PRODUCT	PAGE NO.	Wet / Damp Location (or N3)	NEMA 4 (or 4X, or IP6x)	Class I, Div. 2 / Zone 2	Class I, Zone 2 Ex nR (option)	Class I, Div. 2 / Zone I	Class II / III Div. 1	Class II / III Div. 2	Class I, Div. 1 C,D / Zone I	Class I, Div. 1 A,B,C,D / Zone I	CENELEC Zone 2	CENELEC Zone 1
General Suitability — See catalog pages for details												
INCANDESCENT FIXTURES												
 **NV2 Series**												
Class I, Div.2; NEMA 4X	2-5	X	X	X				X				
 **V Series**												
Standard Location	6-8	X										
Class I, Div. 2; NEMA 4	9-10	X	X	X								
Accessories, Dimensions	11-13											
 **DV Series**												
DV Dust Ignition Proof	14	X					X					
 **NVPI Series**												
Wet Locations												
Class II, Div. 2												
Non-Metallic/Non-Glass	15	X	X					X				
 **EMI Series**												
Hazardous Location												
NEMA 4X Groups C,D												
60-300 Watt Incandescent	137-138	X	X				X		X			
 **E Series/H Series**												
Hazardous Location												
Groups A,B												
200-300 Watt Incandescent	16											
H Series Replacement Parts	16						X		X	X		
 **XHL Series**												
Hazardous Location												
Handlamps												
100 Watt Incandescent	14								X			

PRODUCT	PAGE NO.	Wet / Damp Location (or N3)	NEMA 4 (or 4X, or IP6x)	Class I, Div. 2 / Zone 2	Class I, Zone 2 Ex nR (option)	Class I, Div. 2 / Zone I	Class II / III Div. 1	Class II / III Div. 2	Class I, Div. 1 C,D / Zone I	Class I, Div. 1 A,B,C,D / Zone I	CENELEC Zone 2	CENELEC Zone 1
General Suitability — See catalog pages for details												
COMPACT FLUORESCENT												
 **NV2F Series**												
13-42 Watt Quad-Pin	2-5	X	X	X				X				
 **NVPF Series**												
13-26 Watt												
Class II, Div. 2												
Non-Metallic/Non-Glass	15	X	X					X				
 **MBF Series**												
13-39 Watt for												
Standard & Certain												
Hazardous Locations	22-23											
Accessories	26-27	X	X	X	X		X					
 **VQ1F/VQ2F Series (Replaces VBF/VQF)**												
13-84 Watt for												
Standard & Certain												
Hazardous Locations	43-50	X	X	X			X					
 **EBF/EQF Series**												
13-84 Watt for												
Hazardous Location	137-138	X	X				X		X			
 **XHLF Series**												
Hazardous Location												
Handlamps												
26 Watt Fluorescent	14						X		X			
 **NWPFN Series**												
Surface Mount												
Non-Metallic/Non-Glass												
13-26 Watt	206-207	X	X	X			X					

General Suitability — See catalog pages for details

PRODUCT	PAGE	Wet / Damp Location (or N3)	NEMA 4 (or 4X, or IP6x)	Class I, Div. 2 / Zone 2	Class I, Zone 2 Ex nR (option)	Class I, Div. 2 / Zone I	Class II / III Div. 1	Class II / III Div. 2	Class I, Div. 1 C,D / Zone I	Class I, Div. 1 A,B,C,D / Zone I	CENELEC Zone 2	CENELEC Zone 1
HID AND INDUCTION FIXTURES												
												
MB Series												
Medium Base HID	22,24-25	X	X	X			X					
Accessories	26-27											
Temperature Data	28											
Photometrics	29-35											
												
CERTILITE V **Series**												
Medium Base HID	57-65	X	X	X			X					
Mogul Base HID	66-89	X	X	X			X					
Induction System	90-92	X	X	X			X					
Introduction	51-56											
Quick Locator Table	52											
"3rd Hand" Accessories	53											
Restricted Breathing	54	X	X	X	X		X					
Food Optics	55											
Dark Sky	56											
Accessories	93-97											
Temperature Data	104-113											
Dimensions	100-103											
Photometrics	114-131											
Cross Reference VM to Certilite®V	97											
												
EM Series												
Medium Base HID	137, 139	X	X				X		X			
Accessories	140-141											
Temperature Data	144-145											
Photometric	146-155											
Cenelec Option	144	X	X				X		X			X
												
EZ Series												
Mogul Base HID	156-159	X	X				X		X			
Accessories	160-162											
Temperature Data	164-165											
Photometrics	166-171											
Cenelec Option	164	X	X				X		X			X

LED TECHNOLOGY

General Suitability — See catalog pages for details

PRODUCT	PAGE	Wet / Damp Location (or N3)	NEMA 4 (or 4X, or IP6x)	Class I, Div. 2 / Zone 2	Class I, Zone 2 Ex nR (option)	Class I, Div. 2 / Zone I	Class II / III Div. 1	Class II / III Div. 2	Class I, Div. 1 C,D / Zone I	Class I, Div. 1 A,B,C,D / Zone I	CENELEC Zone 2	CENELEC Zone 1
LED FIXTURES												
												
CERTILITE **MBL Series**												
Compact LED												
Introduction/Logic	17	X	X	X			X					
Selection Grids	18											
Components/Accessories	19											
Dimensions	20											
Photometrics	20-21											
												
CERTILITE V **VM1L Series**												
Reduced Profile LED												
Introduction/Logic	36-37	X	X	X			X					
Selection Grids	38-39											
Components/Accessories	40											
Dimensions	41											
Photometrics	41-42											
												
HOSTILELITE **EML Series**												
Explosion-Proof LED												
CLI, Div.1, CL II, Div. 1, N4X												
Introduction/Logic	132	X	X				X		X			
Selection Grids	133											
Components/Accessories	134											
Dimensions	135											
Photometrics	135-136											
												
ENVIRORITE **NVSL Series LED Signals**												
CLI, Div.2, CL II, Div. 1, N4X												
Non-Metallic, Non-Glass	216-218	X	X	X			X					

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PRODUCT	PAGE NO.	Wet / Damp Location (or N3)	NEMA 4 (or 4X, or IP6x)	Class I, Div. 2 / Zone 2	Class I, Zone 2 Ex nR (option)	Class I, Div. 2 / Zone I	Class II / III Div. 1	Class II / III Div. 2	Class I, Div. 1 C,D / Zone I	Class I, Div. 1 A,B,C,D / Zone I	CENELEC Zone 2	CENELEC Zone 1
General Suitability — See catalog pages for details												
LINEAR FLUORESCENT												
 **DBF Series** Fluorescent Class I, Div. 2	172	X	X	X				X				
 LINEARLITE® **LZ2S Series** Fluorescent Stainless Steel	173	X	X	X				X				
 LINEARLITE® **LZ2N Series** Fluorescent Non-Metallic Class I, Div. 2 Class II, Div. I	174-177	X	X	X			X					
 **HFX-T Series** BIAXIAL Fluorescent Class I, Div. I	178-179	X	X				X		X			
 **HFX Series** Hazardous Location Paint Spray Suitable	180-185	X	X				X		X			
 See L206-207 for emergency backed models	206-207	X	X	X			X					

PRODUCT	PAGE NO.	Wet / Damp Location (or N3)	NEMA 4 (or 4X, or IP6x)	Class I, Div. 2 / Zone 2	Class I, Zone 2 Ex nR (option)	Class I, Div. 2 / Zone I	Class II / III Div. 1	Class II / III Div. 2	Class I, Div. 1 C,D / Zone I	Class I, Div. 1 A,B,C,D / Zone I	CENELEC Zone 2	CENELEC Zone 1
General Suitability — See catalog pages for details												
FLOODLIGHTS & WALL MOUNT FIXTURES												
 **KWP Series** Wallpack for Class I, Div. 2 & N4	194-195	X	X	X								
 **QL** Quartz Floods	186-187	X										
 **KF Series** Floods Aluminum Class I, Div. 2 Marine I 150 to 1000 Watt	189-191	X	X	X								
 **KF-SS** MariGard Stainless Class I, Div. 2 Marine N4 150-400 Watt	192-193	X	X	X	X							
 **EM/DM** Portable Floods	188	X	X				X		X			
 **EZ-T Trunnion**	196-197	X	X						X			
EMERGENCY SIGNALING STROBE LIGHTING												
 **ESX** Strobe Class I, Div. 1	214-215	X	X				X		X			
 **NVSL/NVSZ** LED and XENON Non-Metallic, Non-Glass	216-218	X	X	X			X					

General Suitability — See catalog pages for details

PRODUCT	PAGE NO.	Wet / Damp Location (or N3)	NEMA 4 (or 4X, or IP6x)	Class I, Div. 2 / Zone 2	Class I, Zone 2 Ex nR (option)	Class I, Div. 2 / Zone I	Class II / III Div. 1	Class II / III Div. 2	Class I, Div. 1 C,D / Zone I	Class I, Div. 1 A,B,C,D / Zone I	CENELEC Zone 2	CENELEC Zone 1
EMERGENCY LIGHTING BATTERY-BACKED												
 **DE3B/DE4B**	198											
Class II, Div. 1 Exit Accessory	204		X	X				X				
 **VE3B/VE4B VE3Q/VE4Q** Class I, Div. 2/N4 Class II/N4	198	X	X	X			X					
Exit Accessory	204											
 **EEQ** Class I, Div. 1	211	X					X		X			
Exit Accessory	211											
 **EBB** Class I, D1/N3 Halogen Lamps	212	X					X		X			
BATTERY OPTION FLUORESCENT												
 **DBFE** Linear Fluorescent Class I, D2/N4	208	X	X	X				X				
 **LZ2NE/LZ2SE (FRP or SS)** Class I, Div. 2 Class II, Div. 2	209	X	X	X			X					
 **HFXE** Class I, Div. 1	210	X	X	X			X		X			

PRODUCT	PAGE NO.	Wet / Damp Location (or N3)	NEMA 4 (or 4X, or IP6x)	Class I, Div. 2 / Zone 2	Class I, Zone 2 Ex nR (option)	Class I, Div. 2 / Zone I	Class II / III Div. 1	Class II / III Div. 2	Class I, Div. 1 C,D / Zone I	Class I, Div. 1 A,B,C,D / Zone I	CENELEC Zone 2	CENELEC Zone 1
FITTINGS & ADAPTERS												
 **FKA & FHC**	219	X										
 **HOOK/LOOP**	219	X										
 **FH HOOK**	220	X										
 **V Series** Fixture Hangers	220	X										
 **HXB & XFH**	221	X					X		X			
 **EKJ Series** Flexible Couplings	221	X					X		X	X		
 **JL & JAL**	222	X					X		X			
 **ENY-2SET** Pendant Seals	222	X					X		X	X		
 **VMCHVM** Adapter	223	X	X	X	X		X					
 **EAC** Adapters	224	X	X				X		X			


Pendant Incandescent


Pendant Fluorescent


Ceiling Incandescent


Ceiling Fluorescent

See page L15 for NVP Series with Lexan® Globes

Class I, Div. 2, Groups A,B,C,D
Class I, Zone 2, Groups IIC,IIB,IIA
Class II, Div. 2, Groups F,G
Class III
Marine
NEMA 3, 4, 4X, IP66

Certified - File LR11713

ABS Type Approval

FEATURES-SPECIFICATIONS

ENVIRORITE® II

Applications

Designed specifically for corrosive & wet NEMA 4X and hazardous environments.

Typical applications include manufacturing plants, chemical and petrochemical processing facilities, sewage treatment plants, off-shore and dockside installations, agricultural, commercial/industrial, mining and marine facilities.

Features

- NV2 Series non-metallic light fixtures combine an outstanding balance of strength, stiffness, toughness and electrical properties
- Energy and labor saving fluorescent or incandescent models
- Accessories include polycarbonate dome reflectors and wall extension
- Molded from 30% glass-filled thermoset polyester for high strength
- Resists corrosive effects of most chemicals, hydrocarbons and solvents
- Designed for indoor and outdoor, globe down applications.

to the following standards:

UL 1598 Standard for luminaires

UL 1598A Marine type luminaires

UL 844 Standard for lighting fixtures for hazardous locations

CSA C22.2 no. 137-M1981 electric luminaires for use in hazardous locations

Enclosed and gasketed

NEMA 3, 4X, IP66

Pendant 3/4" Fixture w/clear Globe & Guard*		
Type	Standard Globe	Tempered Globe
150A Incan.	NV2IG15ASG	NV2IG15AHG
13 W Fluor.	NV2FG13ASG	NV2FG13AHG
18 W Fluor.	NV2FG18ASG	NV2FG18AHG
26 W Fluor.	NV2FG26ASG	NV2FG26AHG
32 W Fluor.	NV2FG32ASG	NV2FG32AHG
42 W Fluor.	NV2FG42ASG	NV2FG42AHG

Ceiling 3/4" Fixture w/clear Globe & Guard*		
Type	Standard Globe	Tempered Globe
150A Incan.	NV2IG15XSG	NV2IG15XHG
13 W Fluor.	NV2FG13XSG	NV2FG13XHG
18 W Fluor.	NV2FG18XSG	NV2FG18XHG
26 W Fluor.	NV2FG26XSG	NV2FG26XHG
32 W Fluor.	NV2FG32XSG	NV2FG32XHG
42 W Fluor.	NV2FG42XSG	NV2FG42XHG

Wall 3/4" Fixture w/clear Globe & Guard*		
Type	Standard Globe	Tempered Globe
150A Incan.	NV2IG15BSG	NV2IG15BHG
13 W Fluor.	NV2FG13BSG	NV2FG13BHG
18 W Fluor.	NV2FG18BSG	NV2FG18BHG
26 W Fluor.	NV2FG26BSG	NV2FG26BHG
32 W Fluor.	NV2FG32BSG	NV2FG32BHG
42 W Fluor.	NV2FG42BSG	NV2FG42BHG

*Notes:

- Tempered Globes are required for Wet Location applications
- All assemblies are unit packed with required components (not assembled)
- Fluorescent unit pack models (only) include the lamp
- Reflector is sold separately. For wall mounting with reflector, the NVEXTG extension is required and sold separately
- Fluorescent models use "world voltage" ballasts for 120VAC through 277VAC 50/60Hz applications
- Incandescent models 277VAC max.
- For M20 ceiling units change "X" in part # to "M". For wall units change "B" to "W". M20 Pendant not available.

Colored Globe Options**

Example: NV2IG15ASG-R for Ruby Standard Globe
or NV2IG15AHG-R for Ruby Tempered Globe

Suffix and available combinations		
Color	Standard Globe	Tempered Globe
Amber	A	A
Blue	B	B
Ruby	R	R
Green	G	NA
Purple	P	NA
Blue-Green	BG	BG

**Tempered globes are required for wet locations.

T-codes @ 40°C Max; with or without Reflector						
	Class I Div.2		Class II Div.2		Minimum Start	
Globe Type	Clear	Color	Clear	Color	°C	°F
75A	T2C	T2B	T3C	-	-	-
100A	T2A	T2	T3C	-	-	-
150A	T2B	T2	-	-	-	-
13 Fluor	T3C	T3C	T4A	T4A	-20	-4
18 Fluor	T3C	T3C	T4A	T4A	-20	-4
26 Fluor	T3B	T3A	T4A	T4A	-20	-4
32 Fluor	T3B	T3A	T4A	T4A	-20	-4
42 Fluor	T2D	T2C	T4A	T4A	-20	-4

Min. supply wire Fluor. 60°C, Incan. 90°C

Fluorescent Operating Max. Amps		
Type	120 VAC	277 VAC
13W Fluor	.144	.067
18W Fluor	.158	.073
26W Fluor	.22	.097
32W Fluor	.285	.128
42W Fluor	.38	.166

HUBBELL®
KILLARK®

Wall Mount
Incandescent

Wall Mount
Fluorescent

Wall Mount with
Extension and Dome
Reflector accessories

Class I, Div. 2, Groups A,B,C,D
Class I, Zone 2, Groups IIC,IIB,IIA
Class II, Div. 2, Groups F,G
Class III
Marine
NEMA 3, 4, 4X, IP66

Certified - File LR11713

ABS Type Approval

COMPONENT PARTS

Pendent

Ceiling/Wall

Wall Elbow

Ceiling/Wall
(Interior Detail)

Incandescent

Fluorescent

Globe

Guard

Reflector

Extension

Gray Blank

Clear

NV2 SPLICE BOXES - INCLUDES SILICONE GASKETS & BRASS SCREWS

CATALOG NUMBER	DESCRIPTION		
NV2AG	Pendant	3/4" NPT	Pendant splice box includes a 316 stainless steel set screw at the conduit connection
NV2XG①	Ceiling Box	3/4" NPT	Ceiling box vol. 24 cu. inches
NV2MG①		M20	
NV2BG	Wall Bracket		Use with NV2XG or NV2MG for wall mount

NV2 BODIES

CATALOG NUMBER	DESCRIPTION
NV2IG15	Incandescent Body with E-26 medium base socket; fixture rated voltage 277VAC max.
NV2FG13	13 W Fluorescent Body World Voltage 120V - 277V 50/60Hz
NV2FG18	18 W Fluorescent Body World Voltage 120V - 277V 50/60Hz
NV2FG26	26 W Fluorescent Body World Voltage 120V - 277V 50/60Hz
NV2FG32	32 W Fluorescent Body World Voltage 120V - 277V 50/60Hz
NV2FG42	42 W Fluorescent Body World Voltage 120V - 277V 50/60Hz

NV2 GLASS GLOBES & GUARDS②

CATALOG NUMBER	DESCRIPTION	
VCG-100	Clear	150 watt Lamp size A-21 max.
VCGP-100	Clear, Tempered	
NV2GG	Guard	

NV2 REFLECTORS AND EXTENSION

CATALOG NUMBER	DESCRIPTION
NVPSD12	White Polycabonate Reflector (secured by guard)
NVEXTG	Extension (for wall mount fixture with reflector)

BLANK COVERS FOR NV2XG CEILING BOXES

CATALOG NUMBER	DESCRIPTION
NV2CG	Gray Cover
NV2CC①	Clear Cover

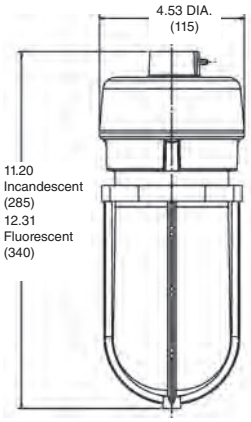
NV2F FLUORESCENT REPLACEMENT LAMPS AND BALLASTS

MQL13	13 W Quad-Pin Lamp 900 Lumens	BKF131830 13/18 Watt Rep. Ballast
MQL18	18 W Quad-Pin Lamp 1200 Lumens	
MQL26	26 W Quad-Pin Lamp 1800 Lumens	BKF26324230 26/32/42 Watt Rep. Ballast
MQL32	32 W Quad-Pin Lamp 2400 Lumens	
MQL42	42 W Quad-Pin Lamp 3200 Lumens	

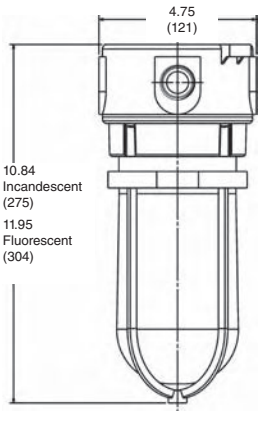
① NV2 ceiling (wall) boxes have 4 10-32 brass inserts with 2 ground screws. May be used for wet locations, as terminal/junction, boxes ,or instruments using 'clear' blank cover.
② See page L12 for colored globes; use tempered for wet locations.

HUBBELL
KILLARK®

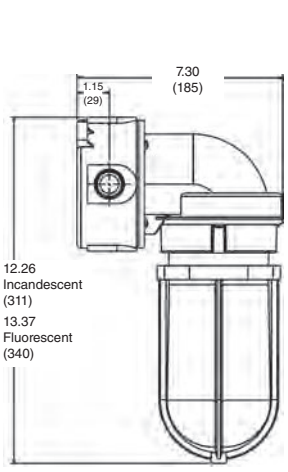
Dimensions*



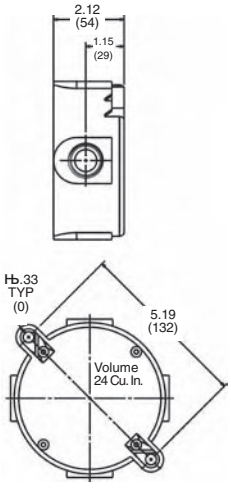
Pendant



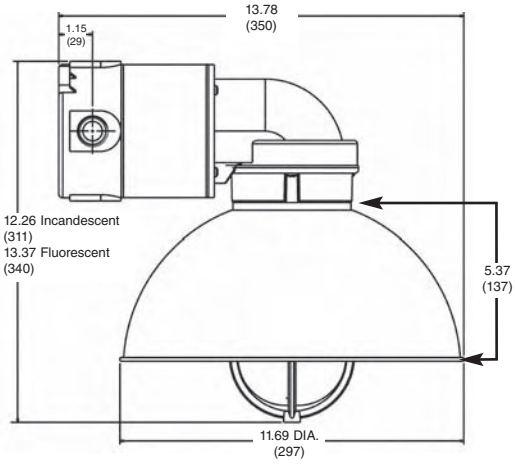
Ceiling



Wall



NV2XG



Wall mount with optional reflector and with extension. Extension required only for wall mount units using reflector.

***NOTE: Dimensional diagrams show incandescent models, but include height also for fluorescent.**

NV To NV2 Cross Reference

OLD	NEW#	NEW DESCRIPTION
Complete Fixtures		
NVA15GG	NV2IG15ASG	INC 150W PEND STD GLOBE/GRD
NVA15GHG	NV2IG15AHG	INC 150W PEND TEMPER GLB/GRD
NVX15GG	NV2IG15XSG	INC 150W CEIL STD GLOBE/GRD
NVX15GHG	NV2IG15XHG	INC 150W CEIL TEMPER GLB/GRD
NVB15GG	NV2IG15BSG	INC 150W WALL STD GLOBE/GRD
NVB15GHG	NV2IG15BHG	INC 150W WALL TEMPER GLB/GRD
NVQA18GG	NV2FG18ASG	FL18 120-277 PEND STD GLOB/GRD
NVQA18GHG	NV2FG18AHG	FL18 120-277 PEND TEM GLOB/GRD
NVQX18GG	NV2FG18XSG	FL18 120-277 CEIL STD GLOB/GRD
NVQX18GHG	NV2FG18XHG	FL18 120-277 CEIL TEM GLB/GRD
NVQB18GG	NV2FG18BSG	FL18 120-277 WALL STD GLOB/GRD
NVQB18GHG	NV2FG18BHG	FL18 120-277 WALL TEM GLOB/GRD
Components		
NVA	NV2AG	3/4" Pendant
NVX	NV2XG	3/4" Ceiling (Wall) Box
NVB	NV2BG	Elbow, use with Ceiling Box
NVQFC	NV2FG18	Fluorescent Body 120-277VAC 50/60Hz
NVQFC184 (1)	NV2FG18	Fluorescent Body 120-277VAC 50/60Hz
NVFC	NV2IG15	Incandescent Body
NVFC-LT (2)	NV2IG15	Incandescent Body
NVG	NV2GG	Guard
NVQ-18	MQL18	18W Compact Fluor. Lamp
NVBC	NV2CG	Blank Cover w/Two Gaskets
NVSG	NV2CG	Use Blank Cover's extra gasket

(1) "4" for 277VAC Fluorescent no longer required

(2) Insulated socket incandescent no longer needed for 90c wire

Key New Features:

- cSPus Certified for Hostile Locations: Class I Div 2; Class II Div 2; N4X; IP66
- ABS Approval
- 120-277VAC 50/60Hz World Voltage Ballasts on Fluorescents
- Four new Fluorescent Wattages: 13, 26, 32, 42
- Only 90° C wire for Incandescent suitable for Marine with 150A
- New Dome Reflector
- Colored "100" Series globes can be ordered in assemblies
- M20 Metric ceiling/wall box
- Four 10-32 bosses in ceiling box for user applications
- Clear Blank covers available for user applications

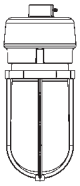
Backward Compatability:

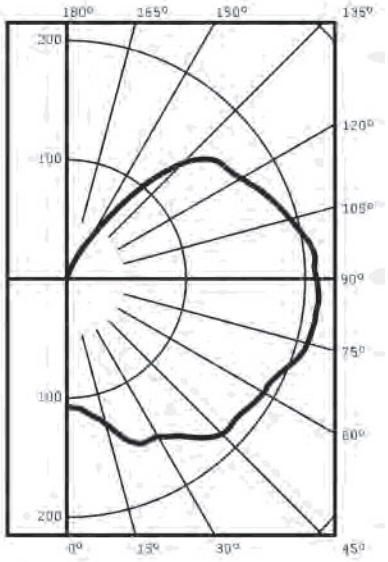
- NVG & NV2GG are interchangeable
- Globes are interchangeable
- Old NV Incandescent and Fluorescent bodies will fit new NV2 Boxes and Elbow, but assembly is Wet Location listed only
- New NV2IG15 Incandescent will fit old NV Boxes and Elbow
- New NV2FGx Fluorescent will fit old NVX box, not pendant or elbow
- Reflectors will fit old bodies for pendant or ceiling applications

Photometrics

NV2IG15 Incandescent
With Globe & Guard

Candlepower - 150 Watt
A-21 lamp 2850 lumens
For 75 Watt multiply by .42
For 100 Watt multiply by .61





ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	117	4.1	5.6
0- 40	219	7.7	10.5
0- 60	528	18.5	25.3
0- 90	1172	41.1	56.1
90-120	608	21.3	29.1
90-130	754	26.5	36.1
90-150	903	31.7	43.3
90-180	915	32.1	43.9
0-180	2087	73.2	100.0

TOTAL LUMINAIRE EFFICIENCY = 73.2 %

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

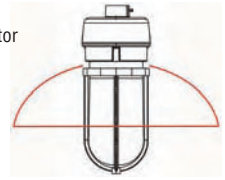
% EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCRW	20% Effective Floor Cavity Reflectance					
0	.79 .79 .79 .79	.74 .74 .74 .74	.64 .64 .64	.54 .54 .54	.45 .45 .45	.41
1	.69 .64 .59 .55	.63 .59 .55 .51	.50 .47 .44	.41 .39 .37	.34 .32 .30	.26
2	.61 .53 .47 .42	.56 .49 .44 .39	.41 .37 .33	.34 .31 .28	.27 .25 .23	.19
3	.55 .46 .39 .33	.50 .42 .36 .31	.35 .30 .26	.29 .25 .22	.23 .20 .18	.14
4	.49 .40 .33 .27	.45 .37 .30 .25	.31 .26 .21	.25 .21 .18	.20 .17 .14	.11
5	.45 .35 .28 .23	.41 .23 .26 .21	.27 .22 .18	.22 .18 .15	.18 .14 .12	.09
6	.41 .31 .24 .19	.38 .29 .22 .18	.24 .19 .15	.20 .16 .12	.16 .12 .10	.08
7	.38 .28 .21 .16	.35 .26 .20 .15	.22 .17 .13	.18 .14 .11	.14 .11 .08	.06
8	.35 .25 .19 .14	.32 .23 .17 .13	.20 .15 .11	.16 .12 .09	.13 .10 .07	.06
9	.33 .23 .17 .12	.30 .21 .15 .12	.18 .13 .10	.15 .11 .08	.12 .09 .06	.05
10	.30 .21 .15 .11	.28 .19 .14 .10	.16 .12 .09	.14 .10 .07	.11 .08 .06	.04

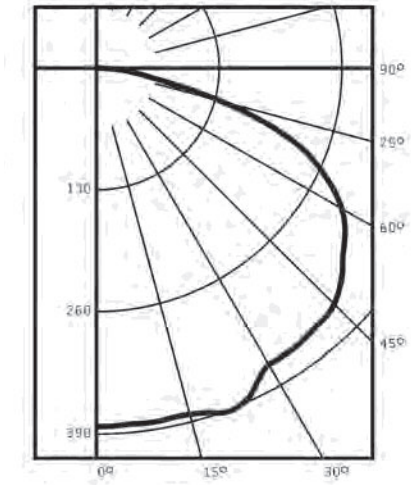
SPACING CRITERION = 2.3
TEST NO. 1716

HUBBELL®
KILLARK®

Photometrics

NV2IG15 Incandescent
With Globe, Guard & Reflector
Candlepower - 150 Watt
A-21 lamp 2850 lumens
For 75 Watt multiply by .42
For 100 Watt multiply by .61





ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	322	11.5	20.7
0- 40	550	19.3	35.5
0- 60	1112	39.0	71.7
0- 90	1550	54.4	100.0
*90-180	0	0.0	0.0
0-180	1550	54.4	100.0

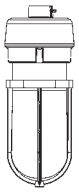
TOTAL LUMINAIRE EFFICIENCY = 54.4 %

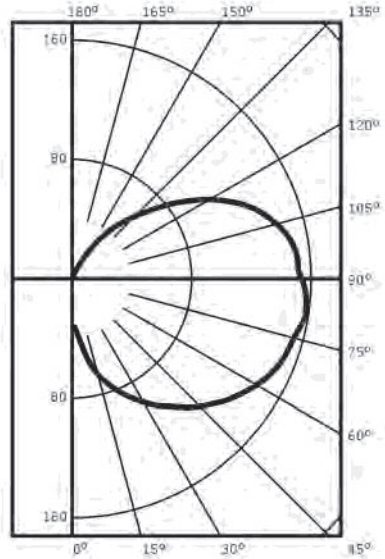
COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCRW	20% Effective Floor Cavity Reflectance					
0	.65 .65 .65 .65	.63 .63 .63 .63	.60 .60 .60	.58 .58 .58	.55 .55 .55	.54
1	.58 .56 .53 .51	.57 .54 .52 .50	.52 .50 .48	.50 .48 .47	.48 .47 .45	.44
2	.53 .48 .43 .40	.51 .47 .43 .40	.45 .41 .39	.43 .40 .38	.41 .39 .37	.36
3	.47 .41 .36 .32	.46 .40 .36 .32	.39 .35 .31	.37 .34 .31	.36 .33 .30	.29
4	.43 .36 .31 .27	.42 .35 .30 .27	.34 .29 .26	.32 .29 .26	.31 .28 .25	.24
5	.39 .32 .26 .23	.38 .31 .26 .22	.30 .25 .22	.29 .25 .22	.28 .24 .12	.20
6	.36 .28 .23 .19	.35 .28 .23 .19	.27 .22 .19	.26 .22 .19	.25 .21 .19	.17
7	.33 .25 .20 .17	.32 .25 .20 .17	.24 .20 .17	.23 .19 .16	.23 .19 .16	.15
8	.31 .23 .18 .15	.30 .23 .18 .15	.22 .18 .15	.27 .17 .14	.21 .17 .14	.13
9	.29 .21 .16 .13	.28 .21 .16 .13	.20 .16 .13	.19 .16 .13	.19 .15 .13	.12
10	.27 .19 .15 .12	.26 .19 .15 .12	.18 .14 .12	.18 .14 .12	.17 .14 .12	.11

SPACING CRITERION = 1.5
TEST NO. 1717
*Full cutoff distribution

NV2FG26 Fluorescent
With Globe & Guard
Candlepower - 26 Watt
CF26 lamp 1800 lumens
For 13 Watt multiply by .50
For 18 Watt multiply by .67
For 32 Watt multiply by 1.33
For 42 Watt multiply by 1.78





ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	63	3.5	4.5
0- 40	128	7.1	9.1
0- 60	344	19.1	24.4
0- 90	825	45.8	58.5
90-120	434	24.1	30.8
90-130	515	28.6	36.5
90-150	582	32.3	41.2
90-180	586	32.5	41.5
0-180	1411	78.4	100.0

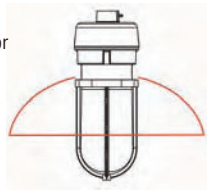
TOTAL LUMINAIRE EFFICIENCY = 78.4 %

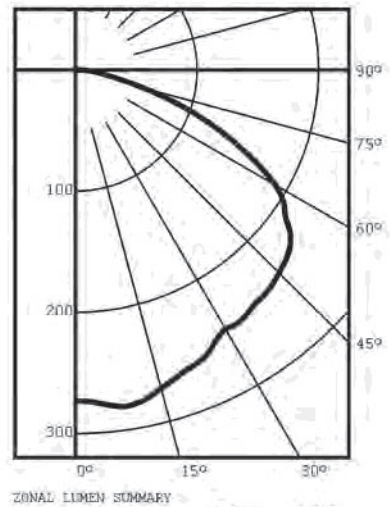
COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCRW	20% Effective Floor Cavity Reflectance					
0	.86 .86 .86 .86	.80 .80 .80 .80	.69 .69 .69	.59 .59 .59	.50 .50 .50	.46
1	.73 .68 .63 .58	.68 .63 .58 .54	.53 .50 .47	.45 .42 .39	.37 .35 .33	.29
2	.65 .57 .50 .44	.60 .52 .46 .41	.44 .39 .35	.36 .33 .29	.30 .27 .24	.20
3	.58 .48 .41 .34	.53 .44 .38 .32	.37 .32 .27	.31 .26 .23	.25 .21 .18	.15
4	.52 .42 .34 .28	.48 .38 .31 .26	.32 .27 .22	.27 .22 .18	.21 .18 .15	.12
5	.48 .37 .29 .23	.44 .34 .27 .21	.28 .23 .18	.23 .19 .15	.19 .15 .12	.09
6	.44 .32 .25 .19	.40 .30 .23 .18	.25 .19 .15	.21 .16 .13	.17 .13 .10	.08
7	.40 .29 .22 .16	.37 .27 .20 .15	.22 .17 .13	.19 .14 .11	.15 .11 .08	.06
8	.37 .26 .19 .14	.34 .24 .18 .13	.20 .15 .11	.17 .12 .09	.14 .10 .07	.05
9	.34 .24 .17 .12	.32 .22 .16 .11	.18 .13 .10	.15 .11 .08	.12 .09 .06	.05
10	.32 .21 .15 .11	.30 .20 .14 .10	.17 .12 .09	.14 .10 .07	.11 .08 .06	.04

SPACING CRITERION = 3.5
TEST NO. 1720

NV2FG26 Fluorescent
With Globe, Guard & Reflector
Candlepower - 26 Watt
CF26 lamp 1800 lumens
For 13 Watt multiply by .50
For 18 Watt multiply by .67
For 32 Watt multiply by 1.33
For 42 Watt multiply by 1.78





ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	222	12.3	22.8
0- 40	376	20.9	38.5
0- 60	750	41.7	76.9
0- 90	976	54.2	100.0
*90-180	0	0.0	0.0
0-180	976	54.2	100.0

TOTAL LUMINAIRE EFFICIENCY = 54.2 %

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCRW	20% Effective Floor Cavity Reflectance					
0	.64 .64 .64 .64	.63 .63 .63 .63	.60 .60 .60	.58 .58 .58	.55 .55 .55	.54
1	.59 .56 .54 .52	.57 .55 .53 .51	.53 .51 .49	.50 .49 .48	.48 .47 .46	.45
2	.53 .48 .45 .41	.52 .47 .44 .41	.45 .42 .40	.44 .41 .39	.42 .40 .38	.37
3	.48 .42 .37 .34	.47 .41 .37 .34	.40 .36 .33	.38 .35 .32	.37 .34 .32	.31
4	.44 .37 .32 .28	.42 .36 .32 .28	.35 .31 .28	.34 .30 .27	.32 .29 .27	.26
5	.40 .33 .28 .24	.39 .32 .27 .24	.31 .27 .23	.30 .26 .23	.29 .26 .23	.22
6	.37 .29 .24 .21	.36 .29 .24 .20	.28 .23 .20	.27 .23 .20	.26 .23 .20	.19
7	.34 .26 .21 .18	.33 .26 .21 .18	.25 .21 .18	.24 .20 .18	.23 .20 .17	.16
8	.32 .24 .19 .16	.31 .24 .19 .16	.23 .19 .16	.22 .18 .16	.21 .18 .15	.14
9	.29 .22 .17 .14	.29 .22 .17 .14	.21 .17 .14	.20 .17 .14	.20 .16 .14	.13
10	.27 .20 .16 .13	.27 .20 .16 .13	.19 .15 .13	.19 .15 .13	.18 .15 .12	.11

SPACING CRITERION = 1.4
TEST NO. 1724
*Full cutoff distribution

Enclosed & Gasketed

Listed - File E27731

Certified - File LR11851

INTRODUCTION AND ORDERING INFORMATION

V Series Enclosed & Gasketed

Applications

Locations requiring durable, protected lighting fixtures

Wet and dirt laden locations

Industrial environments requiring enclosed and gasketed (vapor tight) fixtures

Fixtures intended for base-up mounting

Heat resistant glass globes recommended for wet locations

Features

- Electrostatically applied epoxy/polyester finish
- Modular design
- Hubs are threaded for attachment to conduit
- Set screws in pendant fixtures
- Copper-free aluminum (less than 4/10 of 1%)

Class I, Div. 2, NEMA 4 models available - see VXFC Series lighting assemblies & components, pages L9-L12. Dimensions page L13.

PENDANT MOUNT WITH VGA SPLICE BOX

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER		CONSISTS OF			
			FIXTURE W/ GLOBE	FIXTURE W/ GLOBE & GUARD	MOUNTING BOX	FIXTURE BODY	CLEAR GLOBE*	GUARD (if selected)
100	150	1/2"	VUAG-1-100 ②	VUAGG-1-100 ①	VGA-1	VFC-100	VCG-100	VAG-100
		3/4"	VUAG-2-100 ②	VUAGG-2-100 ①	VGA-2	VFC-100	VCG-100	VAG-100
200	300	1/2"	VUAG-1-200 ②	VUAGG-1-200 ②	VGA-1	VFC-200	VCG-200	VAG-200
		3/4"	VUAG-2-200 ②	VUAGG-2-200 ②	VGA-2	VFC-200	VCG-200	VAG-200

CEILING MOUNT WITH FEET USING VBC SPLICE BOX AND VBA ADAPTER

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER		CONSISTS OF			
			FIXTURE W/ GLOBE	FIXTURE W/ GLOBE & GUARD	MOUNTING BOX/ADAPTER	FIXTURE BODY	CLEAR GLOBE*	GUARD (if selected)
100	150	1/2"	VUXBG-1-100 ①	VUXBGG-1-100 ①	VBC-1 + VBA	VFC-100	VCG-100	VAG-100
		3/4"	VUXBG-2-100 ①	VUXBGG-2-100 ①	VBC-2 + VBA	VFC-100	VCG-100	VAG-100
200	300	1/2"	VUXBG-1-200 ②	VUXBGG-1-200 ②	VBC-1 + VBA	VFC-200	VCG-200	VAG-200
		3/4"	VUXBG-2-200 ②	VUXBGG-2-200 ②	VBC-2 + VBA	VFC-200	VCG-200	VAG-200

CEILING MOUNT WITH VGX SPLICE BOX

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER		CONSISTS OF			
			FIXTURE W/ GLOBE	FIXTURE W/ GLOBE & GUARD	MOUNTING BOX	FIXTURE BODY	CLEAR GLOBE*	GUARD (if selected)
100	150	1/2"	VUXG-1-100 ②	VUXGG-1-100 ②	VGX-1	VFC-100	VCG-100	VAG-100
		3/4"	VUXG-2-100 ②	VUXGG-2-100 ②	VGX-2	VFC-100	VCG-100	VAG-100
200	300	1/2"	VUXG-1-200 ②	VUXGG-1-200 ②	VGX-1	VFC-200	VCG-200	VAG-200
		3/4"	VUXG-2-200 ②	VUXGG-2-200 ②	VGX-2	VFC-200	VCG-200	VAG-200

CEILING MOUNT WITH VGC SPLICE BOX - FEED THROUGH

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER		CONSISTS OF			
			FIXTURE W/ GLOBE	FIXTURE W/ GLOBE & GUARD	MOUNTING BOX	FIXTURE BODY	CLEAR GLOBE*	GUARD (if selected)
100	150	1/2"	VUCG-1-100 ②	VUCGG-1-100 ①	VGC-1	VFC-100	VCG-100	VAG-100
		3/4"	VUCG-2-100 ②	VUCGG-2-100 ②	VGC-2	VFC-100	VCG-100	VAG-100
200	300	1/2"	VUCG-1-200 ②	VUCGG-1-200 ②	VGC-1	VFC-200	VCG-200	VAG-200
		3/4"	VUCG-2-200 ②	VUCGG-2-200 ②	VGC-2	VFC-200	VCG-200	VAG-200

**For other colors, order globes and fixture components separately.*

① *Fixture supplied as component unit pack when ordered by this catalog number.*

② *Catalog number for ordering convenience; fixture is shipped as components as listed in catalog number table.*

Enclosed & Gasketed

Listed - File E27731

Certified - File LR11851

ORDERING INFORMATION

CEILING MOUNT WITH VGH SPLICE BOX - DEAD END

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER		CONSISTS OF			
			FIXTURE W/ GLOBE	FIXTURE W/ GLOBE & GUARD	MOUNTING BOX	FIXTURE BODY	CLEAR GLOBE*	GUARD (if selected)
100	150	1/2"	VUHG-1-100 ②	VUHGG-1-100 ②	VGH-1	VFC-100	VCG-100	VAG-100
		3/4"	VUHG-2-100 ②	VUHGG-2-100 ②	VGH-2	VFC-100	VCG-100	VAG-100
200	300	1/2"	VUHG-1-200 ②	VUHGG-1-200 ②	VGH-1	VFC-200	VCG-200	VAG-200
		3/4"	VUHG-2-200 ②	VUHGG-2-200 ②	VGH-2	VFC-200	VCG-200	VAG-200

CEILING MOUNT WITH VXA DEEP 5-HUB SPLICE BOX

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER		CONSISTS OF			
			FIXTURE W/ GLOBE	FIXTURE W/ GLOBE & GUARD	MOUNTING BOX	FIXTURE BODY	CLEAR GLOBE*	GUARD (if selected)
100	150	1/2"	VXAG-110 ②	VXAGG-110 ①	VXA-1	VFC-100	VCG-100	VAG-100
		3/4"	VXAG-210 ②	VXAGG-210 ②	VXA-2	VFC-100	VCG-100	VAG-100
200	300	1/2"	VXAG-120 ②	VXAGG-120 ②	VXA-1	VFC-200	VCG-200	VAG-200
		3/4"	VXAG-220 ②	VXAGG-220 ②	VXA-2	VFC-200	VCG-200	VAG-200

CEILING MOUNT WITH VBA ADAPTER FOR ROUND OUTLET BOX

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER		CONSISTS OF			
			FIXTURE W/ GLOBE	FIXTURE W/ GLOBE & GUARD	BOX ADAPTER	FIXTURE BODY	CLEAR GLOBE*	GUARD (if selected)
100	150	1/2"	VOB-100 ①	VOBG-100 ①	VBA	VFC-100	VCG-100	VAG-100
200	300	3/4"	VOB-200 ②	VOBG-200 ①	VBA	VFC-200	VCG-200	VAG-200

NOTES: Mounts directly to VJ ,VB or steel 3-1/2" or 4" outlet boxes. Supplied with gasket.

CEILING MOUNT WITH VFPS ADAPTER FOR SQUARE OR OCTAGON OUTLET BOX

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER		CONSISTS OF			
			FIXTURE W/ GLOBE	FIXTURE W/ GLOBE & GUARD	BOX ADAPTER	FIXTURE BODY	CLEAR GLOBE*	GUARD (if selected)
100	150	1/2"	VFCA-100 ①	VFCAG-100 ②	VFPS	VFC-100	VCG-100	VAG-100
200	300	3/4"	VFCA-200 ②	VFCAG-200 ②	VFPS	VFC-200	VCG-200	VAG-200

NOTES: Mounts directly to steel 4" square and 3-1/2" or 4" octagon outlet box. Supplied with gasket.

**For other colors, order globe and fixture components separately.*

① Fixture supplied as component unit pack when ordered by this catalog number.

② Catalog number for ordering convenience; fixture is shipped as components as listed in catalog number table.

Enclosed & Gasketed

Listed - File E27731

Certified - File LR11851

ORDERING INFORMATION

WALL MOUNT WITH FEET USING VBC SPLICE BOX AND VB ELBOW

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER		CONSISTS OF			
			FIXTURE W/ GLOBE	FIXTURE W/ GLOBE & GUARD	MOUNTING BOX/ELBOW	FIXTURE BODY	CLEAR GLOBE*	GUARD (if selected)
100	150	1/2"	VFBG-1-100 ①	VFBGG-1-100 ①	VBC-1+VB-1	VFC-100	VCG-100	VAG-100
		3/4"	VFBG-2-100 ①	VFBGG-2-100 ①	VBC-2+VB-2	VFC-100	VCG-100	VAG-100
200	300	1/2"	VFBG-1-200 ②	VFBGG-1-200 ②	VBC-1+VB-1	VFC-200	VCG-200	VAG-200
		3/4"	VFBG-2-200 ②	VFBGG-2-200 ②	VBC-2+VB-2	VFC-200	VCG-200	VAG-200

WALL MOUNT WITH VB ELBOW TO MOUNT TO 4" OUTLET BOX

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER		CONSISTS OF			
			FIXTURE W/ GLOBE	FIXTURE W/ GLOBE & GUARD	MOUNTING ELBOW	FIXTURE BODY	CLEAR GLOBE*	GUARD (if selected)
100	150	1/2"	VFBG-110 ②	VFBGG-110 ①	VB-1	VFC-100	VCG-100	VAG-100
		3/4"	VFBG-210 ②	VFBGG-210 ①	VB-2	VFC-100	VCG-100	VAG-100
200	300	1/2"	VFBG-120 ②	VFBGG-120 ②	VB-1	VFC-200	VCG-200	VAG-200
		3/4"	VFBG-220 ②	VFBGG-220 ②	VB-2	VFC-200	VCG-200	VAG-200

Mounts directly to VJ or VB Series or 4" steel outlet boxes. One hub in back, supplied with gasket.

WALL MOUNT-WITH VFL ELBOW FOR DIRECT MOUNT TO V SERIES SPLICE BOXES

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER		CONSISTS OF			
			FIXTURE W/ GLOBE	FIXTURE W/ GLOBE & GUARD	MOUNTING ELBOW	FIXTURE BODY	CLEAR GLOBE*	GUARD (if selected)
100	150	—	VOBL-100 ②	VOBLG-100 ①	VFL	VFC-100	VCG-100	VAG-100
200	300	—	VOBL-200 ②	VOBLG-200 ②	VFL	VFC-200	VCG-200	VAG-200

Mounts directly to V Series splice boxes, not to VBC box.

STANCHION MOUNT FOR 1-1/4" THREADED PIPE

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER		CONSISTS OF			
			FIXTURE W/ GLOBE	FIXTURE W/ GLOBE & GUARD	MOUNTING ARM	FIXTURE BODY	CLEAR GLOBE*	GUARD (if selected)
100	150	1-1/4"	VD-410G ①	VD-410GG ①	VD-4	VFC-100	VCG-100	VAG-100
200	300	1-1/4"	VD-420G ②	VD-420GG ②	VD-4	VFC-200	VCG-200	VAG-200

**For other colors, order globe and fixture components separately.*

① Fixture supplied as component unit pack when ordered by this catalog number.

② Catalog number for ordering convenience; fixture is shipped as components as listed in catalog number table.

Class I, Div. 2, Groups A,B,C,D
Class I, Zone 2, Groups IIC,IIB,IIA
NEMA 3, 4*

Listed - File E10514
UL-1571 Standard for incandescent fixtures
UL-844 Standard for hazardous location fixtures
Certified - File LR11713

Pendant

Ceiling

FEATURES-SPECIFICATIONS

Applications

Killark "V" Series Vaportight fixtures are now available Third Party Certified for use in certain hazardous as well as wet locations which require durable, protected lighting fixtures.

Wet and dirt laden industrial environments such as walkways, tunnels, loading docks, stairwells, etc. made hazardous by the presence of flammable vapors as defined by the NEC.

Fixtures intended for base-up mounting only.

Heat resistant (tempered) glass globes recommended for wet locations.

** Wet location when used with tempered glass.*

Features

Killark Vaportight assemblies using VXFC bodies & tempered glass have all the features & advantages of "V" Enclosed & Gasketed" models plus:

- Heavy-duty silicone gasketing for NEMA 4 requirements
- Third party tested & labeled for use in C1D2 areas
- Modular design permits selection of splice box, fixture body, globe, guard and reflector for specific or custom applications
- Existing V Series mounting boxes may be retrofitted to upgrade to NEMA 4; C1D2 suitability

Copper-free aluminum construction with electrostatically applied epoxy/polyester finish resists corrosion

APPLICATION DATA①

FIXTURE TYPE	LAMP SIZE	GLOBE TYPE	TEMPERATURE CODE @ 40°C
100	A-19 60W	colored & clear	T2C (230°C)
100	A-19 70W	colored & clear	T2D (215°C)
100	A-19 100W	colored & clear	T2A (280°C)
100	A-21 100W	colored & clear	T2B (260°C)
100	A-21 150W	colored & clear	T2 (300°C)
200	A-23 150W	colored & clear	T2A (280°C)
200	PS-25 150W	colored & clear	T2B (260°C)
200	A-23 200W	colored & clear	T2 (300°C)
200	PS-25 200W	colored & clear	T2A (280°C)
200	PS-25 300W	colored & clear	(350°C)

① *Suitability based on base up installation*

See dimensions page L13.

L

INCANDESCENT NEMA 4 - CLASS I, DIV. 2 ALUMINUM FIXTURES

Class I, Div. 2, Groups A,B,C,D②
Class I, Zone 2, Groups IIC,IIB,IIA
NEMA 3, 4

Listed - File E10514
UL-1571 Standard for incandescent fixtures
UL-844 Standard for hazardous location fixtures

Certified - File LR11713

FEATURES-SPECIFICATIONS

PENDANT MOUNT WITH VGA SPLICE BOX

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER FIXTURE W/ GLOBE & GUARD	CONSISTS OF MOUNTING BOX	FIXTURE BODY	CLEAR GLOBE*	GUARD
100	150	1/2"	**VUAGG-1-100PX** ①	VGA-1	VXFC-100 N34	VCGP-100	VAG-100
		3/4"	**VUAGG-2-100PX** ①	VGA-2	VXFC-100 N34	VCGP-100	VAG-100
200	300	1/2"	**VUAGG-1-200PX** ①	VGA-1	VXFC-200 N34	VCGP-200	VAG-200
		3/4"	**VUAGG-2-200PX** ①	VGA-2	VXFC-200 N34	VCGP-200	VAG-200

CEILING FIXTURE WITH VGX SPLICE BOX

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER FIXTURE W/ GLOBE & GUARD	CONSISTS OF MOUNTING BOX	FIXTURE BODY	CLEAR GLOBE*	GUARD
100	150	1/2"	**VUXGG-1-100PX** ①	VGX-1	VXFC-100 N34	VCGP-100	VAG-100
		3/4"	**VUXGG-2-100PX** ①	VGX-2	VXFC-100 N34	VCGP-100	VAG-100
200	300	1/2"	**VUXGG-1-200PX** ①	VGX-1	VXFC-200 N34	VCGP-200	VAG-200
		3/4"	**VUXGG-2-200PX** ①	VGX-2	VXFC-200 N34	VCGP-200	VAG-200

CEILING FIXTURE WITH MOUNTING FEET USING VBC SPLICE BOX & VBA ADAPTER

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER FIXTURE W/ GLOBE & GUARD	CONSISTS OF MOUNTING BOX/ADAPTER	FIXTURE BODY	CLEAR GLOBE*	GUARD
100	150	1/2"	**VUXBGG-1-100PX** ①	VBC-1+VBA	VXFC-100 N34	VCGP-100	VAG-100
		3/4"	**VUXBGG-2-100PX** ①	VBC-2+VBA	VXFC-100 N34	VCGP-100	VAG-100
200	300	1/2"	**VUXBGG-1-200PX** ①	VBC-1+VBA	VXFC-200 N34	VCGP-200	VAG-200
		3/4"	**VUXBGG-2-200PX** ①	VBC-2+VBA	VXFC-200 N34	VCGP-200	VAG-200

STANCHION MOUNT FOR 1-1/4" THREADED PIPE

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER FIXTURE W/ GLOBE & GUARD	CONSISTS OF MOUNTING BOX/ADAPTER	FIXTURE BODY	CLEAR GLOBE*	GUARD
100	150	1-1/4"	**VD-410GGPX** ①	VD-4	VFC-100 N34	VCGP-100	VAG-100
200	300	1-1/4"	**VD-420GGPX** ①	VD-4	VFC-200 N34	VCGP-200	VAG-200

WALL FIXTURE WITH MOUNTING FEET USING VBC SPLICE BOX & VB ELBOW

FIXTURE TYPE	LAMP WATT	HUB SIZE	CATALOG NUMBER FIXTURE W/ GLOBE & GUARD	CONSISTS OF MOUNTING BOX/ELBOW	FIXTURE BODY	CLEAR GLOBE*	GUARD
100	150	1/2"	**VFBGG-1-100PX** ①	VBC-1 + VB-1	VXFC-100 N34	VCGP-100	VAG-100
		3/4"	**VFBGG-2-100PX** ①	VBC-2 + VB-2	VXFC-100 N34	VCGP-100	VAG-100
200	300	1/2"	**VFBGG-1-200PX** ①	VBC-1 + VB-1	VXFC-200 N34	VCGP-200	VAG-200
		3/4"	**VFBGG-2-200PX** ①	VBC-2 + VB-2	VXFC-200 N34	VCGP-200	VAG-200

**For other colors, order globes and mounting components separately.*
① Fixture supplied as component unit pack when ordered by this catalog number.
② See page L9 for temperature codes; NEMA 3, 4 when used with tempered glass.

HUBBELL
KILLARK®

Listed - File E27731
Certified - File LR11851

VFC Fixture Bodies

Fixture bodies contain lamp receptacle and are threaded to accept globes, guards and reflectors. These fixture bodies are designed for metallic boxes and mount directly to V Series splice boxes. They may also be mounted to VJ Series, VB Series or other 4" outlet boxes with the use of the appropriate adapter plate. Each fixture body is supplied with gaskets.

VFC-100
VXFC-100①

VFC-200
VXFC-200①

V FIXTURE BODIES	
CATALOG NUMBER	DESCRIPTION
VFC-100	150W max. Enclosed & Gasketed Fixture Boby
VFC-200	300W max. Enclosed & Gasketed Fixture Boby
VXFC-100 N34	150W max. NEMA 3,4 - Class I, Div. 2 Fixture Body①
VXFC-200 N34	300W max. NEMA 3,4 - Class I, Div. 2 Fixture Body①

① *Use VXFC body with tempered globe for NEMA 3, 4 - Class I, Div. 2 applications. VXFC body is Class I, Div. 2 only (not N3, N4) when used with standard globes. Consult temperature table, page L9 for suitability.*

VGA

VGH

VGC

VGX

VXA

VBC

V Splice Boxes

For use with types 100 and 200 fixture bodies

V SPLICE BOXES			
CATALOG NUMBER	HUB SIZE	& QTY.	DESCRIPTION
VGA-1	1/2"	1	Pendant mount
VGA-2	3/4"	1	
VGH-1	1/2"	1	Ceiling mount
VGH-2	3/4"	1	
VGC-1	1/2"	2	Ceiling mount
VGC-2	3/4"	2	
VGX-1	1/2"	4	Ceiling mount
VGX-2	3/4"	4	
VXA-1	1/2"	5	Ceiling mount, deep box
VXA-2	3/4"	5	
VBC-1*	1/2"	4	Ceiling mount, with 3 close-up plugs (requires **VBA** Adapter)
VBC-2*	3/4"	4	
VXAB	–	–	Blank close-up plate (less gasket)

** Volume cu. in. is 18.*

VBA

VFPS

V ADAPTER MOUNTING PLATES	
CATALOG NUMBER	DESCRIPTION
VBA	Adapts fixture body to VB, VJ or steel 3-1/2" & 4" splice boxes. Supplied with gasket.
VFPS	Adapts fixture body to steel 4" square outlet boxes or 3-1/2" or 4" octagon boxes

VB

VFL

VD

V MOUNTING BRACKETS			
CATALOG NUMBER	HUB SIZE	QTY.	DESCRIPTION
VB-1	1/2"	1	Wall mount to VJ or VB boxes
VB-2	3/4"	1	Wall mount to VJ or VB boxes
VFL	—	—	Wall mount to V boxes directly or to VJ, VB boxes with VBA adapter
VD-4	1-1/4"	1	Stanchion mount

L

Listed - File E27731
Certified - File LR11851

150 W Max.
Lamp Size A-21

300 W Max.
Lamp Size PS-25

Polycarbonate

500 W Max.
Lamp Size PS-35

V GLASS GLOBES		
CATALOG NUMBER		DESCRIPTION
150 W A-21 LAMP	300 W PS-25 LAMP	
VCG-100	VCG-200	Clear
VCGP-100	VCGP-200	Clear Tempered. Thermal and shock resistant①
VCGPT-100	—	Clear Tempered with Tuffskin® coating②
VAMG-100	VAMG-200	Amber
VAMGP-100	—	Amber Tempered①
VGG-100	VGG-200	Blue Green
VGGP-100	VGGP-200	Blue Green Tempered①
VBG-100	—	Blue
VBGP-100	—	Blue Tempered①
VRG-100	VRG-200	Ruby
VRGP-100	VRGP-200	Ruby Tempered①
VRSG-100	—	Green
VPG-100	—	Purple
75 W A-19 LAMP	150 W A-21 LAMP	Polycarbonate. Cannot be used with guard or in high ambient temperature locations (40°C/104°F max.) Not UL Listed.
VPLCG-100	VPLCG-200	
500 W PS-35 LAMP		
VCG-500		Clear (for replacement) Formerly DCG-20
VCGP-500		Tempered. Thermal and shock resistant (for replacement).

① *Recommended for use with VXFC fixture basis.*
② *TM Thomas Manufacturing.*

V GUARDS	
CATALOG NUMBER	DESCRIPTION
VAG-100	100 Series Vaportite guard
VAG-200	200 Series Vaportite guard

V REFLECTORS		
CATALOG NUMBER	DESCRIPTION	
VPRSD-100	100 Series Reflector	16 3/8" Dia. 5 5/8" High. White polypropylene for pendant & ceiling applications. Not for use with wall or stanchion models.
VPRSD-200	200 Series Reflector	

Body To Splice Box
Gasket
100 or 200 Series
VTG Standard
VTG-S Silicone (pictured)

V SERIES GASKETS			
CATALOG NUMBER		TYPE	DESCRIPTION
100 SERIES	200 SERIES		
VTG		VFC	Fixture body to splice box
VTG-S		VXFC	Silicone, Fixture body to splice box
VBNB		—	Replacement Gaskets for VB-1/VB-2 and VBA
15871AABB	VTGG	VFC	Globe gasket
VTGG1-S	VTGG2-S	VFXC	Silicone, globe gasket

Globe Gasket
100 Series Standard - 15871AABB
200 Series Standard - VTGG (pictured)
100 Series Silicone - VTGG1-S
200 Series Silicone - VTGG2-S

V LAMP SOCKET	
CATALOG NUMBER	DESCRIPTION
VRME	For fixture types 100 and 200

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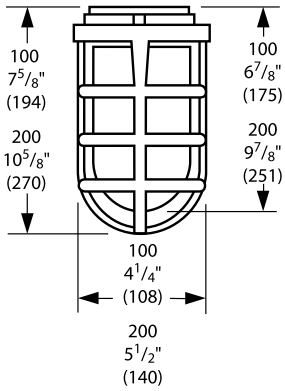
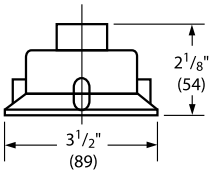


V Fixture w/o Splice Box



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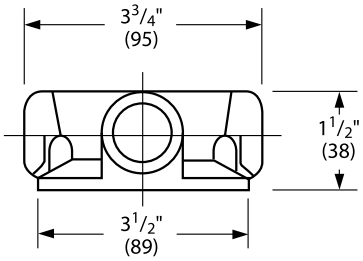
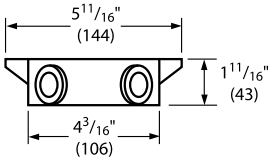
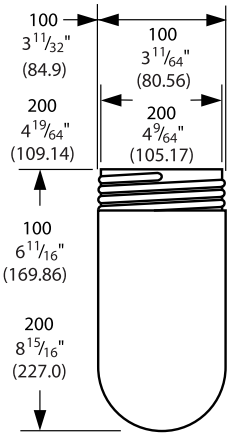
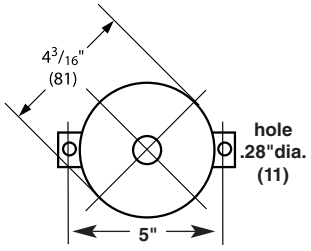


VGC VGX

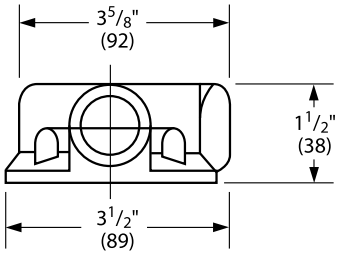




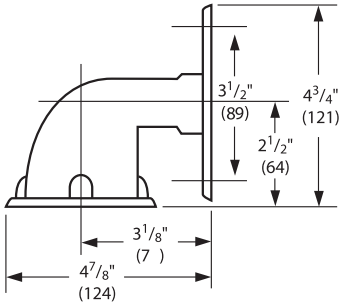
V Fixture Globes



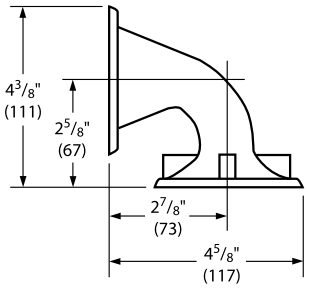
VBC-1 & VBC-2



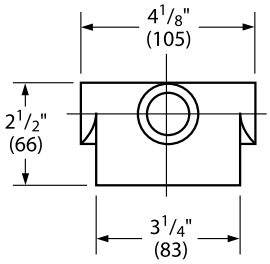
VGH

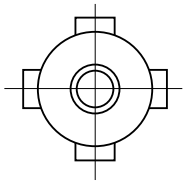


VB

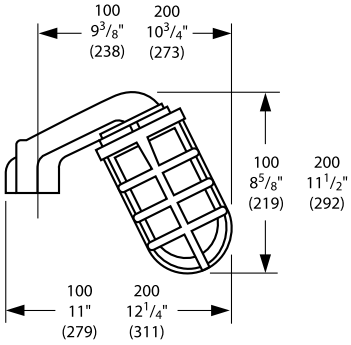


VFL





VXA



V Stanchion

L

DAG Guard

Class II, Div. 1 & 2 Groups E,F,G①
Class III

Listed - File E12976

Certified - File LR11713

FEATURES-SPECIFICATIONS

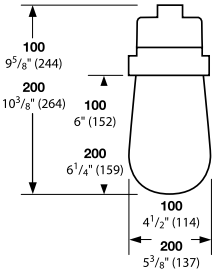
DV DUST-IGNITION PROOF

Applications
For hazardous locations where suspended metal, carbon (coal, etc.) and grain dusts create explosive or ignitable mixtures with the air

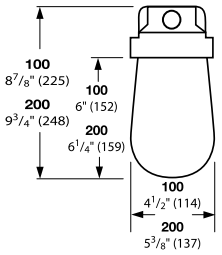
Features
Cast of corrosion resistant aluminum alloy with electrostatically applied epoxy/polyester finish

Ceiling mounted units supplied with 4 hubs.

Dimensions



Pendant 100-200



Ceiling 100-200

DV 100/200				
MODEL SIZE	LAMP SIZE	HUB	CATALOG NUMBER	
			PENDANT	CEILING
TYPE 100	100 Watt A-21	1/2"	DVA-110	DVX-110
	150 Watt A-23	3/4"	DVA-210	DVX-210
TYPE 200	150 Watt PS-25	1/2"	DVA-120	DVX-120
	200 Watt PS-25	3/4"	DVA-220	DVX-220

ACCESSORIES/REPLACEMENT PARTS			
FIXTURE TYPE	CATALOG NUMBER		
	GLASS GLOBE	WIRE GUARD	REPLACEMENT SOCKET
100	DCGE-10	DAG-100	VRME
200	DCGE-20	DAG-200	VRME

① *Temperature code T3B, use supply wire suitable for 150° C.*

XHL SERIES HAND LAMPS

XHL Series Hand Lamps are a handy accessory to the ACCEPTOR® Series. Used as a supplemental illumination source for areas where flammable materials are present such as processed finished goods, storage vats or handling areas.

XHL

XHLF

Features XHL Incandescent
- Phenolic handle for long service in rugged conditions
- Aluminum guard
- Heat and impact resistant globe
- Supplied with an A-21 100 Watt (100A/RS) Rough Service lamp
- Supplied with 2 grommets for use with either 14/3 or 16/3 user furnished SO cable

CATALOG NUMBER	DESCRIPTION
XHL-100	Handlamp
XHL-GL	Replacement Globe
XHLG	Replacement Guard
XHLS	Replacement Socket

XHL Incandescent
Class I, Div. 1 & 2, Groups C, D
Class I, Zones 1 & 2, Groups IIB,IIA

Listed File No. E97760

Certified File No. LR10019

Features XHLF Fluorescent (120 VAC)
- No exposed metal parts
- Furnished with 26 watt 1800 Lumen fluorescent lamp and light shield
- Supplied with grommet for use with 16/3 user furnished SO cable

CATALOG NUMBER	DESCRIPTION
XHLF26	Fluorescent hand lamp
XHLF26-50KP	Fluorescent hand lamp with 50' of 16/3 SOW cord and 15A Acceptor plug

XHLF Fluorescent
Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB,IIA
Class II, Div. 1 & 2, Groups F,G

Listed File No. E97760

HUBBELL®
KILLARK®

Pendant Fluorescent

Ceiling Incandescent

Wall Mount Fluorescent

NEW!
NON-GLASS

Class II, Div. 2, Groups F,G
NEMA 3,4,4X

Certified* - File LR11713

Self-ballasted CFL's for 26W ①

FEATURES-SPECIFICATIONS

ENVIRORITE®

Applications

Designed specifically for corrosive & wet NEMA 4X and hazardous dust environments.

Typical applications include food processing, sewage treatment plants, offshore and dockside installations and agricultural.

Features

- NVP Series non-metallic light fixtures comine an outstanding balance of strength, stiffness, toughness and electrical properties
- Polycarbonate lens
- Energy and labor saving fluorescent or incandescent models
- Molded from 30% glass-filled thermoset polyester for high strength
- Resists corrosive effects of most chemicals, hydrocarbons and solvents
- Designed for indoor and outdoor globe down applications
- All assemblies are unit packed with required components (not assembled)
- Fluorescent unit pack models (only) include the lamp
- Fluorescent models use "world voltage" ballasts for 120VAC through 277VAC 50/60Hz applications
- For M20 ceiling units change "X" in part # to "M". For wall units change "B" to "W". M20 Pendant not available
- Photometrics "similar" to those shown on L4-L5.
- See dimensions on L4

Pendant 3/4" Clear Polycarbonate Globe & Guard*	
75A Incan.①	NVPIG75AG
13 W Fluor.	NVPFG13AG
18 W Fluor.	NVPFG18AG
26 W Fluor.	NVPFG26AG

Ceiling 3/4" Clear Polycarbonate Globe & Guard*	
75A Incan.①	NVPIG75XG
13 W Fluor.	NVPFG13XG
18 W Fluor.	NVPFG18XG
26 W Fluor.	NVPFG26XG

Wall 3/4" Clear Polycarbonate Globe & Guard*	
75A Incan.①	NVPIG75BG
13 W Fluor.	NVPFG13BG
18 W Fluor.	NVPFG18BG
26 W Fluor.	NVPFG26BG

cULus to the following standards:

UL 1598 Standard for luminaires

UL 844 Standard for lighting fixtures for hazardous locations

CSA C22.2 no. 137-M1981 electric luminaires for use in hazardous locations

Enclosed and gasketed

NEMA 3, 4X

APPLICATION DATA①					
WATTAGE & TYPE	CLASS II DIV.2 CLEAR OR COLOR	MIN. START C°	MIN. START F°	CURRENT FLUOR. VAC 120V	CURRENT FLUOR. VAC 277V
75A ①	F, G	—	—	—	—
13 Fluor	F, G	-20°C	-4°F	.144	.067
18 Fluor	F, G	-20°C	-4°F	.158	.073
26 Fluor	F, G	-20°C	-4°F	.220	.097

① *Incandescent models w/medium base socket marked for 75W 277V Max or self-ballasted CFL's to 26W max, lamps F.O.B.*

L

Polycarbonate Globe Options for ASSEMBLIES: Red or Green
For RED polycarbonate add -R e.g. NVPIG75AG-R
For GREEN polycarbonate add -G e.g. NVPIG75AG-G

COMPONENTS**	
CATALOG NUMBER	DESCRIPTION
NVPIG75 ①	Incandescent Body with E26 socket; 75W Max①
NVPFG13	13W Fluor Body & 120 - 277VAC 50/60Hz Ballast (less lamp)
NVPFG18	18W Fluor Body & 120 - 277VAC 50/60Hz Ballast (less lamp)
NVPFG26	26W Fluor Body & 120 - 277VAC 50/60Hz Ballast (less lamp)
NV2AG	3/4" Pendant splice box
NV2XG	3/4" Ceiling splice box
NV2BG	Elbow (used between NV2XG and Fixture Body)
NV2GG	Guard
VPLCG100	Clear Poly Globe
VPLCG100R	Red Poly Globe
VPLCG100G	Green Poly Globe

** Reflectors shown on L3 are not recommended - globe taper prevents guard from holding reflector securely.*
*** For 13-26W Quad Pin Lamps and Replacement Ballasts see page L3.*

E INCANDESCENT


EPG-2-200


EXG-2-200


EBG-2-200

Class I, Div. 1 & 2, Groups A,B,C,D
Class I, Zones 1 & 2, Groups IIC,IIB,IIA
Class II, Div. 1 & 2, Groups E,F,G


HG-200

Applications

For hazardous locations including where Group A or Group B gases are present, indoors or outdoors.

General, local or supplementary lighting in areas where Group A or Group B gases are manufactured, used or handled.

Features

- Cast of corrosion resistant aluminum alloy with electrostatically applied epoxy/polyester finish
- For 200 watt or 300 watt PS-30 medium base lamps. Fixture for lamp base-up mounting only
- Omit "G" in catalog number to omit guard

Groups A,B Rated

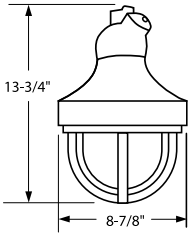
E INCANDESCENT FIXTURE	
CATALOG NUMBER	DESCRIPTION
EPG-2-200	Pendant 3/4" hub
EXG-2-200	Ceiling 3/4" hub
EBG-2-200	Bracket 3/4" hub

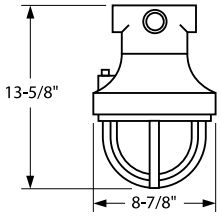
Note: For 200 watt or 300 watt PS-30 lamps. Fixture for lamp base-up mounting only.

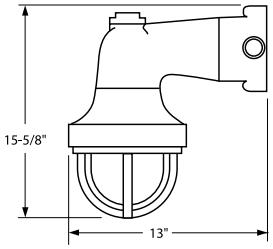
E ACCESSORIES	
CATALOG NUMBER	DESCRIPTION
HG-200	Guard
EGSA-200	Globe w/ support assembly
HRME*	Replacement socket
ERSD30	Dome reflector
ERA30	Angle reflector

** Also fits discontinued H series medium base fixtures*

E APPLICATION DATA							
LAMP WATTS	RATED AMBIENT °C	CLASS I, DIV. 1 & 2		CLASS II, DIV. 1 & 2		CLASS III SUITABILITY	SUPPLY WIRE °C
		T-CODE	GROUPS	T-CODE	GROUPS		
200	40	T4	A, B, C, D	T3C	E F G	YES	90
300	40	T3C	A, B, C, D	T3A	E, F	NO	150







H INCANDESCENT

500W MOGUL BASE

SERIES DISCONTINUED

AVAILABLE REPLACEMENT PARTS	
CATALOG NUMBER	DESCRIPTION
HP-2	3/4" Pendant Mount
HX-2	3/4" Ceiling Mount
HB-2	3/4" Wall Mount
HGSA-500F	Globe with Support Assembly
EZG1G	Guard
HRMO	Replacement Mogul Socket
HRD-400	Deep Reflector 21-1/8" dia.

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB,IIA
Class II, Div. 1 & 2, Groups E,F,G

Listed - File E12976

Certified - File LR11713


HP-2


HX-2


HB-2


HGSA-500F


EZG1G


HRMO


HRD-400

HUBBELL
KILLARK

LED TECHNOLOGY

Class I, Div. 2, Groups A,B,C,D
Class I, Zone 2, Groups IIC,IIB,IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
Marine
NEMA 3, 4X

Certified - File LR11713

FEATURES-SPECIFICATIONS

CERTILITE® LED

Applications

CERTI*LITE*® MBL LED fixtures are designed for installations where moisture, dirt, dust, corrosion and vibration may be present, or NEMA 3 and 4X areas where wind, water, snow or high ambients can be expected. They can be used in locations made hazardous by the presence of flammable vapors or gases or combustible dusts as defined by the NEC.

Typical applications include manufacturing plants, and certain chemical and petrochemical processing facilities, sewage treatment plants, off-shore and dockside installations, garages and storage facilities.

Compliances

- UL-8750 for LED lighting
- UL Marine type lighting fixtures (HID models) UL-844 Standard for lighting fixtures for hazardous locations, Class I, Division 2; Class II, Divisions 1 and 2; Class III
- CSA C22.2 no. 137-M1981 electric luminaries for use in hazardous locations
- Enclosed and gasketed
- NEMA 3, 4X

Materials

- Ballast tank, splice box and guards (MBAG, VMAG) corrosion resistant copper-free aluminum alloy
- Baked powder epoxy/polyester finish, electrostatically applied for complete, uniform corrosion protection
- All external hardware - stainless steel
- Reflectors - Polyester reinforced fiberglass

LED Luminaire Features and Standards

- Compact in Size with Traditional Industrial Appearance and Suitability
- Wide variety of optics including globes, globes with reflectors, all-glass refractors, and spin-top refractors
- Optional Mounting arrangements including Pendant, Wall, Ceiling, and Stanchion
- MBL LED Housings can be retrofitted to existing MB splice boxes; upgrade from Fluorescent or HID
- Energy Savings - less than 50 Watts of Power; 25 Watts for MBL2230
- Long Life - 50,000 - 60,000 maintenance free hours to 70% initial lumens
- Crisp White Light for Excellent Color Rendering - Chromaticity 5000°K (CCT); 70 CRI
- Ambient suitability -40°C to 40°C (to 55°C for MBL2230)
- Instant on - including after power interruption
- "World Voltage" 120-277VAC 50/60Hz
- Solder-LESS LED Board Connections – Vibration Resistant
- Dual Drivers - Redundant Systems (built-in backup), or for additional energy savings half of MBL4530 can be turned off
- LM80-08* Measurement of lumen maintenance for LED light sources
- LM79-08* Certified "Absolute" Photometry, including Chromaticity Color for Solid State Lighting
- L70 Values - Industry Nomenclature for Hours of use to 70% of Initial Lumens

* LM-xx are Illumination Engineering Society Standards designed to promote uniformity in testing procedures among test labs and manufacturers. For more information go to www.ies.org

Catalog Number Logic MBL 45 30 A 2 R5 G

Housing Series

LED Wattage
22 - 22 Watt
45 - 45 Watt

Voltage
30 - 120-277VAC

Mounting Style
A — Pendant
X — Ceiling
B — Wall
D — Stanchion 25°

Entry
2 — 3/4" NPT (A, X, B)
3 — 1" NPT (A, X, B)
4 — 1-1/4" NPT (D only)
5 — 1-1/2" NPT (D only)
8 — M20 4 hub (X only)

Optic
GL —Globe
R1 —Type 1 Glass Refractor
R5 —Type 5 Glass Refractor
S8 — 8" Spin-top Type V Refractor
S5 —12" Spin-top V Refractor
FG —Silicone Coated Globe
T1 —Teflon® ① coated Type 1 Glass Refractor
T5 —Teflon® coated Type V Glass Refractor
T8 —8" Teflon® Spin-top V Refractor
TV —12" Teflon® Spin-top V Refractor

Guard
N — No Guard
G — Guard

Options
CP - Component Pack (housing, mount, optic, guard if selected)

AN - Assembled Fixture (components as selected)

①Teflon® is a registered trademark of DuPont, Inc.

L

HUBBELL®
KILLARK®


PENDANT


WALL


CEILING


STANCHION

ORDERING INFORMATION

MBL SERIES PENDANT WITH OPTIC AND GUARD①

WATTS	HUB SIZE②	VOLTAGE③	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	8" SPIN-TOP TYPE V REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
22	3/4"	120-277VAC	MBL2230A2GLG	MBL2230A2R1G	MBL2230A2R5G	MBL2230A2S8G	MBL2230A2S5G
45	3/4"	120-277VAC	MBL4530A2GLG	MBL4530A2R1G	MBL4530A2R5G	MBL4530A2S8G	MBL4530A2S5G

MBL SERIES CEILING WITH OPTIC AND GUARD①

WATTS	HUB SIZE②	VOLTAGE③	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	8" SPIN-TOP TYPE V REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
22	3/4"	120-277VAC	MBL2230X2GLG	MBL2230X2R1G	MBL2230X2R5G	MBL2230X2S8G	MBL2230X2S5G
45	3/4"	120-277VAC	MBL4530X2GLG	MBL4530X2R1G	MBL4530X2R5G	MBL4530X2S8G	MBL4530X2S5G

MBL SERIES WALL WITH OPTIC AND GUARD①

WATTS	HUB SIZE②	VOLTAGE③	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	8" SPIN-TOP TYPE V REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
22	3/4"	120-277VAC	MBL2230B2GLG	MBL2230B2R1G	MBL2230B2R5G	MBL2230B2S8G	MBL2230B2S5G
45	3/4"	120-277VAC	MBL4530B2GLG	MBL4530B2R1G	MBL4530B2R5G	MBL4530B2S8G	MBL4530B2S5G

MBL SERIES 25° STANCHION WITH OPTIC AND GUARD①

WATTS	HUB SIZE④	VOLTAGE⑤	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	8" SPIN-TOP TYPE V REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
22	1-1/4"	120-277VAC	MBL2230D4GLG	MBL2230D4R1G	MBL2230D4R5G	MBL2230D4S8G	MBL2230D4S5G
45	1-1/4"	120-277VAC	MBL4530D4GLG	MBL4530D4R1G	MBL4530D4R5G	MBL4530D4S8G	MBL4530D4S5G

① Catalog numbers shown are with Guard; to omit guard change ending G to N; e.g. MBL2230A2GLN
② Catalog numbers shown are with 3/4" conduit openings; change “2” to “3” for 1" e.g. MBL2230A3GLG
③ 120VAC through 277VAC 50/60Hz
④ Catalog numbers shown are with 1-1/4" conduit openings; change “4” to “5” for 1-1/2" e.g. MBL2230D5GLG

Pendant Ceiling Wall Stanchion

MB MOUNTING BRACKETS				
CATALOG NUMBER				HUB SIZE
PENDANT	CEILING	WALL	STANCHION	
MBA-2	MBX-2	MBB-2	—	3/4"
MBA-3	MBX-3	MBB-3	—	1"
—	MBX-8*	—	—	M20
—	—	—	MBD-4	1-1/4"
—	—	—	MBD-5	1-1/2"

** MBX-8 furnished with 3 non-metallic Ex plugs*

MBL LED OPTICS AND ACCESSORIES		
DESCRIPTION	OPTIC LOGIC	GUARD
Globe (glass)	MBG (GL)	MBAG
Refractor (all glass) Type I	VMR171 (R1)	VMAG17
Refractor (all glass) Type V	VMR175 (R5)	VMAG17
Refractor (spin top) 8" Type V	VZRG1550 (S8)	VMRWG8
Refractor (spin top) 12" Type V	VZRG2550 (S5)	VMRWGS
Globe (Silicone coated)	MBGT (FG)	MBAG
Refractor Teflon® ① coated (all glass) Type I	VMR171T (T1)	VMAG17
Refractor Teflon® coated (all glass) Type V	VMR175T (T5)	VMAG17
Refractor (spin top) 8" Type V	VZRG1550T (T8)	VMRWG8
Refractor (spin top) 12" Type V	VZRG2550T (TV)	VMRWGS
Reflector for MBG Globe - DOME ②	VMPSD-17	NA
Reflector for MBG Globe - ANGLE ②	VMPA-17	NA
120VAC Photocell with FS Style Cover	VMFSPC1	NA
208-277VAC Photocell with FS Style Cover	VMFSPC2	NA
3-sided EXIT Accessory (use without guard)	VEXA100B	NA

① Teflon is a registered trademark of DuPont, Inc.
② Reflectors for use with MBG/MBAG only; VMG17 globe with VMAG17 guard will fit without reflector.

OPTICS

MBG VMR175 VMR171 VZRG1550 VZRG2550

ACCESSORIES

MBAG VMAG17 VMRWG8⑤ VMRWGS⑤

VMPSD-17 VMPA-17 VMFSPC1

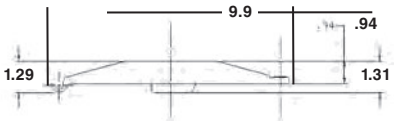
VEXA100B

MBL LED HOUSINGS WITH DRIVERS AND LEDS - ELECTRICAL RATINGS					
CAT. NO.	VOLTAGE 50/60HZ	WATTAGE	AMPS 120/277	CIL③	WEIGHT
MBL2230	120-277VAC	25.8	.215/.093	1980	8 LBS
MBL4530	120-277VAC	48.4	.416/.180	3960	15.5 LBS

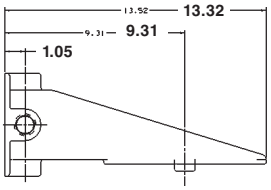
THERMAL PERFORMANCE DATA (ANY OPTIC)					
CAT. NO.	AMBIENT	C1D2	C2D1	L70	SUPPLY WIRE
MBL2230	40°C	T4A	T4 (EFG)	60,000 HRS	75°C
MBL2230	55°C	T4	T4(EFG)	50,000 HRS	90°C
MBL4530	40°C	T4A	T4(EFG)	55,000 HRS	90°C

③ CIL = Calculated Initial Lumens of LED component based on mfg. data and driver current INSIDE the optic. This value is provided as a reference only for comparison to traditional light sources such as incandescent, HID, or fluorescent which use initial values in "relative" photometry. KILLARK LED luminaires are tested using the Absolute photometry method (LM79-08), which calculates delivered lumens only. KILLARK's LED luminaires provide very bright white 5000° K (CCT) color and can appear brighter than traditional light sources with higher lumen values under both photopic and scotopic conditions.
④ Driver THD < 20%, Powerfactor 99% @ 120V; Line Regulation 2%; Load regulation 5%; Protected against Over-voltage and Over-current.
⑤ VMRWG8 Plated Steel, VMRWGS 316 Stainless Steel.

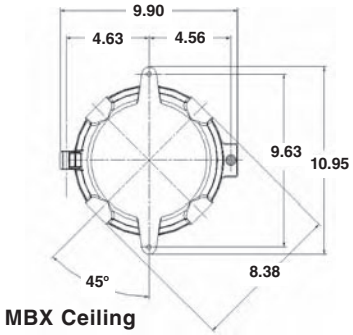
L



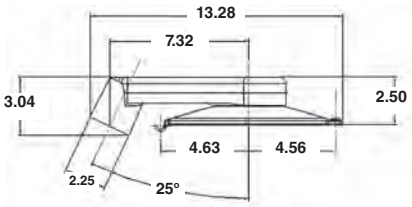
MBA Pendant



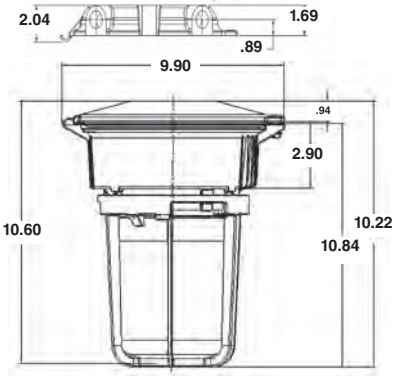
MBB Wall Mount



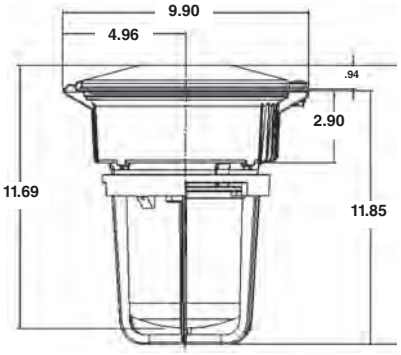
MBX Ceiling



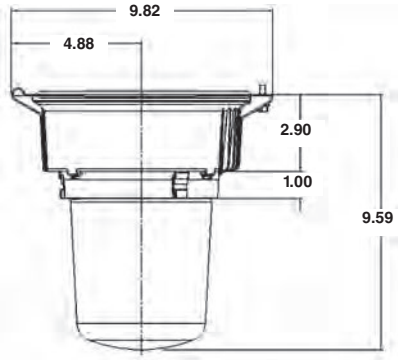
MBD Stanchion



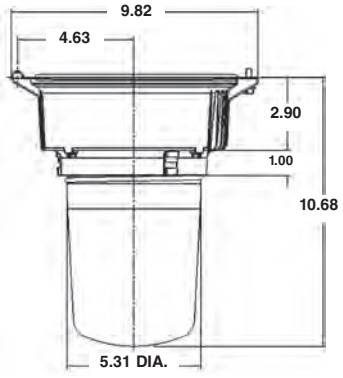
MBL Pendant, Globe, Guard



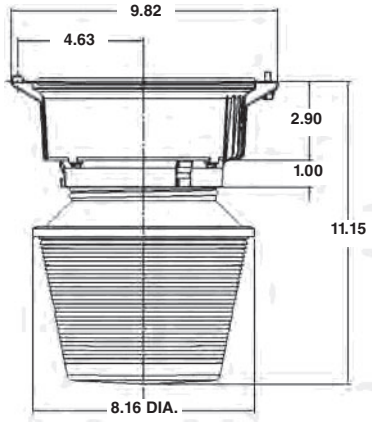
MBL Pendant, Refractor, Guard



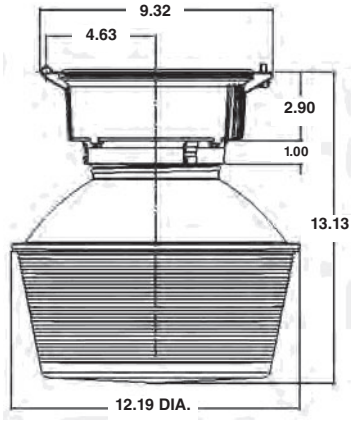
MBL & MBG Globe Only



MBL & VMR Refractor



MBL & 8" Type V Spin-top



MBL & 12" Type V Spin-top

LED 45 Watt Globe Only①

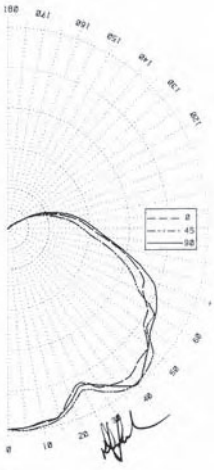
Zonal Lumen Summary

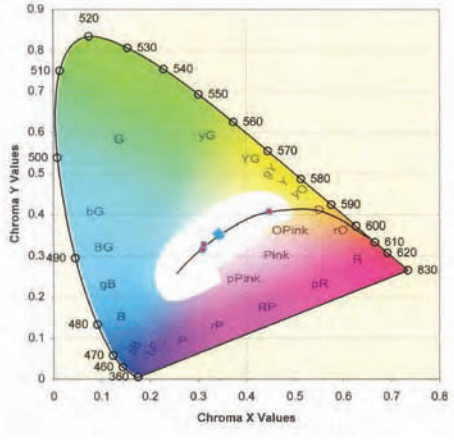
Zone	Lumens	%Lamp	%Fixt
0-30	397	N.A.	13.5%
0-40	710	N.A.	24.2%
0-60	1488	N.A.	50.6%
0-90	2471	N.A.	84.1%
90-120	430	N.A.	14.6%
90-130	460	N.A.	15.6%
90-150	468	N.A.	15.9%
90-180	468	N.A.	15.9%
0-180	2940	N.A.	100

Absolute Photometry
Total Luminaire Efficiency = N.A.%
Spacing to Mounting Height Ratio 1.5

CANDLEPOWER DISTRIBUTION
HORIZONTAL ANGLE

0	22.5	45	67.5	90
512.	512.	512.	512.	512.
509.	516.	517.	511.	509.
502.	509.	511.	497.	500.
497.	506.	503.	499.	496.
457.	479.	481.	476.	468.
432.	441.	454.	451.	440.
467.	468.	480.	465.	460.
482.	499.	505.	501.	490.
489.	504.	513.	531.	518.
474.	494.	506.	515.	494.
469.	464.	488.	483.	471.
426.	432.	435.	439.	449.
415.	434.	435.	455.	439.
383.	383.	369.	398.	423.
370.	363.	341.	374.	398.
332.	330.	299.	321.	348.
289.	288.	257.	272.	296.
244.	244.	216.	231.	253.
212.	214.	190.	200.	222.
190.	193.	170.	174.	199.
166.	171.	146.	152.	176.
137.	146.	123.	130.	150.
112.	120.	101.	108.	122.
91.	95.	80.	83.	96.
65.	65.	58.	55.	65.
35.	34.	32.	30.	34.
20.	21.	21.	20.	20.
8.	9.	9.	10.	9.
4.	4.	4.	4.	4.
2.	2.	2.	3.	3.
0.	0.	0.	0.	0.
0.	0.	0.	0.	0.
0.	0.	0.	0.	0.
0.	0.	0.	0.	0.
0.	0.	0.	0.	0.
0.	0.	0.	0.	0.





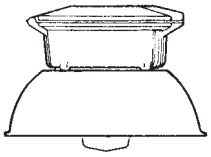
Chromaticity 5101°K (CCT); 72.2 CRI

Certified Report BAL15302.0

① 22W model values approx. 50% of 45W

HUBBELL
KILLARK®

LED 45Watt Globe & Dome Reflector①



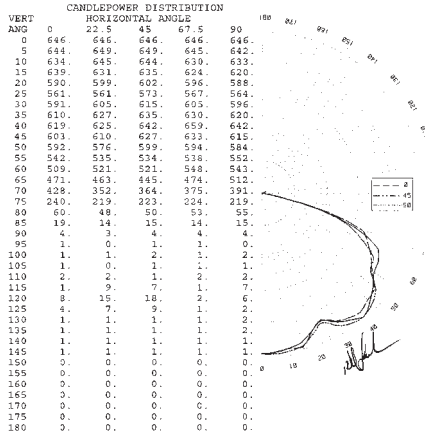
Zonal Lumen Summary

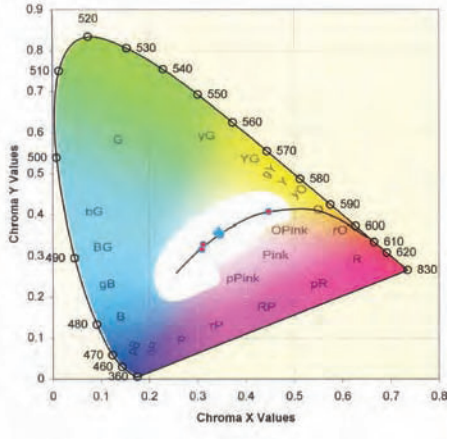
Zone	Lumens	%Lamp	%Fixt
0-30	502	N.A.	19.4%
0-40	896	N.A.	34.6%
0-60	1859	N.A.	71.8%
0-90	2577	N.A.	99.5%
90-120	7	N.A.	0.3%
90-130	11	N.A.	0.4%
90-150	13	N.A.	0.5%
90-180	13	N.A.	0.5%
0-180	2590	N.A.	100

Absolute Photometry
Total Luminaire Efficiency = N.A.%
Spacing to Mounting Height Ratio 1.5

CANDLEPOWER DISTRIBUTION

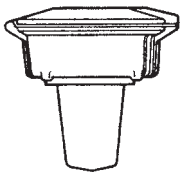
VERT ANG	HORIZONTAL ANGLE 0	22.5	45	67.5	90
0	646.	646.	646.	646.	646.
5	644.	649.	649.	645.	642.
10	634.	645.	644.	630.	633.
15	639.	631.	635.	624.	620.
20	590.	599.	602.	596.	588.
25	561.	561.	573.	567.	564.
30	591.	605.	615.	605.	596.
35	610.	627.	635.	630.	620.
40	619.	625.	642.	659.	642.
45	603.	610.	627.	633.	615.
50	592.	576.	599.	594.	584.
55	542.	535.	534.	538.	552.
60	509.	521.	521.	548.	543.
65	471.	463.	445.	474.	512.
70	428.	352.	364.	375.	391.
75	240.	219.	223.	224.	219.
80	60.	48.	50.	53.	55.
85	19.	14.	15.	14.	15.
90	4.	3.	4.	4.	4.
95	1.	0.	1.	1.	0.
100	1.	1.	2.	1.	2.
105	1.	0.	1.	1.	1.
110	2.	2.	1.	2.	2.
115	1.	1.	1.	1.	1.
120	8.	19.	18.	2.	6.
125	4.	7.	9.	1.	2.
130	1.	1.	1.	1.	2.
135	1.	1.	1.	1.	2.
140	1.	1.	1.	1.	1.
145	1.	1.	1.	1.	1.
150	0.	0.	0.	0.	0.
155	0.	0.	0.	0.	0.
160	0.	0.	0.	0.	0.
165	0.	0.	0.	0.	0.
170	0.	0.	0.	0.	0.
175	0.	0.	0.	0.	0.
180	0.	0.	0.	0.	0.





Chromaticity 5034° K (CCT); 70.3 CRI
Certified Report BAL15303.0

LED 45Watt Glass Type V Refractor①



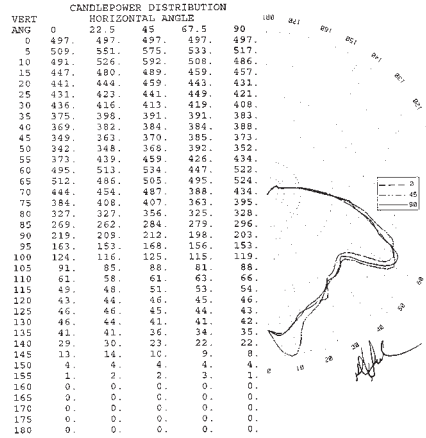
Zonal Lumen Summary

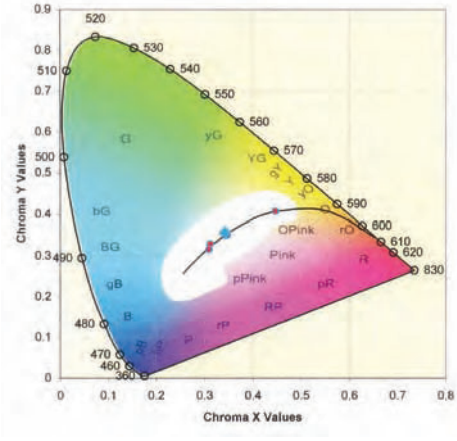
Zone	Lumens	%Lamp	%Fixt
0-30	386	N.A.	13.3%
0-40	631	N.A.	21.7%
0-60	1305	N.A.	44.8%
0-90	2519	N.A.	86.6%
90-120	315	N.A.	10.8%
90-130	355	N.A.	12.2%
90-150	390	N.A.	13.4%
90-180	391	N.A.	13.4%
0-180	2910	N.A.	100

Absolute Photometry
Total Luminaire Efficiency = N.A.%
Spacing to Mounting Height Ratio 1.3

CANDLEPOWER DISTRIBUTION

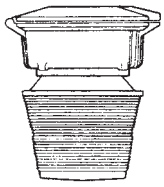
VERT ANG	HORIZONTAL ANGLE 0	22.5	45	67.5	90
0	497.	497.	497.	497.	497.
5	509.	551.	575.	533.	517.
10	491.	526.	592.	508.	486.
15	447.	480.	489.	459.	457.
20	441.	444.	459.	443.	431.
25	431.	423.	441.	449.	421.
30	436.	416.	413.	419.	408.
35	375.	398.	391.	391.	383.
40	369.	382.	384.	384.	388.
45	349.	363.	370.	385.	373.
50	342.	348.	368.	392.	352.
55	373.	439.	459.	426.	434.
60	495.	513.	534.	447.	522.
65	512.	486.	505.	495.	524.
70	444.	454.	487.	388.	434.
75	384.	408.	407.	363.	395.
80	327.	327.	356.	325.	328.
85	269.	262.	284.	279.	296.
90	219.	209.	212.	198.	203.
95	163.	153.	168.	156.	153.
100	124.	116.	125.	115.	119.
105	91.	85.	88.	81.	88.
110	61.	58.	61.	63.	66.
115	49.	48.	51.	53.	54.
120	43.	44.	46.	45.	46.
125	46.	46.	45.	44.	43.
130	46.	44.	41.	41.	42.
135	41.	41.	36.	34.	35.
140	29.	30.	23.	22.	22.
145	13.	14.	10.	9.	8.
150	4.	4.	4.	4.	4.
155	1.	2.	2.	3.	1.
160	0.	0.	0.	0.	0.
165	0.	0.	0.	0.	0.
170	0.	0.	0.	0.	0.
175	0.	0.	0.	0.	0.
180	0.	0.	0.	0.	0.





Chromaticity 5089° K (CCT); 72.3 CRI
Certified Report BAL15309.0

LED 45Watt 8" Spin-top Type V Refractor①



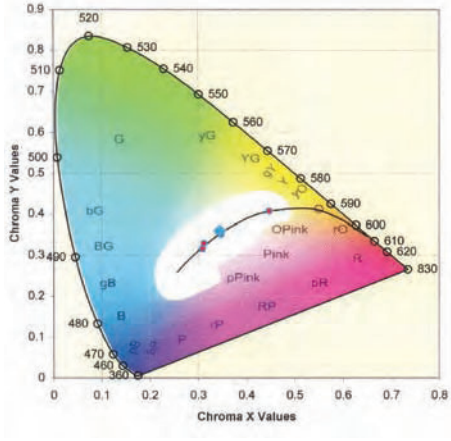
Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-30	328	N.A.	12.1%
0-40	617	N.A.	22.7%
0-60	1429	N.A.	52.5%
0-90	2332	N.A.	85.7%
90-120	287	N.A.	10.6%
90-130	334	N.A.	12.3%
90-150	384	N.A.	14.1%
90-180	388	N.A.	14.3%
0-180	2720	N.A.	100

Absolute Photometry
Total Luminaire Efficiency = N.A.%
Spacing to Mounting Height Ratio 1.6

CANDLEPOWER DISTRIBUTION

VERT ANG	HORIZONTAL ANGLE 0	22.5	45	67.5	90
0	412.	412.	412.	412.	412.
5	407.	411.	414.	411.	410.
10	396.	399.	399.	399.	395.
15	383.	383.	384.	383.	382.
20	377.	377.	378.	377.	376.
25	386.	394.	388.	390.	387.
30	427.	438.	433.	432.	428.
35	453.	452.	457.	473.	466.
40	442.	423.	426.	447.	442.
45	419.	417.	418.	427.	424.
50	467.	473.	498.	469.	504.
55	555.	523.	535.	565.	542.
60	538.	561.	583.	526.	551.
65	433.	434.	455.	448.	422.
70	340.	336.	351.	355.	364.
75	270.	271.	273.	270.	271.
80	198.	201.	198.	198.	199.
85	163.	165.	163.	164.	163.
90	137.	137.	138.	137.	134.
95	119.	120.	120.	118.	117.
100	102.	102.	103.	103.	102.
105	85.	85.	86.	85.	85.
110	75.	75.	75.	75.	75.
115	67.	66.	67.	66.	68.
120	59.	59.	60.	59.	60.
125	52.	52.	53.	53.	55.
130	48.	48.	48.	48.	48.
135	43.	41.	41.	41.	44.
140	36.	35.	35.	35.	36.
145	28.	27.	29.	28.	29.
150	19.	18.	20.	20.	20.
155	8.	7.	10.	7.	7.
160	0.	0.	1.	0.	0.
165	0.	0.	0.	0.	0.
170	0.	0.	0.	0.	0.
175	0.	0.	0.	0.	0.
180	0.	0.	0.	0.	0.



Chromaticity 5010° K (CCT); 70.4 CRI
Certified Report BAL15310.0

① *22W model values approx. 50% of 45W*

L


Pendant


Ceiling


Wall


Stanchion

Class I, Div. 2, Groups A,B,C,D*
Class I, Zone 2, Groups IIC,IIB,IIA
Class II, Div. 1 & 2, Groups E,F,G*
Class III
Suitable for wet locations
Marine
NEMA 3, 4X

Listed - Files E10514 and E91793 (Marine)

Certified - File LR11713

FEATURES-SPECIFICATIONS

CERTILITE®

Applications

CERTI*LITE*® MB fixtures are designed for installations where moisture, dirt, dust, corrosion and vibration may be present, or NEMA 3 and 4X areas where wind, water, snow or high ambients can be expected. They can be used in locations made hazardous by the presence of flammable vapors or gases or combustible dusts as defined by the NEC.

Typical applications include manufacturing plants, and certain chemical and petrochemical processing facilities, sewage treatment plants, off-shore and dockside installations, garages and storage facilities.

Compliances

- UL-1572 Standard for HID lighting fixtures
- UL-1570 Standard for Fluorescent fixtures
- UL Marine type lighting fixtures (HID models) UL-844 Standard for lighting fixtures for hazardous locations, Class I, Division 2; Class II, Divisions 1 and 2; Class III
- CSA C22.2 no. 137-M1981 electric luminaries for use in hazardous locations
- Enclosed and gasketed
- NEMA 3, 4X

Features

- Ballast tank and splice box — corrosion resistant copper-free aluminum alloy
- Baked powder epoxy/polyester finish, electrostatically applied for complete, uniform corrosion protection
- All external hardware — stainless steel
- Guard — copper-free aluminum alloy
- Normally shipped as components for quick delivery
- Refractor guard — steel with corrosion resistant finish
- Reflector — lightweight, corrosion resistant fiberglass reinforced polyester
- Fluorescent models furnished with lamps. Energy efficient instant on white light (2700K). 10,000 hour lamp life
- HID lamp holders are E26 medium base

Catalog Number Logic

MB 0 00 0 - 000 00

Series Constant

Lamp Type
F—Fluorescent
L—High Pressure Sodium
H—Metal Halide
K—MV Mercury Vapor

Lamp Wattage
13—(1) 13 Watt PL Lamp
26—(2) 13 Watt PL Lamp
39—(3) 13 Watt PL Lamp
50—50 Watt—HPS/MH
70—70 Watt—HPS/MH
10—100 Watt—HPS/MH
15—150 Watt—HPS

Voltage Ⓥ
0—Quad - 120/208/240/277 Volts 60 Hz (50, 70 HPS/MH)
1—120 Volts 60 Hz (HPS/Fluorescent)
4—277 Volts 60 Hz (13, 26 Watt Fluorescent)

Optic
G—Fluted Glass Globe
GG—Globe and Guard
R5—Glass Refractor Type V
R5G—Glass Refractor & Guard

Options
SU103—Assembled w/Lamp

Mounting Style
A2—3/4" Pendant
A3—1" Pendant
X2—3/4" Ceiling
X3—1" Ceiling
B2—3/4" Wall Bracket
B3—1" Wall Bracket
D4—1-1/4" Stanchion
D5—1-1/2" Stanchion

Ⓥ *Consult factory for available lamp and voltage combinations.*

** See Hazardous Location Application Data on page L28 for limitations.*

Class I, Div. 2, Groups A,B,C,D*
Class I, Zone 2, Groups IIC,IIB,IIA
Class II, Div. 1 & 2, Groups E,F,G*
Class III
Suitable for wet locations
NEMA 3, 4X

Listed - Files E10514 and E91793

Certified - File LR11713

FEATURES-SPECIFICATIONS

PENDANT

PENDANT FLUORESCENT					
LAMP TYPE	LAMP/① WATTS	HUB SIZE①	VOLTAGE 60 HZ③	CATALOG NUMBER②	
				GLOBE AND GUARD	REFRACTOR AND GUARD
Bi-Pin	13 Watt (1 x 13)	3/4"	120	MBF131-GGA2	MBF131-R5GA2
	26 Watt (2 x 13)	3/4"	120	MBF261-GGA2	MBF261-R5GA2
	39 Watt (3 x 13)	3/4"	120	MBF391-GGA2	MBF391-R5GA2

CEILING

CEILING FLUORESCENT					
LAMP TYPE	LAMP/① WATTS	HUB SIZE②	VOLTAGE 60 HZ③	CATALOG NUMBER②	
				GLOBE AND GUARD	REFRACTOR AND GUARD
Bi-Pin	13 Watt (1 x 13)	3/4"	120	MBF131-GGX2	MBF131-R5GX2
	26 Watt (2 x 13)	3/4"	120	MBF261-GGX2	MBF261-R5GX2
	39 Watt (3 x 13)	3/4"	120	MBF391-GGX2	MBF391-R5GX2

WALL

WALL FLUORESCENT					
LAMP TYPE	LAMP/① WATTS	HUB SIZE②	VOLTAGE 60 HZ③	CATALOG NUMBER②	
				GLOBE AND GUARD	REFRACTOR AND GUARD
Bi-Pin	13 Watt (1 x 13)	3/4"	120	MBF131-GGB2	MBF131-R5GB2
	26 Watt (2 x 13)	3/4"	120	MBF261-GGB2	MBF261-R5GB2
	39 Watt (3 x 13)	3/4"	120	MBF391-GGB2	MBF391-R5GB2

STANCHION

STANCHION FLUORESCENT					
LAMP TYPE	LAMP/① WATTS	HUB SIZE②	VOLTAGE 60 HZ③	CATALOG NUMBER②	
				GLOBE AND GUARD	REFRACTOR AND GUARD
Bi-Pin	13 Watt (1 x 13)	1-1/4"	120	MBF131-GGD4	MBF131-R5GD4
	26 Watt (2 x 13)	1-1/4"	120	MBF261-GGD4	MBF261-R5GD4
	39 Watt (3 x 13)	1-1/4"	120	MBF391-GGD4	MBF391-R5GD4

① *Fixtures supplied with Bi-Pin fluorescent lamps. Replacement number MPL13.*
② *Catalog numbers shown are with 3/4" conduit openings (1-1/4" on stanchion mount) and include globe and guard. See catalog logic for other possible configurations.*
③ *Catalog numbers are shown with 120V ballasts. 1 & 2 lamp fixtures are available with 277V ballasts Change 6th character from "1" to "4"; e.g. MBF264-GGA2.*

* *See Hazardous Location Application Data on page L28 for limitations.*

Class I, Div. 2, Groups A,B,C,D*
Class I, Zone 2, Groups IIC,IIB,IIA
Class II, Div. 1 & 2, Groups E,F,G*
Class III
Suitable for wet locations
UL Marine
NEMA 3, 4X

Listed - Files E10514 and E91793 (Marine)

Certified - File LR11713

FEATURES-SPECIFICATIONS

PENDANT

PENDANT 50-150W HIGH PRESSURE SODIUM					
LAMP TYPE	LAMP WATTS/ANSI	HUB SIZE②	VOLTAGE 60 HZ①	CATALOG NUMBER②	
				GLOBE AND GUARD	REFRACTOR AND GUARD
HPS	50 (S68)	3/4"	120	MBL501-GGA2	MBL501-R5GA2
	70 (S62)	3/4"	120	MBL701-GGA2	MBL701-R5GA2
	100 (S54)	3/4"	120	MBL101-GGA2	MBL101-R5GA2
	150 (S55)	3/4"	120	MBL151-GGA2	MBL151-R5GA2

CEILING

CEILING 50-150W HIGH PRESSURE SODIUM					
LAMP TYPE	LAMP WATTS/ANSI	HUB SIZE②	VOLTAGE 60 HZ①	CATALOG NUMBER②	
				GLOBE AND GUARD	REFRACTOR AND GUARD
HPS	50 (S68)	3/4"	120	MBL501-GGX2	MBL501-R5GX2
	70 (S62)	3/4"	120	MBL701-GGX2	MBL701-R5GX2
	100 (S54)	3/4"	120	MBL101-GGX2	MBL101-R5GX2
	150 (S55)	3/4"	120	MBL151-GGX2	MBL151-R5GX2

WALL

WALL 50-150W HIGH PRESSURE SODIUM					
LAMP TYPE	LAMP WATTS/ANSI	HUB SIZE②	VOLTAGE 60 HZ①	CATALOG NUMBER②	
				GLOBE AND GUARD	REFRACTOR AND GUARD
HPS	50 (S68)	3/4"	120	MBL501-GGB2	MBL501-R5GB2
	70 (S62)	3/4	120	MBL701-GGB2	MBL701-R5GB2
	100 (S54)	3/4"	120	MBL101-GGB2	MBL101-R5GB2
	150 (S55)	3/4"	120	MBL151-GGB2	MBL151-R5GB2

STANCHION

STANCHION 50-150W HIGH PRESSURE SODIUM					
LAMP TYPE	LAMP WATTS/ANSI	HUB SIZE②	VOLTAGE 60 HZ①	CATALOG NUMBER②	
				GLOBE AND GUARD	REFRACTOR AND GUARD
HPS	50 (S68)	1-1/4"	120	MBL501-GGD4	MBL501-R5GD4
	70 (S62)	1-1/4"	120	MBL701-GGD4	MBL701-R5GD4
	100 (S54)	3/4"	120	MBL101-GGD4	MBL101-R5GD4
	150 (S55)	1-1/4"	120	MBL151-GGD4	MBL151-R5GD4
	150	1-1/4"	120	MBL151-GGD4	MBL151-R5GD4

① *Catalog numbers shown are 120. Consult factory for other available voltages.*
② *Catalog numbers shown with 3/4" conduit openings (1-1/4" on stanchion mount) and includes globe and guard or IES type V 8" glass refractor and guard. See catalog logic for other possible configurations.*

** See Hazardous Location Application Data on page L28 for limitations.*

Class I, Div. 2, Groups A,B,C,D*
Class I, Zone 2, Groups IIC,IIB,IIA
Class II, Div. 1 & 2, Groups E,F,G*
Class III
Suitable for wet locations
UL Marine
NEMA 3, 4X

Listed - Files E10514 and E91793 (Marine)

Certified - File LR11713

ORDERING INFORMATION

PENDANT

PENDANT 50-100W METAL HALIDE					
LAMP TYPE	LAMP WATTS/ANSI	HUB SIZE②	VOLTAGE 60 HZ①	CATALOG NUMBER②	
				GLOBE AND GUARD	REFRACTOR AND GUARD
MH ③	50 (M110)	3/4"	120/208/240/277	MBH500-GGA2	MBH500-R5GA2
	70 (M98)	3/4"	120/208/240/277	MBH700-GGA2	MBH700-R5GA2
	100 (M90)	3/4"	120/208/240/277	MBH100-GGA2	MBH100-R5GA2

CEILING

CEILING 50-100W METAL HALIDE					
LAMP TYPE	LAMP WATTS/ANSI	HUB SIZE②	VOLTAGE 60 HZ①	CATALOG NUMBER②	
				GLOBE AND GUARD	REFRACTOR AND GUARD
MH ③	50 (M110)	3/4"	120/208/240/277	MBH500-GGX2	MBH500-R5GX2
	70 (M98)	3/4"	120/208/240/277	MBH700-GGX2	MBH700-R5GX2
	100 (M90)	3/4"	120/208/240/277	MBH100-GGX2	MBH100-R5GX2

WALL

WALL 50-100W METAL HALIDE					
LAMP TYPE	LAMP WATTS/ANSI	HUB SIZE②	VOLTAGE 60 HZ①	CATALOG NUMBER②	
				GLOBE AND GUARD	REFRACTOR AND GUARD
MH ③	50 (M110)	3/4"	120/208/240/277	MBH500-GGB2	MBH500-R5GB2
	70 (M98)	3/4"	120/208/240/277	MBH700-GGB2	MBH700-R5GB2
	100 (M90)	3/4"	120/208/240/277	MBH100-GGB2	MBH100-R5GB2

STANCHION

STANCHION 50-100W METAL HALIDE					
LAMP TYPE	LAMP WATTS/ANSI	HUB SIZE②	VOLTAGE 60 HZ①	CATALOG NUMBER②	
				GLOBE AND GUARD	REFRACTOR AND GUARD
MH ③	50 (M110)	1-1/4"	120/208/240/277	MBH500-GGD4	MBH500-R5GD4
	70 (M98)	1-1/4"	120/208/240/277	MBH700-GGD4	MBH700-R5GD4
	100 (M90)	1-1/4"	120/208/240/277	MBH100-GGD4	MBH100-R5GD4

① *Metal Halide MB fixtures use quad-volt ballasts.*
② *Catalog numbers shown with 3/4" conduit openings (1-1/4" on stanchion mount) and include globe and guard or IES type V 8" glass refractor and guard. See catalog logic for other possible configurations.*
③ *50,70, 100 MH Ballasts include a separate ignitor and are PULSE circuits.*

* *See Hazardous Location Application Data on page L28 for limitations.*

L


Pendant


Ceiling


Wall


Stanchion

MB MOUNTING BRACKETS				
CATALOG NUMBER				HUB SIZE
PENDANT	CEILING	WALL	STANCHION	
MBA-2	MBX-2	MBB-2	—	3/4"
MBA-3	MBX-3	MBB-3	—	1"
—	MBX-8*	—	—	M20
—	—	—	MBD-4	1-1/4"
—	—	—	MBD-5	1-1/2"

** MBX-8 furnished with 3 non-metallic Ex plugs*


EBRS


EMRS


ENY-2SET

MB ACCESSORIES	
CATALOG NUMBER	DESCRIPTION
EMRS	MB medium base replacement socket (E26)
EBRS	MB Bi-Pin base replacement socket
MPL13	Replacement lamp for MBF and EBF series
ENY-2SET	3/4" ENY seal with set screw for sealed (Ex nR) pendant installations
ENY-3SET	1" ENY seal with set screw for sealed (Ex nR) pendant installations

MB BALLAST TANK④			
LAMP TYPE	LAMP WATTAGE	VOLTAGE 60 HZ	CATALOG NUMBER
FL	13	120	MBF131
	26	120	MBF261
	39	120	MBF391
HPS	50	120	MBL501
	70	120	MBL701
	100	120	MBL101
	150	120	MBL151
MH	50	120/208/240/277	MBH500
	70	120/208/240/277	MBH700
	100	120/208/240/277	MBH100

④ *Catalog numbers shown are 120 volt (except Metal Halide). Consult catalog number logic on page L22 and change sixth character to indicate other available voltages.*

MB BALLAST DATA										
LAMP TYPE			STARTING AMPS	OPERATING AMPS	OPEN CIRCUIT AMPS	INPUT WATTS MAX	BALLAST CIRCUIT	REGULATIONS	MINIMUM START TEMPERATURE	
LAMP	WATTS	VOLTS - VAC								
FL①	13	120/277	.39/.35	.30/.3	—	16	NPF	—	0°F	-18°C
HPS	50	120	.75	.55	.90	60	HX-HPF②	±5% Line voltage③	-40°F	-40°C
	70	120	.85	.75	1.30	82	HX-HPF②	±5% Line voltage③	-40°F	-40°C
	100	120	1.50	1.05	1.80	115	HX-HPF②	±5% Line voltage③	-40°F	-40°C
	150	120	2.20	1.50	2.35	170	HX-HPF②	±5% Line voltage③	-40°F	-40°C
MH	50	120/208 240/277	.87/.51/.47/.39	.6/.35/.3/.25	1.6/.67/.57/.5	67	HX-HPF②	±5% Line voltage③ ±12% Lamp watts③	-20°F	-30°C
	70	120/208 240/277	.8/.5/.43/.39	.85/.5/.43/.37	1.7/1.04/.87/.78	95	HX-HPF②	±5% Line voltage③ ±12% Lamp watts③	-20°F	-30°C
	100	120/208 240/277	1.2/.8/.65/.6	1.15/.66/.58/.5	2.3/1.4/1.15/1.0	129	HX-HPF②	±5% Line voltage③ ±12% Lamp watts③	-20°F	-30°C

①*Per lamp, max available lamps @ 120 volt is .3; max @ 277 volt is .2.*
②*Ballasts are High Power Factor 90%+.*
③*Lamp watts within ANSI Trapezoid limitations.*

Globe

MBG

Refractor

VZRG1550

Guards

MBAG

VMRWG8

Reflectors

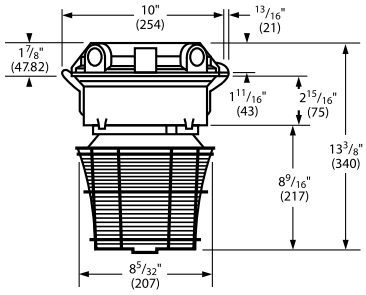
VMPSD-17

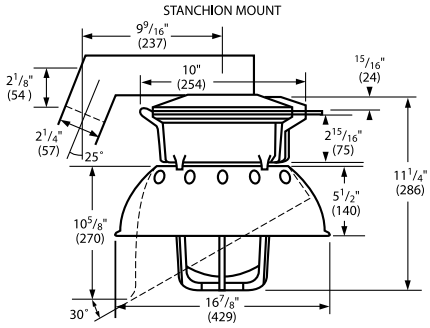
VMPA-17

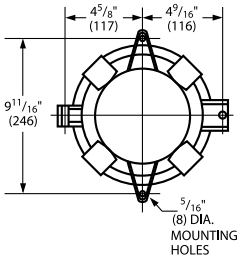
ORDERING INFORMATION

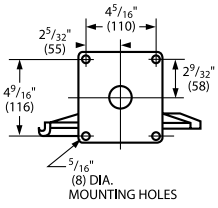
MB ACCESSORIES	
CATALOG NUMBER	DESCRIPTION
MBG	Heat and impact resistant globe
VZRG1550	(I.E.S. Type V) closed bottom 8" glass refractor
MBAG	Globe guard - Epoxy/polyester painted aluminum
VMRWG8	Refractor guard - plated steel
VMPSD-17	Standard dome reflector (fiberglass reinforced polyester)
VMPA-17	Angle reflector (fiberglass reinforced polyester)

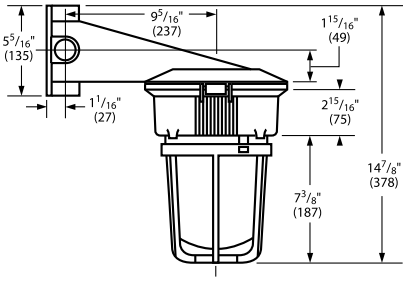
Dimensions











MBF HAZARDOUS LOCATION DATA

			CLASS I, DIVISION 2 GROUPS A, B, C, D① LAMP TEMP, W/GLOBE, GLOBE & REFLECTOR② OR 8" GLASS REFRACTOR	CLASS II, DIVISION 1 & 2① MAXIMUM SURFACE TEMPERATURE W/GLOBE, GUARD③ & REFLECTOR② OR 8" GLASS REFRACTOR④		CLASS III, DIV. 1 & 2① W/GLOBE, W/GUARD③ & REFLECTOR② OR 8" GLASS REFRACTOR	SUPPLY WIRE SUITABLE FOR °C
LAMP TYPE	LAMPS/ WATTS	RATED AMBIENT°C	UL/CSA TEMP I.D.	UL/CSA TEMP I.D.	GROUP	UL/CSA	
PL	13	40	(T3B) 165°C	(T4) 135°C	E, F & G	YES	90
	26 (2x13)	40	(T3B) 165°C	(T4) 135°C	E, F & G	YES	90
	39 (3x13)	25	(T3A) 180°C	(T4) 135°C	E, F & G	YES	90

① *Verify temperatures for suitability for intended use.*
② *Includes both standard dome and angle reflectors.*
③ *Guard required for Class II, Division 1 and Class III, Division 1 applications.*
④ *Note: 8 inch glass refractor not CSA certified for Class II, Division 1 and Class III, Divisions 1 installations.*

MB HAZARDOUS LOCATION DATA

LAMP		RATED AMBIENT °C	CLASS I, DIV. 2, GROUPS A, B, C, D① LAMP TEMPERATURES			CLASS II, DIV. 1 & 2, GROUPS E, F, G③⑤ MAXIMUM SURFACE TEMPERATURES			CLASS III, DIV. 1 & 2③			SUPPLY WIRE SUITABLE FOR °C
TYPE	WATTAGE		WITHOUT④ REFLECTOR	WITH② REFLECTOR	WITH REFRACTOR	WITHOUT④ REFLECTOR	WITH② REFLECTOR	WITH REFRACTOR	WITHOUT④ REFLECTOR	WITH② REFLECTOR	WITH REFRACTOR	
HPS	50	40	215°C(T2D)	215°C(T2D)	215°C(T2D)	120°C(T4A)	135°C(T4)	120°C(T4A)	YES	YES	YES	75
	50	55	230°C(T2C)	230°C(T2C)	230°C(T2C)	135°C(T4)	160°C(T3C)	135°C(T4)	YES	YES	YES	90
	50	65	230°C(T2C)	230°C(T2C)	230°C(T2C)	160°C(T3C)	160°C(T3C)	160°C(T3C)	YES	YES	YES	90
	70	40	260°C(T2B)	260°C(T2B)	230°C(T2C)	120°C(T4A)	135°C(T4)	120°C(T4A)	YES	YES	YES	75
	100	40	280°C(T2A)	280°C(T2A)	280°C(T2A)	160°C(T3C)	160°C(T3C)	160°C(T3C)	YES	YES	YES	90
	150	40	325°C(T1)	325°C(T1)	325°C(T1)	—	—	160°C(T3C)	NO	NO	YES	110
	150	40	325°C(T1)	325°C(T1)	325°C(T1)	180°C(T3A)	200°C(T3)	—	NO	NO	NO	110
MH	50	40	230°C(T2C)	230°C(T2C)	230°C(T2C)	160°C(T3C)	160°C(T3C)	160°C(T3C)	YES	YES	YES	90
	70	40	230°C(T2C)	230°C(T2C)	230°C(T2C)	160°C(T3C)	160°C(T3C)	160°C(T3C)	YES	YES	YES	90
	100	40	280°C(T2A)	280°C(T2A)	280°C(T2A)	160°C(T3C)	160°C(T3C)	160°C(T3C)	YES	YES	YES	85

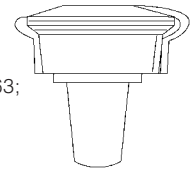
① *Verify temperatures for suitability for intended use.*
② *Includes both standard dome and angle reflectors.*
③ *Guard required for Class II, Division 1 and Class III applications.*
④ *Based on luminaire with globe and guard only.*
⑤ *150 watt HPS—Groups E, F only with or without reflector and Groups E, F and G with refractor.*

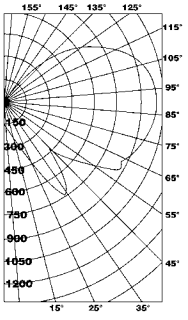
HIGH PRESSURE SODIUM
With Globe Only
50 – 100 Watt Medium Base

CANDLEPOWER–100 WATT
B-17 Clear Lamp
(9500 Lumens)

For CP of a 70 Watt Luminaire multiply by .663;

For a 50 Watt Luminaire multiply by .421





Angle	CP	Angle	CP
0	160	85	1006
5	149	90	1012
15	206	95	1008
25	398	105	955
35	727	115	818
45	430	125	643
55	736	135	289
65	874	145	26
75	955	165	12

Efficiency 88.8%

COEFFICIENTS OF UTILIZATION-ZONAL CAVITY

% Effective Ceiling Cavity Reflectance rcc	80			70			50			30			10			0
% Wall Reflectance rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance															
1	.76	.70	.65	.70	.65	.60	.59	.55	.51	.48	.45	.42	.39	.36	.34	.30
2	.63	.55	.49	.58	.51	.45	.48	.43	.38	.39	.35	.31	.31	.28	.25	.21
3	.54	.45	.38	.49	.42	.35	.44	.35	.30	.33	.28	.24	.26	.22	.19	.15
4	.46	.37	.31	.43	.34	.28	.35	.29	.24	.28	.23	.19	.22	.18	.15	.11
5	.40	.32	.25	.37	.29	.23	.31	.24	.19	.25	.19	.15	.19	.15	.12	.09
6	.36	.27	.21	.33	.25	.19	.27	.21	.16	.22	.17	.13	.17	.13	.10	.07
7	.32	.23	.18	.19	.21	.16	.24	.18	.13	.19	.14	.11	.15	.11	.08	.05
8	.28	.20	.15	.26	.19	.14	.21	.16	.11	.17	.12	.09	.13	.09	.06	.04
9	.25	.18	.13	.23	.16	.12	.19	.14	.10	.16	.11	.07	.12	.08	.05	.03
10	.23	.16	.11	.21	.14	.10	.17	.12	.08	.14	.09	.06	.11	.07	.04	.02

SPACING TO MOUNTING HEIGHT RATIO–S/MH 3.9
ILLUMINATION ON HORIZONTAL SURFACE

Illumination for 100 Watts HPS
For 70 Watt Mult. by .663
For 50 Watt Mult. by .421

$$FC = \frac{(Candlepower)\ (COS\ 0)}{D^2}$$

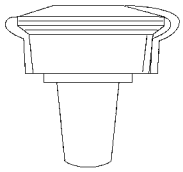
FOOTCANDLE CHART (INITIAL) 100 WATT
HORIZONTAL DISTANCE FROM SOURCE IN FT.

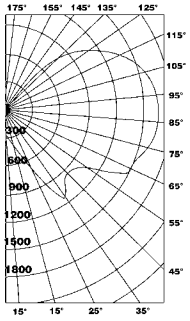
MOUNTING HEIGHT	0'	4'	8'	12'	16'	20'	24'	28'	32'	36'	40'
8'	2.50	5.05	2.38	2.00	1.22	.72	.46	.31	.21	.16	.12
10'	1.60	2.40	2.86	1.53	1.27	.78	.51	.35	.25	.18	.14
12'	1.11	1.42	2.80	1.06	1.01	.82	.54	.38	.28	.20	.15
14'	.82	.98	2.04	1.25	.79	.71	.57	.40	.29	.22	.17
16'	.63	.68	1.26	1.40	.59	.62	.51	.42	.31	.23	.18

Test No. HP-03126

HIGH PRESSURE SODIUM
With Globe Only
150 Watt Medium Base

CANDLEPOWER–150 WATT
B-17 Clear Lamp
(16000 Lumens)





Angle	CP	Angle	CP
0	260	85	1647
5	246	90	1647
15	363	95	1624
25	669	105	1527
35	1126	115	1338
45	968	125	1093
55	1159	135	536
65	1505	145	42
75	1566	165	13

Efficiency 87.7%

COEFFICIENTS OF UTILIZATION-ZONAL CAVITY

% Effective Ceiling Cavity Reflectance rcc	80			70			50			30			10			0
% Wall Reflectance rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance															
1	.75	.69	.64	.69	.64	.59	.58	.54	.51	.48	.45	.42	.39	.37	.35	.30
2	.63	.55	.48	.58	.51	.45	.48	.43	.38	.39	.35	.31	.31	.28	.25	.21
3	.53	.45	.38	.49	.41	.35	.41	.35	.30	.33	.29	.24	.26	.22	.19	.15
4	.46	.37	.30	.42	.34	.28	.35	.29	.24	.28	.23	.19	.22	.18	.15	.12
5	.40	.31	.25	.37	.29	.23	.31	.24	.19	.25	.20	.15	.19	.15	.12	.09
6	.35	.27	.21	.32	.25	.19	.27	.21	.16	.22	.17	.13	.17	.13	.10	.07
7	.31	.23	.17	.29	.21	.16	.24	.18	.13	.19	.14	.11	.15	.11	.08	.06
8	.28	.20	.15	.26	.18	.13	.21	.15	.11	.17	.12	.09	.13	.10	.07	.04
9	.25	.18	.13	.23	.16	.12	.19	.14	.09	.16	.11	.07	.12	.08	.05	.03
10	.22	.15	.10	.21	.14	.10	.17	.12	.08	.14	.09	.06	.11	.07	.04	.02

SPACING TO MOUNTING HEIGHT RATIO–S/MH 4.0
ILLUMINATION ON HORIZONTAL SURFACE

$$FC = \frac{(Candlepower)\ (COS\ 0)}{D^2}$$

FOOTCANDLE CHART (INITIAL) 150 WATT
HORIZONTAL DISTANCE FROM SOURCE IN FT.

MOUNTING HEIGHT	0'	4'	8'	12'	16'	20'	24'	28'	32'	36'	40'
8'	4.06	9.50	5.35	3.20	2.03	1.21	.75	.51	.35	.26	.19
10'	2.60	4.40	5.00	2.60	1.86	1.30	.86	.58	.41	.30	.23
12'	1.81	2.67	4.40	2.38	1.54	1.23	.90	.64	.46	.33	.26
14'	1.33	1.81	3.37	2.29	1.38	1.12	.86	.66	.50	.37	.28
16'	1.02	1.07	2.38	2.20	1.34	.95	.81	.64	.51	.40	.30

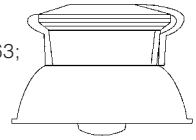
Test No. HP-03128

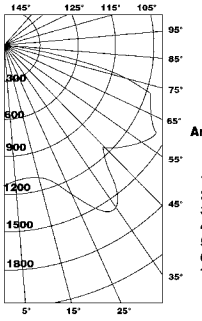
HIGH PRESSURE SODIUM
With Globe and Dome Reflector
50 – 100 Watt Medium Base

CANDLEPOWER–100 WATT
B-17 Clear Lamp
(9500 Lumens)

For CP of a 70 Watt Luminaire multiply by .663;

For a 50 Watt Luminaire multiply by .421





Angle	CP	Angle	CP
0	1127	85	103
5	1084	90	34
15	1104	95	25
25	1288	105	32
35	1561	115	136
45	1154	125	18
55	1352	135	15
65	1316	145	13
75	980	165	10

Efficiency 71.5%

COEFFICIENTS OF UTILIZATION-ZONAL CAVITY

% Effective Ceiling Cavity Reflectance rcc	80			70			50			30			10			0
% Wall Reflectance rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance															
1	.72	.68	.65	.70	.67	.64	.66	.64	.61	.63	.61	.59	.60	.58	.57	.55
2	.61	.56	.51	.60	.54	.50	.57	.43	.48	.54	.50	.47	.51	.48	.45	.44
3	.52	.46	.41	.51	.45	.40	.49	.35	.39	.46	.42	.38	.44	.40	.37	.35
4	.45	.38	.33	.44	.37	.32	.42	.29	.32	.40	.35	.31	.38	.34	.30	.28
5	.39	.32	.27	.38	.32	.27	.37	.24	.26	.35	.30	.26	.33	.29	.25	.23
6	.35	.28	.23	.34	.28	.23	.33	.21	.22	.31	.26	.22	.30	.25	.21	.20
7	.31	.24	.19	.30	.24	.19	.29	.18	.19	.28	.22	.18	.26	.22	.18	.16
8	.28	.21	.16	.27	.21	.16	.26	.16	.16	.25	.19	.16	.23	.19	.15	.14
9	.25	.19	.14	.24	.18	.14	.19	.23	.14	.22	.17	.14	.21	.17	.13	.12
10	.22	.16	.11	.21	.15	.11	.17	.20	.11	.20	.15	.11	.19	.14	.11	.09

SPACING TO MOUNTING HEIGHT RATIO–S/MH 1.7
ILLUMINATION ON HORIZONTAL SURFACE

Illumination for 100 Watts HPS
For 70 Watt Mult. by .663
For 50 Watt Mult. by .421

$$FC = \frac{(Candlepower)\ (COS\ 0)}{D^2}$$

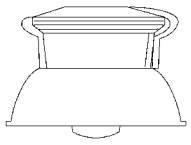
FOOTCANDLE CHART (INITIAL) 100 WATT
HORIZONTAL DISTANCE FROM SOURCE IN FT.

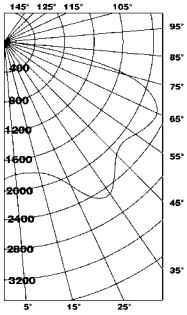
MOUNTING HEIGHT	0'	4'	8'	12'	16'	20'	24'	28'	32'	36'	40'
8'	17.34	14.53	6.35	3.60	1.85	1.04	.63	.32	.21	.14	.04
10'	11.10	9.20	6.43	3.25	2.08	1.21	.74	.49	.33	.19	.13
12'	7.70	6.52	6.36	2.82	1.95	1.32	.82	.55	.38	.27	.20
14'	5.66	4.99	5.01	3.01	1.86	1.30	.91	.63	.42	.37	.23
16'	4.34	3.92	3.63	3.12	1.59	1.19	.87	.67	.46	.34	.26

Test No. HP-03125

HIGH PRESSURE SODIUM
With Globe and Dome Reflector
150 Watt Medium Base

CANDLEPOWER–150 WATT
B-17 Clear Lamp
(16000 Lumens)





Angle	CP	Angle	CP
0	1832	85	178
5	1772	90	48
15	1825	95	35
25	2108	105	44
35	2461	115	204
45	2155	125	40
55	2163	135	18
65	2271	145	16
75	1613	165	11

Efficiency 70.8%

COEFFICIENTS OF UTILIZATION-ZONAL CAVITY

% Effective Ceiling Cavity Reflectance rcc	80			70			50			30			10			0
% Wall Reflectance rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance															
1	.71	.68	.64	.69	.66	.63	.66	.63	.61	.63	.60	.58	.60	.58	.56	.55
2	.61	.55	.50	.59	.54	.49	.56	.52	.48	.56	.50	.46	.51	.48	.45	.43
3	.52	.45	.40	.51	.45	.40	.48	.43	.39	.46	.41	.38	.44	.40	.37	.35
4	.45	.38	.32	.44	.37	.32	.41	.36	.31	.39	.34	.30	.38	.33	.30	.28
5	.39	.32	.27	.38	.31	.26	.36	.30	.26	.34	.29	.25	.33	.28	.25	.23
6	.35	.28	.22	.34	.27	.22	.32	.26	.22	.31	.25	.21	.29	.25	.21	.19
7	.31	.24	.19	.30	.23	.19	.29	.23	.18	.27	.22	.18	.26	.21	.18	.16
8	.27	.21	.16	.27	.20	.16	.25	.20	.16	.24	.19	.15	.23	.19	.15	.14
9	.25	.18	.14	.24	.18	.14	.23	.17	.14	.22	.17	.13	.21	.17	.13	.12
10	.21	.15	.11	.21	.15	.11	.20	.15	.11	.19	.14	.11	.18	.14	.11	.09

SPACING TO MOUNTING HEIGHT RATIO–S/MH 1.8
ILLUMINATION ON HORIZONTAL SURFACE

$$FC = \frac{\text{(Candlepower) (COS 0)}}{D^2}$$

FOOTCANDLE CHART (INITIAL) 150 WATT
HORIZONTAL DISTANCE FROM SOURCE IN FT.

MOUNTING HEIGHT	0'	4'	8'	12'	16'	20'	24'	28'	32'	36'	40'
8'	28.63	24.60	11.90	5.81	3.18	1.76	1.04	.55	.36	.15	.11
10'	18.32	15.61	11.31	5.49	3.28	2.03	1.25	.81	.56	.33	.23
12'	12.72	10.67	9.90	5.29	3.15	2.10	1.41	.96	.64	.46	.34
14'	9.35	8.30	8.01	5.02	3.05	2.08	1.45	1.04	.75	.53	.39
16'	7.16	6.49	6.15	4.86	2.98	2.00	1.45	1.06	.79	.59	.44

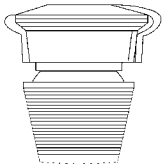
Test No. HP-03130

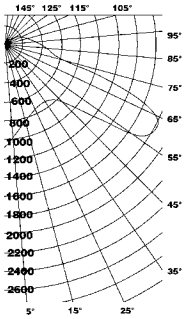
HIGH PRESSURE SODIUM
With Type V 8" Refractor
50 – 100 Watt Medium Base

CANDLEPOWER–100 WATT
B-17 Clear Lamp
(9500 Lumens)

For CP of a 70 watt luminaire multiply by .663;

For a 50 watt luminaire multiply by .421





Angle	CP	Angle	CP
0	1078	85	457
5	980	90	391
15	801	95	342
25	742	105	235
35	735	115	165
45	846	125	140
55	1556	135	104
65	1729	145	61
75	698	165	29

Efficiency 75.6%

COEFFICIENTS OF UTILIZATION-ZONAL CAVITY

% Effective Ceiling Cavity Reflectance rcc	80			70			50			30			10			0
% Wall Reflectance rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance															
1	.72	.67	.64	.69	.65	.61	.64	.60	.57	.59	.56	.54	.54	.52	.50	.48
2	.60	.54	.49	.58	.52	.47	.53	.49	.44	.49	.45	.42	.45	.42	.39	.37
3	.51	.44	.38	.49	.42	.37	.45	.39	.35	.41	.37	.33	.38	.34	.31	.28
4	.43	.35	.29	.41	.34	.28	.38	.32	.27	.35	.30	.25	.32	.27	.24	.21
5	.37	.29	.23	.35	.24	.22	.33	.26	.21	.30	.24	.20	.27	.22	.19	.17
6	.33	.25	.19	.31	.24	.19	.29	.22	.17	.26	.21	.16	.24	.19	.15	.13
7	.29	.21	.16	.27	.20	.15	.25	.19	.14	.23	.18	.14	.21	.16	.13	.00
8	.25	.18	.13	.24	.18	.13	.22	.16	.12	.21	.15	.11	.19	.14	.11	.09
9	.23	.16	.12	.22	.16	.11	.21	.15	.11	.19	.14	.10	.17	.13	.09	.08
10	.21	.14	.10	.20	.14	.09	.18	.13	.09	.17	.12	.08	.16	.11	.08	.06

SPACING TO MOUNTING HEIGHT RATIO–S/MH 1.0
ILLUMINATION ON HORIZONTAL SURFACE

Illumination for 100 Watts HPS
For 70 Watt Mult. by .663
For 50 Watt Mult. by .421

$$FC = \frac{\text{(Candlepower) (COS 0)}}{D^2}$$

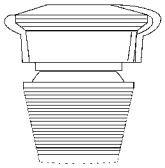
FOOTCANDLE CHART (INITIAL) 100 WATT
HORIZONTAL DISTANCE FROM SOURCE IN FT.

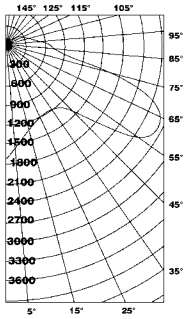
MOUNTING HEIGHT	0'	4'	8'	12'	16'	20'	24'	28'	32'	36'	40'
8'	16.84	8.25	4.67	4.40	2.49	1.20	.52	.24	.16	.09	.06
10'	10.78	6.12	3.57	2.75	2.62	1.59	.88	.47	.24	.14	.08
12'	7.49	4.62	2.94	2.08	2.10	1.70	1.11	.68	.39	.24	.13
14'	5.50	3.61	2.41	1.70	1.49	1.49	1.19	.81	.53	.34	.20
16'	4.21	2.89	2.06	1.48	1.17	1.04	1.10	.87	.63	.43	.29

Test No. HP-03127

HIGH PRESSURE SODIUM
With Type V 8" Refractor
150 Watt Medium Base

CANDLEPOWER–150 WATT
B-17 Clear Lamp
(16000 Lumens)





Angle	CP	Angle	CP
0	1707	85	804
5	1555	90	672
15	1274	95	589
25	1180	105	385
35	1174	115	271
45	1389	125	228
55	2381	135	169
65	2576	145	95
75	1775	165	43

Efficiency 75.4%

COEFFICIENTS OF UTILIZATION-ZONAL CAVITY

% Effective Ceiling Cavity Reflectance rcc	80			70			50			30			10			0
% Wall Reflectance rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance															
1	.71	.66	.62	.68	.64	.60	.63	.59	.56	.58	.55	.52	.53	.51	.49	.46
2	.59	.52	.46	.56	.50	.45	.52	.47	.42	.48	.43	.40	.44	.40	.37	.35
3	.50	.42	.36	.47	.40	.35	.44	.38	.33	.40	.35	.31	.36	.32	.29	.26
4	.42	.34	.28	.40	.33	.27	.37	.30	.25	.34	.28	.24	.31	.26	.22	.20
5	.36	.28	.22	.35	.27	.21	.32	.25	.20	.29	.23	.19	.26	.22	.18	.16
6	.32	.24	.18	.30	.23	.18	.28	.22	.17	.26	.20	.16	.23	.18	.15	.13
7	.28	.21	.15	.27	.20	.15	.25	.18	.14	.23	.17	.13	.21	.16	.12	.10
8	.25	.18	.13	.24	.17	.12	.22	.16	.12	.20	.15	.11	.18	.14	.10	.08
9	.23	.16	.11	.22	.15	.11	.20	.14	.10	.18	.13	.09	.17	.12	.09	.07
10	.20	.14	.09	.20	.13	.09	.18	.12	.08	.17	.11	.08	.15	.11	.07	.06

SPACING TO MOUNTING HEIGHT RATIO–S/MH 1.0
ILLUMINATION ON HORIZONTAL SURFACE

$$FC = \frac{\text{(Candlepower) (COS 0)}}{D^2}$$

FOOTCANDLE CHART (INITIAL) 150 WATT
HORIZONTAL DISTANCE FROM SOURCE IN FT.

MOUNTING HEIGHT	0'	4'	8'	12'	16'	20'	24'	28'	32'	36'	40'
8'	26.67	12.86	7.67	6.40	3.63	2.00	1.06	.62	.39	.22	.14
10'	17.07	9.60	5.71	4.67	3.84	2.33	1.42	.88	.58	.36	.25
12'	11.85	7.41	4.68	3.41	3.23	2.46	1.61	1.08	.69	.47	.34
14'	8.71	5.78	3.88	2.75	2.48	2.29	1.70	1.19	.84	.60	.42
16'	6.67	4.64	3.21	2.40	1.92	1.90	1.60	1.24	.91	.67	.50

Test No. HP-03129

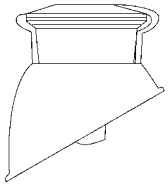
HIGH PRESSURE SODIUM
With Globe and 30° Angle Reflector

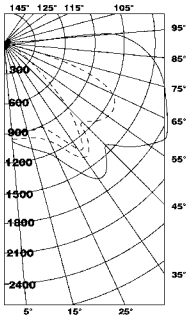
50 – 100 Watt Medium Base

CANDLEPOWER–100 WATT
B-17 Clear Lamp
(9500 Lumens)

For CP of a 70 Watt Luminaire multiply by .663;

For a 50 Watt Luminaire multiply by .421





Angle	Front	Side	Back
0	1001	1001	1001
5	1021	972	930
15	1118	986	897
25	1322	1114	976
35	1646	1366	1272
45	1437	1071	670
55	1776	1214	135
65	1752	1162	21
75	1629	284	24
85	1462	47	32
90	1353	15	41
95	1176	15	44
105	132	14	207

Efficiency 67.4%

COEFFICIENTS OF UTILIZATION-ZONAL CAVITY

% Effective Ceiling Cavity Reflectance rcc	80			70			50			30			10			0
% Wall Reflectance rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance															
1	.65	.61	.58	.63	.59	.56	.59	.56	.53	.55	.53	.51	.52	.50	.48	.46
2	.56	.50	.45	.54	.49	.44	.51	.46	.43	.47	.44	.41	.45	.42	.39	.37
3	.48	.42	.37	.47	.41	.36	.44	.39	.35	.41	.37	.34	.39	.35	.32	.31
4	.42	.35	.30	.41	.35	.30	.38	.33	.29	.36	.31	.28	.34	.30	.27	.25
5	.37	.30	.25	.36	.30	.25	.34	.28	.24	.32	.27	.23	.30	.26	.23	.21
6	.33	.26	.22	.32	.26	.21	.30	.25	.21	.28	.24	.20	.27	.23	.19	.18
7	.29	.23	.18	.28	.22	.18	.27	.21	.17	.25	.21	.17	.24	.20	.16	.15
8	.26	.20	.16	.25	.19	.15	.24	.19	.15	.23	.18	.14	.21	.17	.14	.13
9	.23	.17	.13	.23	.17	.13	.22	.16	.13	.20	.16	.12	.19	.15	.12	.11
10	.21	.15	.11	.20	.14	.11	.19	.14	.10	.18	.13	.10	.17	.13	.10	.08

SPACING TO MOUNTING HEIGHT RATIO–S/MH 1.8
ILLUMINATION ON HORIZONTAL SURFACE

Illumination for 100 Watts HPS
For 70 Watt Mult. by .663
For 50 Watt Mult. by .421
For 35 Watt Mult. by .237

$$FC = \frac{(Candlepower)\ (COS\ 0)}{D^2}$$

FOOTCANDLE CHART (INITIAL) 100 WATT
HORIZONTAL DISTANCE FROM SOURCE (FRONT) IN FT.

MOUNTING HEIGHT	0'	4'	8'	12'	16'	20'
8'	15.64	15.37	7.94	4.80	2.51	1.37
10'	10.01	9.77	7.28	4.23	2.75	1.61
12'	6.95	6.82	6.56	3.53	2.51	1.75
14'	5.11	5.10	5.18	3.35	2.33	1.71
16'	3.91	3.92	3.84	3.26	1.98	1.57

FOOTCANDLE CHART (INITIAL) 100 WATT
HORIZONTAL DISTANCE FROM SOURCE (SIDE) IN FT.

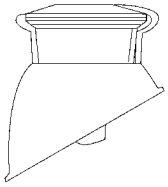
MOUNTING HEIGHT	0'	4'	8'	12'	16'	20'
8'	15.64	13.14	5.92	3.25	1.68	.82
10'	10.01	8.24	5.98	3.09	1.86	1.07
12'	6.95	5.93	5.48	2.63	1.77	1.18
14'	5.11	4.47	4.27	2.62	1.68	1.17
16'	3.91	3.50	3.26	2.70	1.48	1.12

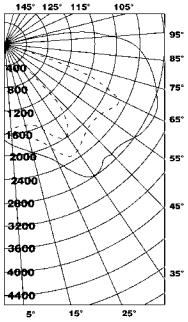
Test No. HP-03124

HIGH PRESSURE SODIUM
With Globe and 30° Angle Reflector

150 Watt Medium Base

CANDLEPOWER–150 WATT
B-17 Clear Lamp
(16000 Lumens)





Angle	Front	Side	Back
0	1649	1649	1649
5	1722	1615	1519
15	1918	1684	1452
25	2229	1926	1602
35	2777	2297	1948
45	2683	2110	1260
55	2837	2122	209
65	2943	2237	28
75	2802	607	30
85	2508	82	47
90	2296	21	54
95	1969	19	59
105	336	19	297

Efficiency 67.6%

COEFFICIENTS OF UTILIZATION-ZONAL CAVITY

% Effective Ceiling Cavity Reflectance rcc	80			70			50			30			10			0
% Wall Reflectance rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance															
1	.65	.61	.58	.63	.60	.56	.59	.56	.54	.56	.53	.51	.52	.50	.49	.47
2	.56	.50	.46	.54	.49	.45	.51	.47	.43	.48	.41	.44	.45	.42	.39	.37
3	.48	.42	.37	.47	.41	.37	.44	.39	.35	.41	.37	.34	.39	.35	.33	.31
4	.42	.35	.30	.41	.35	.30	.38	.33	.29	.36	.32	.28	.34	.30	.27	.25
5	.37	.30	.25	.36	.30	.25	.34	.28	.24	.32	.27	.23	.30	.26	.23	.21
6	.33	.26	.22	.32	.26	.21	.30	.25	.21	.28	.24	.20	.27	.23	.19	.18
7	.29	.23	.18	.28	.22	.18	.27	.21	.17	.25	.21	.17	.24	.20	.16	.15
8	.26	.20	.16	.25	.19	.15	.24	.19	.15	.23	.18	.14	.21	.17	.14	.13
9	.23	.17	.13	.23	.17	.13	.22	.16	.13	.20	.16	.12	.19	.15	.12	.11
10	.20	.15	.11	.20	.14	.11	.19	.14	.10	.18	.13	.10	.17	.13	.10	.08

SPACING TO MOUNTING HEIGHT RATIO–S/MH 1.9
ILLUMINATION ON HORIZONTAL SURFACE

$$FC = \frac{(Candlepower)\ (COS\ 0)}{D^2}$$

FOOTCANDLE CHART (INITIAL) 150 WATT
HORIZONTAL DISTANCE FROM SOURCE (FRONT) IN FT.

MOUNTING HEIGHT	0'	4'	8'	12'	16'	20'
8'	25.77	25.71	14.82	7.57	4.11	2.33
10'	16.49	16.51	13.14	7.12	4.22	2.63
12'	11.45	11.86	11.04	6.59	28.00	2.73
14'	8.41	8.84	8.60	6.05	3.91	2.73
16'	6.44	6.78	6.43	5.52	3.71	2.59

FOOTCANDLE CHART (INITIAL) 150 WATT
HORIZONTAL DISTANCE FROM SOURCE (SIDE) IN FT.

MOUNTING HEIGHT	0'	4'	8'	12'	16'	20'
8'	25.77	22.47	11.66	5.66	3.13	1.36
10'	16.49	14.29	10.71	5.46	3.16	2.00
12'	11.45	10.09	9.19	5.18	3.11	2.08
14'	8.41	7.64	7.38	4.87	3.04	2.04
16'	6.44	6.01	5.62	4.55	2.91	1.98

Test No. HP-03131

METAL HALIDE
With Globe Only

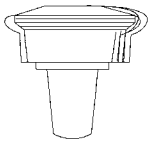
50 – 100 Watt Medium Base

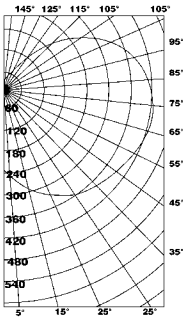
CANDLEPOWER–100 WATT MV
B-17 Clear Lamp
(4400 Lumens)

For a 50 Watt MH Luminaire multiply by .77;

For a 70 Watt MH Luminaire multiply by 1.36

For a 100 Watt MH Luminaire multiply by 1.93





Angle	CP	Angle	CP
0	237	85	429
5	240	90	420
15	283	95	407
25	326	105	377
35	355	115	322
45	376	125	244
55	397	135	154
65	413	145	57
75	429	165	15

Efficiency 91.1%

COEFFICIENTS OF UTILIZATION-ZONAL CAVITY

% Effective Ceiling Cavity Reflectance rcc	80			70			50			30			10			0
% Wall Reflectance rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance															
1	.80	.74	.69	.74	.69	.65	.64	.60	.56	.54	.51	.48	.45	.43	.41	.36
2	.67	.60	.53	.63	.56	.50	.54	.48	43	.45	.41	.37	.37	.34	.35	.27
3	.58	.49	.42	.54	.46	.40	.46	.40	.35	.39	.34	.30	.32	.28	.25	.21
4	.50	.41	.34	.47	.38	.32	.40	.33	.28	.33	.28	.24	.27	.23	.20	.17
5	.44	.35	.28	.41	.33	.27	.35	.28	.23	.29	.24	.20	.24	.20	.16	.13
6	.39	.30	.24	.36	.28	.23	.31	.25	.20	.26	.21	.17	.22	.17	.14	.11
7	.35	.26	.20	.32	.25	.19	.28	.21	.17	.23	.18	.14	.19	.15	.12	.09
8	.31	.23	.17	.29	.21	.16	.25	.19	.14	.21	.16	.12	.17	.13	.10	.08
9	.28	.20	.15	.26	.19	.14	.22	.16	.12	.19	.14	.10	.16	.12	.09	.06
10	.25	.18	.13	.23	.16	.12	.20	.14	.10	.17	.12	.08	.14	.10	.07	.05

SPACING TO MOUNTING HEIGHT RATIO–S/MH 2.2
ILLUMINATION ON HORIZONTAL SURFACE

Illumination for 100 Watts MV
For 75 Watt Mult. by .636
See above for other values

$$FC = \frac{(Candlepower)\ (COS\ 0)}{D^2}$$

FOOTCANDLE CHART (INITIAL) 100 WATT
HORIZONTAL DISTANCE FROM SOURCE IN FT.

MOUNTING HEIGHT	0'	4'	8'	12'	16'	20'	24'	28'	32'	36'	40'
8'	3.75	3.63	2.10	1.06	.59	.34	.21	.14	.10	.07	.05
10'	2.40	2.56	1.71	1.01	.60	.37	.24	.16	.11	.08	.06
12'	1.67	1.78	1.40	.92	.59	.38	.25	.18	.13	.10	.07
14'	1.22	1.27	1.11	.82	.56	.38	.26	.19	.14	.10	.08
16'	.94	.98	.92	.72	.52	.37	.27	.19	.14	.11	.08

Test No. HP-03138

L

METAL HALIDE
With Globe and Dome Reflector

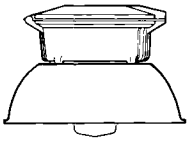
50 – 100 Watt Medium Base

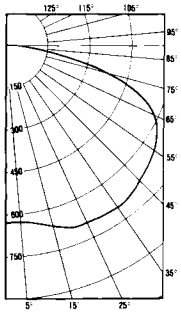
CANDLEPOWER–100 WATT MV
B-17 Clear Lamp

For a 50 Watt MH Luminaire multiply by .77;

For a 70 Watt MH Luminaire multiply by 1.36

For a 100 Watt MH Luminaire multiply by 1.93





Angle	CP	Angle	CP
0	627	85	75
5	627	90	27
15	662	95	22
25	690	105	26
35	698		
45	676		
55	646		
65	580		
75	366		

Efficiency 75.0%

COEFFICIENTS OF UTILIZATION-ZONAL CAVITY

% EFFECTIVE CEILING CAVITY REFLECTANCE rcc	80			70			50			30			10		0
% WALL REFLECTANCE rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance															
1	76	72	69	74	70	67	70	67	65	66	64	62	63	61	63	58
2	65	60	55	63	58	54	60	56	52	57	54	50	53	51	45	47
3	57	50	45	55	49	44	52	47	43	50	45	42	48	44	41	39
4	49	42	37	48	41	36	45	40	35	43	38	34	41	37	34	32
5	43	36	31	42	35	30	38	34	29	38	33	29	39	32	28	26
6	38	31	26	37	31	26	36	30	25	34	29	25	33	28	24	23
7	34	27	22	33	27	22	32	26	22	30	25	21	29	24	21	19
8	31	24	19	30	23	19	29	23	19	27	22	18	26	21	18	16
9	28	21	17	27	21	16	26	20	14	25	20	16	24	19	16	14
10	24	18	13	24	18	13	23	18	13	22	17	13	21	16	13	11

SPACING TO MOUNTING HEIGHT RATIO — S/MH 1.7

ILLUMINATION ON HORIZONTAL SURFACE

Illumination for 100 Watts MV
See above for other values

$$FC = \frac{(Candlepower)\ (COS\ \theta)}{D^2}$$

FOOTCANDLE CHART (INITIAL) 100 WATT

HORIZONTAL DISTANCE FROM SOURCE IN FT

MOUNTING HEIGHT FT	0'	4'	8'	12'	16'	20'	24'	28'	32'	36'	40'
8'	9.80	7.73	3.73	1.69	.84	.41	.27	.12	.07	.04	.02
10'	6.27	5.49	3.30	1.73	.94	.58	.31	.19	.15	.07	.05
12'	4.35	4.03	2.78	1.66	.98	.59	.37	.24	.15	.10	.07
14'	3.20	3.01	2.32	1.55	.97	.62	.40	.27	.18	.13	.09
16'	3.19	2.26	1.93	1.39	.93	.63	.43	.30	.20	.15	.10

Test No. HP-03139

METAL HALIDE
With Type V 8" Refractor

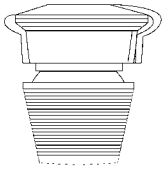
50 – 100 Watt Medium Base

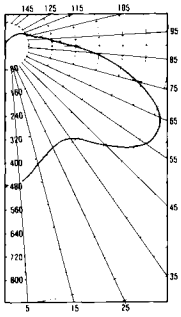
CANDLEPOWER–100 WATT MV
B-17 Clear Lamp
(4400 Lumens)

For a 50 Watt MH Luminaire multiply by .77;

For a 70 Watt MH Luminaire multiply by 1.36

For a 100 Watt MH Luminaire multiply by 1.93





Angle	CP	Angle	CP
0	475	85	304
5	470	90	226
15	418	95	169
25	382	105	112
35	385	115	86
45	479	125	75
55	583	135	58
65	579	145	38
75	457	165	14

Efficiency 77.4%

COEFFICIENTS OF UTILIZATION-ZONAL CAVITY

% EFFECTIVE CEILING CAVITY REFLECTANCE rcc	80			70			50			30			10		0
% WALL REFLECTANCE rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance															
1	72	67	63	69	65	61	63	60	57	58	55	53	53	51	49	46
2	61	54	48	58	52	46	53	48	43	49	44	41	44	41	38	35
3	52	44	38	49	42	37	45	39	34	41	36	32	38	34	30	28
4	44	36	30	42	35	29	39	32	27	35	30	26	32	28	24	22
5	38	30	25	37	29	24	34	27	22	31	25	21	28	23	20	17
6	34	26	21	33	25	20	30	24	19	27	22	18	25	20	16	14
7	30	23	17	29	22	17	27	20	16	24	19	15	22	18	14	12
8	27	20	15	26	19	14	24	18	13	22	16	13	20	15	12	10
9	24	17	13	23	17	12	22	16	12	20	15	11	18	14	10	09
10	22	15	11	21	15	10	19	14	10	18	13	09	16	12	08	07

SPACING TO MOUNTING HEIGHT RATIO — S/MH 1.2

ILLUMINATION OF HORIZONTAL SURFACE

Illumination for 100 Watts MV
See above for other values

$$FC = \frac{(Candlepower)\ (COS\ \theta)}{D^2}$$

FOOTCANDLE CHART (INITIAL) 100 WATT

HORIZONTAL DISTANCE FROM SOURCE IN FT

MOUNTING HEIGHT FT	0'	4'	8'	12'	16'	20'	24'	28'	32'	36'	40'
8'	7.42	4.25	2.65	1.57	.82	.44	.25	.15	.10	.06	.04
10'	4.75	3.14	1.95	1.42	.88	.52	.33	.20	.13	.09	.06
12'	3.30	2.40	1.52	1.18	.86	.56	.36	.23	.16	.13	.08
14'	2.42	1.86	1.25	.95	.77	.56	.39	.27	.19	.13	.09
16'	1.86	1.52	1.06	.79	.66	.52	.39	.28	.20	.15	.11

Test No. HP-03141

METAL HALIDE
With Globe and 30° Angle Reflector

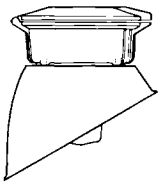
50 – 100 Watt Medium Base

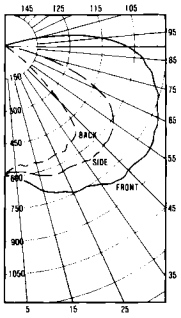
CANDLEPOWER–100 WATT MV
B-17 Clear Lamp
(4400 Lumens)

For a 50 Watt MH Luminaire multiply by .77;

For a 70 Watt MH Luminaire multiply by 1.36

For a 100 Watt MH Luminaire multiply by 1.93





Angle	Front	Side	Back
0	588	588	588
5	608	585	559
15	687	615	558
25	740	634	552
35	774	646	535
45	806	644	348
55	818	611	63
65	778	470	17
75	716	167	19
85	638	25	22
90	561	16	30
95	439	12	37
105	127	10	69

Efficiency 72.5%

COEFFICIENTS OF UTILIZATION-ZONAL CAVITY

% EFFECTIVE CEILING CAVITY REFLECTANCE rcc	80			70			50			30			10		0
% WALL REFLECTANCE rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance															
1	71	67	63	68	65	62	64	61	58	60	58	56	56	55	53	51
2	61	55	51	59	54	49	55	51	47	52	48	45	49	46	43	41
3	53	47	42	52	46	41	49	44	39	46	41	38	43	39	36	34
4	47	40	35	45	39	34	43	37	33	40	35	32	38	34	31	29
5	41	34	29	40	34	29	38	32	28	36	31	27	34	29	26	24
6	37	30	25	36	29	25	34	28	24	32	27	23	30	26	23	21
7	33	26	22	32	26	21	30	25	21	29	24	20	27	23	19	18
8	29	23	18	29	23	18	27	22	18	26	21	17	24	20	17	15
9	27	20	16	26	20	16	25	19	15	23	19	15	22	18	15	13
10	23	17	13	23	14	11	19	14	10	18	13	10	17	13	10	08

SPACING TO MOUNTING HEIGHT RATIO — S/MH 1.6

ILLUMINATION OF HORIZONTAL SURFACE

Illumination for 100 Watts MV
See above for other values

$$FC = \frac{(Candlepower)\ (COS\ \theta)}{D^2}$$

FOOTCANDLE CHART (Initial) 100 WATT

HORIZONTAL DISTANCE FROM SOURCE (Front) IN FT

MOUNTING HEIGHT FT	0'	4'	8'	12'	16'	20'
8'	9.19	8.27	4.45	2.18	1.09	.61
10'	5.88	5.72	3.81	2.14	1.16	.70
12'	4.08	4.18	3.06	1.98	1.21	.75
14'	3.00	3.17	2.49	1.80	1.18	.79
16'	2.30	2.45	2.07	1.56	1.11	.78

FOOTCANDLE CHART (Initial) 100 WATT

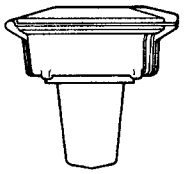
HORIZONTAL DISTANCE FROM SOURCE (Side) IN FT

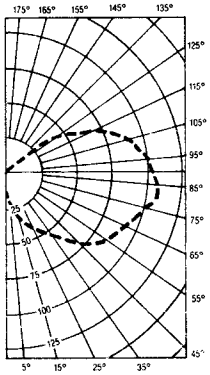
MOUNTING HEIGHT FT	0'	4'	8'	12'	16'	20'
8'	9.19	7.12	3.56	1.61	.73	.27
10'	5.88	5.08	2.98	1.67	.85	.47
12'	4.08	3.65	2.56	1.58	.92	.53
14'	3.00	2.77	2.11	1.45	.93	.59
16'	2.30	2.19	1.78	1.30	.89	.60

Test No. HP-03140

FLUORESCENT
With Globe Only—13 Watt

CANDLEPOWER —13 WATT
(900 Lumens
One Lamp)





ANGLE	CP	ANGLE	CP
0.00	15.0	90.00	104.0
5.00	15.0	95.00	99.0
10.00	21.0	100.00	92.0
15.00	29.0	105.00	84.0
20.00	35.0	110.00	74.0
25.00	41.0	115.00	64.0
30.00	47.0	120.00	54.0
35.00	55.0	125.00	44.0
40.00	63.0	130.00	32.0
45.00	75.0	135.00	22.0
50.00	78.0	140.00	14.0
55.00	84.0	145.00	7.0
60.00	84.0	150.00	2.0
65.00	92.0	155.00	1.0
70.00	96.0	160.00	1.0
75.00	102.0	165.00	1.0
80.00	110.0	170.00	0.0
85.00	107.0	175.00	0.0

Efficiency 92.4%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY

% EFFECTIVE CEILING CAVITY REFLECTANCE rcc	80			70			50			30			10			0
% WALL REFLECTANCE rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance															
0	1.01	1.01	1.01	.95	.95	.95	.83	.83	.83	.72	.72	.72	.62	.62	.62	.57
1	.80	.74	.69	.75	.69	.65	.64	.60	.56	.54	.51	.48	.45	.43	.40	.36
2	.66	.56	.51	.61	.54	.47	.52	.46	.41	.44	.39	.35	.36	.32	.29	.25
3	.55	.47	.40	.52	.44	.37	.44	.38	.32	.37	.32	.27	.30	.26	.22	.18
4	.49	.39	.32	.45	.37	.30	.38	.31	.26	.32	.26	.22	.26	.21	.18	.14
5	.42	.33	.26	.39	.30	.24	.33	.26	.20	.27	.21	.17	.22	.17	.14	.10
6	.37	.28	.21	.34	.26	.20	.29	.22	.17	.24	.18	.14	.19	.15	.11	.08
7	.33	.24	.18	.30	.22	.17	.26	.19	.14	.21	.16	.11	.17	.12	.09	.06
8	.29	.21	.15	.27	.19	.14	.23	.16	.12	.19	.14	.10	.15	.11	.07	.05
9	.26	.18	.13	.24	.17	.12	.21	.14	.10	.17	.12	.08	.14	.09	.06	.04
10	.24	.16	.11	.22	.15	.10	.19	.13	.09	.15	.10	.07	.12	.08	.05	.03

SPACING CRITERIA: ADJACENT = 4.1
DIAGONAL = 2.9

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (INITIAL) 13 WATT
HORIZONTAL DISTANCE FROM SOURCE IN FT.

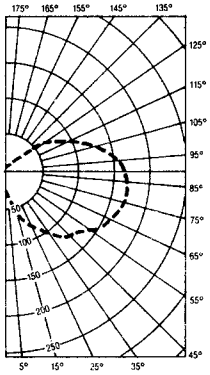
MOUNTING HEIGHT FT.	0′	4′	8′	12′	16′	20′	24′	28′
8′	.23	.46	.41	.22	.12	.07	.05	.03
10′	.15	.28	.28	.20	.13	.08	.05	.04
12′	.10	.19	.21	.18	.12	.08	.06	.04
14′	.08	.13	.16	.14	.11	.08	.06	04
16′	.06	.10	.11	.11	.10	.07	.06	.04

$$FC = \frac{(CANDLEPOWER)\ (COS\ \theta)}{D^2}$$

Test No. 5659.1

FLUORESCENT
With Globe Only—26 Watt

CANDLEPOWER —26 WATT
(1800 Lumens
Two Lamps)



ANGLE	CP	ANGLE	CP
0.00	32.0	90.00	164.0
5.00	37.0	95.00	155.0
10.00	48.0	100.00	145.0
15.00	58.0	105.00	131.0
20.00	70.0	110.00	116.0
25.00	80.0	115.00	100.0
30.00	91.0	120.00	83.0
35.00	104.0	125.00	66.0
40.00	117.0	130.00	49.0
45.00	129.0	135.00	34.0
50.00	137.0	140.00	21.0
55.00	146.0	145.00	14.0
60.00	152.0	150.00	7.0
65.00	159.0	155.00	5.0
70.00	165.0	160.00	4.0
75.00	170.0	165.00	3.0
80.00	173.0	170.00	0.0
85.00	171.0	175.00	0.0

Efficiency 76.7%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY

% EFFECTIVE CEILING CAVITY REFLECTANCE rcc	80			70			50			30			10			0
% WALL REFLECTANCE rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance															
0	.85	.85	.85	.79	.79	.79	.70	.70	.70	.61	.61	.61	.53	.53	.53	.49
1	.67	.62	.58	.63	.58	.54	.54	.51	.48	.46	.44	.41	.39	.37	.35	.31
2	.56	.49	.43	.52	.45	.40	.44	.39	.35	.37	.33	.30	.31	.28	.25	.22
3	.47	.40	.34	.44	.37	.31	.38	.32	.27	.32	.27	.23	.26	.23	.20	.16
4	.41	.33	.27	.38	.31	.25	.32	.27	.22	.27	.23	.19	.22	.19	.16	.13
5	.35	.28	.22	.33	.26	.20	.28	.22	.18	.23	.19	.15	.19	.15	.12	.10
6	.31	.23	.18	.29	.22	.17	.25	.19	.14	.21	.16	.12	.17	.13	.10	.07
7	.28	.20	.15	.26	.19	.14	.22	.16	.12	.18	.14	.10	.15	.11	.08	.06
8	.25	.18	.13	.23	.16	.12	.20	.14	.10	.16	.12	.08	.13	.09	.07	.05
9	.22	.16	.11	.21	.14	.10	.18	.12	.09	.15	.10	.07	.12	.08	.05	.04
10	.20	.14	.10	.19	.13	.09	.16	.11	.07	.13	.09	.06	.11	.07	.05	.03

SPACING CRITERIA: ADJACENT = 3.8
DIAGONAL = 2.7

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (INITIAL) 26 WATT
HORIZONTAL DISTANCE FROM SOURCE IN FT.

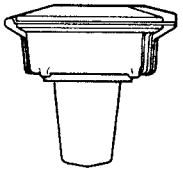
MOUNTING HEIGHT FT.	0′	4′	8′	12′	16′	20′	24′	28′
8′	.50	.92	.71	.39	.22	.13	.08	.05
10′	.32	.58	.53	.36	.22	.14	.09	.06
12′	.22	.38	.39	.32	.21	.14	.10	.07
14′	.16	.27	.30	.27	.19	.14	.10	.07
16′	.13	.20	.23	.22	.18	.13	.10	.07

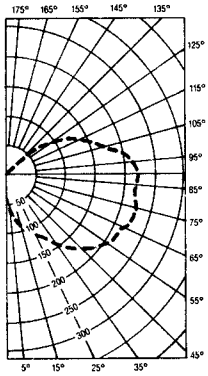
$$FC = \frac{(CANDLEPOWER)\ (COS\ \theta)}{D^2}$$

Test No. 5658.0

FLUORESCENT
With Globe Only—39 Watt

CANDLEPOWER —39 WATT
(2700 Lumens
Three Lamps)





ANGLE	CP	ANGLE	CP
0.00	46.0	90.00	222.0
5.00	55.0	95.00	212.0
10.00	70.0	100.00	198.0
15.00	88.0	105.00	181.0
20.00	104.0	110.00	160.0
25.00	117.0	115.00	139.0
30.00	132.0	120.00	116.0
35.00	148.0	125.00	93.0
40.00	165.0	130.00	71.0
45.00	181.0	135.00	51.0
50.00	193.0	140.00	32.0
55.00	204.0	145.00	15.0
60.00	210.0	150.00	8.0
65.00	216.0	155.00	3.0
70.00	224.0	160.00	2.0
75.00	230.0	165.00	4.0
80.00	233.0	170.00	0.0
85.00	232.0	175.00	0.0

Efficiency 70.6%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY

% EFFECTIVE CEILING CAVITY REFLECTANCE rcc	80			70			50			30			10			0
% WALL REFLECTANCE rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance															
0	.78	.78	.78	.73	.73	.73	.64	.64	.64	.56	.56	.56	.48	.48	.48	.45
1	.62	.58	.54	.58	.54	.50	.50	.47	.44	.43	.40	.38	.36	.34	.33	.29
2	.51	.45	.40	.48	.42	.37	.41	.36	.32	.35	.31	.28	.29	.26	.24	.20
3	.44	.37	.31	.41	.34	.29	.35	.30	.25	.29	.25	.22	.24	.21	.18	.15
4	.38	.31	.25	.35	.29	.24	.30	.25	.21	.25	.21	.18	.21	.17	.15	.12
5	.33	.26	.20	.30	.24	.19	.26	.21	.16	.22	.17	.14	.18	.14	.11	.09
6	.29	.22	.17	.27	.20	.16	.23	.17	.14	.19	.15	.11	.16	.12	.09	.07
7	.26	.19	.14	.24	.18	.13	.20	.15	.11	.17	.13	.09	.14	.10	.08	.06
8	.23	.16	.12	.21	.15	.11	.18	.13	.10	.15	.11	.08	.12	.09	.06	.05
9	.21	.14	.10	.19	.13	.10	.16	.11	.08	.14	.10	.07	.11	.08	.05	.04
10	.19	.13	.09	.17	.12	.08	.15	.10	.07	.12	.08	.06	.10	.07	.04	.03

SPACING CRITERIA: ADJACENT = 3.7
DIAGONAL = 2.6

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (INITIAL) 39 WATT
HORIZONTAL DISTANCE FROM SOURCE IN FT.

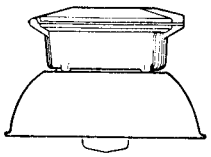
MOUNTING HEIGHT FT.	0′	4′	8′	12′	16′	20′	24′	28′
8′	.72	1.38	1.00	.55	.31	.18	.11	.07
10′	.46	.86	.76	.51	.31	.19	.12	.09
12′	.44	.58	.58	.44	.30	.20	.13	.09
14′	.33	.41	.44	.38	.28	.20	.14	.10
16′	.25	.29	.34	.31	.25	.18	.14	.10

$$FC = \frac{(CANDLEPOWER)\ (COS\ \theta)}{D^2}$$

Test No. 5657.0

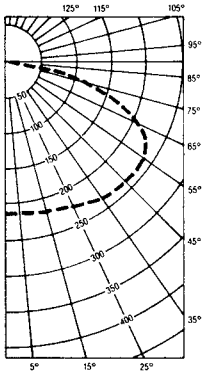
L

FLUORESCENT
With Globe and Dome Reflector—26 Watt



CANDLEPOWER —26 WATT
(1800 Lumens Two Lamp)

For CP of a 13 Watt Luminaire Multiply by .50



ANGLE	CP	ANGLE	CP
0.00	215.0	90.00	8.0
5.00	219.0	95.00	4.0
10.00	221.0	100.00	6.0
15.00	219.0	105.00	7.0
20.00	219.0	110.00	7.0
25.00	221.0	115.00	7.0
30.00	226.0	120.00	7.0
35.00	234.0	125.00	5.0
40.00	237.0	130.00	2.0
45.00	238.0	135.00	0.0
50.00	239.0	140.00	0.0
55.00	239.0	145.00	0.0
60.00	231.0	150.00	0.0
65.00	209.0	155.00	0.0
70.00	170.0	160.00	0.0
75.00	124.0	165.00	0.0
80.00	78.0	170.00	0.0
85.00	37.0	175.00	0.0

Efficiency 62.8%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY

% EFFECTIVE CEILING CAVITY REFLECTANCE rcc	80			70			50			30			10			0
% WALL REFLECTANCE rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance															
0	75	75	75	73	73	73	69	69	69	66	66	66	63	63	63	62
1	64	61	58	62	59	57	59	57	55	57	55	53	54	53	51	50
2	54	50	45	53	49	45	51	47	44	48	45	42	46	44	41	40
3	47	41	37	46	41	36	44	39	36	42	38	35	40	37	34	32
4	41	35	30	40	34	30	38	33	29	36	32	29	35	31	28	27
5	35	29	24	34	29	24	33	28	24	31	27	23	30	26	23	21
6	31	25	20	30	24	20	29	24	20	28	23	19	27	22	19	18
7	27	21	17	27	21	17	26	20	17	25	20	16	24	19	16	15
8	24	18	14	24	18	14	23	18	14	22	17	14	21	17	14	12
9	22	16	12	21	16	12	20	15	12	19	15	12	19	15	12	10
10	20	14	10	19	14	10	18	14	10	18	13	10	17	13	10	09

SPACING CRITERIA: ADJACENT = 1.7
DIAGONAL = 1.2

ILLUMINATION ON HORIZONTAL SURFACE

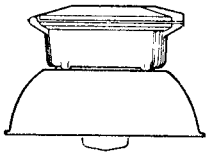
FOOTCANDLE CHART (INITIAL) 26 WATT
HORIZONTAL DISTANCE FROM SOURCE IN FT.

MOUNTING HEIGHT FT.	0′	4′	8′	12′	16′	20′	24′	28′
8′	3.36	2.49	1.31	.63	.31	.15	.09	.04
10′	2.15	1.75	1.13	63	.34	19	.13	.06
12′	1.49	1.30	.94	.58	.36	.22	.19	.09
14′	1.10	.99	.75	53	.35	.23	15	.10
16′	.84	.78	.62	.47	.33	.23	.16	.11

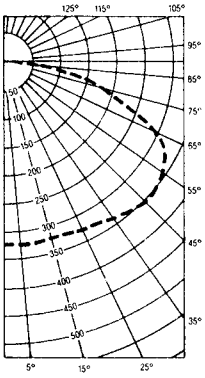
$$FC = \frac{(CANDLEPOWER)(COS\ \theta)}{D^2}$$

Test No. 5689.0

FLUORESCENT
With Globe and Dome Reflector—39 Watt



CANDLEPOWER —39 WATT
(2700 Lumens Three Lamps)



ANGLE	CP	ANGLE	CP
0.00	329.0	90.00	9.0
5.00	327.0	95.00	6.0
10.00	329.0	100.00	10.0
15.00	323.0	105.00	11.0
20.00	324.0	110.00	12.0
25.00	328.0	115.00	11.0
30.00	337.0	120.00	10.0
35.00	345.0	125.00	7.0
40.00	349.0	130.00	3.0
45.00	351.0	135.00	0.0
50.00	350.0	140.00	0.0
55.00	347.0	145.00	0.0
60.00	332.0	150.00	0.0
65.00	296.0	155.00	0.0
70.00	239.0	160.00	0.0
75.00	176.0	165.00	0.0
80.00	110.0	170.00	0.0
85.00	51.0	175.00	0.0

Efficiency 60.9%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY

% EFFECTIVE CEILING CAVITY REFLECTANCE rcc	80			70			50			30			10			0
% WALL REFLECTANCE rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance															
0	72	72	72	70	70	70	67	67	67	64	64	64	61	61	61	60
1	62	59	56	60	58	55	58	56	53	55	53	51	53	51	50	48
2	53	48	44	52	47	44	49	46	42	47	44	41	45	42	40	39
3	46	40	36	45	40	36	43	38	35	41	37	34	39	36	33	32
4	40	34	29	39	33	29	37	32	29	36	31	28	34	30	28	26
5	34	28	24	34	28	24	32	27	23	31	26	23	29	26	22	21
6	30	24	20	30	24	20	28	23	19	27	22	19	26	22	18	17
7	27	21	17	26	21	17	25	20	16	24	20	16	23	19	16	15
8	24	18	14	23	18	14	22	17	14	21	17	14	20	16	13	12
9	21	16	12	21	15	12	20	15	12	19	15	12	18	14	11	10
10	19	14	10	19	14	10	18	13	10	17	13	10	17	13	10	09

SPACING CRITERIA: ADJACENT = 1.6
DIAGONAL = 1.1

ILLUMINATION ON HORIZONTAL SURFACE

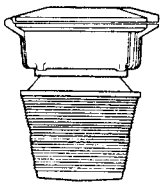
FOOTCANDLE CHART (INITIAL) 39 WATT
HORIZONTAL DISTANCE FROM SOURCE IN FT.

MOUNTING HEIGHT FT.	0′	4′	8′	12′	16′	20′	24′	28′
8′	5.14	3.71	1.94	.93	.43	.21	11	06
10′	3.29	2.61	1.66	92	.55	.28	.15	09
12′	2.28	1.92	1.38	86	.52	32	.19	.12
14′	1.68	1.47	1.13	78	51	.33	.22	14
16′	1.29	1.16	.93	69	.48	.33	.23	.16

$$FC = \frac{(CANDLEPOWER)(COS\ \theta)}{D^2}$$

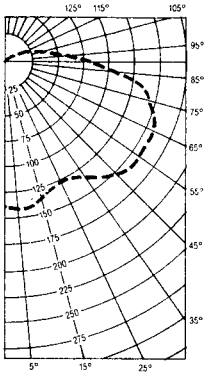
Test No. 5692.0

FLUORESCENT
With Type V "8" Refractor—26 Watt



CANDLEPOWER —26 WATT
(1800 Lumens Two Lamps)

For CP of a 13 Watt Luminaire multiply by .50



ANGLE	CP	ANGLE	CP
0.00	142.0	90.00	84.0
5.00	143.0	95.00	61.0
10.00	140.0	100.00	45.0
15.00	137.0	105.00	33.0
20.00	132.0	110.00	27.0
25.00	129.0	115.00	23.0
30.00	130.0	120.00	20.0
35.00	135.0	125.00	20.0
40.00	143.0	130.00	20.0
45.00	152.0	135.00	17.0
50.00	161.0	140.00	15.0
55.00	162.0	145.00	10.0
60.00	162.0	150.00	6.0
65.00	159.0	155.00	1.0
70.00	153.0	160.00	0.0
75.00	143.0	165.00	0.0
80.00	129.0	170.00	0.0
85.00	110.0	175.00	0.0

Efficiency 58.4%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY

% EFFECTIVE CEILING CAVITY REFLECTANCE rcc	80			70			50			30			10			0
% WALL REFLECTANCE rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance															
0	67	67	67	65	65	65	60	60	60	55	55	55	51	51	51	49
1	55	51	48	53	49	46	48	46	43	44	42	40	41	39	37	35
2	46	40	36	44	39	35	40	36	33	37	33	31	34	31	29	27
3	39	33	29	37	32	28	34	30	26	31	28	24	29	26	23	21
4	34	28	23	32	27	22	30	25	21	27	23	20	25	21	19	17
5	29	23	19	28	22	18	26	21	17	23	19	16	21	18	15	13
6	26	20	16	25	19	15	23	18	14	21	17	13	19	15	12	11
7	23	17	13	22	17	13	20	15	12	18	14	11	17	13	11	09
8	20	15	11	20	14	11	18	13	10	16	12	10	15	12	09	08
9	18	13	09	18	13	09	16	12	09	15	11	08	14	10	08	06
10	17	12	08	16	11	08	15	10	06	13	10	07	12	09	07	05

SPACING CRITERIA: ADJACENT = 1.5
DIAGONAL = 1.1

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (INITIAL) 26 WATT
HORIZONTAL DISTANCE FROM SOURCE IN FT.

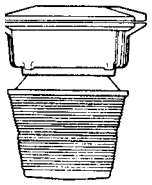
MOUNTING HEIGHT FT.	0′	4′	8′	12′	16′	20′	24′	28′
8′	2.22	1.44	.84	.43	.22	.12	.07	.05
10′	1.42	1.04	.66	.42	.24	.14	.09	.06
12′	.99	.79	.55	.37	.24	.15	.10	.07
14′	.72	.62	.43	.32	.23	.16	.11	.07
16′	.55	.49	.36	.27	.21	.15	.11	.08

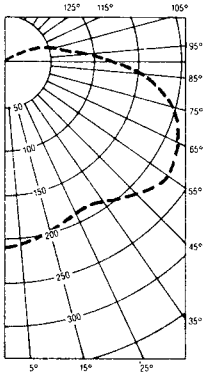
$$FC = \frac{(CANDLEPOWER)(COS\ \theta)}{D^2}$$

Test No. 5691.0

FLUORESCENT
With Type V "8" Refractor—39 Watt

CANDLEPOWER –39 WATT
(2700 Lumens
Three Lamps)





ANGLE	CP	ANGLE	CP
0.00	210.0	90.00	118.0
5.00	207.0	95.00	87.0
10.00	201.0	100.00	64.0
15.00	197.0	105.00	50.0
20.00	192.0	110.00	41.0
25.00	187.0	115.00	35.0
30.00	187.0	120.00	31.0
35.00	192.0	125.00	31.0
40.00	201.0	130.00	30.0
45.00	212.0	135.00	26.0
50.00	221.0	140.00	20.0
55.00	224.0	145.00	15.0
60.00	222.0	150.00	8.0
65.00	218.0	155.00	2.0
70.00	208.0	160.00	0.0
75.00	195.0	165.00	0.0
80.00	177.0	170.00	0.0
85.00	153.0	175.00	0.0

Efficiency 54.7%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY

% EFFECTIVE CEILING CAVITY REFLECTANCE rcc	80			70			50			30			10			0
% WALL REFLECTANCE rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance															
0	.63	.63	.63	.60	.60	.60	.58	.58	.58	.57	.57	.57	.55	.55	.55	.53
1	.51	.48	.45	.49	.46	.43	.47	.45	.43	.46	.44	.42	.45	.43	.41	.41
2	.43	.38	.34	.41	.37	.33	.39	.36	.33	.38	.35	.32	.37	.34	.32	.31
3	.37	.31	.27	.35	.30	.26	.33	.29	.26	.32	.28	.25	.31	.28	.25	.24
4	.32	.26	.22	.30	.25	.21	.28	.24	.20	.27	.23	.20	.26	.22	.19	.18
5	.28	.22	.18	.26	.21	.17	.24	.20	.16	.23	.19	.16	.22	.18	.15	.14
6	.24	.19	.15	.23	.18	.14	.21	.17	.13	.20	.16	.13	.19	.16	.13	.12
7	.22	.16	.13	.21	.16	.12	.19	.15	.11	.17	.14	.11	.16	.13	.10	.09
8	.19	.14	.11	.18	.14	.10	.17	.13	.10	.16	.12	.09	.14	.11	.08	.07
9	.17	.12	.09	.17	.12	.09	.15	.11	.08	.14	.10	.08	.13	.09	.07	.06
10	.16	.11	.08	.15	.11	.08	.14	.10	.07	.13	.09	.07	.12	.08	.06	.05

SPACING CRITERIA: ADJACENT = 1.4
DIAGONAL = 1.0

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (INITIAL) 39 WATT
HORIZONTAL DISTANCE FROM SOURCE IN FT.

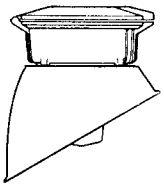
MOUNTING HEIGHT FT.	0'	4'	8'	12'	16'	20'	24'	28'
8'	3.28	2.09	1.17	.59	.31	.18	.10	.06
10'	2.10	1.52	.92	.58	.33	.20	.12	.08
12'	1.46	1.13	.76	.52	.33	.21	.14	.09
14'	1.07	.90	.62	.45	.32	.22	14	.10
16'	.82	.71	.52	.38	.29	.21	.15	.11

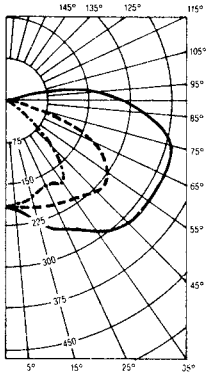
$FC = \frac{(CANDLEPOWER)(COS\ \theta)}{D^2}$

Test No. 5694.0

FLUORESCENT
With Globe and 30° Angle Reflector
—26 Watt

CANDLEPOWER –26 WATT
(1800 Lumens
Two Lamps)
For CP of a 13 Watt
Luminaire multiply by .50





ANGLE	FRONT	SIDE	BACK
0.00	184.0	184.0	184.0
5.00	194.0	186.0	179.0
10.00	207.0	189.0	178.0
15.00	220.0	193.0	172.0
20.00	234.0	196.0	167.0
25.00	247.0	201.0	165.0
30.00	267.0	209.0	168.0
35.00	287.0	218.0	171.0
40.00	300.0	224.0	152.0
45.00	311.0	227.0	109.0
50.00	314.0	229.0	66.0
55.00	316.0	222.0	20.0
60.00	316.0	202.0	4.0
65.00	317.0	164.0	1.0
70.00	317.0	123.0	1.0
75.00	313.0	75.0	2.0
80.00	295.0	31.0	7.0
85.00	259.0	10.0	15.0
90.00	214.0	3.0	24.0
95.00	166.0	3.0	31.0
100.00	113.0	2.0	31.0
105.00	65.0	2.0	30.0

Efficiency 57.2%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY

% EFFECTIVE CEILING CAVITY REFLECTANCE rcc	80			70			50			30			10			0
% WALL REFLECTANCE rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance															
0	.67	.67	.67	.65	.65	.65	.61	.61	.61	.58	.58	.58	.55	.55	.55	.53
1	.56	.53	.51	.55	.52	.49	.51	.49	.47	.48	.47	.45	.46	.44	.43	.41
2	.48	.44	.40	.47	.43	.39	.44	.40	.37	.41	.39	.36	.39	.37	.35	.33
3	.42	.37	.32	.41	.36	.32	.38	.34	.31	.36	.33	.30	.34	.31	.29	.27
4	.37	.31	.27	.36	.30	.27	.34	.29	.26	.32	.28	.25	.30	.27	.24	.23
5	.32	.26	.22	.31	.26	.22	.29	.25	.21	.28	.24	.21	.26	.23	.20	.19
6	.28	.23	.19	.27	.22	.18	.25	.21	.18	.25	.21	.17	.23	.20	.17	.16
7	.25	.20	.16	.24	.19	.16	.23	.19	.15	.22	.18	.15	.21	.17	.14	.13
8	.22	.17	.13	.22	.17	.13	.21	.16	.13	.19	.15	.13	.18	.15	.12	.11
9	.20	.15	.11	.19	.15	.11	.18	.14	.11	.17	.13	.11	.16	.13	.10	.09
10	.18	.13	.10	.16	.13	.10	.17	.12	.10	.16	.12	.09	.15	.11	.09	.08

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 26 WATT
Horizontal Distance from Source (Front) in Ft.

MOUNTING HEIGHT FT.	0'	4'	8'	12'	16'
8'	2.87	2.76	1.72	.84	.44
10'	1.84	1.87	1.43	.82	.47
12'	1.28	1.39	1.15	.76	.47

FOOTCANDLE CHART (Initial) 26 WATT
Horizontal Distance from Source (Side) in Ft.

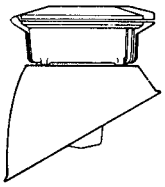
MOUNTING HEIGHT FT.	0'	4'	8'	12'	16'
8'	2.87	2.25	1.25	.59	.53
10'	1.84	1.57	1.07	.60	.30
12'	1.28	1.16	.87	.56	.33

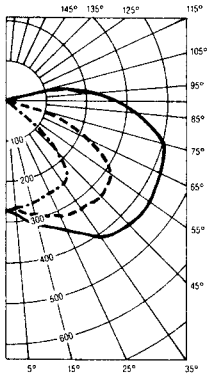
$FC = \frac{(CANDLEPOWER)(COS\ \theta)}{D^2}$

Test No. 5690.0

FLUORESCENT
With Globe and 30° Angle Reflector
—39 Watt

CANDLEPOWER –39 WATT
(2700 Lumens
Three Lamps)





ANGLE	FRONT	SIDE	BACK
0.00	276.0	276.0	276.0
5.00	287.0	280.0	269.0
10.00	303.0	287.0	265.0
15.00	319.0	295.0	256.0
20.00	336.0	302.0	250.0
25.00	356.0	310.0	248.0
30.00	384.0	317.0	251.0
35.00	407.0	323.0	248.0
40.00	418.0	326.0	217.0
45.00	427.0	330.0	163.0
50.00	432.0	326.0	99.0
55.00	431.0	312.0	37.0
60.00	424.0	275.0	6.0
65.00	417.0	226.0	1.0
70.00	411.0	164.0	1.0
75.00	402.0	101.0	3.0
80.00	369.0	45.0	12.0
85.00	323.0	13.0	22.0
90.00	275.0	2.0	34.0
95.00	216.0	2.0	39.0
100.00	152.0	2.0	37.0
105.00	95.0	1.0	34.0

Efficiency 58.3%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY

% EFFECTIVE CEILING CAVITY REFLECTANCE rcc	80			70			50			30			10			0
% WALL REFLECTANCE rw	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance															
0	.68	.68	.68	.66	.66	.66	.62	.62	.62	.59	.59	.59	.55	.55	.55	.54
1	.57	.54	.51	.56	.53	.50	.52	.50	.48	.49	.47	.45	.46	.45	.43	.42
2	.49	.44	.40	.47	.43	.39	.44	.41	.38	.42	.39	.36	.39	.37	.35	.33
3	.42	.37	.33	.41	.35	.32	.39	.35	.31	.36	.33	.30	.34	.31	.29	.27
4	.37	.31	.27	.36	.31	.27	.34	.29	.26	.32	.28	.25	.30	.27	.24	.23
5	.32	.27	.22	.31	.26	.22	.30	.25	.21	.28	.24	.21	.26	.23	.20	.19
6	.29	.23	.19	.28	.22	.19	.26	.22	.18	.25	.21	.18	.23	.20	.17	.16
7	.25	.20	.16	.25	.19	.16	.23	.19	.15	.22	.18	.15	.21	.17	.14	.13
8	.23	.17	.14	.22	.17	.13	.21	.16	.13	.20	.16	.13	.19	.15	.12	.11
9	.20	.15	.12	.20	.15	.11	.19	.14	.11	.18	.14	.11	.17	.13	.10	.09
10	.18	.13	.10	.18	.13	.10	.17	.13	.10	.16	.12	.09	.15	.12	.09	.08

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 39 WATT
Horizontal Distance from Source (Front) in Ft.

MOUNTING HEIGHT FT.	0'	4'	8'	12'	16'
8'	4.31	3.75	2.36	1.15	.58
10'	2.76	2.69	1.99	1.05	.63
12'	1.92	1.99	1.63	1.05	.65

FOOTCANDLE CHART (Initial) 39 WATT
Horizontal Distance from Source (Side) in Ft.

MOUNTING HEIGHT FT.	0'	4'	8'	12'	16'
8'	4.31	3.47	1.82	.83	.32
10'	2.76	2.42	.155	.86	.46
12'	1.92	1.79	1.29	.81	.47

$FC = \frac{(CANDLEPOWER)(COS\ \theta)}{D^2}$

Test No. 5693.0

L

LED
TECHNOLOGY

HIGH WATTAGE VM4L AVAILABLE 2011

Class I, Div. 2, Groups A,B,C,D
Class I, Zone 2, Groups IIC,IIB,IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
Marine
NEMA 3, 4X

Certified - File LR11713

FEATURES-SPECIFICATIONS

CERTILITE V LED

Applications

CERTI*LITE*®V VM1L LED fixtures are designed for installations where moisture, dirt, dust, corrosion and vibration may be present, or NEMA 3 and 4X areas where wind, water, snow or high ambients can be expected. They can be used in locations made hazardous by the presence of flammable vapors or gases or combustible dusts as defined by the NEC.

Typical applications include manufacturing plants, and certain chemical and petrochemical processing facilities, sewage treatment plants, off-shore and dockside installations, garages and storage facilities.

Compliances

- UL-8750 for LED lighting
- UL Marine type lighting fixtures (HID models) UL-844 Standard for lighting fixtures for hazardous locations, Class I, Division 2; Class II, Divisions 1 and 2; Class III
- CSA C22.2 no. 137-M1981 electric luminaries for use in hazardous locations
- Enclosed and gasketed
- NEMA 3, 4X

Materials

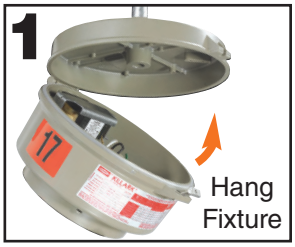
- Ballast tank, splice box and cast guards corrosion resistant copper-free aluminum alloy
- Baked powder epoxy/polyester finish, electrostatically applied for complete, uniform corrosion protection
- All external hardware - stainless steel
- Reflectors - Polyester reinforced fiberglass

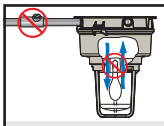
LED Luminaire Features and Standards

- Reduced profile with Traditional Industrial Appearance and Suitability
- Wide variety of optics including globes, globes with reflectors, all-glass refractors, and spin-top refractors
- Swing-Barrel Nut patented tank mounting system
- Optional Mounting arrangements including Pendant, Wall, Ceiling, Stanchion and others
- VM1L LED Housings can be retrofitted to existing VM splice boxes; upgrade from HID sources
- Energy Savings - less than 50 Watts of Power
- Long Life - 50,000 - 55,000 maintenance free hours to 70% initial lumens
- Crisp White Light for Excellent Color Rendering - Chromaticity 5000°K (CCT); 70 CRI
- Ambient suitability -40°C to 55°C
- Instant on - including after power interruption
- "World Voltage" 120-277VAC 50/60Hz
- Solder-LESS LED Board Connections – Vibration Resistant
- Dual Drivers - Redundant Systems (built-in backup), or for additional energy savings half of VM1L4530 can be turned off
- LM80-08* Measurement of lumen maintenance for LED light sources
- LM79-08* Certified "Absolute" Photometry, including Chromaticity Color for Solid State Lighting
- L70 Values - Industry Nomenclature for Hours of use to 70% of Initial Lumens

* LM-xx are Illumination Engineering Society Standards designed to promote uniformity in testing procedures among test labs and manufacturers. For more information go to www.ies.org

Swing-Barrel Nut





Sealed Optic Zone 2 AEx nAR Restricted Breathing (suffix NR)

No External Seals. Lower T-codes. Suitable for Class I Div. 2 Classified areas per the NEC®

Photo controls - Class I Div. 2 / N4X areas

Available as Field or Factory Installed to save energy when light not required.

"EZ" Mount Adapter

For easy fixture relocation or repair due to impact damage.

Earthquake Tab - Built-in attachment point for safety cables.

Safety: Secures fixture to structure in case of conduit failure.

HUBBELL
KILLARK®

CERTILITE V
The Logical Choice

CertiLite® V LED Catalog Number Logic

VM1L 45 30 0 0 00 0 (NR④) 00

Housing Series
5-1/2" thread w/driver and LED's

Lamp Wattage
45—approx. VA (wattage) of driver and LED's

Voltage
30—120-277VAC 50/60 Hz

Mounting Type
A—Pendant
X—Ceiling
B—Wall Bracket
C—Cone Top
E—EZ Mount Adapter①
D—Stanchion 25°
S—Stanchion Straight 90°
N—None (mount ordered separately)②

Entry (Mounts available)
2—3/4" NPT (A,B,C,X)
3—1" NPT (A,B,C,X)
4—1 1/4" NPT (D,S)
5—1 1/2" NPT (D,S)
6—3/4" NPT 5-Hub (X)
7—1" NPT 5-Hub (X)
8—M20 4-Hub (X)
9—M20 5-Hub (X)
Z—EZ Mount Adapter①
N—None (mount ordered separately)②

Optic
GL—Globe
R1—Type I Refractor (all glass)
R5—Type V Refractor (all glass)
S8—Type V 8" Spin-Top Refractor
S5—Type V12" Spin-Top Refractor
TG—Teflon® ③Coated Globe
T1—Teflon® ③Coated Type I Refractor (all glass)
T5—Teflon® ③Coated Type V Refractor (all glass)
T8—Teflon® ③Coated Type V 8" Spin-Top Refractor
TV—Teflon® Coated Type V 12" Spin-Top Refractor

Guard
G—Guard (Globes & Glass refractors)
N—No Guard

Options
F—Single Fuse⑤
FF—Double Fuse⑤
TBX—Terminal Blocks X= Variations (May be alphanumeric to indicate terminals)
P1—Photocell 120V⑥ Factory Installed
P2—Photocell 208-277V⑥ Factory Installed
QD—QD Wired at Ballast⑦
CP—Component Pack (Tank w/mount, optic, guard - LED's included in tank)
AN—Assembled (Tank w/mount, optic, guard- LED's included in tank)

① *Completes as "EZ", conduit mounting boxes ordered separately - See L39.*

② *NN mount ordered separately.*

③ *Teflon® is a registered trademark of DuPont, Inc.*

④ *Restricted Breathing - See L39 for more information.*

⑤ *Fusing not for Marine or Canadian installations.*

⑥ *Photo cells for Class I, Div. 2 only.*

⑦ *QD = Quick Disconnect. Allows easy tank removal for maintenance. Electrician simply unplugs tank from mount for fixture relocation or repair due to impact damage.*


PENDANT


CEILING


WALL


CONE

ORDERING INFORMATION

VM1L SERIES PENDANT WITH OPTIC AND GUARD①

WATTS	HUB SIZE②	VOLTAGE③	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	8" SPIN-TOP TYPE V REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
45	3/4"	120-277VAC	VM1L4530A2GLG	VM1L4530A2R1G	VM1L4530A2R5G	VM1L4530A2S8G	VM1L4530A2S5G

VM1L SERIES CEILING WITH OPTIC AND GUARD①

WATTS	HUB SIZE②	VOLTAGE③	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	8" SPIN-TOP TYPE V REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
45	3/4"	120-277VAC	VM1L4530X2GLG	VM1L4530X2R1G	VM1L4530X2R5G	VM1L4530X2S8G	VM1L4530X2S5G

VM1L SERIES WALL WITH OPTIC AND GUARD①

WATTS	HUB SIZE②	VOLTAGE③	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	8" SPIN-TOP TYPE V REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
45	3/4"	120-277VAC	VM1L4530B2GLG	VM1L4530B2R1G	VM1L4530B2R5G	VM1L4530B2S8G	VM1L4530B2S5G

VM1L SERIES CONE WITH OPTIC AND GUARD①

WATTS	HUB SIZE②	VOLTAGE③	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	8" SPIN-TOP TYPE V REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
45	3/4"	120-277VAC	VM1L4530C2GLG	VM1L4530C2R1G	VM1L4530C2R5G	VM1L4530C2S8G	VM1L4530C2S5G

① Catalog numbers shown are with Guard; to omit guard change ending G to N; e.g. VM1L4530A2GLN
② Catalog numbers shown are with 3/4" conduit openings; change “2” to “3” for 1" e.g. VM1L4530A3GLG
③ 120VAC through 277VAC 50/60Hz

STANCHION 25°

STANCHION STRAIGHT

EZ ADAPTER

ORDERING INFORMATION

VM1L SERIES 25° STANCHION WITH OPTIC AND GUARD①							
WATTS	HUB SIZE②	VOLTAGE③	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	8" SPIN-TOP TYPE V REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
45	1-1/2"	120-277VAC	VM1L4530D5GLG	VM1L4530D5R1G	VM1L4530D5R5G	VM1L4530D5S8G	VM1L4530D5S5G

VM1L SERIES STRAIGHT STANCHION WITH OPTIC AND GUARD①							
WATTS	HUB SIZE②	VOLTAGE③	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	8" SPIN-TOP TYPE V REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
45	1-1/2"	120-277VAC	VM1L4530S5GLG	VM1L4530S5R1G	VM1L4530S5R5G	VM1L4530S5S8G	VM1L4530S5S5G

VM1L SERIES EZ ADAPTER WITH OPTIC AND GUARD①							
WATTS	HUB SIZE④	VOLTAGE③	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	8" SPIN-TOP TYPE V REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
45	④	120-277VAC	VM1L4530EZGLG	VM1L4530EZR1G	VM1L4530EZR5G	VM1L4530EZS8G	VM1L4530EZS5G

① Catalog numbers shown are with Guard; to omit guard change ending G to N; e.g. VM1L4530D5GLN
② Catalog numbers shown are with 1-1/2" conduit openings; change "5" to "4" for 1-1/4" e.g. VM1L4530D4GLG
③ 120VAC through 277VAC 50/60Hz
④ VMEZA tank adapters UL "classified" as an assembly for use between VM tanks and EZ mounts. Order EZ mounts separately (see below).

Pendant

Ceiling

Wall Bracket

25° Stanchion

MOUNTING BOXES FOR EZ ADAPTER				
CATALOG NUMBER				HUB SIZE
PENDANT	CEILING	BRACKET	STANCHION	
EZA2	EZX2	EZB2	—	3/4"
EZA3	EZX3	EZB3	—	1"
—	—	—	EZD4A*	1-1/4"/1-1/2"*

*1-1/2" furnished with 1-1/2"-1-1/4" reducer and extension.

L

HUBBELL
KILLARK®


Pendant


Ceiling


Wall


Cone Top


25° Stanchion


Straight Stanchion


EZ Adapter*
VMEZA


Tank Adapter

CERTILITE®V VM MOUNTING SPLICE BOXES							
	CATALOG NUMBER						
HUB SIZE	PENDANT	CEILING 4 HUB	CEILING 5 HUB	WALL	CONE TOP	25 DEGREE STANCHION	90 DEGREE STANCHION
3/4"	VMA2B	VMX2B	VMX6B	VMB2B	VMC2B	—	—
1"	VMA3B	VMX3B	VMX7B	VMB3B	VMC3B	—	—
1-1/4"	—	—	—	—	—	VMD4B	VMS4B
1-1/2"	—	—	—	—	—	VMD5B	VMS5B
M-20	—	VMX8B**	VMX9B	—	—	—	—

VMEZA is used between a ballast tank and an EZ mount-ordered separately. See L39 for more info.
**VMX8B furnished with 3 non-metallic plugs.*

VM1L LED OPTICS AND ACCESSORIES		
DESCRIPTION	OPTIC LOGIC	GUARD
Globe (glass)	VMG17 (GL)	VMAG17
Refractor (all glass) Type I	VMR171 (R1)	VMAG17
Refractor (all glass) Type V	VMR175 (R5)	VMAG17
Refractor (spin top) 8" Type V	VZRG1550 (S8)	VMRWG8
Refractor (spin top) 12" Type V	VZRG2550 (S5)	VMRWGS
Globe Teflon® ① coated	VMG17T	VMAG17
Refractor Teflon® coated (all glass) Type I	VMR171T (T1)	VMAG17
Refractor Teflon® coated (all glass) Type V	VMR175T (T5)	VMAG17
Refractor (spin top) Teflon® coated 8" Type V	VZRG1550T (T8)	VMRWG8
Refractor (spin top) Teflon® coated 12" Type V	VZRG2550T (TV)	VMRWGS
DOME REFLECTOR (fiberglass reinforced polyester)	VMPSD40	NA
ANGLE REFLECTOR (fiberglass reinforced polyester)	VMPA40	NA
120VAC Photocell with FS Style Cover	VMFSPC1	NA
208-277VAC Photocell with FS Style Cover	VMFSPC2	NA
3-sided EXIT Accessory (use without guard)	VEXA100B	NA
Tank adapter to Crouse-Hinds® VM Series mounts*	VMCHVM	NA

① *Teflon is a registered trademark of DuPont, Inc.*
** See page L223 for more information.*

OPTICS


VMG17 VMR175 VMR171 VZRG1550 VZRG2550

ACCESSORIES


VMAG17 VMAG17 VMRWG8⑤ VMRWGS⑤


VMPSD40 VMPA40 VMFSPC1

VEXA100B

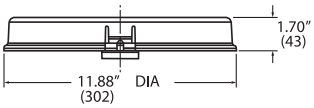
VM1L LED HOUSINGS WITH DRIVERS AND LEDS - ELECTRICAL RATINGS					
CAT. NO.	VOLTAGE 50/60HZ	WATTAGE	AMPS 120/277	CIL③	WEIGHT
VM1L4530	120-277VAC	48.4	.416/.180	3960	15.5 LBS

THERMAL PERFORMANCE DATA (ANY OPTIC)						
CAT. NO.	AMBIENT	C1D2	C1Z2 NR	C2D1	L70	SUPPLY WIRE
VM1L4530	40°C	T4A	T6	T4(EFG)	55,000 HRS	75°C
VM1L4530	55°C	T4	T6	T4(EFG)	50,000 HRS	90°C

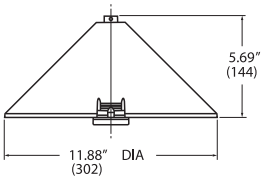
③ *CIL = Calculated Initial Lumens of LED component based on mfg. data and driver current INSIDE the optic. This value is provided as a reference only for comparison to traditional light sources such as incandescent, HID, or fluorescent which use initial values in "relative" photometry. KILLARK LED luminaires are tested using the Absolute photometry method (LM79-08), which calculates delivered lumens only. KILLARK's LED luminaires provide very bright white 5000° K (CCT) color and can appear brighter than traditional light sources with higher lumen values under both photopic and scotopic conditions.*

④ *Driver THD < 20%, Powerfactor 99% @ 120V; Line Regulation 2%; Load regulation 5%; Protected against Over-voltage and Over-current.*

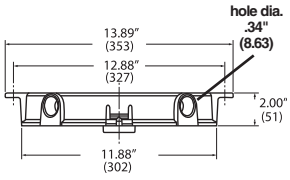
⑤ *VMRWG8 Plated Steel, VMRWGS 316 Stainless Steel.*



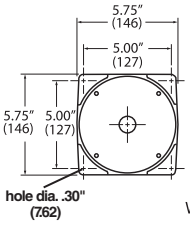
Pendant Mount



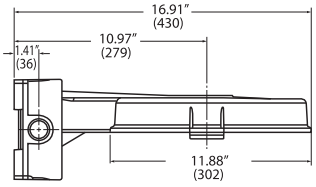
Cone Mount

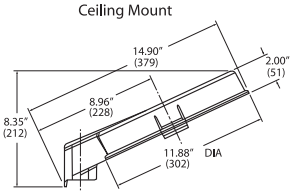


Ceiling Mount

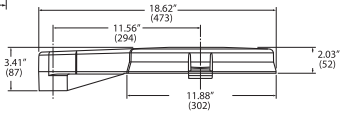


Wall Bracket Mount

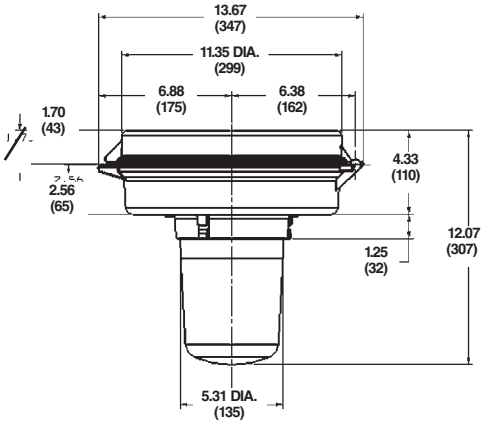




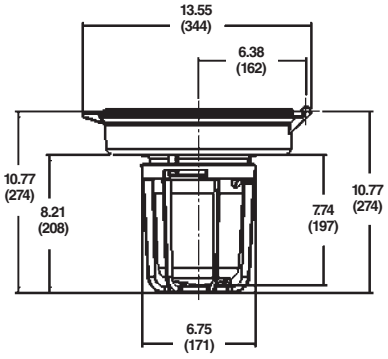
Stanchion(25°) Mount



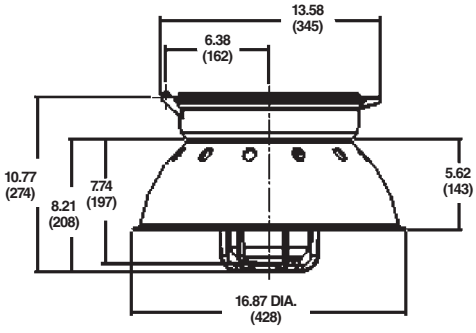
Stanchion(0°) Mount



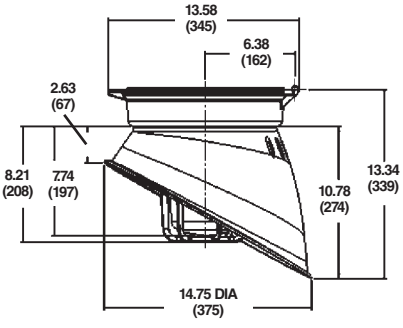
VM1L Tank w/Pendant Mount & Globe



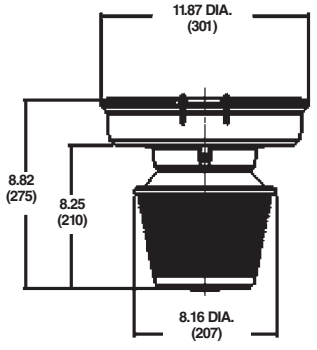
VM1L Tank Globe & Guard



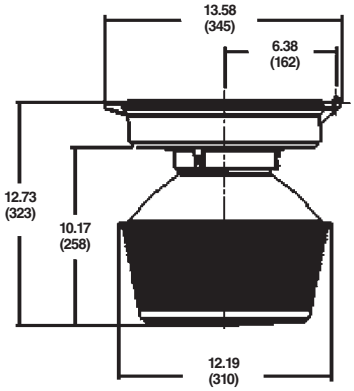
VM1L Tank with Dome Refractor



VM1L Tank with Angle Refractor



VM1L Tank with 8" Spin-top Refractor



VM1L Tank with 12" Spin-top Refractor

HUBBELL®
KILLARK®

LED 45 Watt Globe Only

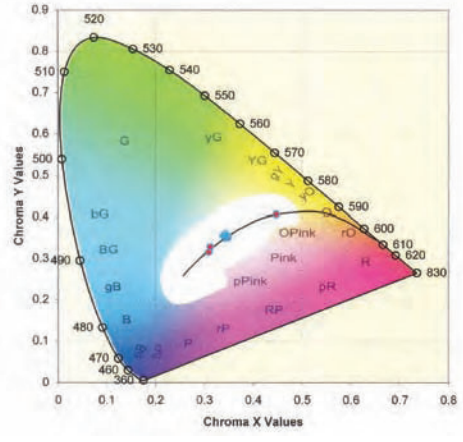
Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-30	381	N.A.	12.4%
0-40	704	N.A.	22.9%
0-60	1568	N.A.	50.9%
0-90	2576	N.A.	83.6%
90-120	456	N.A.	14.8%
90-130	492	N.A.	16.0%
90-150	504	N.A.	16.4%
90-180	504	N.A.	16.4%
0-180	3080	N.A.	100

Absolute Photometry
Total Luminaire Efficiency = N.A.%
Spacing to Mounting Height Ratio 1.8

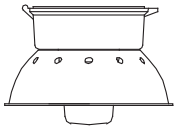
CANDLEPOWER DISTRIBUTION

VERT ANG	HORIZONTAL ANGLE 0	22.5	45	67.5	90
0	424.	424.	424.	424.	424.
5	419.	433.	475.	454.	420.
10	409.	447.	516.	453.	411.
15	429.	445.	469.	442.	428.
20	436.	446.	449.	443.	449.
25	449.	441.	480.	461.	460.
30	496.	507.	514.	504.	494.
35	495.	509.	531.	508.	512.
40	508.	523.	513.	514.	525.
45	503.	530.	542.	558.	529.
50	480.	481.	454.	488.	458.
55	475.	499.	503.	534.	456.
60	419.	429.	434.	444.	417.
65	388.	391.	419.	398.	404.
70	349.	348.	361.	368.	371.
75	315.	306.	321.	328.	331.
80	282.	267.	294.	298.	288.
85	250.	231.	255.	260.	254.
90	229.	211.	224.	224.	219.
95	205.	189.	200.	199.	193.
100	176.	161.	165.	175.	162.
105	151.	135.	142.	144.	140.
110	126.	119.	117.	118.	118.
115	99.	95.	92.	90.	91.
120	72.	71.	69.	59.	59.
125	45.	47.	42.	34.	35.
130	28.	24.	23.	22.	22.
135	12.	11.	9.	12.	12.
140	5.	6.	5.	5.	5.
145	4.	4.	4.	4.	4.
150	2.	2.	2.	3.	2.
155	0.	0.	0.	0.	0.
160	0.	0.	0.	0.	0.
165	0.	0.	0.	0.	0.
170	0.	0.	0.	0.	0.
175	0.	0.	0.	0.	0.
180	0.	0.	0.	0.	0.



Chromaticity 5080°K (CCT); 72.4 CRI
Certified Report BAL15305.0

LED 45 Watt
Globe & Dome Reflector



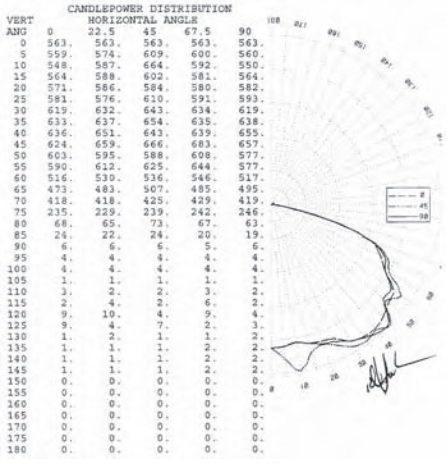
Zonal Lumen Summary

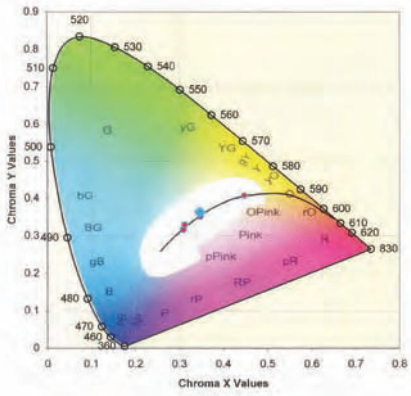
Zone	Lumens	%Lamp	%Fixt
0-30	495	N.A.	18.1%
0-40	898	N.A.	32.8%
0-60	1964	N.A.	71.7%
0-90	2725	N.A.	99.4%
90-120	9	N.A.	0.3%
90-130	13	N.A.	0.5%
90-150	15	N.A.	0.6%
90-180	15	N.A.	0.6%
0-180	2740	N.A.	100

Absolute Photometry
Total Luminaire Efficiency = N.A.%
Spacing to Mounting Height Ratio 1.7

CANDLEPOWER DISTRIBUTION
HORIZONTAL ANGLE

VERT ANG	0	22.5	45	67.5	90
0	563.	563.	563.	563.	563.
5	559.	574.	609.	600.	560.
10	548.	587.	664.	592.	550.
15	564.	588.	602.	581.	564.
20	571.	586.	584.	580.	582.
25	581.	576.	610.	591.	593.
30	619.	632.	643.	634.	619.
35	633.	637.	654.	635.	638.
40	636.	651.	643.	639.	655.
45	624.	659.	666.	683.	657.
50	603.	595.	588.	608.	577.
55	590.	612.	625.	644.	577.
60	516.	530.	536.	546.	517.
65	473.	483.	507.	485.	495.
70	418.	418.	425.	429.	419.
75	235.	229.	239.	242.	246.
80	68.	65.	73.	67.	63.
85	24.	22.	24.	20.	19.
90	6.	6.	6.	5.	6.
95	4.	4.	4.	4.	4.
100	4.	4.	4.	4.	4.
105	1.	1.	1.	1.	1.
110	3.	2.	2.	3.	2.
115	2.	4.	2.	6.	2.
120	9.	10.	4.	9.	4.
125	9.	4.	7.	2.	3.
130	1.	2.	1.	1.	2.
135	1.	1.	1.	2.	2.
140	1.	1.	1.	2.	2.
145	1.	1.	1.	2.	2.
150	0.	0.	0.	0.	0.
155	0.	0.	0.	0.	0.
160	0.	0.	0.	0.	0.
165	0.	0.	0.	0.	0.
170	0.	0.	0.	0.	0.
175	0.	0.	0.	0.	0.
180	0.	0.	0.	0.	0.





Chromaticity 5015°K (CCT); 70.6 CRI
Certified Report BAL15306.0

LED 45 Watt
Globe & Type V Refractor

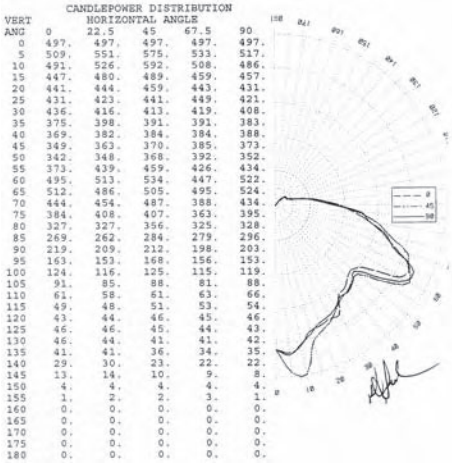
Zonal Lumen Summary

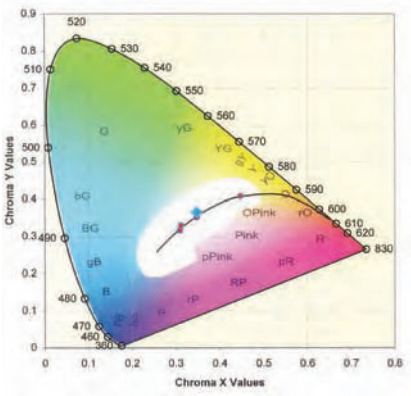
Zone	Lumens	%Lamp	%Fixt
0-30	386	N.A.	13.3%
0-40	631	N.A.	21.7%
0-60	1305	N.A.	44.8%
0-90	2519	N.A.	86.6%
90-120	315	N.A.	10.8%
90-130	355	N.A.	12.2%
90-150	390	N.A.	13.4%
90-180	391	N.A.	13.4%
0-180	2910	N.A.	100

Absolute Photometry
Total Luminaire Efficiency = N.A.%
Spacing to Mounting Height Ratio 1.3

CANDLEPOWER DISTRIBUTION
HORIZONTAL ANGLE

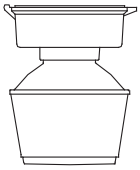
VERT ANG	0	22.5	45	67.5	90
0	497.	497.	497.	497.	497.
5	509.	551.	575.	533.	517.
10	491.	526.	592.	508.	486.
15	447.	480.	489.	459.	457.
20	441.	444.	459.	443.	431.
25	431.	423.	441.	449.	421.
30	436.	416.	413.	419.	408.
35	375.	398.	391.	393.	383.
40	369.	382.	384.	384.	388.
45	349.	363.	370.	385.	373.
50	342.	348.	368.	392.	352.
55	373.	439.	459.	426.	434.
60	495.	513.	534.	497.	522.
65	512.	486.	505.	495.	524.
70	444.	454.	487.	388.	434.
75	384.	408.	407.	363.	395.
80	327.	327.	356.	325.	328.
85	269.	262.	284.	279.	296.
90	219.	209.	212.	198.	203.
95	163.	153.	168.	156.	153.
100	124.	116.	125.	115.	119.
105	91.	85.	88.	81.	88.
110	61.	58.	61.	63.	66.
115	49.	48.	51.	53.	54.
120	43.	44.	46.	45.	46.
125	46.	46.	45.	44.	43.
130	46.	44.	41.	41.	42.
135	41.	41.	36.	34.	35.
140	29.	30.	23.	22.	22.
145	13.	14.	10.	9.	8.
150	4.	4.	4.	4.	4.
155	1.	2.	2.	3.	1.
160	0.	0.	0.	0.	0.
165	0.	0.	0.	0.	0.
170	0.	0.	0.	0.	0.
175	0.	0.	0.	0.	0.
180	0.	0.	0.	0.	0.





Chromaticity 5089°K (CCT); 72.3 CRI
Certified Report BAL15309.0

LED 45 Watt 12" Spin-top
Type V Refractor



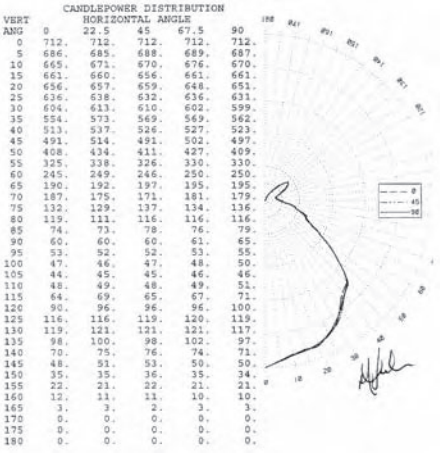
Zonal Lumen Summary

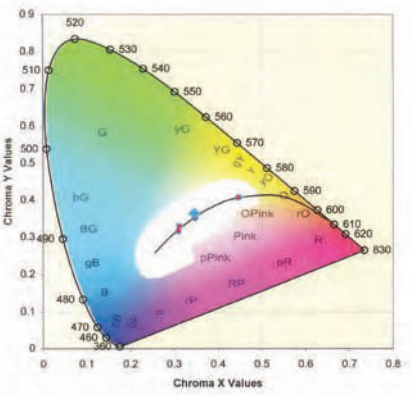
Zone	Lumens	%Lamp	%Fixt
0-30	547	N.A.	22.8%
0-40	903	N.A.	37.6%
0-60	1587	N.A.	66.1%
0-90	2003	N.A.	83.5%
90-120	172	N.A.	7.2%
90-130	278	N.A.	11.6%
90-150	386	N.A.	16.1%
90-180	397	N.A.	16.5%
0-180	2400	N.A.	100

Absolute Photometry
Total Luminaire Efficiency = N.A.%
Spacing to Mounting Height Ratio 1.3

CANDLEPOWER DISTRIBUTION
HORIZONTAL ANGLE

VERT ANG	0	22.5	45	67.5	90
0	712.	712.	712.	712.	712.
5	686.	685.	688.	689.	687.
10	665.	671.	670.	676.	670.
15	661.	660.	656.	661.	661.
20	656.	657.	659.	648.	651.
25	636.	638.	632.	636.	631.
30	604.	613.	610.	602.	599.
35	554.	573.	569.	569.	562.
40	513.	537.	526.	527.	523.
45	491.	514.	491.	502.	497.
50	408.	434.	411.	427.	409.
55	325.	338.	326.	330.	330.
60	245.	249.	246.	250.	250.
65	190.	192.	197.	195.	195.
70	187.	175.	171.	181.	179.
75	132.	129.	137.	134.	136.
80	119.	111.	116.	116.	116.
85	74.	73.	78.	76.	79.
90	60.	60.	60.	61.	65.
95	53.	52.	52.	53.	55.
100	47.	46.	47.	48.	50.
105	44.	45.	45.	46.	46.
110	48.	49.	48.	49.	51.
115	64.	69.	65.	67.	71.
120	90.	96.	96.	96.	100.
125	116.	116.	119.	120.	119.
130	119.	121.	121.	121.	117.
135	98.	100.	98.	102.	97.
140	70.	75.	76.	74.	71.
145	48.	51.	53.	50.	50.
150	35.	35.	36.	35.	34.
155	22.	21.	22.	21.	21.
160	12.	11.	11.	10.	10.
165	3.	3.	2.	3.	3.
170	0.	0.	0.	0.	0.
175	0.	0.	0.	0.	0.
180	0.	0.	0.	0.	0.





Chromaticity 4960°K (CCT); 70.3 CRI
Certified Report BAL15311.0

CERTILITE®

NEW! Replaces VBF/VQF Series


VM1/Pendant Globe & Guard


VM2/Ceiling Globe & Guard


VM1/Wall Globe & Guard


VM2/Stanchion 25° Refractor & Guard

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

Certified - File LR11713

NR Restricted Breathing Option②
Class I, Zone 2 AEx nAnR
Class I, Zone 2 Ex nR

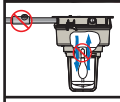
FEATURES-SPECIFICATIONS

Applications:
Certi*Lite*® VQ1F/VQ2F Series are designed for installations where moisture, dirt, dust, corrosion and vibration may be present, or NEMA 3 and 4X areas and where wind, water, snow or high ambients can be expected. They can be used in locations made hazardous by the presence of flammable vapors and gases or combustible dusts, as defined by the NEC®. Typical applications include manufacturing plants and certain chemical and petrochemical processing facilities, sewage treatment plants, off-shore and dockside installations, garages and warehouses.

Standard Materials:
- Ballast tank and splice box – corrosion resistant copper-free aluminum alloy with baked powder epoxy/polyester finish, electrostatically applied for complete, uniform corrosion protection.
- All external hardware – 316 stainless steel.
- Guards – Painted copper-free aluminum alloy or 316SS for 7-3/4" glass optics and Enclosed Reflectors.
- Reflectors – lightweight, corrosion resistant fiberglass reinforced polyester, or copper-free aluminum.

Features:
- "World Voltage" Ballast 120 through 277 VAC 50/60Hz
- Six mounting splice box types: Pendant, Ceiling, Wall bracket, Cone Top, 25° Angle Stanchion, Straight Stanchion – in a variety of entry sizes, including M20 for the VMX ceiling style.
- Elevated ambients to 55°C 13W–64W
- Two lamp models have 2 ballasts for separate switching or system redundancy
- Normally shipped as components for fast delivery, or may be ordered factory assembled.
- Options for Fuses and Quick Disconnect
- Tank assemblies include quad-pin lamp

Compliances
- UL1598 Standard for luminaires
- UL1598A Marine type luminaire
- UL-844 Standard for lighting fixtures for hazardous locations
- CSA C22.2 no. 137-M1981 electric luminaries for use in hazardous locations

FEATURES	BENEFITS
 Swing-Barrel Nut Patented Tank Mounting System	• Stainless-to-Stainless securement • Takes load off during installation • Uses ordinary tools • Saves time and labor
 Sealed Optic Zone 2 AEx nAR Restricted Breathing (suffix NR)	NO External Seals. Lower T-codes, Suitable for Class I Div. 2 Classified areas per the NEC®. See L54 for more info.
All glass refractors 	Compact (5-1/2" thread size, types I & V) Standard (7-3/4", thread size,types I, III, V) Enhances user selection flexibility
 "EZ" mount adapter	Easier Maintenance, saves labor, move fixture from the ladder to the workbench
 Photo controls - Class I Div. 2 / N4X areas	Available as Field or Factory Installed to save energy when light not required
 Earthquake Tab - Built-in attachment point for safety cables	Safety: Secures fixture to structure in case of conduit failure. "3rd hand" accessories for lamp change out. See L53 for more info.
 "FULL CUTOFF" & CUTOFF Optics	For "Dark Sky" Requirements. Helps to minimize offending light pollution. See L56 for more info.
 VMEP40 "Food Optic" VQ2F	Expanded Offering for Food or Grain Handling Applications to minimize contamination. See L55 for more info.

Compliances Continued:
- Enclosed and gasketed
- NEMA 3, 4X IP66
- UL 60079-15 - Electrical apparatus for Explosive Gas Atmospheres with Type of Protection "n" (Restricted Breathing and non-sparking).

Note: VQ1F dimensions are the same as VM1 and VQ2F are same as VM2 - See L100-L103.

L

CertiLite® Catalog Number Logic; 13-84 W Compact Fluorescent Fixtures

VQ 1F 84 30 A 3 R1 G (NR⑦)

Series Constant

Optic Thread Size
1F—5 1/2"
2F—7 3/4"

Lamp Wattage
13—1 x 13
18—1 x 18
26S—1 x 26
32—1 x 32
42—1 x 42
26—2 x 13
36—2 x 18
52—2 x 26
64—2 x 32
84—2 x 42

Voltage
30—120/277VAC

Mounting Type
A—Pendant
X—Ceiling
B—Wall Bracket
C—Cone Top
E—EZ Mount Adapter①
D—Stanchion 25°
S—Stanchion Straight 90°
N—None (mount ordered separately)②

Entry (Mounts available)
2—3/4" NPT (A,B,C,X)
3—1" NPT (A,B,C,X)
4—1 1/4" NPT (D,S)
5—1 1/2" NPT (D,S)
6—3/4" NPT 5-Hub (X)
7—1" NPT 5-Hub (X)
8—M20 4-Hub (X)
9—M20 5-Hub (X)
Z—EZ Mount Adapter①
N—None (mount ordered separately)②

Optic
GL—Globe (VQ1F, VQ2F)
R1—Type I Glass Refractor (VQ1F, VQ2F)
R3—Type III Glass Refractor (VQ2F)
R5—Type V Glass Refractor (VQ1F, VQ2F)
ER—Enclosed Reflector (VQ2F)
EP—Poylcarbonate Shielded Enclosed Reflector (VQ2F)⑧
S2—Type II 12" Spin-Top Refractor (VQ1F, VQ2F)
S8—Type V 8" Spin-Top Refractor (VQ1F)
S5—Type V 12" Spin-Top Refractor (VQ1F, VQ2F)
P5—Type V 12" Plastic Spin-Top Refractor (VQ1F)
FG—Silicone③ Coated Globe (VQ1F, VQ2F)
TG—Teflon®④ Coated Globe (VQ1F, VQ2F)
T1—Teflon®④ Coated Globe Type I Glass Refractor (VQ1F, VQ2F)
T3—Teflon®④ Coated Globe Type III Glass Refractor (VQ2F)
T5—Teflon®④ Coated Globe Type V Glass Refractor (VQ1F, VQ2F)
T2—Teflon®④ Coated Type II 12" Spin-Top Refractor (VQ1F, VQ2F)
T8—Teflon®④ Coated Type V 8" Spin-Top Refractor (VQ1F)
TV—Teflon®④ Coated Type V 12" Spin-Top Refractor (VQ1F, VQ2F)

Guard
G—With Guard
N—Without Guard

Options
NR—⑦
F—Single Fuse⑤
FF—Double Fuse⑤
TBx—Terminal Blocks⑤
P1—Photocell 120V⑥
P2—Photocell 208-277V⑥
QD—Quick Disconnect⑨
CP—Component Pack
AN—Assembled–no lamps

① Completes as "EZ", conduit mounting boxes ordered separately - See L83.
② NN mount ordered separately.
③ Silicone coated globe for additional impact protection.
④ Teflon® is a registered trademark of DuPont, Inc.
⑤ Fusing not for Marine or Canadian installations.
⑥ Photo cells for Class I, Div. 2 only
⑦ Restricted Breathing - See L54 for more information.
⑧ Not for use with wall or straight (90°) Stanchion.
⑨ QD = Quick Disconnect. Allows easy tank removal for maintenance. Electrician simply unplugs de-energized ballast from supply circuit.

VM1 Pendant w/5-1/2" Globe & Guard

VM2 Pendant w/7-3/4" Globe & Guard

VM1 Ceiling w/5-1/2" Globe & Guard

VM2 Ceiling w/7-3/4" Globe & Guard

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR
Class I, Zone 2 Ex nR

VQ1F - VQ2F 13 - 84 WATT COMPACT FLUORESCENT - PENDANT

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	LAMPS INCL.	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
13	1X13	3/4"	120VAC THROUGH 227VAC 50/60Hz	VQ1F1330A2GLG	VQ1F1330A2R1G	VQ1F1330A2R5G	VQ2F1330A2GLG	VQ2F1330A2R1G	VQ2F1330A2R5G	VQ2F1330A2S5G
18	1X18	3/4"		VQ1F1830A2GLG	VQ1F1830A2R1G	VQ1F1830A2R5G	VQ2F1830A2GLG	VQ2F1830A2R1G	VQ2F1830A2R5G	VQ2F1830A2S5G
26	1X26	3/4"		VQ1F26S30A2GLG	VQ1F26S30A2R1G	VQ1F26S30A2R5G	VQ2F26S30A2GLG	VQ2F26S30A2R1G	VQ2F26S30A2R5G	VQ2F26S30A2S5G
32	1X32	3/4"		VQ1F3230A2GLG	VQ1F3230A2R1G	VQ1F3230A2R5G	VQ2F3230A2GLG	VQ2F3230A2R1G	VQ2F3230A2R5G	VQ2F3230A2S5G
42	1X42	3/4"		VQ1F4230A2GLG	VQ1F4230A2R1G	VQ1F4230A2R5G	VQ2F4230A2GLG	VQ2F4230A2R1G	VQ2F4230A2R5G	VQ2F4230A2S5G
26	2X13	3/4"		VQ1F2630A2GLG	VQ1F2630A2R1G	VQ1F2630A2R5G	VQ2F2630A2GLG	VQ2F2630A2R1G	VQ2F2630A2R5G	VQ2F2630A2S5G
36	2X18	3/4"		VQ1F3630A2GLG	VQ1F3630A2R1G	VQ1F3630A2R5G	VQ2F3630A2GLG	VQ2F3630A2R1G	VQ2F3630A2R5G	VQ2F3630A2S5G
52	2X26	3/4"		VQ1F5230A2GLG	VQ1F5230A2R1G	VQ1F5230A2R5G	VQ2F5230A2GLG	VQ2F5230A2R1G	VQ2F5230A2R5G	VQ2F5230A2S5G
64	2X32	3/4"		VQ1F6430A2GLG	VQ1F6430A2R1G	VQ1F6430A2R5G	VQ2F6430A2GLG	VQ2F6430A2R1G	VQ2F6430A2R5G	VQ2F6430A2S5G
84	2X42	3/4"		VQ1F8430A2GLG	VQ1F8430A2R1G	VQ1F8430A2R5G	VQ2F8430A2GLG	VQ2F8430A2R1G	VQ2F8430A2R5G	VQ2F8430A2S5G

VQ1F - VQ2F 13 - 84 WATT COMPACT FLUORESCENT - CEILING

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	LAMPS INCL.	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
13	1X13	3/4"	120VAC THROUGH 227VAC 50/60Hz	VQ1F1330X2GLG	VQ1F1330X2R1G	VQ1F1330X2R5G	VQ2F1330X2GLG	VQ2F1330X2R1G	VQ2F1330X2R5G	VQ2F1330X2S5G
18	1X18	3/4"		VQ1F1830X2GLG	VQ1F1830X2R1G	VQ1F1830X2R5G	VQ2F1830X2GLG	VQ2F1830X2R1G	VQ2F1830X2R5G	VQ2F1830X2S5G
26	1X26	3/4"		VQ1F26S30X2GLG	VQ1F26S30X2R1G	VQ1F26S30X2R5G	VQ2F26S30X2GLG	VQ2F26S30X2R1G	VQ2F26S30X2R5G	VQ2F26S30X2S5G
32	1X32	3/4"		VQ1F3230X2GLG	VQ1F3230X2R1G	VQ1F3230X2R5G	VQ2F3230X2GLG	VQ2F3230X2R1G	VQ2F3230X2R5G	VQ2F3230X2S5G
42	1X42	3/4"		VQ1F4230X2GLG	VQ1F4230X2R1G	VQ1F4230X2R5G	VQ2F4230X2GLG	VQ2F4230X2R1G	VQ2F4230X2R5G	VQ2F4230X2S5G
26	2X13	3/4"		VQ1F2630X2GLG	VQ1F2630X2R1G	VQ1F2630X2R5G	VQ2F2630X2GLG	VQ2F2630X2R1G	VQ2F2630X2R5G	VQ2F2630X2S5G
36	2X18	3/4"		VQ1F3630X2GLG	VQ1F3630X2R1G	VQ1F3630X2R5G	VQ2F3630X2GLG	VQ2F3630X2R1G	VQ2F3630X2R5G	VQ2F3630X2S5G
52	2X26	3/4"		VQ1F5230X2GLG	VQ1F5230X2R1G	VQ1F5230X2R5G	VQ2F5230X2GLG	VQ2F5230X2R1G	VQ2F5230X2R5G	VQ2F5230X2S5G
64	2X32	3/4"		VQ1F6430X2GLG	VQ1F6430X2R1G	VQ1F6430X2R5G	VQ2F6430X2GLG	VQ2F6430X2R1G	VQ2F6430X2R5G	VQ2F6430X2S5G
84	2X42	3/4"		VQ1F8430X2GLG	VQ1F8430X2R1G	VQ1F8430X2R5G	VQ2F8430X2GLG	VQ2F8430X2R1G	VQ2F8430X2R5G	VQ2F8430X2S5G

① *See hazardous application data on page L49 for application suitability.*
② *Catalog numbers shown are with Guard; to omit guard change ending G to N; e.g. VQ1F1330A2GLN.*
③ *Catalog numbers shown are with 3/4" conduit openings; change "2" to "3" for 1"; e.g. VQ1F1330A3GLG.*
④ *Ballasts are electronic for included Quad-Pin Lamps and 120VAC through 277VAC operation.*
⑤ *Add suffix NR for AEx nR Restricted Breathing; see page L54 for more information.*

HUBBELL®
KILLARK®

VM1 Wall w/5-1/2" Globe & Guard

VM2 Wall w/7-3/4" Globe & Guard

VM1 EZ Adapter w/5-1/2" Globe & Guard

VM2 EZ Adapter w/7-3/4" Globe & Guard

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

CSA Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR
Class I, Zone 2 Ex nR

VQ1F - VQ2F 13 - 84 WATT COMPACT FLUORESCENT - WALL

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	LAMPS INCL.	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
13	1X13	3/4"		VQ1F1330B2GLG	VQ1F1330B2R1G	VQ1F1330B2R5G	VQ2F1330B2GLG	VQ2F1330B2R1G	VQ2F1330B2R5G	VQ2F1330B2S5G
18	1X18	3/4"		VQ1F1830B2GLG	VQ1F1830B2R1G	VQ1F1830B2R5G	VQ2F1830B2GLG	VQ2F1830B2R1G	VQ2F1830B2R5G	VQ2F1830B2S5G
26	1X26	3/4"		VQ1F26S30B2GLG	VQ1F26S30B2R1G	VQ1F26S30B2R5G	VQ2F26S30B2GLG	VQ2F26S30B2R1G	VQ2F26S30B2R5G	VQ2F26S30B2S5G
32	1X32	3/4"	120VAC	VQ1F3230B2GLG	VQ1F3230B2R1G	VQ1F3230B2R5G	VQ2F3230B2GLG	VQ2F3230B2R1G	VQ2F3230B2R5G	VQ2F3230B2S5G
42	1X42	3/4"	THROUGH	VQ1F4230B2GLG	VQ1F4230B2R1G	VQ1F4230B2R5G	VQ2F4230B2GLG	VQ2F4230B2R1G	VQ2F4230B2R5G	VQ2F4230B2S5G
26	2X13	3/4"	227VAC	VQ1F2630B2GLG	VQ1F2630B2R1G	VQ1F2630B2R5G	VQ2F2630B2GLG	VQ2F2630B2R1G	VQ2F2630B2R5G	VQ2F2630B2S5G
36	2X18	3/4"	50/60Hz	VQ1F3630B2GLG	VQ1F3630B2R1G	VQ1F3630B2R5G	VQ2F3630B2GLG	VQ2F3630B2R1G	VQ2F3630B2R5G	VQ2F3630B2S5G
52	2X26	3/4"		VQ1F5230B2GLG	VQ1F5230B2R1G	VQ1F5230B2R5G	VQ2F5230B2GLG	VQ2F5230B2R1G	VQ2F5230B2R5G	VQ2F5230B2S5G
64	2X32	3/4"		VQ1F6430B2GLG	VQ1F6430B2R1G	VQ1F6430B2R5G	VQ2F6430B2GLG	VQ2F6430B2R1G	VQ2F6430B2R5G	VQ2F6430B2S5G
84	2X42	3/4"		VQ1F8430B2GLG	VQ1F8430B2R1G	VQ1F8430B2R5G	VQ2F8430B2GLG	VQ2F8430B2R1G	VQ2F8430B2R5G	VQ2F8430B2S5G

VQ1F - VQ2F 13 - 84 WATT COMPACT FLUORESCENT - EZ ADAPTER⑥

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	LAMPS INCL.	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
13	1X13	⑥		VQ1F1330EZGLG	VQ1F1330EZR1G	VQ1F1330EZR5G	VQ2F1330EZGLG	VQ2F1330EZR1G	VQ2F1330EZR5G	VQ2F1330EZS5G
18	1X18	⑥		VQ1F1830EZGLG	VQ1F1830EZR1G	VQ1F1830EZR5G	VQ2F1830EZGLG	VQ2F1830EZR1G	VQ2F1830EZR5G	VQ2F1830EZS5G
26	1X26	⑥		VQ1F26S30EZGLG	VQ1F26S30EZR1G	VQ1F26S30EZR5G	VQ2F26S30EZGLG	VQ2F26S30EZR1G	VQ2F26S30EZR5G	VQ2F26S30EZS5G
32	1X32	⑥	120VAC	VQ1F3230EZGLG	VQ1F3230EZR1G	VQ1F3230EZR5G	VQ2F3230EZGLG	VQ2F3230EZR1G	VQ2F3230EZR5G	VQ2F3230EZS5G
42	1X42	⑥	THROUGH	VQ1F4230EZGLG	VQ1F4230EZR1G	VQ1F4230EZR5G	VQ2F4230EZGLG	VQ2F4230EZR1G	VQ2F4230EZR5G	VQ2F4230EZS5G
26	2X13	⑥	227VAC	VQ1F2630EZGLG	VQ1F2630EZR1G	VQ1F2630EZR5G	VQ2F2630EZGLG	VQ2F2630EZR1G	VQ2F2630EZR5G	VQ2F2630EZS5G
36	2X18	⑥	50/60Hz	VQ1F3630EZGLG	VQ1F3630EZR1G	VQ1F3630EZR5G	VQ2F3630EZGLG	VQ2F3630EZR1G	VQ2F3630EZR5G	VQ2F3630EZS5G
52	2X26	⑥		VQ1F5230EZGLG	VQ1F5230EZR1G	VQ1F5230EZR5G	VQ2F5230EZGLG	VQ2F5230EZR1G	VQ2F5230EZR5G	VQ2F5230EZS5G
64	2X32	⑥		VQ1F6430EZGLG	VQ1F6430EZR1G	VQ1F6430EZR5G	VQ2F6430EZGLG	VQ2F6430EZR1G	VQ2F6430EZR5G	VQ2F6430EZS5G
84	2X42	⑥		VQ1F8430EZGLG	VQ1F8430EZR1G	VQ1F8430EZR5G	VQ2F8430EZGLG	VQ2F8430EZR1G	VQ2F8430EZR5G	VQ2F8430EZS5G

① See hazardous location data on page L49 for application suitability.
② Catalog numbers shown are with Guard; to omit guard change ending G to N; e.g. VQ1F1330B2GLN.
③ Catalog numbers shown are with 3/4" conduit openings; change "2" to "3" for 1"; e.g. VQ1F1330B3GLG.
④ Ballasts are electronic for included Quad-Pin Lamps and 120VAC through 277VAC operation.
⑤ Add suffix NR for AEx nR Restricted Breathing; see page L54 for more information.
⑥ VMEZA tank adapters "classified" as an assembly for use between VM type tanks and EZ mounts. Order EZ mounts separately.

VM1 Stanchion 25° w/5-1/2" Globe & Guard

VM1 Stanchion Straight w/5-1/2" Globe & Guard

VM2 Stanchion 25° w/7-3/4" Globe & Guard

VM2 Stanchion Straight w/7-3/4" Globe & Guard

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR
Class I, Zone 2 Ex nR

VQ1F - VQ2F 13 - 84 WATT COMPACT FLUORESCENT - STANCHION 25° ANGLE

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	LAMPS INCL.	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
13	1X13	3/4"		VQ1F1330D5GLG	VQ1F1330D5R1G	VQ1F1330D5R5G	VQ2F1330D5GLG	VQ2F1330D5R1G	VQ2F1330D5R5G	VQ2F1330D5S5G
18	1X18	3/4"		VQ1F1830D5GLG	VQ1F1830D5R1G	VQ1F1830D5R5G	VQ2F1830D5GLG	VQ2F1830D5R1G	VQ2F1830D5R5G	VQ2F1830D5S5G
26	1X26	3/4"		VQ1F26S30D5GLG	VQ1F26S30D5R1G	VQ1F26S30D5R5G	VQ2F26S30D5GLG	VQ2F26S30D5R1G	VQ2F26S30D5R5G	VQ2F26S30D5S5G
32	1X32	3/4"	120VAC	VQ1F3230D5GLG	VQ1F3230D5R1G	VQ1F3230D5R5G	VQ2F3230D5GLG	VQ2F3230D5R1G	VQ2F3230D5R5G	V12F3230D5S5G
42	1X42	3/4"	THROUGH	VQ1F4230D5GLG	VQ1F4230D5R1G	VQ1F4230D5R5G	VQ2F4230D5GLG	VQ2F4230D5R1G	VQ2F4230D5R5G	VQ2F4230D5S5G
26	2X13	3/4"	227VAC	VQ1F2630D5GLG	VQ1F2630D5R1G	VQ1F2630D5R5G	VQ2F2630D5GLG	VQ2F2630D5R1G	VQ2F2630D5R5G	VQ2F2630D5S5G
36	2X18	3/4"	50/60Hz	VQ1F3630D5GLG	VQ1F3630D5R1G	VQ1F3630D5R5G	VQ2F3630D5GLG	VQ2F3630D5R1G	VQ2F3630D5R5G	VQ2F3630D5S5G
52	2X26	3/4"		VQ1F5230D5GLG	VQ1F5230D5R1G	VQ1F5230D5R5G	VQ2F5230D5GLG	VQ2F5230D5R1G	VQ2F5230D5R5G	VQ2F5230D5S5G
64	2X32	3/4"		VQ1F6430D5GLG	VQ1F6430D5R1G	VQ1F6430D5R5G	VQ2F6430D5GLG	VQ2F6430D5R1G	VQ2F6430D5R5G	VQ2F6430D5S5G
84	2X42	3/4"		VQ1F8430D5GLG	VQ1F8430D5R1G	VQ1F8430D5R5G	VQ2F8430D5GLG	VQ2F8430D5R1G	VQ2F8430D5R5G	VQ2F8430D5S5G

VQ1F - VQ2F 13 - 84 WATT COMPACT FLUORESCENT - STANCHION STRAIGHT

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	LAMPS INCL.	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
13	1X13	1-1/2"		VQ1F1330S5GLG	VQ1F1330S5R1G	VQ1F1330S5R5G	VQ2F1330S5GLG	VQ2F1330S5R1G	VQ2F1330S5R5G	VQ2F1330S5S5G
18	1X18	1-1/2"		VQ1F1830S5GLG	VQ1F1830S5R1G	VQ1F1830S5R5G	VQ2F1830S5GLG	VQ2F1830S5R1G	VQ2F1830S5R5G	VQ2F1830S5S5G
26	1X26	1-1/2"		VQ1F26S30S5GLG	VQ1F26S30S5R1G	VQ1F26S30S5R5G	VQ2F26S30S5GLG	VQ2F26S30S5R1G	VQ2F26S30S5R5G	VQ2F26S30S5S5G
32	1X32	1-1/2"	120VAC	VQ1F3230S5GLG	VQ1F3230S5R1G	VQ1F3230S5R5G	VQ2F3230S5GLG	VQ2F3230S5R1G	VQ2F3230S5R5G	VQ2F3230S5S5G
42	1X42	1-1/2"	THROUGH	VQ1F4230S5GLG	VQ1F4230S5R1G	VQ1F4230S5R5G	VQ2F4230S5GLG	VQ2F4230S5R1G	VQ2F4230S5R5G	VQ2F4230S5S5G
26	2X13	1-1/2"	227VAC	VQ1F2630S5GLG	VQ1F2630S5R1G	VQ1F2630S5R5G	VQ2F2630S5GLG	VQ2F2630S5R1G	VQ2F2630S5R5G	VQ2F2630S5S5G
36	2X18	1-1/2"	50/60Hz	VQ1F3630S5GLG	VQ1F3630S5R1G	VQ1F3630S5R5G	VQ2F3630S5GLG	VQ2F3630S5R1G	VQ2F3630S5R5G	VQ2F3630S5S5G
52	2X26	1-1/2"		VQ1F5230S5GLG	VQ1F5230S5R1G	VQ1F5230S5R5G	VQ2F5230S5GLG	VQ2F5230S5R1G	VQ2F5230S5R5G	VQ2F5230S5S5G
64	2X32	1-1/2"		VQ1F6430S5GLG	VQ1F6430S5R1G	VQ1F6430S5R5G	VQ2F6430S5GLG	VQ2F6430S5R1G	VQ2F6430S5R5G	VQ2F6430S5S5G
84	2X42	1-1/2"		VQ1F8430S5GLG	VQ1F8430S5R1G	VQ1F8430S5R5G	VQ2F8430S5GLG	VQ2F8430S5R1G	VQ2F8430S5R5G	VQ2F8430S5S5G

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① *See hazardous location data on page L49 for application suitability.*
② *Catalog numbers shown are with Guard; to omit guard change ending G to N; e.g. VQ1F1330D5GLN.*
③ *Catalog numbers shown are with 1-1/2" conduit openings; change "5" to "4" for 1-1/4"; e.g. VQ1F1330D4GLG.*
④ *Ballasts are electronic for included Quad-Pin Lamps and 120VAC through 277VAC operation.*
⑤ *Add suffix NR for AEx nR Restricted Breathing; see page L54 for more information.*

MOUNTING SPLICE BOXES

	CATALOG NUMBER						
HUB SIZE	PENDANT	CEILING 4 HUB	CEILING 5 HUB	WALL	CONE TOP	25 DEGREE STANCHION	90 DEGREE STANCHION
3/4"	VMA2B	VMX2B	VMX6B	VMB2B	VMC2B	—	—
1"	VMA3B	VMX3B	VMX7B	VMB3B	VMC3B	—	—
1-1/4"	—	—	—	—	—	VMD4B	VMS4B
1-1/2"	—	—	—	—	—	VMD5B	VMS5B
M-20	—	VMX8B**	VMX9B	—	—	—	—

**VMEZA is used between a ballast tank and an EZ mount-ordered separately. See L94 for more info.*
***VMX8B furnished with 3 non-metallic Ex plugs.*

OPTICS AND GUARDS

	VQ1F LOW WATTAGE 5-1/2" OPTIC THREAD SIZE		VQ2F LOW WATTAGE 7-3/4" OPTIC THREAD SIZE	
DESCRIPTION	OPTICS	GUARD	OPTICS	GUARD
Globe (glass)	VMG17	VMAG17	VMG25	VMAG25S
Refractor (all glass) Type V	VMR175	VMAG17	VMR255	VMAG25S
Refractor (all glass) Type I	VMR171②	VMAG17	VMR251	VMAG25S
Refractor (all glass) Type III	—	—	VMG25	VMAG25S
Refractor (spin top glass) 8" Type V	VZRG1550	VMRWG8	—	—
Refractor (spin top glass) 12" Type V	VZRG2550	VMRWG	VZRG4050	VMRWG
Refractor (spin top glass) 12" Type II	VZRG2520	VMRWG	VZRG4020	VMRWG
Refractor (spin top plastic) 12" Type V	VZRP175	VMRWG	—	—
Enclosed Refractor (glass lens)	—	—	VMER40	VMERG
Enclosed Refractor (plastic lens)	—	—	VMEP40	—

** See L95 for full selection and information.*

BALLAST TANKS ONLY 120VAC THROUGH 277VAC 50/60HZ

CATALOG NUMBER			
5-1/2" OPTIC	7-3/4" OPTIC	WATTS	LAMPS INCL.
VQIF1330	VQ2F1330	13	1X13
VQIF1830	VQ2F1830	18	1X18
VQIF26S30	VQ2F26S30	26	1X26
VQIF3230	VQ2F3230	32	1X32
VQIF4230	VQ2F4230	42	1X42
VQIF2630	VQ2F2630	26	2X13
VQIF3630	VQ2F3630	36	2X18
VQIF5230	VQ2F5230	52	2X26
VQIF6430	VQ2F6430	64	2X32
VQIF8430	VQ2F8430	84	2X42

REPLACEMENT LAMPS

CATALOG NUMBER	DESCRIPTION
MQL13	13W Quad-Pin
MQL18	18W Quad-Pin
MQL26	26W Quad-Pin
MQL32	32W Quad-Pin
MQL42	42W Quad-Pin

NOTE: VQ1F dimensions are the same as VMI; VQ2F dimensions are the same as VM2. See L100-L102.

LUMEN OUTPUT

LAMP SOURCE	LUMEN OUTPUT
13 Watt (1X13)	900
18 Watt (1X18)	1200
26 Watt (1X26)	1800
32 Watt (1X32)	2400
42 Watt (1X42)	3200
26 Watt (2X13)	1800
36 Watt (2X18)	2400
52 Watt (2X26)	3600
64 Watt (2X32)	4800
84 Watt (2X42)	6400

② *Order splice box, optic and guard separately.*
③ *See pages L98, L99 for ballast data.*

VBF/VBQ BALLAST DATA

LAMP SOURCE	LAMP WATTS/TYPE	VOLTAGE 60HZ	OPERATING (AMPS)	BALLAST CIRCUIT	REGULATION	MIN. START
Quad-Pin Fluorescent	13 Watt (1X13) 18 Watt (1X18)	120-277	.144 (120)/.067 (277) .158 (120)/.073 (277)	HPF	Electronic	5°F (-20°C) 5°F (-15°C)
	26 Watt (1X26) 32 Watt (1X32) 42 Watt (1X42)	120-277	.24 (120)/.11 (277) .31 (120)/.13 (277) .38 (120)/.18 (277)	HPF	Electronic	-4°F (-20°C) Watt
	26 Watt (2X13) 36 Watt (2X18)	120-277	.288 (120)/.134 (277) .316 (120)/.146 (277)	HPF	Electronic	5°F (-15°C)
	52 Watt (2X26) 64 Watt (2X32) 84 Watt (2X42)	120-277	.48 (120)/.11 (277) .62 (120)/.26 (277) .76 (120)/.36 (277)	HPF	Electronic	-4°F (-20°C)

VQ1F/VQ2F SERIES THERMAL PERFORMANCE DATA①
CLASS I DIVISION 2 GROUPS A,B,C,D / ZONE 2 GROUPS IIC, IIB, IIA / CLASS II E,F,G / CLASS III

CATALOG NUMBER*	LAMP WATTS	AMBIENT DEGREES C	CLASS I DIVISION 2		CLASS I ZONE 2 NR II		CLASS II DIVISION 1 (3)		SUPPLY WIRE
			GLOBE OR REFRACTOR ①	GLOBE + REFLECTOR	GLOBE OR REFRACTOR ②	GLOBE + REFLECTOR	GLOBE OR REFRACTOR ①	GLOBE + REFLECTOR	TEMP. MIN. °C
VQ1F1330	13 (1X13)	40	T3C	T3C	T6	T6	T3C (EFG)	T3C (EFG)	75
		55	T3C	T3C	T6	T6	T3C (EFG)	T3C (EFG)	75
VQ1F1830	18 (1X18)	40	T3C	T3C	T6	T6	T3C (EFG)	T3C (EFG)	75
		55	T3C	T3C	T6	T6	T3C (EFG)	T3C (EFG)	75
VQ1F26S30	26 (1X26)	40	T3A	T3A	T6	T6	T3C (EFG)	T3C (EFG)	75
		55	T3A	T3A	T6	T6	T3C (EFG)	T3C (EFG)	75
VQ1F3230	32 (1X32)	40	T3A	T3A	T6	T6	T3C (EFG)	T3C (EFG)	75
		55	T3A	T3A	T6	T6	T3C (EFG)	T3C (EFG)	75
VQ1F4230	42 (1X42)	40	T3A	T3A	T6	T6	T3C (EFG)	T3C (EFG)	75
		55	T3A	T3A	T6	T6	T3C (EFG)	T3C (EFG)	75
VQ1F2630	26 (2X13)	40	T3A	T3A	T6	T6	T3C (EFG)	T3C (EFG)	60
		55	T3A	T3A	T5	T5	T3C (EFG)	T3C (EFG)	75
VQ1F3630	36 (2X18)	40	T3A	T3A	T6	T6	T3C (EFG)	T3C (EFG)	60
		55	T3A	T3A	T6	T6	T3C (EFG)	T3C (EFG)	75
VQ1F5230	52 (2X26)	40	T3	T2D	T6	T5	T3C (EFG)	T3C (EFG)	75
		55	T2D	T2D	T4	T4	T3C (EFG)	T3C (EFG)	75
VQ1F6430	64 (2X32)	40	T3	T2D	T6	T5	T3C (EFG)	T3C (EFG)	75
		55	T2D	T2D	T4	T4	T3C (EFG)	T3C (EFG)	75
VQ1F8430	84 (2X42)	40	T2B	T2B	T4	T4	T3C (EFG)	T3C (EFG)	75
		55	XXX	XXX	XXX	XXX	XXX	XXX	XXX
VQ2F1330	13 (1X13)	40	T3C	T3C	T6	T6	T4A (EFG)	T4A (EFG)	60
		55	T3C	T3C	T6	T6	T4A (EFG)	T4A (EFG)	75
VQ2F1830	18 (1X18)	40	T3C	T3C	T6	T6	T4A (EFG)	T4A (EFG)	60
		55	T3C	T3C	T6	T6	T4A (EFG)	T4A (EFG)	75
VQ2F26S30	26 (1X26)	40	T3A	T3A	T6	T6	T4A (EFG)	T4A (EFG)	60
		55	T3A	T3A	T6	T6	T4A (EFG)	T4A (EFG)	75
VQ2F3230	32 (1X32)	40	T3A	T3A	T6	T6	T4A (EFG)	T4A (EFG)	60
		55	T3A	T3A	T6	T6	T4A (EFG)	T4A (EFG)	75
VQ2F4230	42 (1X42)	40	T3A	T3A	T6	T6	T4A (EFG)	T4A (EFG)	60
		55	T3A	T3A	T6	T6	T4A (EFG)	T4A (EFG)	75
VQ2F2630	26 (2X13)	40	T3A	T3A	T6	T6	T4A (EFG)	T4A (EFG)	60
		55	T3A	T3A	T6	T6	T4A (EFG)	T4A (EFG)	75
VQ2F3630	36 (2X18)	40	T3A	T3A	T6	T6	T4A (EFG)	T4A (EFG)	60
		55	T3A	T3A	T6	T6	T4A (EFG)	T4A (EFG)	75
VQ2F5230	52 (2X26)	40	T3	T3	T6	T6	T4A (EFG)	T4A (EFG)	60
		55	T3	T3	T6	T6	T4A (EFG)	T4A (EFG)	75
VQ2F6430	64 (2X32)	40	T3	T3	T6	T6	T4A (EFG)	T4A (EFG)	60
		55	T3	T3	T6	T6	T4A (EFG)	T4A (EFG)	75
VQ1F8430	84 (2X42)	40	T2C	T2C	T6	T6	T4A (EFG)	T4A (EFG)	75
		55	XXX	XXX	XXX	XXX	XXX	XXX	XXX-

T-CODE & TEMPERATURE RANGE CONVERSION TABLE °C

T1	350	325	T2	T2A	T2B	T2C	T2D	T3	T3A	T3B	T3C	T4	T4A	T5	T6
351-450	326-350	301-325	281-300	261-280	231-260	216-230	201-215	181-200	166-180	161-165	136-160	121-135	101-120	86-100	<=85

① *C1D2 & T-codes for Refractors include VMR "All Glass" and VZ Spin-Top Types. Also applies for VMER40 and VMEP40 in VQ2F models.*
② *T-codes for Ex nR Refractors are for VMR "All Glass" Types. Also applies for VMER40 and VMEP40 in VQ2F models.*
③ *Models suitable for Class II Div. 1 are also suitable for Class III.*

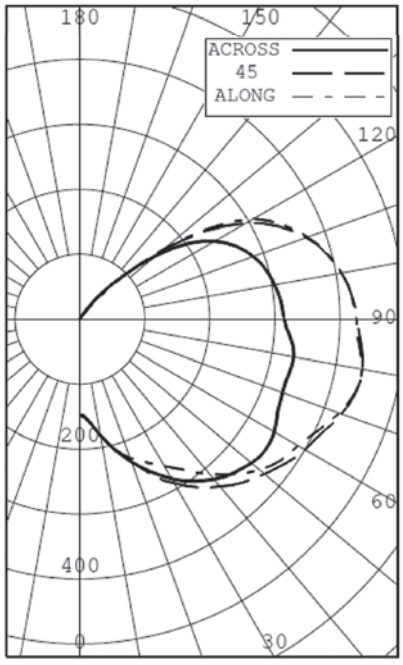
** VQ1F models use 5-1/2" CertiLite®V VM optics; VQ2F models use 7-3/4" VM optics.*

L

VQ1F 64Watt Globe Only

64 Watt Fluorescent
4800 Lumens

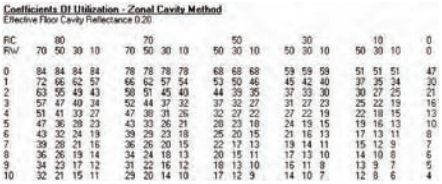
For 13W Multiply by 0.188
For 18W Multiply by 0.250
For 26W Multiply by 0.375
For 32W Multiply by 0.500
For 36W Multiply by 0.500
For 42W Multiply by 0.667
For 52W Multiply by 0.750
For 84W Multiply by 1.333



ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LAMP	%LUMINAIRE
0-30	196	4.08	5.37
0-40	387	8.07	10.62
0-60	987	20.55	27.05
0-90	2235	46.57	61.28
40-90	1848	38.50	50.66
60-90	1249	26.02	34.23
90-180	1413	29.43	38.72
0-180	3648	76.00	100.00

** EFFICIENCY: 76.0% **

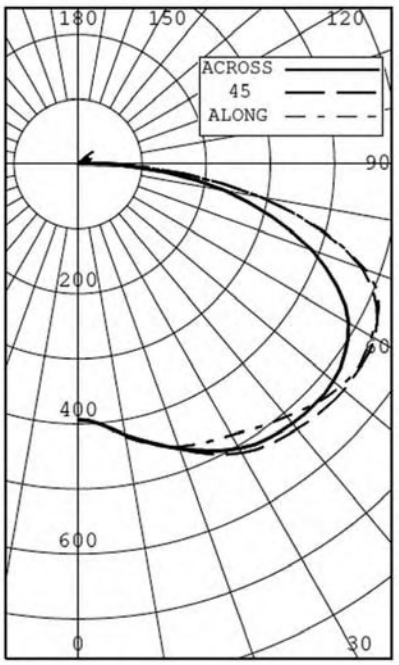


Certified Report LSI25349

VQ1F 64Watt Globe & Dome Reflector

64 Watt Fluorescent
4800 Lumens

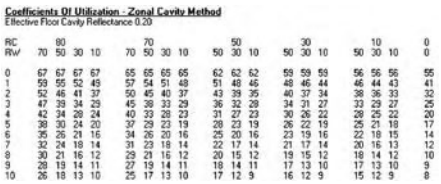
For 13W Multiply by 0.188
For 18W Multiply by 0.250
For 26W Multiply by 0.375
For 32W Multiply by 0.500
For 36W Multiply by 0.500
For 42W Multiply by 0.667
For 52W Multiply by 0.750
For 84W Multiply by 1.333



ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LAMP	%LUMINAIRE
0-30	392	8.16	14.47
0-40	714	14.87	26.38
0-60	1594	33.21	58.94
0-90	2639	54.98	97.55
40-90	1925	40.11	71.17
60-90	1045	21.76	38.61
90-180	66	1.38	2.45
0-180	2705	56.36	100.00

** EFFICIENCY: 56.4% **

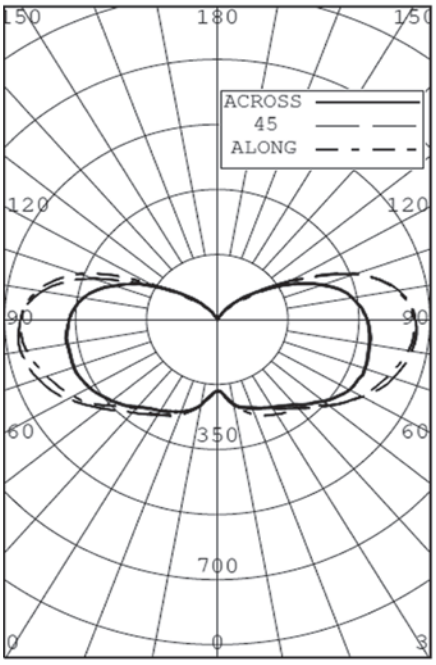


Certified Report LSI25351

VQ1F 64Watt Type V Glass Refractor

64 Watt Fluorescent
4800 Lumens

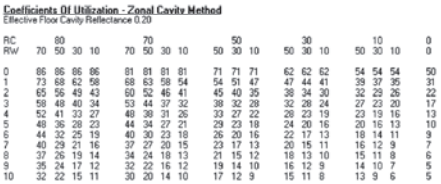
For 13W Multiply by 0.188
For 18W Multiply by 0.250
For 26W Multiply by 0.375
For 32W Multiply by 0.500
For 36W Multiply by 0.500
For 42W Multiply by 0.667
For 52W Multiply by 0.750
For 84W Multiply by 1.333



BOTH SIDES
ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LAMP	%LUMINAIRE
0-30	219	4.56	5.88
0-40	407	8.47	10.91
0-60	1008	20.99	27.03
0-90	2395	49.91	64.26
40-90	1989	41.43	53.34
60-90	1388	28.91	37.23
90-180	1333	27.76	35.74
0-180	3728	77.67	100.00

** EFFICIENCY: 77.7% **



Certified Report LSI25357

CERTILITE® V
The Logical Choice


VM1


VM2


VM3


VM4


VM5

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)
c SP us Certified - File LR11713

NR Restricted Breathing Option②
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR SP

FEATURES-SPECIFICATIONS

KILLARK® Certi*Lite*®V Series sets a new standard for industrial grade HID luminaires. Designed for installations where moisture, dirt, dust, corrosion and vibration may be present, these fixtures are suitable for NEMA 3 and 4X areas and where wind, water, snow or high ambients can be expected. They also can be used in locations made hazardous by the presence of flammable vapors and gases or combustible dusts, as defined by the NEC®. Typical applications include manufacturing sites, chemical and petrochemical processing facilities, sewage treatment plants, off-shore and dockside installations, garages and warehouses.

Standard Materials:

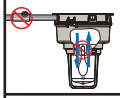
- Ballast tank and splice box – corrosion resistant copper-free aluminum alloy with baked powder epoxy/polyester finish, electrostatically applied for complete, uniform corrosion protection.
- All external hardware – 316 stainless steel.
- Guards – Painted copper-free aluminum alloy or 316SS for 7-3/4" glass optics and Enclosed Reflectors.
- Spin-top Refractor Guards are Plated Steel.
- Reflectors – lightweight, corrosion resistant fiberglass reinforced polyester, or copper-free aluminum.

Additional Features:

- Seven mounting splice box types; Pendant, Flex Pendant, Ceiling, Wall bracket, Cone Top, 25° Angle Stanchion, Straight Stanchion – in a variety of entry sizes, including M20 for the VMX ceiling style.
- Quartz auxiliary, HPS instant restart, Ballast Protectors
- Minimum starting temperature: HPS – 40°C; MV, MH & MHP – 30°C
- Normally shipped as components for fast delivery, or may be ordered factory assembled with or without lamps.
- Options for fuses and Quick Disconnect

Compliances

- UL1598 Standard for luminaires
- UL1598A Marine type luminaire
- UL-844 Standard for lighting fixtures for hazardous locations
- CSA C22.2 no. 137-M1981 electric luminaries for use in hazardous locations
- Enclosed and gasketed
- NEMA 3, 4X IP66
- UL 60079-15 - Electrical apparatus for Explosive Gas Atmospheres with Type of Protection "n" (Restricted Breathing and non-sparking).

FEATURES	BENEFITS
 Swing-Barrel Nut Patented Tank Mounting System	• Stainless-to-Stainless securement • Takes load off during installation • Uses ordinary tools • Saves time and labor
New ballast tank sizes 	Cover a wider range of wattage sizes and socket types (will include five total) for maximum user selection flexibility
 Sealed Optic Zone 2 AEx nAR Restricted Breathing (suffix NR)	NO External Seals. Lower T-codes, Suitable for Class I Div. 2 Classified areas per the NEC®
All glass refractors 	Compact (5-1/2" thread size, types I & V) Standard (7-3/4", thread size,types I, III, V) Enhances user selection flexibility
 New "EZ" mount adapter	Easier Maintenance, saves labor, move fixture from the ladder to the workbench
 Photo controls - Class I Div. 2 / N4X areas	Available as Field or Factory Installed to save energy when light not required
 Earthquake Tab - Built-in attachment point for safety cables	Safety: Secures fixture to structure in case of conduit failure. "3rd hand" accessories for lamp change out
 "FULL CUTOFF" & CUTOFF Optics	For "Dark Sky" Requirements. Helps to minimize offending light pollution
 VMEP40 "Food Optic"	Expanded Offering for Food or Grain Handling Applications to minimize contamination
NEMA Decals 15 17 17P	Easier Maintenance, Saves labor *"Have the right lamp in hand before going up the ladder".*
 Expanded lamp types and wattages	Philips® QL Induction type and 600Watt HPS available for long life or high lumen requirements
 CertiLite Software	Used to determine number of fixtures required and their proper layout for various tasks and applications.

Philips® is a registered trademark of Koninklijke Philips Electronics N.V.

①② See Thermal Performance Tables beginning L104.

L

HUBBELL®
KILLARK®

CERTILITE® V
The Logical Choice

VM1
5 1/2" Optic
Reduced Profile
Medium Base

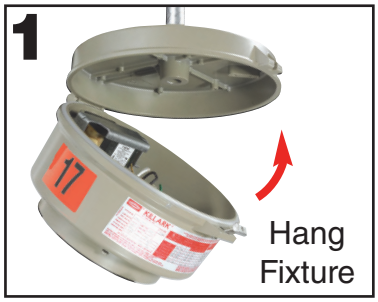
VM2
7 3/4" Optic
Reduced Profile
Medium Base

VM3
5 1/2" Optic
Low Wattage
Mogul Base

VM4
7 3/4" Optic
Low Wattage
Mogul Base

VM5
7 3/4" Optic
High Wattage
Mogul Base

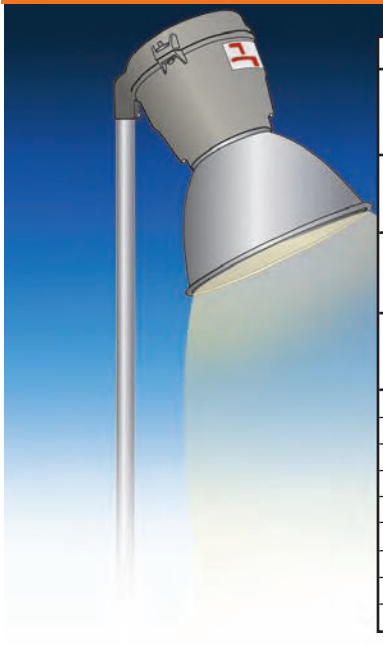
SWING-BARREL NUT



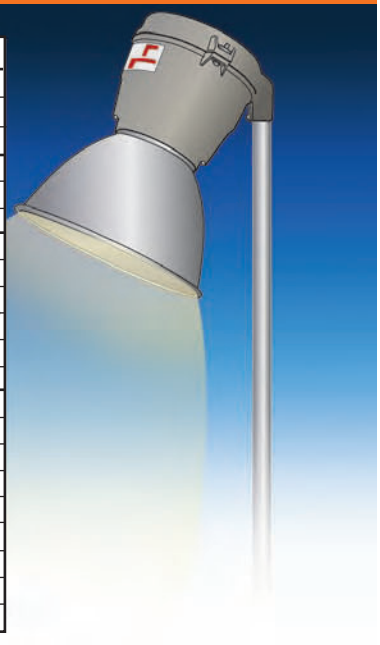
- The Certi*Lite*®V Swing-Barrel Nut System provides a Stainless-to-Stainless securement between tank and mounting box. No more Stainless-to-Aluminum connections or need for Stainless inserts.
- Users can easily lift the tank into place and "take the load off", then tighten. Saves time and labor.
- Only the patented Swing-Barrel Nut Stainless System can be tightened with a common screwdriver or nut driver; others are either stainless-to-aluminum, or require a wrench or special deep socket.

NOTE: Certi*Lite*®V series tanks are backwardly compatible with older Certi*Lite*® mounts. Simply remove Barrel Nut and thread into old mount.

QUICK LOCATOR TABLE



Lamp Type	Wattage Range	Luminaire Tank	Begins on Page
HPS	35-150	VM1 & VM2	L58
	50-100	VM3 & VM4	L67
	200-600	VM5	L80
MH	50-100	VM1 & VM2	L62
	70-250	VM3 & VM4	L71
	400	VM5	L84
MHP	125-175	VM1 & VM2	L62
	125-200	VM3 & VM4	L75
	250-400	VM5	L86
QL	55	VM1	L91
	85	VM4	L91
	165	VM5	L91
Accessories			L93
Dimensional Information			L100
Temperature Data			L104
Photometrics			L114
VM1 & VM2 Logic Tree			L57
VM3 & VM4 Logic Tree			L66
VM5 Logic Tree			L79
QL Logic Tree			L90
Cross-reference guide Certi*Lite*® to Certi*Lite*®V			L97



Or turn the page for more features/comparisons

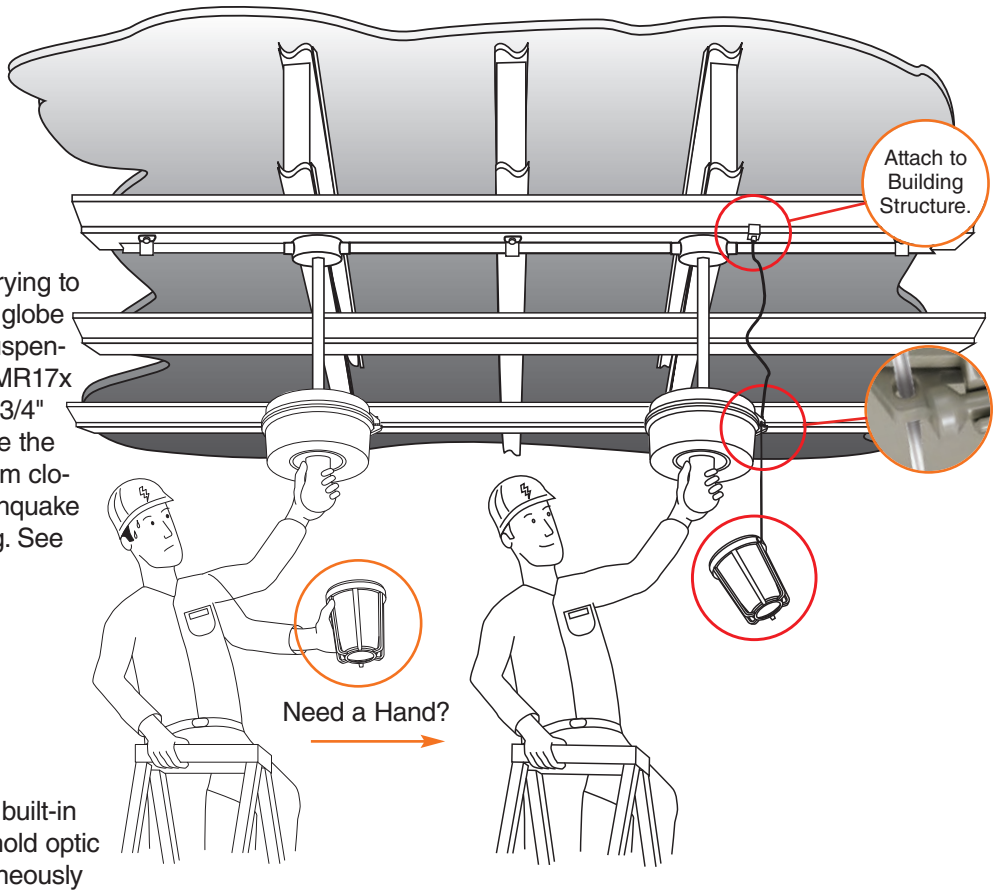
CERTILITE®V

The Logical Choice

For Personnel Safety

Maintenance personnel are often in awkward positions when relamping: trying to simultaneously hold on to a ladder, a globe and the lamp. Available "3rd Hand" suspension cables support 5-1/2" VMG17/VMR17x optics, utilizing the VMAG17 guard. 7-3/4" VMG25/VMR25x/VMG40 optics utilize the VMAGxxS guard and VMAGBC bottom closure. Cables attach to a special "Earthquake Tab" built into the ballast tank housing. See Suspension Accessories page L96.

CertiLite®V tanks as standard have a built-in "Earthquake Tab". The tab is used to hold optic suspension devices, and can simultaneously be used to add a safety cable linked to the building superstructure.



EZ MOUNT & LAMP INDENTIFICATION

To enable easy and safe removal of CertiLite®V fixtures for maintenance, install with the new VMEZA ballast tank to EZ mount adapter.

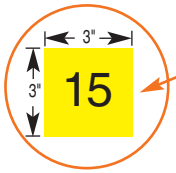
The complete assembly is removed for maintenance at the workbench.

Large facilities often keep spares so that a "new" fixture is put in at the time one needs maintenance – thus eliminating the need to set up access equipment multiple times.

HAVE THE RIGHT LAMP IN HAND BEFORE GOING UP THE LADDER.

15	17	17P *
YELLOW 150W HPS	RED 175W MH	RED 175W MHP

* "P" designates newer Pulse Start Metal Halide lamps: 150, 175, 200, 250, 320, 350 and 400 watt models.

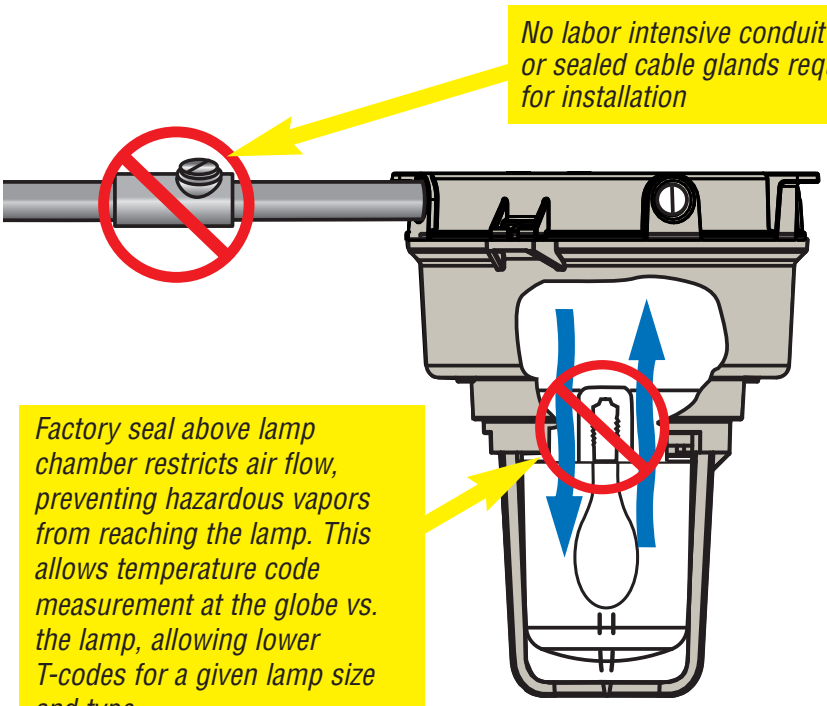


NEMA Decals for Lamp Type & Wattage

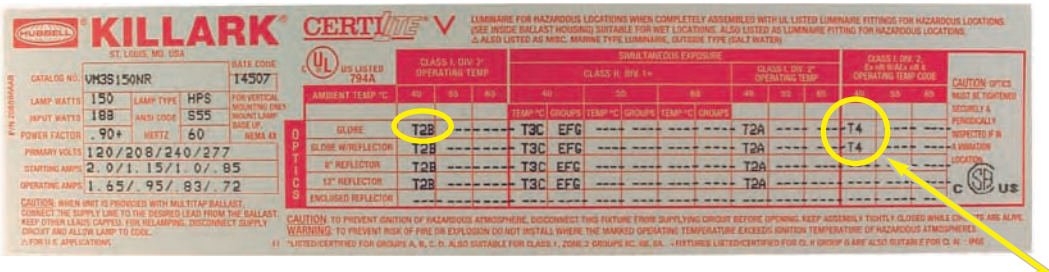
HUBBELL®
KILLARK®

CERTILITE®V
The Logical Choice
For Lower T-Codes

NEW "Sealed Optic" construction, option "NR." Rated for Class I, Zone 2 **AEx nAnR/Ex nR II** Restricted Breathing. "Sealed Entry" is no longer required to obtain significantly lower T-codes.



- CertiLite®V luminaires with the NR option are factory sealed to save installation time and labor costs.
- AEx nAnR/Ex nR II is covered under NEC® Article 505, and indicates Non-Arcing and Non-Breathing.
- North American Class I Division 2 designated locations may use properly marked Zone 2 rated equipment per NEC Article 501.5.
- The CertiLite®V NR option is available for VMG, VMR, and VMER40 optics, but not VZRG Type "Spin-top" Refractors.
- Permits the use of fewer higher wattage luminaires for a given application.



See the Benefit!

Lamp Type and Wattage	Examples at 40c ambient. See thermal performance charts beginning L84 for more information	Class I Div. 2/ Zone 2 Globe only ①	Class I Zone 2 AEX nAnR II ②	Reduction in Applied T-Code
150 HPS	VM3 w/VMG or VMR	T2B (260°C)	T4 (135°C)	-125°C
	VM4 w/VMG or VMR	T2B (260°C)	T4 (135°C)	-125°C
400 HPS	VM5 w/VMG	350° C	T3 (200°C)	-150°C
	VM5 w/VMER40	350° C	T3 (200°C)	-150°C
175 MH	VM3 w/VMG or VMR	T2A (280°C)	T3 (200°C)	-80°C
	VM4 w/VMG or VMR	T2B (260°C)	T4 (135°C)	-125°C
400 MH	VM5 w/VMG40	325° (300°C)	T3 (200°C)	-100°C
	VM5 w/VMER40	T2 (300°C)	T3 (200°C)	-100°C

①*Based on Lamp temperature data*
②*Based on Globe temperature data*

CERTILITE®V

The Logical Choice

For Food & Grain Safety and Low Bay Applications

Grain Area

VMEP40 Optic

Food Area

Listed and Certified Class I Div. 2; Class II Div. 1; N4X

- Certi*Lite*®V VM4 or VM5 series luminaires with the new VMEP40 Optic have a strong non-glass polycarbonate shield protecting food from potential broken glass contamination, as could be the case even with heat-resistant heavy duty globes.
- Unique design incorporates internal glass lens to seal out dust and vapors from the lamp, with a polycarbonate shield banded tightly at the bottom.
- Copper-free aluminum reflector has anodized finish for easy cleaning; threaded portion at top is natural aluminum to prevent paint dust contamination during maintenance (from attaching/detaching).
- Polycarbonate shield is replaceable and must always be used to maintain ratings. Order part number VMEP40-LENS.

SAFETY COATING

L

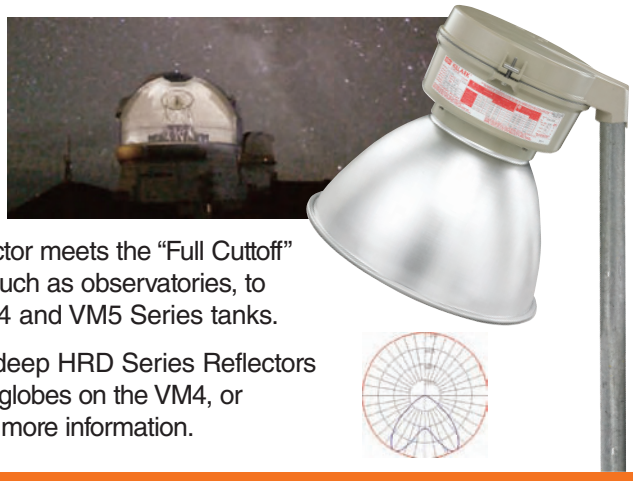
EXPANDED TEFLON® COATED OPTICS

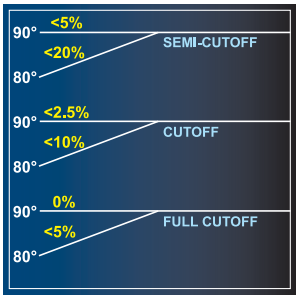
- Certi*Lite*®V now offers additional all-glass threaded refractors, and many are available with a Teflon coating.
- Teflon® coating helps to reduce the likelihood of glass breakage, and if broken, reduces the area of contamination. Also enhances cleanability.

Teflon® is a registered trademark of Dupont, Inc.

VMG17T

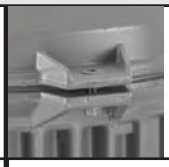
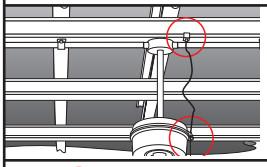
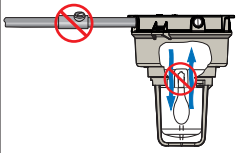
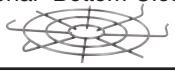
CERTILITE® V
The Logical Choice
For Dark Sky Needs





- The CertiLite®V VMER40 Enclosed Reflector meets the "Full Cuttoff" photometric requirement in many areas, such as observatories, to minimize offending light pollution. Fits VM4 and VM5 Series tanks.
- Use VMDARK1 gasket kit to enable the deep HRD Series Reflectors to meet the "Full Cutoff" requirement over globes on the VM4, or "Cutoff" on VM5 Series tanks. See L96 for more information.

COMPETITIVE COMPARISONS

CertiLiteV® KILLARK	vs.	COMPETITION
 **Swing-barrel nut (patented)** Stainless-to-Stainless securement between tank and mounting box. Can be tightened with a common screwdriver or nut driver.		 Either not stainless, or require a wrench or special deep socket.
 **Earthquake tab** Built in securement location for safety cables, optic "3rd Hand" or to building structure.		Not Available
 **Maintenance Safety Optic suspension systems**		Not Available
 **Suspension safety cable to building superstructure**		Not Available
 **"Sealed Optic"** Instead of more costly "Sealed Entry" Meets AEx nAR Requirements		"Sealed Entry" requires extra parts (conduit seals) and labor to install, and block pulling of replacement wiring.
 **VMEP40** Food Area Suitable Optic		Only Glass Optics Offered
 **Dark Sky** Optics Available		Limited, if any, solutions for light pollution, a problem in many areas.
 **316 Stainless Guards** For 7 3/4" All Glass Optics. Optional Bottom Closure. 		"Ordinary" stainless & open bottom type only. Provides less protection from bottom impact or corrosion.

HUBBELL®
KILLARK®

CERTILITE®V
The Logical Choice

CertiLite®V Catalog Number Logic; 35-175 Low Wattage (Medium Base) HID Fixtures

VM 0 0 00 0 0 0 00 0 (NR⑦) 00

Series Constant

Optic Thread Size
1—5 1/2"
2—7 3/4"

Lamp Type
S—HPS (35, 50, 70, 100, 150)
H—MH (50, 70, 100)
P—MHP (125①, 150, 175)

Lamp Wattage
03—35W, (HPS)
05—50W, (HPS, MH)
07—70W, (HPS, MH)
10—100W, (HPS, MH)
12—125W, (MHP①)
15—150W, (HPS, MHP)
17—175W, (MHP)

Voltage @ 60 Hertz Ⓥ
1—120V
0—Quadri-Volt (120, 208, 240, 277)
5—480V
6—Tri - 120, 277, 347 (Canada)
7—220V
8—220/240 50 Hz

Mounting Type
A—Pendant
F—Flexible Pendant
X—Ceiling
B—Wall Bracket
C—Cone Top
E—EZ Mount Adapter②
D—Stanchion 25°
S—Stanchion Straight 90°
N—None (mount ordered separately)③

Entry (Mounts available)
2—3/4" NPT (A,B,C,X)
3—1" NPT (A,B,C,X)
4—1 1/4" NPT (D,S)
5—1 1/2" NPT (D,S)
6—3/4" NPT 5-Hub (X)
7—1" NPT 5-Hub (X)
8—M20 4-Hub (X)
9—M20 5-Hub (X)
Z—EZ Mount Adapter②
N—None (mount ordered separately)③

Optic
GL—Globe (VM1, VM2)
R1—Type I Glass Refractor (VM1, VM2)
R3—Type III Glass Refractor (VM2)
R5—Type V Glass Refractor (VM1, VM2)
ER—Enclosed Reflector (VM2)
EP—Poylcarbonate Shielded Enclosed Reflector (VM2)⑬
S2—Type II 12" Spin-Top Refractor (VM1④, VM2)
S8—Type V 8" Spin-Top Refractor (VM1)
S5—Type V 12" Spin-Top Refractor (VM1④, VM2)
P5—Type V 12" Plastic Spin-Top Refractor (VM1-175W Max.)
FG—Silicone⑤ Coated Globe (VM1, VM2)
TG—Teflon®⑥ Coated Globe (VM1, VM2)
T1—Teflon®⑥ Coated Globe Type I Glass Refractor (VM1, VM2)
T3—Teflon®⑥ Coated Globe Type III Glass Refractor (VM2)
T5—Teflon®⑥ Coated Globe Type V Glass Refractor (VM1, VM2)
T2—Teflon®⑥ Coated Type II 12" Spin-Top Refractor (VM1④, VM2)
T8—Teflon®⑥ Coated Type V 8" Spin-Top Refractor (VM1)
TV—Teflon®⑥ Coated Type V 12" Spin-Top Refractor (VM1④, VM2)

Guard
G—Guard (Globes & Glass refractors)
N—No Guard⑧

Options
IR—Instant Restrike - 50-150 HPS⑯
QA—Quartz Auxiliary⑨
BP—Ballast Protector - 70-150 HPS⑯
F1—Fusing 120V⑩
F2—Fusing 208V⑩
F3—Fusing 240V⑩
F4—Fusing 277V⑩
F5—Fusing 480V⑩
F6—Fusing 347V⑩
F7—Fusing 220V⑩
F8—Fusing 240V 50 Hz⑩
P1—Photocell 120V ⑪ ⑫
P2—Photocell 208-277V ⑪ ⑫
P3—Photocell 347V ⑪ ⑫
Q1—QD Wired to 120V⑭
Q2—QD Wired to 208V⑭
Q3—QD Wired to 240V⑭
Q4—QD Wired to 277V⑭
Q5—QD Wired to 480V⑭
Q6—QD Wired to 347V⑭
Q7—QD 220V⑭
Q8—QD 240V (50Hz)
TBx—Terminal Blocks
x = Voltage Code
AS—Assembled Fixture with Standard Lamp
AD—Assembled Fixture with Dual Arc Tube Lamp 70, 100, 150 HPS only
AN—Assembled, no lamp
CP—Component Pack-No Lamp
CS—Component Pack with Standard Lamp

① Special order lamp type/wattage not shown in grids, minimums apply.
② Completes as "EZ", conduit mounting boxes ordered separately - See L83.
③ NN mount ordered separately.
④ 12" Spintops for use with VM3 tanks ship with a Mogul to Mogul socket extender for enhanced photometrics vs. 7 3/4", which are used on VM5, but will fit VM4.
⑤ Silicone coated globe for additional impact protection.
⑥ Teflon® is a registered trademark of DuPont, Inc.
Ⓥ Consult factory for available lamp and voltage combinations.
⑦ Restricted Breathing - See L54 for more information.
⑧ Order Guards for Spin-Tops & VMER40 separately.
⑨ QA not suitable for Class I, Div. 2/Zone 2 applications; consult factory for other hazardous applications.
⑩ Fusing not for Marine or Canadian installations.
⑪ Photo cells for Class I, Div. 2 only, or C1Z2 nR, not Class II.
⑫ Field connection to proper tap in case of Multitap Ballasts.
⑬ Not for use with wall or straight (90°) Stanchion.
⑭ QD = Quick Disconnect. Allows easy tank removal for maintenance. Electrician simply unplugs de-energized ballast from supply circuit.
⑮ 220V 60Hz or 230V 50Hz used with QA-requires VM5 tank.
⑯ IR and BP cannot be ordered together.

VM1 Pendant w/5-1/2" Globe & Guard

VM2 Pendant w/7-3/4" Globe & Guard

VM1 Flexible Pendant w/5-1/2" Refractor & Guard

VM2 Flexible Pendant w/7-3/4" Refractor & Guard

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

c SP us Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR SP

VM 35-150 HIGH PRESSURE SODIUM-PENDANT

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
35	S76	3/4"	120V	VM1S031A2GLG	VM1S031A2R1G	VM1S031A2R5G	VM2S031A2GLG	VM2S031A2R1G	VM2S031A2R5G	VM2S031A2S5G
50	S68	3/4"	Quad	VM1S050A2GLG	VM1S050A2R1G	VM1S050A2R5G	VM2S050A2GLG	VM2S050A2R1G	VM2S050A2R5G	VM2S050A2S5G
70	S62	3/4"	Quad	VM1S070A2GLG	VM1S070A2R1G	VM1S070A2R5G	VM2S070A2GLG	VM2S070A2R1G	VM2S070A2R5G	VM2S070A2S5G
			Tri	VM1S076A2GLG	VM1S076A2R1G	VM1S076A2R5G	VM2S076A2GLG	VM2S076A2R1G	VM2S076A2R5G	VM2S076A2S5G
			480	VM1S075A2GLG	VM1S075A2R1G	VM1S075A2R5G	VM2S075A2GLG	VM2S075A2R1G	VM2S075A2R5G	VM2S075A2S5G
100	S54	3/4"	Quad	VM1S100A2GLG	VM1S100A2R1G	VM1S100A2R5G	VM2S100A2GLG	VM2S100A2R1G	VM2S100A2R5G	VM2S100A2S5G
			Tri	VM1S106A2GLG	VM1S106A2R1G	VM1S106A2R5G	VM2S106A2GLG	VM2S106A2R1G	VM2S106A2R5G	VM2S106A2S5G
			480	VM1S105A2GLG	VM1S105A2R1G	VM1S105A2R5G	VM2S105A2GLG	VM2S105A2R1G	VM2S105A2R5G	VM2S105A2S5G
150	S55	3/4"	Quad	VM1S150A2GLG	VM1S150A2R1G	VM1S150A2R5G	VM2S150A2GLG	VM2S150A2R1G	VM2S150A2R5G	VM2S150A2S5G
			Tri	VM1S156A2GLG	VM1S156A2R1G	VM1S156A2R5G	VM2S156A2GLG	VM2S156A2R1G	VM2S156A2R5G	VM2S156A2S5G
			480	VM1S155A2GLG	VM1S155A2R1G	VM1S155A2R5G	VM2S155A2GLG	VM2S155A2R1G	VM2S155A2R5G	VM2S155A2S5G

VM 35-150 HIGH PRESSURE SODIUM-FLEX PENDANT

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
35	S76	3/4"	120V	VM1S031F2GLG	VM1S031F2R1G	VM1S031F2R5G	VM2S031F2GLG	VM2S031F2R1G	VM2S031F2R5G	VM2S031F2S5G
50	S68	3/4"	Quad	VM1S050F2GLG	VM1S050F2R1G	VM1S050F2R5G	VM2S050F2GLG	VM2S050F2R1G	VM2S050F2R5G	VM2S050F2S5G
70	S62	3/4"	Quad	VM1S070F2GLG	VM1S070F2R1G	VM1S070F2R5G	VM2S070F2GLG	VM2S070F2R1G	VM2S070F2R5G	VM2S070F2S5G
			Tri	VM1S076F2GLG	VM1S076F2R1G	VM1S076F2R5G	VM2S076F2GLG	VM2S076F2R1G	VM2S076F2R5G	VM2S076F2S5G
			480	VM1S075F2GLG	VM1S075F2R1G	VM1S075F2R5G	VM2S075F2GLG	VM2S075F2R1G	VM2S075F2R5G	VM2S075F2S5G
100	S54	3/4"	Quad	VM1S100F2GLG	VM1S100F2R1G	VM1S100F2R5G	VM2S100F2GLG	VM2S100F2R1G	VM2S100F2R5G	VM2S100F2S5G
			Tri	VM1S106F2GLG	VM1S106F2R1G	VM1S106F2R5G	VM2S106F2GLG	VM2S106F2R1G	VM2S106F2R5G	VM2S106F2S5G
			480	VM1S105F2GLG	VM1S105F2R1G	VM1S105F2R5G	VM2S105F2GLG	VM2S105F2R1G	VM2S105F2R5G	VM2S105F2S5G
150	S55	3/4"	Quad	VM1S150F2GLG	VM1S150F2R1G	VM1S150F2R5G	VM2S150F2GLG	VM2S150F2R1G	VM2S150F2R5G	VM2S150F2S5G
			Tri	VM1S156F2GLG	VM1S156F2R1G	VM1S156F2R5G	VM2S156F2GLG	VM2S156F2R1G	VM2S156F2R5G	VM2S156F2S5G
			480	VM1S155F2GLG	VM1S155F2R1G	VM1S155F2R5G	VM2S155F2GLG	VM2S155F2R1G	VM2S155F2R5G	VM2S155F2S5G

① *See hazardous location data pages L104-107 for application suitability*
② *Catalog numbers shown are with Guard; to omit guard change ending G to N; e.g. VM1S050A2GLN*
③ *Catalog numbers shown are with 3/4" conduit openings; change "2" to "3" for 1" e.g. VM1S050A3GLG*
④ *Consult catalog logic for other available voltage & lamp combinations*
⑤ *Add suffix NR for AEx nR Restricted Breathing; see page L54 for more information*

VM1 Ceiling w/5-1/2" Globe & Guard

VM2 Ceiling w/7-3/4" Globe & Guard

VM1 Wall w/5-1/2" Refractor & Guard

VM2 Wall w/7-3/4" Refractor & Guard

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

c SP us Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR SP

VM 35-150 HIGH PRESSURE SODIUM-CEILING

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
35	S76	3/4"	120V	VM1S031X2GLG	VM1S031X2R1G	VM1S031X2R5G	VM2S031X2GLG	VM2S031X2R1G	VM2S031X2R5G	VM2S031X2S5G
50	S68	3/4"	Quad	VM1S050X2GLG	VM1S050X2R1G	VM1S050X2R5G	VM2S050X2GLG	VM2S050X2R1G	VM2S050X2R5G	VM2S050X2S5G
70	S62	3/4"	Quad	VM1S070X2GLG	VM1S070X2R1G	VM1S070X2R5G	VM2S070X2GLG	VM2S070X2R1G	VM2S070X2R5G	VM2S070X2S5G
			Tri	VM1S076X2GLG	VM1S076X2R1G	VM1S076X2R5G	VM2S076X2GLG	VM2S076X2R1G	VM2S076X2R5G	VM2S076X2S5G
			480	VM1S075X2GLG	VM1S075X2R1G	VM1S075X2R5G	VM2S075X2GLG	VM2S075X2R1G	VM2S075X2R5G	VM2S075X2S5G
100	S54	3/4"	Quad	VM1S100X2GLG	VM1S100X2R1G	VM1S100X2R5G	VM2S100X2GLG	VM2S100X2R1G	VM2S100X2R5G	VM2S100X2S5G
			Tri	VM1S106X2GLG	VM1S106X2R1G	VM1S106X2R5G	VM2S106X2GLG	VM2S106X2R1G	VM2S106X2R5G	VM2S106X2S5G
			480	VM1S105X2GLG	VM1S105X2R1G	VM1S105X2R5G	VM2S105X2GLG	VM2S105X2R1G	VM2S105X2R5G	VM2S105X2S5G
150	S55	3/4"	Quad	VM1S150X2GLG	VM1S150X2R1G	VM1S150X2R5G	VM2S150X2GLG	VM2S150X2R1G	VM2S150X2R5G	VM2S150X2S5G
			Tri	VM1S156X2GLG	VM1S156X2R1G	VM1S156X2R5G	VM2S156X2GLG	VM2S156X2R1G	VM2S156X2R5G	VM2S156X2S5G
			480	VM1S155X2GLG	VM1S155X2R1G	VM1S155X2R5G	VM2S155X2GLG	VM2S155X2R1G	VM2S155X2R5G	VM2S155X2S5G

VM 35-150 HIGH PRESSURE SODIUM-WALL

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
35	S76	3/4"	120V	VM1S031B2GLG	VM1S031B2R1G	VM1S031B2R5G	VM2S031B2GLG	VM2S031B2R1G	VM2S031B2R5G	VM2S031B2S5G
50	S68	3/4"	Quad	VM1S050B2GLG	VM1S050B2R1G	VM1S050B2R5G	VM2S050B2GLG	VM2S050B2R1G	VM2S050B2R5G	VM2S050B2S5G
70	S62	3/4"	Quad	VM1S070B2GLG	VM1S070B2R1G	VM1S070B2R5G	VM2S070B2GLG	VM2S070B2R1G	VM2S070B2R5G	VM2S070B2S5G
			Tri	VM1S076B2GLG	VM1S076B2R1G	VM1S076B2R5G	VM2S076B2GLG	VM2S076B2R1G	VM2S076B2R5G	VM2S076B2S5G
			480	VM1S075B2GLG	VM1S075B2R1G	VM1S075B2R5G	VM2S075B2GLG	VM2S075B2R1G	VM2S075B2R5G	VM2S075B2S5G
100	S54	3/4"	Quad	VM1S100B2GLG	VM1S100B2R1G	VM1S100B2R5G	VM2S100B2GLG	VM2S100B2R1G	VM2S100B2R5G	VM2S100B2S5G
			Tri	VM1S106B2GLG	VM1S106B2R1G	VM1S106B2R5G	VM2S106B2GLG	VM2S106B2R1G	VM2S106B2R5G	VM2S106B2S5G
			480	VM1S105B2GLG	VM1S105B2R1G	VM1S105B2R5G	VM2S105B2GLG	VM2S105B2R1G	VM2S105B2R5G	VM2S105B2S5G
150	S55	3/4"	Quad	VM1S150B2GLG	VM1S150B2R1G	VM1S150B2R5G	VM2S150B2GLG	VM2S150B2R1G	VM2S150B2R5G	VM2S150B2S5G
			Tri	VM1S156B2GLG	VM1S156B2R1G	VM1S156B2R5G	VM2S156B2GLG	VM2S156B2R1G	VM2S156B2R5G	VM2S156B2S5G
			480	VM1S155B2GLG	VM1S155B2R1G	VM1S155B2R5G	VM2S155B2GLG	VM2S155B2R1G	VM2S155B2R5G	VM2S155B2S5G

① See hazardous location data pages L104-107 for application suitability
② Catalog numbers shown are with Guard; to omit guard change ending G to N; e.g. VM1S050X2GLN
③ Catalog numbers shown are with 3/4" conduit openings; change "2" to "3" for 1" e.g. VM1S050X3GLG
④ Consult catalog logic for other available voltage & lamp combinations
⑤ Add suffix NR for AEx nR Restricted Breathing; see page L54 for more information

HUBBELL
KILLARK®


VM1 Cone w/5-1/2" Globe & Guard


VM2 Cone w/7-3/4" Globe & Guard


VM1 EZ Adapter w/5-1/2" Refractor & Guard


VM2 EZ Adapter w/7-3/4" Refractor & Guard

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

c SP us Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR SP

VM 35-150 HIGH PRESSURE SODIUM-CONE

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
35	S76	3/4"	120V	VM1S031C2GLG	VM1S031C2R1G	VM1S031C2R5G	VM2S031C2GLG	VM2S031C2R1G	VM2S031C2R5G	VM2S031C2S5G
50	S68	3/4"	Quad	VM1S050C2GLG	VM1S050C2R1G	VM1S050C2R5G	VM2S050C2GLG	VM2S050C2R1G	VM2S050C2R5G	VM2S050C2S5G
70	S62	3/4"	Quad	VM1S070C2GLG	VM1S070C2R1G	VM1S070C2R5G	VM2S070C2GLG	VM2S070C2R1G	VM2S070C2R5G	VM2S070C2S5G
			Tri	VM1S076C2GLG	VM1S076C2R1G	VM1S076C2R5G	VM2S076C2GLG	VM2S076C2R1G	VM2S076C2R5G	VM2S076C2S5G
			480	VM1S075C2GLG	VM1S075C2R1G	VM1S075C2R5G	VM2S075C2GLG	VM2S075C2R1G	VM2S075C2R5G	VM2S075C2S5G
100	S54	3/4"	Quad	VM1S100C2GLG	VM1S100C2R1G	VM1S100C2R5G	VM2S100C2GLG	VM2S100C2R1G	VM2S100C2R5G	VM2S100C2S5G
			Tri	VM1S106C2GLG	VM1S106C2R1G	VM1S106C2R5G	VM2S106C2GLG	VM2S106C2R1G	VM2S106C2R5G	VM2S106C2S5G
			480	VM1S105C2GLG	VM1S105C2R1G	VM1S105C2R5G	VM2S105C2GLG	VM2S105C2R1G	VM2S105C2R5G	VM2S105C2S5G
150	S55	3/4"	Quad	VM1S150C2GLG	VM1S150C2R1G	VM1S150C2R5G	VM2S150C2GLG	VM2S150C2R1G	VM2S150C2R5G	VM2S150C2S5G
			Tri	VM1S156C2GLG	VM1S156C2R1G	VM1S156C2R5G	VM2S156C2GLG	VM2S156C2R1G	VM2S156C2R5G	VM2S156C2S5G
			480	VM1S155C2GLG	VM1S155C2R1G	VM1S155C2R5G	VM2S155C2GLG	VM2S155C2R1G	VM2S155C2R5G	VM2S155C2S5G

VM 35-150 HIGH PRESSURE SODIUM-EZ ADAPTER⑥

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
35	S76	⑥	120V	VM1S031EZGLG	VM1S031EZR1G	VM1S031EZR5G	VM2S031EZGLG	VM2S031EZR1G	VM2S031EZR5G	VM2S031EZS5G
50	S68	⑥	Quad	VM1S050EZGLG	VM1S050EZR1G	VM1S050EZR5G	VM2S050EZGLG	VM2S050EZR1G	VM2S050EZR5G	VM2S050EZS5G
70	S62	⑥	Quad	VM1S070EZGLG	VM1S070EZR1G	VM1S070EZR5G	VM2S070EZGLG	VM2S070EZR1G	VM2S070EZR5G	VM2S070EZS5G
			Tri	VM1S076EZGLG	VM1S076EZR1G	VM1S076EZR5G	VM2S076EZGLG	VM2S076EZR1G	VM2S076EZR5G	VM2S076EZS5G
			480	VM1S075EZGLG	VM1S075EZR1G	VM1S075EZR5G	VM2S075EZGLG	VM2S075EZR1G	VM2S075EZR5G	VM2S075EZS5G
100	S54	⑥	Quad	VM1S100EZGLG	VM1S100EZR1G	VM1S100EZR5G	VM2S100EZGLG	VM2S100EZR1G	VM2S100EZR5G	VM2S100EZS5G
			Tri	VM1S106EZGLG	VM1S106EZR1G	VM1S106EZR5G	VM2S106EZGLG	VM2S106EZR1G	VM2S106EZR5G	VM2S106EZS5G
			480	VM1S105EZGLG	VM1S105EZR1G	VM1S105EZR5G	VM2S105EZGLG	VM2S105EZR1G	VM2S105EZR5G	VM2S105EZS5G
150	S55	⑥	Quad	VM1S150EZGLG	VM1S150EZR1G	VM1S150EZR5G	VM2S150EZGLG	VM2S150EZR1G	VM2S150EZR5G	VM2S150EZS5G
			Tri	VM1S156EZGLG	VM1S156EZR1G	VM1S156EZR5G	VM2S156EZGLG	VM2S156EZR1G	VM2S156EZR5G	VM2S156EZS5G
			480	VM1S155EZGLG	VM1S155EZR1G	VM1S155EZR5G	VM2S155EZGLG	VM2S155EZR1G	VM2S155EZR5G	VM2S155EZS5G

① See hazardous location data pages L104-107 for application suitability.
② Catalog numbers shown are with Guard; to omit guard change ending G to N; e.g. VM1S050C2GLN.
③ Catalog numbers shown are with 3/4" conduit openings; change "2" to "3" for 1" e.g. VM1S050C3GLG.
④ Consult catalog logic for other available voltage & lamp combinations.
⑤ Add suffix NR for AEx nR Restricted Breathing; see page L54 for more information.
⑥ VMEZA tank adapters UL "classified" as an assembly for use between VM tanks and EZ mounts. Order EZ mounts separately. See page L83.

VM1 Stanchion 25° w/5-1/2" Globe & Guard

VM2 Stanchion 25° w/7-3/4" Globe & Guard

VM1 Stanchion Straight w/5-1/2" Refractor & Guard

VM2 Stanchion Straight w/7-3/4" Refractor & Guard

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

c SP us Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR SP

VM 35-150 HIGH PRESSURE SODIUM - STANCHION 25° ANGLE

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
35	S76	1-1/2"	120V	VM1S031D5GLG	VM1S031D5R1G	VM1S031D5R5G	VM2S031D5GLG	VM2S031D5R1G	VM2S031D5R5G	VM2S031D5S5G
50	S68	1-1/2"	Quad	VM1S050D5GLG	VM1S050D5R1G	VM1S050D5R5G	VM2S050D5GLG	VM2S050D5R1G	VM2S050D5R5G	VM2S050D5S5G
70	S62	1-1/2"	Quad	VM1S070D5GLG	VM1S070D5R1G	VM1S070D5R5G	VM2S070D5GLG	VM2S070D5R1G	VM2S070D5R5G	VM2S070D5S5G
			Tri	VM1S076D5GLG	VM1S076D5R1G	VM1S076D5R5G	VM2S076D5GLG	VM2S076D5R1G	VM2S076D5R5G	VM2S076D5S5G
			480	VM1S075D5GLG	VM1S075D5R1G	VM1S075D5R5G	VM2S075D5GLG	VM2S075D5R1G	VM2S075D5R5G	VM2S075D5S5G
100	S54	1-1/2"	Quad	VM1S100D5GLG	VM1S100D5R1G	VM1S100D5R5G	VM2S100D5GLG	VM2S100D5R1G	VM2S100D5R5G	VM2S100D5S5G
			Tri	VM1S106D5GLG	VM1S106D5R1G	VM1S106D5R5G	VM2S106D5GLG	VM2S106D5R1G	VM2S106D5R5G	VM2S106D5S5G
			480	VM1S105D5GLG	VM1S105D5R1G	VM1S105D5R5G	VM2S105D5GLG	VM2S105D5R1G	VM2S105D5R5G	VM2S105D5S5G
150	S55	1-1/2"	Quad	VM1S150D5GLG	VM1S150D5R1G	VM1S150D5R5G	VM2S150D5GLG	VM2S150D5R1G	VM2S150D5R5G	VM2S150D5S5G
			Tri	VM1S156D5GLG	VM1S156D5R1G	VM1S156D5R5G	VM2S156D5GLG	VM2S156D5R1G	VM2S156D5R5G	VM2S156D5S5G
			480	VM1S155D5GLG	VM1S155D5R1G	VM1S155D5R5G	VM2S155D5GLG	VM2S155D5R1G	VM2S155D5R5G	VM2S155D5S5G

VM 35-150 HIGH PRESSURE SODIUM - STANCHION STRAIGHT

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
35	S76	1-1/2"	120V	VM1S031S5GLG	VM1S031S5R1G	VM1S031S5R5G	VM2S031S5GLG	VM2S031S5R1G	VM2S031S5R5G	VM2S031S5S5G
50	S68	1-1/2"	Quad	VM1S050S5GLG	VM1S050S5R1G	VM1S050S5R5G	VM2S050S5GLG	VM2S050S5R1G	VM2S050S5R5G	VM2S050S5S5G
70	S62	1-1/2"	Quad	VM1S070S5GLG	VM1S070S5R1G	VM1S070S5R5G	VM2S070S5GLG	VM2S070S5R1G	VM2S070S5R5G	VM2S070S5S5G
			Tri	VM1S076S5GLG	VM1S076S5R1G	VM1S076S5R5G	VM2S076S5GLG	VM2S076S5R1G	VM2S076S5R5G	VM2S076S5S5G
			480	VM1S075S5GLG	VM1S075S5R1G	VM1S075S5R5G	VM2S075S5GLG	VM2S075S5R1G	VM2S075S5R5G	VM2S075S5S5G
100	S54	1-1/2"	Quad	VM1S100S5GLG	VM1S100S5R1G	VM1S100S5R5G	VM2S100S5GLG	VM2S100S5R1G	VM2S100S5R5G	VM2S100S5S5G
			Tri	VM1S106S5GLG	VM1S106S5R1G	VM1S106S5R5G	VM2S106S5GLG	VM2S106S5R1G	VM2S106S5R5G	VM2S106S5S5G
			480	VM1S105S5GLG	VM1S105S5R1G	VM1S105S5R5G	VM2S105S5GLG	VM2S105S5R1G	VM2S105S5R5G	VM2S105S5S5G
150	S55	1-1/2"	Quad	VM1S150S5GLG	VM1S150S5R1G	VM1S150S5R5G	VM2S150S5GLG	VM2S150S5R1G	VM2S150S5R5G	VM2S150S5S5G
			Tri	VM1S156S5GLG	VM1S156S5R1G	VM1S156S5R5G	VM2S156S5GLG	VM2S156S5R1G	VM2S156S5R5G	VM2S156S5S5G
			480	VM1S155S5GLG	VM1S155S5R1G	VM1S155S5R5G	VM2S155S5GLG	VM2S155S5R1G	VM2S155S5R5G	VM2S155S5S5G

① See hazardous location data pages L104-107 for application suitability.
② Catalog numbers shown are with Guard; to omit guard change ending G to N; e.g. VM1S050D5GLN.
③ Catalog numbers shown are with 1-1/2" conduit openings; change "5" to "4" for 1-1/4" e.g. VM1S050D4GLG.
④ Consult catalog logic for other available voltage & lamp combinations.
⑤ Add suffix NR for AEx nR Restricted Breathing; see page L54 for more information.

L

VM1 Pendant w/5-1/2" Globe & Guard

VM2 Pendant w/7-3/4" Globe & Guard

VM1 Flexible Pendant w/5-1/2" Refractor & Guard

VM2 Flexible Pendant w/7-3/4" Refractor & Guard

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

c SP us Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR SP

VM 50-175 METAL HALIDE (PULSE) - PENDANT**

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
50	M110	3/4"	Quad	VM1H050A2GLG	VM1H050A2R1G	VM1H050A2R5G	VM2H050A2GLG	VM2H050A2R1G	VM2H050A2R5G	VM2H050A2S5G
			Tri	VM1H056A2GLG	VM1H056A2R1G	VM1H056A2R5G	VM2H056A2GLG	VM2H056A2R1G	VM2H056A2R5G	VM2H056A2S5G
70	M98	3/4"	Quad	VM1H070A2GLG	VM1H070A2R1G	VM1H070A2R5G	VM2H070A2GLG	VM2H070A2R1G	VM2H070A2R5G	VM2H070A2S5G
			Tri	VM1H076A2GLG	VM1H076A2R1G	VM1H076A2R5G	VM2H076A2GLG	VM2H076A2R1G	VM2H076A2R5G	VM2H076A2S5G
			480	VM1H075A2GLG	VM1H075A2R1G	VM1H075A2R5G	VM2H075A2GLG	VM2H075A2R1G	VM2H075A2R5G	VM2H075A2S5G
100	M90	3/4"	Quad	VM1H100A2GLG	VM1H100A2R1G	VM1H100A2R5G	VM2H100A2GLG	VM2H100A2R1G	VM2H100A2R5G	VM2H100A2S5G
			Tri	VM1H106A2GLG	VM1H106A2R1G	VM1H106A2R5G	VM2H106A2GLG	VM2H106A2R1G	VM2H106A2R5G	VM2H106A2S5G
			480	VM1H105A2GLG	VM1H105A2R1G	VM1H105A2R5G	VM2H105A2GLG	VM2H105A2R1G	VM2H105A2R5G	VM2H105A2S5G
150	M102	3/4"	Quad	VM1P150A2GLG	VM1P150A2R1G	VM1P150A2R5G	VM2P150A2GLG	VM2P150A2R1G	VM2P150A2R5G	VM2P150A2S5G
			Tri	VM1P156A2GLG	VM1P156A2R1G	VM1P156A2R5G	VM2P156A2GLG	VM2P156A2R1G	VM2P156A2R5G	VM2P156A2S5G
	M142		480	VM1P155A2GLG	VM1P155A2R1G	VM1P155A2R5G	VM2P155A2GLG	VM2P155A2R1G	VM2P155A2R5G	VM2P155A2S5G
175	M137	3/4"	Quad	VM1P170A2GLG	VM1P170A2R1G	VM1P170A2R5G	VM2P170A2GLG	VM2P170A2R1G	VM2P170A2R5G	VM2P170A2S5G
			Tri	VM1P176A2GLG	VM1P176A2R1G	VM1P176A2R5G	VM2P176A2GLG	VM2P176A2R1G	VM2P176A2R5G	VM2P176A2S5G
	M152		480	VM1P175A2GLG	VM1P175A2R1G	VM1P175A2R5G	VM2P175A2GLG	VM2P175A2R1G	VM2P175A2R5G	VM2P175A2S5G

VM 50-175 METAL HALIDE (PULSE) - FLEX PENDANT**

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
50	M110	3/4"	Quad	VM1H050F2GLG	VM1H050F2R1G	VM1H050F2R5G	VM2H050F2GLG	VM2H050F2R1G	VM2H050F2R5G	VM2H050F2S5G
			Tri	VM1H056F2GLG	VM1H056F2R1G	VM1H056F2R5G	VM2H056F2GLG	VM2H056F2R1G	VM2H056F2R5G	VM2H056F2S5G
70	M98	3/4"	Quad	VM1H070F2GLG	VM1H070F2R1G	VM1H070F2R5G	VM2H070F2GLG	VM2H070F2R1G	VM2H070F2R5G	VM2H070F2S5G
			Tri	VM1H076F2GLG	VM1H076F2R1G	VM1H076F2R5G	VM2H076F2GLG	VM2H076F2R1G	VM2H076F2R5G	VM2H076F2S5G
			480	VM1H075F2GLG	VM1H075F2R1G	VM1H075F2R5G	VM2H075F2GLG	VM2H075F2R1G	VM2H075F2R5G	VM2H075F2S5G
100	M90	3/4"	Quad	VM1H100F2GLG	VM1H100F2R1G	VM1H100F2R5G	VM2H100F2GLG	VM2H100F2R1G	VM2H100F2R5G	VM2H100F2S5G
			Tri	VM1H106F2GLG	VM1H106F2R1G	VM1H106F2R5G	VM2H106F2GLG	VM2H106F2R1G	VM2H106F2R5G	VM2H106F2S5G
			480	VM1H105F2GLG	VM1H105F2R1G	VM1H105F2R5G	VM2H105F2GLG	VM2H105F2R1G	VM2H105F2R5G	VM2H105F2S5G
150	M102	3/4"	Quad	VM1P150F2GLG	VM1P150F2R1G	VM1P150F2R5G	VM2P150F2GLG	VM2P150F2R1G	VM2P150F2R5G	VM2P150F2S5G
			Tri	VM1P156F2GLG	VM1P156F2R1G	VM1P156F2R5G	VM2P156F2GLG	VM2P156F2R1G	VM2P156F2R5G	VM2P156F2S5G
	M142		480	VM1P155F2GLG	VM1P155F2R1G	VM1P155F2R5G	VM2P155F2GLG	VM2P155F2R1G	VM2P155F2R5G	VM2P155F2S5G
175	M137	3/4"	Quad	VM1P170F2GLG	VM1P170F2R1G	VM1P170F2R5G	VM2P170F2GLG	VM2P170F2R1G	VM2P170F2R5G	VM2P170F2S5G
			Tri	VM1P176F2GLG	VM1P176F2R1G	VM1P176F2R5G	VM2P176F2GLG	VM2P176F2R1G	VM2P176F2R5G	VM2P176F2S5G
	M152		480	VM1P175F2GLG	VM1P175F2R1G	VM1P175F2R5G	VM2P175F2GLG	VM2P175F2R1G	VM2P175F2R5G	VM2P175F2S5G

① See hazardous location data pages L104-107 for application suitability.
② Catalog numbers shown are with Guard; to omit guard change ending G to N; e.g. VM1H050A2GLN.
③ Catalog numbers shown are with 3/4" conduit openings; change "2" to "3" for 1" e.g. VM1H050A3GLG.
④ Consult catalog logic for other available voltage & lamp combinations.
⑤ Add suffix NR for AEx nR Restricted Breathing; see page L54 for more information.
*** 50, 70, & 100 Watt "Traditional Metal Hallide" ballasts include a Pulse Ignitor, as do 150 & 175W Metal Halide Pulse models.*

VM1 Ceiling w/5-1/2" Globe & Guard

VM2 Ceiling w/7-3/4" Globe & Guard

VM1 Wall w/5-1/2" Refractor & Guard

VM2 Wall w/7-3/4" Refractor & Guard

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

c SP us Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR SP

VM 50-175 METAL HALIDE (PULSE) - CEILING**

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
50	M110	3/4"	Quad	VM1H050X2GLG	VM1H050X2R1G	VM1H050X2R5G	VM2H050X2GLG	VM2H050X2R1G	VM2H050X2R5G	VM2H050X2S5G
			Tri	VM1H056X2GLG	VM1H056X2R1G	VM1H056X2R5G	VM2H056X2GLG	VM2H056X2R1G	VM2H056X2R5G	VM2H056X2S5G
70	M98	3/4"	Quad	VM1H070X2GLG	VM1H070X2R1G	VM1H070X2R5G	VM2H070X2GLG	VM2H070X2R1G	VM2H070X2R5G	VM2H070X2S5G
			Tri	VM1H076X2GLG	VM1H076X2R1G	VM1H076X2R5G	VM2H076X2GLG	VM2H076X2R1G	VM2H076X2R5G	VM2H076X2S5G
			480	VM1H075X2GLG	VM1H075X2R1G	VM1H075X2R5G	VM2H075X2GLG	VM2H075X2R1G	VM2H075X2R5G	VM2H075X2S5G
100	M90	3/4"	Quad	VM1H100X2GLG	VM1H100X2R1G	VM1H100X2R5G	VM2H100X2GLG	VM2H100X2R1G	VM2H100X2R5G	VM2H100X2S5G
			Tri	VM1H106X2GLG	VM1H106X2R1G	VM1H106X2R5G	VM2H106X2GLG	VM2H106X2R1G	VM2H106X2R5G	VM2H106X2S5G
			480	VM1H105X2GLG	VM1H105X2R1G	VM1H105X2R5G	VM2H105X2GLG	VM2H105X2R1G	VM2H105X2R5G	VM2H105X2S5G
150	M102	3/4"	Quad	VM1P150X2GLG	VM1P150X2R1G	VM1P150X2R5G	VM2P150X2GLG	VM2P150X2R1G	VM2P150X2R5G	VM2P150X2S5G
			Tri	VM1P156X2GLG	VM1P156X2R1G	VM1P156X2R5G	VM2P156X2GLG	VM2P156X2R1G	VM2P156X2R5G	VM2P156X2S5G
	M142		480	VM1P155X2GLG	VM1P155X2R1G	VM1P155X2R5G	VM2P155X2GLG	VM2P155X2R1G	VM2P155X2R5G	VM2P155X2S5G
175	M137	3/4"	Quad	VM1P170X2GLG	VM1P170X2R1G	VM1P170X2R5G	VM2P170X2GLG	VM2P170X2R1G	VM2P170X2R5G	VM2P170X2S5G
			Tri	VM1P176X2GLG	VM1P176X2R1G	VM1P176X2R5G	VM2P176X2GLG	VM2P176X2R1G	VM2P176X2R5G	VM2P176X2S5G
	M152		480	VM1P175X2GLG	VM1P175X2R1G	VM1P175X2R5G	VM2P175X2GLG	VM2P175X2R1G	VM2P175X2R5G	VM2P175X2S5G

VM 50-175 METAL HALIDE (PULSE) - WALL**

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
50	M110	3/4"	Quad	VM1H050B2GLG	VM1H050B2R1G	VM1H050B2R5G	VM2H050B2GLG	VM2H050B2R1G	VM2H050B2R5G	VM2H050B2S5G
			Tri	VM1H056B2GLG	VM1H056B2R1G	VM1H056B2R5G	VM2H056B2GLG	VM2H056B2R1G	VM2H056B2R5G	VM2H056B2S5G
70	M98	3/4"	Quad	VM1H070B2GLG	VM1H070B2R1G	VM1H070B2R5G	VM2H070B2GLG	VM2H070B2R1G	VM2H070B2R5G	VM2H070B2S5G
			Tri	VM1H076B2GLG	VM1H076B2R1G	VM1H076B2R5G	VM2H076B2GLG	VM2H076B2R1G	VM2H076B2R5G	VM2H076B2S5G
			480	VM1H075B2GLG	VM1H075B2R1G	VM1H075B2R5G	VM2H075B2GLG	VM2H075B2R1G	VM2H075B2R5G	VM2H075B2S5G
100	M90	3/4"	Quad	VM1H100B2GLG	VM1H100B2R1G	VM1H100B2R5G	VM2H100B2GLG	VM2H100B2R1G	VM2H100B2R5G	VM2H100B2S5G
			Tri	VM1H106B2GLG	VM1H106B2R1G	VM1H106B2R5G	VM2H106B2GLG	VM2H106B2R1G	VM2H106B2R5G	VM2H106B2S5G
			480	VM1H105B2GLG	VM1H105B2R1G	VM1H105B2R5G	VM2H105B2GLG	VM2H105B2R1G	VM2H105B2R5G	VM2H105B2S5G
150	M102	3/4"	Quad	VM1P150B2GLG	VM1P150B2R1G	VM1P150B2R5G	VM2P150B2GLG	VM2P150B2R1G	VM2P150B2R5G	VM2P150B2S5G
			Tri	VM1P156B2GLG	VM1P156B2R1G	VM1P156B2R5G	VM2P156B2GLG	VM2P156B2R1G	VM2P156B2R5G	VM2P156B2S5G
	M142		480	VM1P155B2GLG	VM1P155B2R1G	VM1P155B2R5G	VM2P155B2GLG	VM2P155B2R1G	VM2P155B2R5G	VM2P155B2S5G
175	M137	3/4"	Quad	VM1P170B2GLG	VM1P170B2R1G	VM1P170B2R5G	VM2P170B2GLG	VM2P170B2R1G	VM2P170B2R5G	VM2P170B2S5G
			Tri	VM1P176B2GLG	VM1P176B2R1G	VM1P176B2R5G	VM2P176B2GLG	VM2P176B2R1G	VM2P176B2R5G	VM2P176B2S5G
	M152		480	VM1P175B2GLG	VM1P175B2R1G	VM1P175B2R5G	VM2P175B2GLG	VM2P175B2R1G	VM2P175B2R5G	VM2P175B2S5G

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① *See hazardous location data pages L104-107 for application suitability.*
② *Catalog numbers shown are with Guard; to omit guard change ending G to N; e.g. VM1H050X2GLN.*
③ *Catalog numbers shown are with 3/4" conduit openings; change "2" to "3" for 1" e.g. VM1H050X3GLG.*
④ *Consult catalog logic for other available voltage & lamp combinations.*
⑤ *Add suffix NR for AEx nR Restricted Breathing; see page L54 for more information.*
*** 50, 70, & 100 Watt "Traditional Metal Hallide" ballasts include a Pulse Ignitor, as do 150 & 175W Metal Halide Pulse models.*

VM1 Cone w/5-1/2" Globe & Guard

VM2 Cone w/7-3/4" Globe & Guard

VM1 EZ Adapter w/5-1/2" Refractor & Guard

VM2 EZ Adapter w/7-3/4" Refractor & Guard

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

c SP us Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR SP

VM 50-175 METAL HALIDE (PULSE) - CONE**

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
50	M110	3/4"	Quad	VM1H050C2GLG	VM1H050C2R1G	VM1H050C2R5G	VM2H050C2GLG	VM2H050C2R1G	VM2H050C2R5G	VM2H050C2S5G
			Tri	VM1H056C2GLG	VM1H056C2R1G	VM1H056C2R5G	VM2H056C2GLG	VM2H056C2R1G	VM2H056C2R5G	VM2H056C2S5G
70	M98	3/4"	Quad	VM1H070C2GLG	VM1H070C2R1G	VM1H070C2R5G	VM2H070C2GLG	VM2H070C2R1G	VM2H070C2R5G	VM2H070C2S5G
			Tri	VM1H076C2GLG	VM1H076C2R1G	VM1H076C2R5G	VM2H076C2GLG	VM2H076C2R1G	VM2H076C2R5G	VM2H076C2S5G
			480	VM1H075C2GLG	VM1H075C2R1G	VM1H075C2R5G	VM2H075C2GLG	VM2H075C2R1G	VM2H075C2R5G	VM2H075C2S5G
100	M90	3/4"	Quad	VM1H100C2GLG	VM1H100C2R1G	VM1H100C2R5G	VM2H100C2GLG	VM2H100C2R1G	VM2H100C2R5G	VM2H100C2S5G
			Tri	VM1H106C2GLG	VM1H106C2R1G	VM1H106C2R5G	VM2H106C2GLG	VM2H106C2R1G	VM2H106C2R5G	VM2H106C2S5G
			480	VM1H105C2GLG	VM1H105C2R1G	VM1H105C2R5G	VM2H105C2GLG	VM2H105C2R1G	VM2H105C2R5G	VM2H105C2S5G
150	M102	3/4"	Quad	VM1P150C2GLG	VM1P150C2R1G	VM1P150C2R5G	VM2P150C2GLG	VM2P150C2R1G	VM2P150C2R5G	VM2P150C2S5G
			Tri	VM1P156C2GLG	VM1P156C2R1G	VM1P156C2R5G	VM2P156C2GLG	VM2P156C2R1G	VM2P156C2R5G	VM2P156C2S5G
	M142		480	VM1P155C2GLG	VM1P155C2R1G	VM1P155C2R5G	VM2P155C2GLG	VM2P155C2R1G	VM2P155C2R5G	VM2P155C2S5G
175	M137	3/4"	Quad	VM1P170C2GLG	VM1P170C2R1G	VM1P170C2R5G	VM2P170C2GLG	VM2P170C2R1G	VM2P170C2R5G	VM2P170C2S5G
			Tri	VM1P176C2GLG	VM1P176C2R1G	VM1P176C2R5G	VM2P176C2GLG	VM2P176C2R1G	VM2P176C2R5G	VM2P176C2S5G
	M152		480	VM1P175C2GLG	VM1P175C2R1G	VM1P175C2R5G	VM2P175C2GLG	VM2P175C2R1G	VM2P175C2R5G	VM2P175C2S5G

VM 50-175 METAL HALIDE (PULSE) - EZ ADAPTER⑥**

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
50	M110	⑥	Quad	VM1H050EZGLG	VM1H050EZR1G	VM1H050EZR5G	VM2H050EZGLG	VM2H050EZR1G	VM2H050EZR5G	VM2H050EZS5G
			Tri	VM1H056EZGLG	VM1H056EZR1G	VM1H056EZR5G	VM2H056EZGLG	VM2H056EZR1G	VM2H056EZR5G	VM2H056EZS5G
70	M98	⑥	Quad	VM1H070EZGLG	VM1H070EZR1G	VM1H070EZR5G	VM2H070EZGLG	VM2H070EZR1G	VM2H070EZR5G	VM2H070EZS5G
			Tri	VM1H076EZGLG	VM1H076EZR1G	VM1H076EZR5G	VM2H076EZGLG	VM2H076EZR1G	VM2H076EZR5G	VM2H076EZS5G
			480	VM1H075EZGLG	VM1H075EZR1G	VM1H075EZR5G	VM2H075EZGLG	VM2H075EZR1G	VM2H075EZR5G	VM2H075EZS5G
100	M90	⑥	Quad	VM1H100EZGLG	VM1H100EZR1G	VM1H100EZR5G	VM2H100EZGLG	VM2H100EZR1G	VM2H100EZR5G	VM2H100EZS5G
			Tri	VM1H106EZGLG	VM1H106EZR1G	VM1H106EZR5G	VM2H106EZGLG	VM2H106EZR1G	VM2H106EZR5G	VM2H106EZS5G
			480	VM1H105EZGLG	VM1H105EZR1G	VM1H105EZR5G	VM2H105EZGLG	VM2H105EZR1G	VM2H105EZR5G	VM2H105EZS5G
150	M102	⑥	Quad	VM1P150EZGLG	VM1P150EZR1G	VM1P150EZR5G	VM2P150EZGLG	VM2P150EZR1G	VM2P150EZR5G	VM2P150EZS5G
			Tri	VM1P156EZGLG	VM1P156EZR1G	VM1P156EZR5G	VM2P156EZGLG	VM2P156EZR1G	VM2P156EZR5G	VM2P156EZS5G
	M142		480	VM1P155EZGLG	VM1P155EZR1G	VM1P155EZR5G	VM2P155EZGLG	VM2P155EZR1G	VM2P155EZR5G	VM2P155EZS5G
175	M137	⑥	Quad	VM1P170EZGLG	VM1P170EZR1G	VM1P170EZR5G	VM2P170EZGLG	VM2P170EZR1G	VM2P170EZR5G	VM2P170EZS5G
			Tri	VM1P176EZGLG	VM1P176EZR1G	VM1P176EZR5G	VM2P176EZGLG	VM2P176EZR1G	VM2P176EZR5G	VM2P176EZS5G
	M152		480	VM1P175EZGLG	VM1P175EZR1G	VM1P175EZR5G	VM2P175EZGLG	VM2P175EZR1G	VM2P175EZR5G	VM2P175EZS5G

① See hazardous location data pages L104-107 for application suitability.
② Catalog numbers shown are with Guard; to omit guard change ending G to N; e.g. VM1H050C2GLN.
③ Catalog numbers shown are with 3/4" conduit openings; change "2" to "3" for 1" e.g. VM1H050C3GLG.
④ Consult catalog logic for other available voltage & lamp combinations.
⑤ Add suffix NR for AEx nR Restricted Breathing; see page L54 for more information.
*** 50, 70, & 100 Watt "Traditional Metal Hallide" ballasts include a Pulse Ignitor, as do 150 & 175W Metal Halide Pulse models.*

HUBBELL®
KILLARK®

VM1 Stanchion 25° w/5-1/2" Globe & Guard

VM2 Stanchion 25° w/7-3/4" Globe & Guard

VM1 Stanchion Straight w/5-1/2" Refractor & Guard

VM2 Stanchion Straight w/7-3/4" Refractor & Guard

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

c SP us Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR SP

VM 50-175 METAL HALIDE (PULSE) - STANCHION 25° ANGLE**

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
50	M110	1-1/2"	Quad	VM1H050D5GLG	VM1H050D5R1G	VM1H050D5R5G	VM2H050D5GLG	VM2H050D5R1G	VM2H050D5R5G	VM2H050D5S5G
			Tri	VM1H056D5GLG	VM1H056D5R1G	VM1H056D5R5G	VM2H056D5GLG	VM2H056D5R1G	VM2H056D5R5G	VM2H056D5S5G
70	M98	1-1/2"	Quad	VM1H070D5GLG	VM1H070D5R1G	VM1H070D5R5G	VM2H070D5GLG	VM2H070D5R1G	VM2H070D5R5G	VM2H070D5S5G
			Tri	VM1H076D5GLG	VM1H076D5R1G	VM1H076D5R5G	VM2H076D5GLG	VM2H076D5R1G	VM2H076D5R5G	VM2H076D5S5G
			480	VM1H075D5GLG	VM1H075D5R1G	VM1H075D5R5G	VM2H075D5GLG	VM2H075D5R1G	VM2H075D5R5G	VM2H075D5S5G
100	M90	1-1/2"	Quad	VM1H100D5GLG	VM1H100D5R1G	VM1H100D5R5G	VM2H100D5GLG	VM2H100D5R1G	VM2H100D5R5G	VM2H100D5S5G
			Tri	VM1H106D5GLG	VM1H106D5R1G	VM1H106D5R5G	VM2H106D5GLG	VM2H106D5R1G	VM2H106D5R5G	VM2H106D5S5G
			480	VM1H105D5GLG	VM1H105D5R1G	VM1H105D5R5G	VM2H105D5GLG	VM2H105D5R1G	VM2H105D5R5G	VM2H105D5S5G
150	M102	1-1/2"	Quad	VM1P150D5GLG	VM1P150D5R1G	VM1P150D5R5G	VM2P150D5GLG	VM2P150D5R1G	VM2P150D5R5G	VM2P150D5S5G
			Tri	VM1P156D5GLG	VM1P156D5R1G	VM1P156D5R5G	VM2P156D5GLG	VM2P156D5R1G	VM2P156D5R5G	VM2P156D5S5G
	M142		480	VM1P155D5GLG	VM1P155D5R1G	VM1P155D5R5G	VM2P155D5GLG	VM2P155D5R1G	VM2P155D5R5G	VM2P155D5S5G
175	M137	1-1/2"	Quad	VM1P170D5GLG	VM1P170D5R1G	VM1P170D5R5G	VM2P170D5GLG	VM2P170D5R1G	VM2P170D5R5G	VM2P170D5S5G
			Tri	VM1P176D5GLG	VM1P176D5R1G	VM1P176D5R5G	VM2P176D5GLG	VM2P176D5R1G	VM2P176D5R5G	VM2P176D5S5G
	M152		480	VM1P175D5GLG	VM1P175D5R1G	VM1P175D5R5G	VM2P175D5GLG	VM2P175D5R1G	VM2P175D5R5G	VM2P175D5S5G

VM 50-175 METAL HALIDE (PULSE) - STANCHION STRAIGHT**

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
50	M110	1-1/2"	Quad	VM1H050S5GLG	VM1H050S5R1G	VM1H050S5R5G	VM2H050S5GLG	VM2H050S5R1G	VM2H050S5R5G	VM2H050S5S5G
			Tri	VM1H056S5GLG	VM1H056S5R1G	VM1H056S5R5G	VM2H056S5GLG	VM2H056S5R1G	VM2H056S5R5G	VM2H056S5S5G
70	M98	1-1/2"	Quad	VM1H070S5GLG	VM1H070S5R1G	VM1H070S5R5G	VM2H070S5GLG	VM2H070S5R1G	VM2H070S5R5G	VM2H070S5S5G
			Tri	VM1H076S5GLG	VM1H076S5R1G	VM1H076S5R5G	VM2H076S5GLG	VM2H076S5R1G	VM2H076S5R5G	VM2H076S5S5G
			480	VM1H075S5GLG	VM1H075S5R1G	VM1H075S5R5G	VM2H075S5GLG	VM2H075S5R1G	VM2H075S5R5G	VM2H075S5S5G
100	M90	1-1/2"	Quad	VM1H100S5GLG	VM1H100S5R1G	VM1H100S5R5G	VM2H100S5GLG	VM2H100S5R1G	VM2H100S5R5G	VM2H100S5S5G
			Tri	VM1H106S5GLG	VM1H106S5R1G	VM1H106S5R5G	VM2H106S5GLG	VM2H106S5R1G	VM2H106S5R5G	VM2H106S5S5G
			480	VM1H105S5GLG	VM1H105S5R1G	VM1H105S5R5G	VM2H105S5GLG	VM2H105S5R1G	VM2H105S5R5G	VM2H105S5S5G
150	M102	1-1/2"	Quad	VM1P150S5GLG	VM1P150S5R1G	VM1P150S5R5G	VM2P150S5GLG	VM2P150S5R1G	VM2P150S5R5G	VM2P150S5S5G
			Tri	VM1P156S5GLG	VM1P156S5R1G	VM1P156S5R5G	VM2P156S5GLG	VM2P156S5R1G	VM2P156S5R5G	VM2P156S5S5G
	M142		480	VM1P155S5GLG	VM1P155S5R1G	VM1P155S5R5G	VM2P155S5GLG	VM2P155S5R1G	VM2P155S5R5G	VM2P155S5S5G
175	M137	1-1/2"	Quad	VM1P170S5GLG	VM1P170S5R1G	VM1P170S5R5G	VM2P170S5GLG	VM2P170S5R1G	VM2P170S5R5G	VM2P170S5S5G
			Tri	VM1P176S5GLG	VM1P176S5R1G	VM1P176S5R5G	VM2P176S5GLG	VM2P176S5R1G	VM2P176S5R5G	VM2P176S5S5G
	M152		480	VM1P175S5GLG	VM1P175S5R1G	VM1P175S5R5G	VM2P175S5GLG	VM2P175S5R1G	VM2P175S5R5G	VM2P175S5S5G

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① See hazardous location data pages L104-107 for application suitability.
② Catalog numbers shown are with Guard; to omit guard change ending G to N; e.g. VM1H050D4GLN.
③ Catalog numbers shown are with 1-1/2" conduit openings; change "5" to "4" for 1-1/4" e.g. VM1H050D4GLG.
④ Consult catalog logic for other available voltage & lamp combinations.
⑤ Add suffix NR for AEx nR Restricted Breathing; see page L54 for more information.
*** 50, 70, & 100 Watt "Traditional Metal Hallide" ballasts include a Pulse Ignitor, as do 150 & 175W Metal Halide Pulse models.*

CERTILITE®V
The Logical Choice

CertiLite®V Catalog Number Logic; 50-250 Low Wattage (Mogul Base) HID Fixtures

VM 0 0 00 0 0 0 00 0 (NR⑦) 00

Series Constant

Optic Thread Size
3—5 1/2"
4—7 3/4"

Lamp Type
S—HPS (50, 70, 100, 150)
H—MH (70, 100, 175, 250)
P—MHP (125①, 150, 175, 200)

Lamp Wattage
05—50W, (HPS)
07—70W, (HPS, MH)
10—100W, (HPS, MH)
12—125W, (MHP①)
15—150W, (HPS, MHP)
17—175W, (MH, MHP)
20—200W, (MHP)
25—250W, (MH)⑮

175-250W Old Style MH are Export only EISA LAW

Voltage @ 60 Hertz Ⓥ
0—Quadri-Volt (120, 208, 240, 277)
5—480V
6—Tri - 120, 277, 347 (Canada)
7—220V
8—220/240 50 Hz

Mounting Type
A—Pendant
F—Flexible Pendant
X—Ceiling
B—Wall Bracket
C—Cone Top
E—EZ Mount Adapter②
D—Stanchion 25°
S—Stanchion Straight 90°
N—None (mount ordered separately)③

Entry (Mounts available)
2—3/4" NPT (A,B,C,X)
3—1" NPT (A,B,C,X)
4—1 1/4" NPT (D,S)
5—1 1/2" NPT (D,S)
6—3/4" NPT 5-Hub (X)
7—1" NPT 5-Hub (X)
8—M20 4-Hub (X)
9—M20 5-Hub (X)
Z—EZ Mount Adapter②
N—None (mount ordered separately)③

Optic
GL—Globe (VM3, VM4)
R1—Type I Glass Refractor (VM3, VM4)
R3—Type III Glass Refractor (VM4)
R5—Type V Glass Refractor (VM3, VM4)
ER—Enclosed Reflector (VM4)
EP—Poylcarbonate Shielded Enclosed Reflector (VM4)⑬
S2—Type II 12" Spin-Top Refractor (VM3④, VM4)
S8—Type V 8" Spin-Top Refractor (VM3)
S5—Type V 12" Spin-Top Refractor (VM3④, VM4)
P5—Type V 12" Plastic Spin-Top Refractor (VM3-175W Max.)
FG—Silicone⑤ Coated Globe (VM3, VM4)
TG—Teflon®⑥ Coated Globe (VM3, VM4)
T1—Teflon®⑥ Coated Globe Type I Glass Refractor (VM3, VM4)
T3—Teflon®⑥ Coated Globe Type III Glass Refractor (VM4)
T5—Teflon®⑥ Coated Globe Type V Glass Refractor (VM3, VM4)
T2—Teflon®⑥ Coated Type II 12" Spin-Top Refractor (VM3④, VM4)
T8—Teflon®⑥ Coated Type V 8" Spin-Top Refractor (VM3)
TV—Teflon®⑥ Coated Type V 12" Spin-Top Refractor (VM3④, VM4)

Guard
G—Guard (Globes & Glass refractors)
N—No Guard⑧

Options
IR—Instant Restrike - 50-150 HPS⑯
QA—Quartz Auxiliary⑨
BP—Ballast Protector - 70-150 HPS⑯
F1—Fusing 120V⑩
F2—Fusing 208V⑩
F3—Fusing 240V⑩
F4—Fusing 277V⑩
F5—Fusing 480V⑩
F6—Fusing 347V⑩
F7—Fusing 220V⑩
F8—Fusing 240V 50 Hz⑩
P1—Photocell 120V ⑪ ⑫
P2—Photocell 208-277V ⑪ ⑫
P3—Photocell 347V ⑪ ⑫
Q1—QD Wired to 120V ⑭
Q2—QD Wired to 208V ⑭
Q3—QD Wired to 240V ⑭
Q4—QD Wired to 277V ⑭
Q5—QD Wired to 480V ⑭
Q6—QD Wired to 347V ⑭
Q7—QD 220V ⑭
Q8—QD 240V (50Hz)
TBx—Terminal Blocks
x = Voltage Code
AS—Assembled Fixture with Standard Lamp
AD—Assembled Fixture with Dual Arc Tube Lamp 70, 100, 150 HPS only
AN—Assembled, no lamp
CP—Component Pack-No Lamp
CS—Component Pack with Standard Lamp

① Special order lamp type/wattage not shown in grids, minimums apply.
② Completes as "EZ", conduit mounting boxes ordered separately - See L83.
③ NN mount ordered separately.
④ 12" Spintops for use with VM3 tanks ship with a Mogul to Mogul socket extender for enhanced photometrics vs. 7 3/4", which are used on VM5, but will fit VM4.
⑤ Silicone coated globe for additional impact protection.
⑥ Teflon® is a registered trademark of DuPont, Inc.
Ⓥ Consult factory for available lamp and voltage combinations.
⑦ Restricted Breathing - See L54 for more information.
⑧ Order Guards for Spin-Tops & VMER40 separately.
⑨ QA not suitable for Class I, Div. 2/Zone 2 applications; consult factory for other hazardous applications.
⑩ Fusing not for Marine or Canadian installations.
⑪ Photo cells for Class I, Div. 2 only, or C1Z2 nR, - not Class II.
⑫ Field connection to proper tap in case of Multitap Ballasts.
⑬ Not for use with wall or straight (90°) Stanchion.
⑭ QD = Quick Disconnect. Allows easy tank removal for maintenance. Electrician simply unplugs de-energized ballast from supply circuit.
⑮ 220V 60Hz or 230V 50Hz used with QA-requires VM5 tank.
⑯ IR and BP cannot be ordered together.

Pendant
w/ 5-1/2"
Globe & Guard

Flexible Pendant
w/ 5-1/2"
Refractor & Guard

Pendant
w/ 7-3/4"
Globe & Guard

Flexible Pendant
w/ 7-3/4"
Refractor & Guard

Pendant
w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

c SP us Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR SP

VM 50-150 WATT HIGH PRESSURE SODIUM PENDANT

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
50	S68	3/4"	Quad	VM3S050A2GLG	VM3S050A2R1G	VM3S050A2R5G	VM4S050A2GLG	VM4S050A2R1G	VM4S050A2R5G	VM4S050A2ERN
70	S62	3/4"	Quad	VM3S070A2GLG	VM3S070A2R1G	VM3S070A2R5G	VM4S070A2GLG	VM4S070A2R1G	VM4S070A2R5G	VM4S070A2ERN
			Tri	VM3S076A2GLG	VM3S076A2R1G	VM3S076A2R5G	VM4S076A2GLG	VM4S076A2R1G	VM4S076A2R5G	VM4S076A2ERN
			480	VM3S075A2GLG	VM3S075A2R1G	VM3S075A2R5G	VM4S075A2GLG	VM4S075A2R1G	VM4S075A2R5G	VM4S075A2ERN
100	S54	3/4"	Quad	VM3S100A2GLG	VM3S100A2R1G	VM3S100A2R5G	VM4S100A2GLG	VM4S100A2R1G	VM4S100A2R5G	VM4S100A2ERN
			Tri	VM3S106A2GLG	VM3S106A2R1G	VM3S106A2R5G	VM4S106A2GLG	VM4S106A2R1G	VM4S106A2R5G	VM4S106A2ERN
			480	VM3S105A2GLG	VM3S105A2R1G	VM3S105A2R5G	VM4S105A2GLG	VM4S105A2R1G	VM4S105A2R5G	VM4S105A2ERN
150	S55	3/4"	Quad	VM3S150A2GLG	VM3S150A2R1G	VM3S150A2R5G	VM4S150A2GLG	VM4S150A2R1G	VM4S150A2R5G	VM4S150A2ERN
			Tri	VM3S156A2GLG	VM3S156A2R1G	VM3S156A2R5G	VM4S156A2GLG	VM4S156A2R1G	VM4S156A2R5G	VM4S156A2ERN
			480	VM3S155A2GLG	VM3S155A2R1G	VM3S155A2R5G	VM4S155A2GLG	VM4S155A2R1G	VM4S155A2R5G	VM4S155A2ERN

VM 50-150 WATT HIGH PRESSURE SODIUM FLEXIBLE PENDANT

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE ③	VOLTAG④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
50	S68	3/4"	Quad	VM3S050F2GLG	VM3S050F2R1G	VM3S050F2R5G	VM4S050F2GLG	VM4S050F2R1G	VM4S050F2R5G	VM4S050F2ERN
70	S62	3/4"	Quad	VM3S070F2GLG	VM3S070F2R1G	VM3S070F2R5G	VM4S070F2GLG	VM4S070F2R1G	VM4S070F2R5G	VM4S070F2ERN
			Tri	VM3S076F2GLG	VM3S076F2R1G	VM3S076F2R5G	VM4S076F2GLG	VM4S076F2R1G	VM4S076F2R5G	VM4S076F2ERN
			480	VM3S075F2GLG	VM3S075F2R1G	VM3S075F2R5G	VM4S075F2GLG	VM4S075F2R1G	VM4S075F2R5G	VM4S075F2ERN
100	S54	3/4"	Quad	VM3S100F2GLG	VM3S100F2R1G	VM3S100F2R5G	VM4S100F2GLG	VM4S100F2R1G	VM4S100F2R5G	VM4S100F2ERN
			Tri	VM3S106F2GLG	VM3S106F2R1G	VM3S106F2R5G	VM4S106F2GLG	VM4S106F2R1G	VM4S106F2R5G	VM4S106F2ERN
			480	VM3S105F2GLG	VM3S105F2R1G	VM3S105F2R5G	VM4S105F2GLG	VM4S105F2R1G	VM4S105F2R5G	VM4S105F2ERN
150	S55	3/4"	Quad	VM3S150F2GLG	VM3S150F2R1G	VM3S150F2R5G	VM4S150F2GLG	VM4S150F2R1G	VM4S150F2R5G	VM4S150F2ERN
			Tri	VM3S156F2GLG	VM3S156F2R1G	VM3S156F2R5G	VM4S156F2GLG	VM4S156F2R1G	VM4S156F2R5G	VM4S156F2ERN
			480	VM3S155F2GLG	VM3S155F2R1G	VM3S155F2R5G	VM4S155F2GLG	VM4S155F2R1G	VM4S155F2R5G	VM4S155F2ERN

L

① See hazardous application data on pages L108-L111 for limitations.

② Catalog numbers shown are with guard (except enclosed reflector); to omit guard change ending G to N; e.g. VM3S050A2GLN

③ Catalog numbers shown are with 3/4" conduit openings; change 2 to 3 for 1"; e.g. VM3S050A3GLG.

④ Consult catalog logic for other available voltages.

⑤ Add suffix NR for restricted breathing; see page L54 for more information.

Ceiling
w/ 5-1/2"
Globe & Guard

Wall
w/ 5-1/2"
Refractor & Guard

Ceiling
w/ 7-3/4"
Globe & Guard

Wall
w/ 7-3/4"
Refractor & Guard

Ceiling
w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

c SP us Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR SP

VM 50-150 WATT HIGH PRESSURE SODIUM CEILING

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE③	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
50	S68	3/4"	Quad	VM3S050X2GLG	VM3S050X2R1G	VM3S050X2R5G	VM4S050X2GLG	VM4S050X2R1G	VM4S050X2R5G	VM4S050X2ERN
70	S62	3/4"	Quad	VM3S070X2GLG	VM3S070X2R1G	VM3S070X2R5G	VM4S070X2GLG	VM4S070X2R1G	VM4S070X2R5G	VM4S070X2ERN
			Tri	VM3S076X2GLG	VM3S076X2R1G	VM3S076X2R5G	VM4S076X2GLG	VM4S076X2R1G	VM4S076X2R5G	VM4S076X2ERN
			480	VM3S075X2GLG	VM3S075X2R1G	VM3S075X2R5G	VM4S075X2GLG	VM4S075X2R1G	VM4S075X2R5G	VM4S075X2ERN
100	S54	3/4"	Quad	VM3S100X2GLG	VM3S100X2R1G	VM3S100X2R5G	VM4S100X2GLG	VM4S100X2R1G	VM4S100X2R5G	VM4S100X2ERN
			Tri	VM3S106X2GLG	VM3S106X2R1G	VM3S106X2R5G	VM4S106X2GLG	VM4S106X2R1G	VM4S106X2R5G	VM4S106X2ERN
			480	VM3S105X2GLG	VM3S105X2R1G	VM3S105X2R5G	VM4S105X2GLG	VM4S105X2R1G	VM4S105X2R5G	VM4S105X2ERN
150	S55	3/4"	Quad	VM3S150X2GLG	VM3S150X2R1G	VM3S150X2R5G	VM4S150X2GLG	VM4S150X2R1G	VM4S150X2R5G	VM4S150X2ERN
			Tri	VM3S156X2GLG	VM3S156X2R1G	VM3S156X2R5G	VM4S156X2GLG	VM4S156X2R1G	VM4S156X2R5G	VM4S156X2ERN
			480	VM3S155X2GLG	VM3S155X2R1G	VM3S155X2R5G	VM4S155X2GLG	VM4S155X2R1G	VM4S155X2R5G	VM4S155X2ERN

VM 50-150 WATT HIGH PRESSURE SODIUM WALL

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
50	S68	3/4"	Quad	VM3S050B2GLG	VM3S050B2R1G	VM3S050B2R5G	VM4S050B2GLG	VM4S050B2R1G	VM4S050B2R5G	VM4S050B2ERN
70	S62	3/4"	Quad	VM3S070B2GLG	VM3S070B2R1G	VM3S070B2R5G	VM4S070B2GLG	VM4S070B2R1G	VM4S070B2R5G	VM4S070B2ERN
			Tri	VM3S076B2GLG	VM3S076B2R1G	VM3S076B2R5G	VM4S076B2GLG	VM4S076B2R1G	VM4S076B2R5G	VM4S076B2ERN
			480	VM3S075B2GLG	VM3S075B2R1G	VM3S075B2R5G	VM4S075B2GLG	VM4S075B2R1G	VM4S075B2R5G	VM4S075B2ERN
100	S54	3/4"	Quad	VM3S100B2GLG	VM3S100B2R1G	VM3S100B2R5G	VM4S100B2GLG	VM4S100B2R1G	VM4S100B2R5G	VM4S100B2ERN
			Tri	VM3S106B2GLG	VM3S106B2R1G	VM3S106B2R5G	VM4S106B2GLG	VM4S106B2R1G	VM4S106B2R5G	VM4S106B2ERN
			480	VM3S105B2GLG	VM3S105B2R1G	VM3S105B2R5G	VM4S105B2GLG	VM4S105B2R1G	VM4S105B2R5G	VM4S105B2ERN
150	S55	3/4"	Quad	VM3S150B2GLG	VM3S150B2R1G	VM3S150B2R5G	VM4S150B2GLG	VM4S150B2R1G	VM4S150B2R5G	VM4S150B2ERN
			Tri	VM3S156B2GLG	VM3S156B2R1G	VM3S156B2R5G	VM4S156B2GLG	VM4S156B2R1G	VM4S156B2R5G	VM4S156B2ERN
			480	VM3S155B2GLG	VM3S155B2R1G	VM3S155B2R5G	VM4S155B2GLG	VM4S155B2R1G	VM4S155B2R5G	VM4S155B2ERN

① *See hazardous application data on pages L108-L111 for limitations.*
② *Catalog numbers shown are with guard, to omit guard (except enclosed reflector); change ending G to N; e.g. VM3S050X2GLN*
③ *Catalog numbers shown are with 3/4" conduit openings, change 2 to 3 for 1"; e.g. VM3S050X3GLG.*
④ *Consult catalog logic for other available voltages.*
⑤ *Add suffix NR for restricted breathing; see page L54 for more information.*

Cone
w/ 5-1/2"
Globe & Guard

EZ Adapter
w/ 5-1/2"
Refractor & Guard

Cone
w/ 7-3/4"
Globe & Guard

EZ Adapter
w/ 7-3/4"
Refractor & Guard

Cone
w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

c SP us Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR SP

VM 50-150 WATT HIGH PRESSURE SODIUM CONE

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
50	S68	3/4"	Quad	VM3S050C2GLG	VM3S050C2R1G	VM3S050C2R5G	VM4S050C2GLG	VM4S050C2R1G	VM4S050C2R5G	VM4S050C2ERN
70	S62	3/4"	Quad	VM3S070C2GLG	VM3S070C2R1G	VM3S070C2R5G	VM4S070C2GLG	VM4S070C2R1G	VM4S070C2R5G	VM4S070C2ERN
			Tri	VM3S076C2GLG	VM3S076C2R1G	VM3S076C2R5G	VM4S076C2GLG	VM4S076C2R1G	VM4S076C2R5G	VM4S076C2ERN
			480	VM3S075C2GLG	VM3S075C2R1G	VM3S075C2R5G	VM4S075C2GLG	VM4S075C2R1G	VM4S075C2R5G	VM4S075C2ERN
100	S54	3/4"	Quad	VM3S100C2GLG	VM3S100C2R1G	VM3S100C2R5G	VM4S100C2GLG	VM4S100C2R1G	VM4S100C2R5G	VM4S100C2ERN
			Tri	VM3S106C2GLG	VM3S106C2R1G	VM3S106C2R5G	VM4S106C2GLG	VM4S106C2R1G	VM4S106C2R5G	VM4S106C2ERN
			480	VM3S105C2GLG	VM3S105C2R1G	VM3S105C2R5G	VM4S105C2GLG	VM4S105C2R1G	VM4S105C2R5G	VM4S105C2ERN
150	S55	3/4"	Quad	VM3S150C2GLG	VM3S150C2R1G	VM3S150C2R5G	VM4S150C2GLG	VM4S150C2R1G	VM4S150C2R5G	VM4S150C2ERN
			Tri	VM3S156C2GLG	VM3S156C2R1G	VM3S156C2R5G	VM4S156C2GLG	VM4S156C2R1G	VM4S156C2R5G	VM4S156C2ERN
			480	VM3S155C2GLG	VM3S155C2R1G	VM3S155C2R5G	VM4S155C2GLG	VM4S155C2R1G	VM4S155C2R5G	VM4S155C2ERN

VM 50-150 WATT HIGH PRESSURE SODIUM EZ ADAPTER⑥

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ③			
WATTS	ANSI	HUB SIZE⑥	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
50	S68	⑥	Quad	VM3S050EZGLG	VM3S050EZR1G	VM3S050EZR5G	VM4S050EZGLG	VM4S050EZR1G	VM4S050EZR5G	VM4S050EZERN
70	S62	⑥	Quad	VM3S070EZGLG	VM3S070EZR1G	VM3S070EZR5G	VM4S070EZGLG	VM4S070EZR1G	VM4S070EZR5G	VM4S070EZERN
			Tri	VM3S076EZGLG	VM3S076EZR1G	VM3S076EZR5G	VM4S076EZGLG	VM4S076EZR1G	VM4S076EZR5G	VM4S076EZERN
			480	VM3S075EZGLG	VM3S075EZR1G	VM3S075EZR5G	VM4S075EZGLG	VM4S075EZR1G	VM4S075EZR5G	VM4S075EZERN
100	S54	⑥	Quad	VM3S100EZGLG	VM3S100EZR1G	VM3S100EZR5G	VM4S100EZGLG	VM4S100EZR1G	VM4S100EZR5G	VM4S100EZERN
			Tri	VM3S106EZGLG	VM3S106EZR1G	VM3S106EZR5G	VM4S106EZGLG	VM4S106EZR1G	VM4S106EZR5G	VM4S106EZERN
			480	VM3S105EZGLG	VM3S105EZR1G	VM3S105EZR5G	VM4S105EZGLG	VM4S105EZR1G	VM4S105EZR5G	VM4S105EZERN
150	S55	⑥	Quad	VM3S150EZGLG	VM3S150EZR1G	VM3S150EZR5G	VM4S150EZGLG	VM4S150EZR1G	VM4S150EZR5G	VM4S150EZERN
			Tri	VM3S156EZGLG	VM3S156EZR1G	VM3S156EZR5G	VM4S156EZGLG	VM4S156EZR1G	VM4S156EZR5G	VM4S156EZERN
			480	VM3S155EZGLG	VM3S155EZR1G	VM3S155EZR5G	VM4S155EZGLG	VM4S155EZR1G	VM4S155EZR5G	VM4S155EZERN

① See hazardous application data on pages L108-L111 for limitations.
② Catalog numbers shown are with guard (except enclosed reflector); to omit guard change ending G to N; e.g. VM3S050C2GLN
③ Cone top catalog numbers shown are with 3/4" conduit openings, change 2 to 3 for 1"; e.g. VM3S050C3GLG.
④ Consult catalog logic for other available voltages.
⑤ Add suffix NR for restricted breathing; see page L54 for more information.
⑥ VMEZA tank adapters UL "classified" as an assembly for use between VM tanks and EZ mounts. Order EZ mounts separately. See page L83.

HUBBELL®
KILLARK®

CERTILITE®V SERIES • LIGHTING
HIGH PRESSURE SODIUM, 50-150W MOGUL BASE HID

Stanchion 25°
w/ 5-1/2"
Globe & Guard

Stanchion Straight
w/ 5-1/2"
Refractor & Guard

Stanchion 25°
w/ 7-3/4"
Globe & Guard

Stanchion Straight
w/ 7-3/4"
Refractor & Guard

Stanchion 25°
w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR
Class I, Zone 2 Ex nR

VM 50-150 WATT HIGH PRESSURE SODIUM STANCHION 25° ANGLE

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
50	S68	1-1/2"	Quad	VM3S050D5GLG	VM3S050D5R1G	VM3S050D5R5G	VM4S050D5GLG	VM4S050D5R1G	VM4S050D5R5G	VM4S050D5ERN
70	S62	1-1/2"	Quad	VM3S070D5GLG	VM3S070D5R1G	VM3S070D5R5G	VM4S070D5GLG	VM4S070D5R1G	VM4S070D5R5G	VM4S070D5ERN
			Tri	VM3S076D5GLG	VM3S076D5R1G	VM3S076D5R5G	VM4S076D5GLG	VM4S076D5R1G	VM4S076D5R5G	VM4S076D5ERN
			480	VM3S075D5GLG	VM3S075D5R1G	VM3S075D5R5G	VM4S075D5GLG	VM4S075D5R1G	VM4S075D5R5G	VM4S075D5ERN
100	S54	1-1/2"	Quad	VM3S100D5GLG	VM3S100D5R1G	VM3S100D5R5G	VM4S100D5GLG	VM4S100D5R1G	VM4S100D5R5G	VM4S100D5ERN
			Tri	VM3S106D5GLG	VM3S106D5R1G	VM3S106D5R5G	VM4S106D5GLG	VM4S106D5R1G	VM4S106D5R5G	VM4S106D5ERN
			480	VM3S105D5GLG	VM3S105D5R1G	VM3S105D5R5G	VM4S105D5GLG	VM4S105D5R1G	VM4S105D5R5G	VM4S105D5ERN
150	S55	1-1/2"	Quad	VM3S150D5GLG	VM3S150D5R1G	VM3S150D5R5G	VM4S150D5GLG	VM4S150D5R1G	VM4S150D5R5G	VM4S150D5ERN
			Tri	VM3S156D5GLG	VM3S156D5R1G	VM3S156D5R5G	VM4S156D5GLG	VM4S156D5R1G	VM4S156D5R5G	VM4S156D5ERN
			480	VM3S155D5GLG	VM3S155D5R1G	VM3S155D5R5G	VM4S155D5GLG	VM4S155D5R1G	VM4S155D5R5G	VM4S155D5ERN

VM 50-150 WATT HIGH PRESSURE SODIUM STANCHION STRAIGHT

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
50	S68	1-1/2"	Quad	VM3S050S5GLG	VM3S050S5R1G	VM3S050S5R5G	VM4S050S5GLG	VM4S050S5R1G	VM4S050S5R5G	VM4S050S5ERN
70	S62	1-1/2"	Quad	VM3S070S5GLG	VM3S070S5R1G	VM3S070S5R5G	VM4S070S5GLG	VM4S070S5R1G	VM4S070S5R5G	VM4S070S5ERN
			Tri	VM3S076S5GLG	VM3S076S5R1G	VM3S076S5R5G	VM4S076S5GLG	VM4S076S5R1G	VM4S076S5R5G	VM4S076S5ERN
			480	VM3S075S5GLG	VM3S075S5R1G	VM3S075S5R5G	VM4S075S5GLG	VM4S075S5R1G	VM4S075S5R5G	VM4S075S5ERN
100	S54	1-1/2"	Quad	VM3S100S5GLG	VM3S100S5R1G	VM3S100S5R5G	VM4S100S5GLG	VM4S100S5R1G	VM4S100S5R5G	VM4S100S5ERN
			Tri	VM3S106S5GLG	VM3S106S5R1G	VM3S106S5R5G	VM4S106S5GLG	VM4S106S5R1G	VM4S106S5R5G	VM4S106S5ERN
			480	VM3S105S5GLG	VM3S105S5R1G	VM3S105S5R5G	VM4S105S5GLG	VM4S105S5R1G	VM4S105S5R5G	VM4S105S5ERN
150	S55	1-1/2"	Quad	VM3S150S5GLG	VM3S150S5R1G	VM3S150S5R5G	VM4S150S5GLG	VM4S150S5R1G	VM4S150S5R5G	VM4S150S5ERN
			Tri	VM3S156S5GLG	VM3S156S5R1G	VM3S156S5R5G	VM4S156S5GLG	VM4S156S5R1G	VM4S156S5R5G	VM4S156S5ERN
			480	VM3S155S5GLG	VM3S155S5R1G	VM3S155S5R5G	VM4S155S5GLG	VM4S155S5R1G	VM4S155S5R5G	VM4S155S5ERN

① See hazardous application data on pages L108-L111 for limitations.

② Catalog numbers shown are with guard (except enclosed reflector); to omit guard change ending G to N; e.g. VM3S050D5GLN

③ Catalog numbers shown are with 1-1/2" conduit openings, change 5 to 4 for 1-1/4"; e.g. VM3S050D4GLG.

④ Consult catalog logic for other available voltages.

⑤ Add suffix NR for restricted breathing; see page L54 for more information.

Pendant
w/ 5-1/2"
Globe & Guard

Flexible Pendant
w/ 5-1/2"
Refractor & Guard

Pendant
w/ 7-3/4"
Globe & Guard

Flexible Pendant
w/ 7-3/4"
Refractor & Guard

Pendant
w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

CSA Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR CSA

VM 70-250 WATT METAL HALIDE PENDANT

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
70	M98 M143	3/4"	Quad	VM3H070A2GLG	VM3H070A2R1G	VM3H070A2R5G	VM4H070A2GLG	VM4H070A2R1G	VM4H070A2R5G	VM4H070A2ERN
			Tri	VM3H076A2GLG	VM3H076A2R1G	VM3H076A2R5G	VM4H076A2GLG	VM4H076A2R1G	VM4H076A2R5G	VM4H076A2ERN
			480	VM3H075A2GLG	VM3H075A2R1G	VM3H075A2R5G	VM4H075A2GLG	VM4H075A2R1G	VM4H075A2R5G	VM4H075A2ERN
100	M90 M140	3/4"	Quad	VM3H100A2GLG	VM3H100A2R1G	VM3H100A2R5G	VM4H100A2GLG	VM4H100A2R1G	VM4H100A2R5G	VM4H100A2ERN
			Tri	VM3H106A2GLG	VM3H106A2R1G	VM3H106A2R5G	VM4H106A2GLG	VM4H106A2R1G	VM4H106A2R5G	VM4H106A2ERN
			480	VM3H105A2GLG	VM3H105A2R1G	VM3H105A2R5G	VM4H105A2GLG	VM4H105A2R1G	VM4H105A2R5G	VM4H105A2ERN
175 ⑥	M57	3/4"	Quad	VM3H170A2GLG	VM3H170A2R1G	VM3H170A2R5G	VM4H170A2GLG	VM4H170A2R1G	VM4H170A2R5G	VM4H170A2ERN
			Tri	VM3H176A2GLG	VM3H176A2R1G	VM3H176A2R5G	VM4H176A2GLG	VM4H176A2R1G	VM4H176A2R5G	VM4H176A2ERN
			480	VM3H175A2GLG	VM3H175A2R1G	VM3H175A2R5G	VM4H175A2GLG	VM4H175A2R1G	VM4H175A2R5G	VM4H175A2ERN
250 ⑥	M58	3/4"	Quad	VM3H250A2GLG	VM3H250A2R1G	VM3H250A2R5G	VM4H250A2GLG	VM4H250A2R1G	VM4H250A2R5G	VM4H250A2ERN
			Tri	VM3H256A2GLG	VM3H256A2R1G	VM3H256A2R5G	VM4H256A2GLG	VM4H256A2R1G	VM4H256A2R5G	VM4H256A2ERN
			480	VM3H255A2GLG	VM3H255A2R1G	VM3H255A2R5G	VM4H255A2GLG	VM4H255A2R1G	VM4H255A2R5G	VM4H255A2ERN

VM 70-250 WATT METAL HALIDE FLEXIBLE PENDANT

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
70	M98 M143	3/4"	Quad	VM3H070F2GLG	VM3H070F2R1G	VM3H070F2R5G	VM4H070F2GLG	VM4H070F2R1G	VM4H070F2R5G	VM4H070F2ERN
			Tri	VM3H076F2GLG	VM3H076F2R1G	VM3H076F2R5G	VM4H076F2GLG	VM4H076F2R1G	VM4H076F2R5G	VM4H076F2ERN
			480	VM3H075F2GLG	VM3H075F2R1G	VM3H075F2R5G	VM4H075F2GLG	VM4H075F2R1G	VM4H075F2R5G	VM4H075F2ERN
100	M90 M140	3/4"	Quad	VM3H100F2GLG	VM3H100F2R1G	VM3H100F2R5G	VM4H100F2GLG	VM4H100F2R1G	VM4H100F2R5G	VM4H100F2ERN
			Tri	VM3H106F2GLG	VM3H106F2R1G	VM3H106F2R5G	VM4H106F2GLG	VM4H106F2R1G	VM4H106F2R5G	VM4H106F2ERN
			480	VM3H105F2GLG	VM3H105F2R1G	VM3H105F2R5G	VM4H105F2GLG	VM4H105F2R1G	VM4H105F2R5G	VM4H105F2ERN
175 ⑥	M57	3/4"	Quad	VM3H170F2GLG	VM3H170F2R1G	VM3H170F2R5G	VM4H170F2GLG	VM4H170F2R1G	VM4H170F2R5G	VM4H170F2ERN
			Tri	VM3H176F2GLG	VM3H176F2R1G	VM3H176F2R5G	VM4H176F2GLG	VM4H176F2R1G	VM4H176F2R5G	VM4H176F2ERN
			480	VM3H175F2GLG	VM3H175F2R1G	VM3H175F2R5G	VM4H175F2GLG	VM4H175F2R1G	VM4H175F2R5G	VM4H175F2ERN
250 ⑥	M58	3/4"	Quad	VM3H250F2GLG	VM3H250F2R1G	VM3H250F2R5G	VM4H250F2GLG	VM4H250F2R1G	VM4H250F2R5G	VM4H250F2ERN
			Tri	VM3H256F2GLG	VM3H256F2R1G	VM3H256F2R5G	VM4H256F2GLG	VM4H256F2R1G	VM4H256F2R5G	VM4H256F2ERN
			480	VM3H255F2GLG	VM3H255F2R1G	VM3H255F2R5G	VM4H255F2GLG	VM4H255F2R1G	VM4H255F2R5G	VM4H255F2ERN

① *See hazardous application data on pages L108-L111 for limitations.*
② *Catalog numbers shown are with guard (except enclosed reflector); to omit guard change ending G to N; e.g. VM3H070A2GLN*
③ *Catalog numbers shown are with 3/4" conduit openings, change 2 to 3 for 1"; e.g. VM3H070A3GLG.*
④ *Consult catalog logic for other available voltages.*
⑤ *Add suffix NR for restricted breathing; see page L54 for more information.*
⑥ *175W M57 & 250W M58 Fixtures are EXPORT ONLY (EISA LAW).*

CERTILITE®V SERIES • LIGHTING
METAL HALIDE, 70-250W MOGUL BASE HID

Ceiling
w/ 5-1/2"
Globe & Guard

Wall
w/ 5-1/2"
Refractor & Guard

Ceiling
w/ 7-3/4"
Globe & Guard

Wall
w/ 7-3/4"
Refractor & Guard

Ceiling
w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR
Class I, Zone 2 Ex nR

VM 70-250 WATT METAL HALIDE CEILING

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE③	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
70	M98 M143	3/4"	Quad	VM3H070X2GLG	VM3H070X2R1G	VM3H070X2R5G	VM4H070X2GLG	VM4H070X2R1G	VM4H070X2R5G	VM4H070X2ERN
			Tri	VM3H076X2GLG	VM3H076X2R1G	VM3H076X2R5G	VM4H076X2GLG	VM4H076X2R1G	VM4H076X2R5G	VM4H076X2ERN
			480	VM3H075X2GLG	VM3H075X2R1G	VM3H075X2R5G	VM4H075X2GLG	VM4H075X2R1G	VM4H075X2R5G	VM4H075X2ERN
100	M90 M140	3/4"	Quad	VM3H100X2GLG	VM3H100X2R1G	VM3H100X2R5G	VM4H100X2GLG	VM4H100X2R1G	VM4H100X2R5G	VM4H100X2ERN
			Tri	VM3H106X2GLG	VM3H106X2R1G	VM3H106X2R5G	VM4H106X2GLG	VM4H106X2R1G	VM4H106X2R5G	VM4H106X2ERN
			480	VM3H105X2GLG	VM3H105X2R1G	VM3H105X2R5G	VM4H105X2GLG	VM4H105X2R1G	VM4H105X2R5G	VM4H105X2ERN
175 ⑥	M57	3/4"	Quad	VM3H170X2GLG	VM3H170X2R1G	VM3H170X2R5G	VM4H170X2GLG	VM4H170X2R1G	VM4H170X2R5G	VM4H170X2ERN
			Tri	VM3H176X2GLG	VM3H176X2R1G	VM3H176X2R5G	VM4H176X2GLG	VM4H176X2R1G	VM4H176X2R5G	VM4H176X2ERN
			480	VM3H175X2GLG	VM3H175X2R1G	VM3H175X2R5G	VM4H175X2GLG	VM4H175X2R1G	VM4H175X2R5G	VM4H175X2ERN
250 ⑥	M58	3/4"	Quad	VM3H250X2GLG	VM3H250X2R1G	VM3H250X2R5G	VM4H250X2GLG	VM4H250X2R1G	VM4H250X2R5G	VM4H250X2ERN
			Tri	VM3H256X2GLG	VM3H256X2R1G	VM3H256X2R5G	VM4H256X2GLG	VM4H256X2R1G	VM4H256X2R5G	VM4H256X2ERN
			480	VM3H255X2GLG	VM3H255X2R1G	VM3H255X2R5G	VM4H255X2GLG	VM4H255X2R1G	VM4H255X2R5G	VM4H255X2ERN

VM 70-250 WATT METAL HALIDE WALL

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
70	M98 M143	3/4"	Quad	VM3H070B2GLG	VM3H070B2R1G	VM3H070B2R5G	VM4H070B2GLG	VM4H070B2R1G	VM4H070B2R5G	VM4H070B2ERN
			Tri	VM3H076B2GLG	VM3H076B2R1G	VM3H076B2R5G	VM4H076B2GLG	VM4H076B2R1G	VM4H076B2R5G	VM4H076B2ERN
			480	VM3H075B2GLG	VM3H075B2R1G	VM3H075B2R5G	VM4H075B2GLG	VM4H075B2R1G	VM4H075B2R5G	VM4H075B2ERN
100	M90 M140	3/4"	Quad	VM3H100B2GLG	VM3H100B2R1G	VM3H100B2R5G	VM4H100B2GLG	VM4H100B2R1G	VM4H100B2R5G	VM4H100B2ERN
			Tri	VM3H106B2GLG	VM3H106B2R1G	VM3H106B2R5G	VM4H106B2GLG	VM4H106B2R1G	VM4H106B2R5G	VM4H106B2ERN
			480	VM3H105B2GLG	VM3H105B2R1G	VM3H105B2R5G	VM4H105B2GLG	VM4H105B2R1G	VM4H105B2R5G	VM4H105B2ERN
175 ⑥	M57	3/4"	Quad	VM3H170B2GLG	VM3H170B2R1G	VM3H170B2R5G	VM4H170B2GLG	VM4H170B2R1G	VM4H170B2R5G	VM4H170B2ERN
			Tri	VM3H176B2GLG	VM3H176B2R1G	VM3H176B2R5G	VM4H176B2GLG	VM4H176B2R1G	VM4H176B2R5G	VM4H176B2ERN
			480	VM3H175B2GLG	VM3H175B2R1G	VM3H175B2R5G	VM4H175B2GLG	VM4H175B2R1G	VM4H175B2R5G	VM4H175B2ERN
250 ⑥	M58	3/4"	Quad	VM3H250B2GLG	VM3H250B2R1G	VM3H250B2R5G	VM4H250B2GLG	VM4H250B2R1G	VM4H250B2R5G	VM4H250B2ERN
			Tri	VM3H256B2GLG	VM3H256B2R1G	VM3H256B2R5G	VM4H256B2GLG	VM4H256B2R1G	VM4H256B2R5G	VM4H256B2ERN
			480	VM3H255B2GLG	VM3H255B2R1G	VM3H255B2R5G	VM4H255B2GLG	VM4H255B2R1G	VM4H255B2R5G	VM4H255B2ERN

① See hazardous application data on pages L108-L111 for limitations.
② Catalog numbers shown are with guard (except enclosed reflector); to omit guard change ending G to N; e.g. VM3H070X2GLN
③ Catalog numbers shown are with 3/4" conduit openings, change 2 to 3 for 1"; e.g. VM3H070X3GLG.
④ Consult catalog logic for other available voltages.
⑤ Add suffix NR for restricted breathing; see page L54 for more information.
⑥ 175W M57 & 250W M58 Fixtures are EXPORT ONLY (EISA LAW).

Cone
w/ 5-1/2"
Globe & Guard

EZ Adapter
w/ 5-1/2"
Refractor & Guard

Cone
w/ 7-3/4"
Globe & Guard

EZ Adapter
w/ 7-3/4"
Refractor & Guard

Cone
w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR CSA

VM 70-250 WATT METAL HALIDE CONE

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
70	M98 M143	3/4"	Quad	VM3H070C2GLG	VM3H070C2R1G	VM3H070C2R5G	VM4H070C2GLG	VM4H070C2R1G	VM4H070C2R5G	VM4H070C2ERN
			Tri	VM3H076C2GLG	VM3H076C2R1G	VM3H076C2R5G	VM4H076C2GLG	VM4H076C2R1G	VM4H076C2R5G	VM4H076C2ERN
			480	VM3H075C2GLG	VM3H075C2R1G	VM3H075C2R5G	VM4H075C2GLG	VM4H075C2R1G	VM4H075C2R5G	VM4H075C2ERN
100	M90 M140	3/4"	Quad	VM3H100C2GLG	VM3H100C2R1G	VM3H100C2R5G	VM4H100C2GLG	VM4H100C2R1G	VM4H100C2R5G	VM4H100C2ERN
			Tri	VM3H106C2GLG	VM3H106C2R1G	VM3H106C2R5G	VM4H106C2GLG	VM4H106C2R1G	VM4H106C2R5G	VM4H106C2ERN
			480	VM3H105C2GLG	VM3H105C2R1G	VM3H105C2R5G	VM4H105C2GLG	VM4H105C2R1G	VM4H105C2R5G	VM4H105C2ERN
175 ⑥	M57	3/4"	Quad	VM3H170C2GLG	VM3H170C2R1G	VM3H170C2R5G	VM4H170C2GLG	VM4H170C2R1G	VM4H170C2R5G	VM4H170C2ERN
			Tri	VM3H176C2GLG	VM3H176C2R1G	VM3H176C2R5G	VM4H176C2GLG	VM4H176C2R1G	VM4H176C2R5G	VM4H176C2ERN
			480	VM3H175C2GLG	VM3H175C2R1G	VM3H175C2R5G	VM4H175C2GLG	VM4H175C2R1G	VM4H175C2R5G	VM4H175C2ERN
250 ⑥	M58	3/4"	Quad	VM3H250C2GLG	VM3H250C2R1G	VM3H250C2R5G	VM4H250C2GLG	VM4H250C2R1G	VM4H250C2R5G	VM4H250C2ERN
			Tri	VM3H256C2GLG	VM3H256C2R1G	VM3H256C2R5G	VM4H256C2GLG	VM4H256C2R1G	VM4H256C2R5G	VM4H256C2ERN
			480	VM3H255C2GLG	VM3H255C2R1G	VM3H255C2R5G	VM4H255C2GLG	VM4H255C2R1G	VM4H255C2R5G	VM4H255C2ERN

VM 70-250 WATT METAL HALIDE EZ ADAPTER

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE⑥	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
70	M98 M143	⑦	Quad	VM3H070EZGLG	VM3H070EZR1G	VM3H070EZR5G	VM4H070EZGLG	VM4H070EZR1G	VM4H070EZR5G	VM4H070EZERN
			Tri	VM3H076EZGLG	VM3H076EZR1G	VM3H076EZR5G	VM4H076EZGLG	VM4H076EZR1G	VM4H076EZR5G	VM4H076EZERN
			480	VM3H075EZGLG	VM3H075EZR1G	VM3H075EZR5G	VM4H075EZGLG	VM4H075EZR1G	VM4H075EZR5G	VM4H075EZERN
100	M90 M140	⑦	Quad	VM3H100EZGLG	VM3H100EZR1G	VM3H100EZR5G	VM4H100EZGLG	VM4H100EZR1G	VM4H100EZR5G	VM4H100EZERN
			Tri	VM3H106EZGLG	VM3H106EZR1G	VM3H106EZR5G	VM4H106EZGLG	VM4H106EZR1G	VM4H106EZR5G	VM4H106EZERN
			480	VM3H105EZGLG	VM3H105EZR1G	VM3H105EZR5G	VM4H105EZGLG	VM4H105EZR1G	VM4H105EZR5G	VM4H105EZERN
175 ⑥	M57	⑦	Quad	VM3H170EZGLG	VM3H170EZR1G	VM3H170EZR5G	VM4H170EZGLG	VM4H170EZR1G	VM4H170EZR5G	VM4H170EZERN
			Tri	VM3H176EZGLG	VM3H176EZR1G	VM3H176EZR5G	VM4H176EZGLG	VM4H176EZR1G	VM4H176EZR5G	VM4H176EZERN
			480	VM3H175EZGLG	VM3H175EZR1G	VM3H175EZR5G	VM4H175EZGLG	VM4H175EZR1G	VM4H175EZR5G	VM4H175EZERN
250 ⑥	M58	⑦	Quad	VM3H250EZGLG	VM3H250EZR1G	VM3H250EZR5G	VM4H250EZGLG	VM4H250EZR1G	VM4H250EZR5G	VM4H250EZERN
			Tri	VM3H256EZGLG	VM3H256EZR1G	VM3H256EZR5G	VM4H256EZGLG	VM4H256EZR1G	VM4H256EZR5G	VM4H256EZERN
			480	VM3H255EZGLG	VM3H255EZR1G	VM3H255EZR5G	VM4H255EZGLG	VM4H255EZR1G	VM4H255EZR5G	VM4H255EZERN

L

① *See hazardous application data on pages L108-L111 for limitations.*
② *Catalog numbers shown are with guard (except enclosed reflector); to omit guard change ending G to N; e.g. VM3H070C2GLN*
③ *Catalog numbers shown are with 3/4" conduit openings, change 2 to 3 for 1"; e.g. VM3H070C3GLG.*
④ *Consult catalog logic for other available voltages.*
⑤ *Add suffix NR for restricted breathing; see page L54 for more information.*
⑥ *175W M57 & 250W M58 Fixtures are EXPORT ONLY (EISA LAW).*
⑦ *VMEZA tank adapters UL "classified" as an assembly for use between VM tanks and EZ mounts. Order EZ mounts separately. See page L83.*

HUBBELL®
KILLARK®

Stanchion 25°
w/ 5-1/2"
Globe & Guard

Stanchion Straight
w/ 5-1/2"
Refractor & Guard

Stanchion 25°
w/ 7-3/4"
Globe & Guard

Stanchion Straight
w/ 7-3/4"
Refractor & Guard

Stanchion 25°
w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR
Class I, Zone 2 Ex nR

VM 70-250 WATT METAL HALIDE STANCHION 25° ANGLE

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
70	M98 M143	1-1/2"	Quad	VM3H070D5GLG	VM3H070D5R1G	VM3H070D5R5G	VM4H070D5GLG	VM4H070D5R1G	VM4H070D5R5G	VM4H070D5ERN
			Tri	VM3H076D5GLG	VM3H076D5R1G	VM3H076D5R5G	VM4H076D5GLG	VM4H076D5R1G	VM4H076D5R5G	VM4H076D5ERN
			480	VM3H075D5GLG	VM3H075D5R1G	VM3H075D5R5G	VM4H075D5GLG	VM4H075D5R1G	VM4H075D5R5G	VM4H075D5ERN
100	M90 M140	1-1/2"	Quad	VM3H100D5GLG	VM3H100D5R1G	VM3H100D5R5G	VM4H100D5GLG	VM4H100D5R1G	VM4H100D5R5G	VM4H100D5ERN
			Tri	VM3H106D5GLG	VM3H106D5R1G	VM3H106D5R5G	VM4H106D5GLG	VM4H106D5R1G	VM4H106D5R5G	VM4H106D5ERN
			480	VM3H105D5GLG	VM3H105D5R1G	VM3H105D5R5G	VM4H105D5GLG	VM4H105D5R1G	VM4H105D5R5G	VM4H105D5ERN
175 ⑥	M57	1-1/2"	Quad	VM3H170D5GLG	VM3H170D5R1G	VM3H170D5R5G	VM4H170D5GLG	VM4H170D5R1G	VM4H170D5R5G	VM4H170D5ERN
			Tri	VM3H176D5GLG	VM3H176D5R1G	VM3H176D5R5G	VM4H176D5GLG	VM4H176D5R1G	VM4H176D5R5G	VM4H176D5ERN
			480	VM3H175D5GLG	VM3H175D5R1G	VM3H175D5R5G	VM4H175D5GLG	VM4H175D5R1G	VM4H175D5R5G	VM4H175D5ERN
250 ⑥	M58	1-1/2"	Quad	VM3H250D5GLG	VM3H250D5R1G	VM3H250D5R5G	VM4H250D5GLG	VM4H250D5R1G	VM4H250D5R5G	VM4H250D5ERN
			Tri	VM3H256D5GLG	VM3H256D5R1G	VM3H256D5R5G	VM4H256D5GLG	VM4H256D5R1G	VM4H256D5R5G	VM4H256D5ERN
			480	VM3H255D5GLG	VM3H255D5R1G	VM3H255D5R5G	VM4H255D5GLG	VM4H255D5R1G	VM4H255D5R5G	VM4H255D5ERN

VM 70-250 WATT METAL HALIDE STANCHION STRAIGHT

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
70	M98 M143	1-1/2"	Quad	VM3H070S5GLG	VM3H070S5R1G	VM3H070S5R5G	VM4H070S5GLG	VM4H070S5R1G	VM4H070S5R5G	VM4H070S5ERN
			Tri	VM3H076S5GLG	VM3H076S5R1G	VM3H076S5R5G	VM4H076S5GLG	VM4H076S5R1G	VM4H076S5R5G	VM4H076S5ERN
			480	VM3H075S5GLG	VM3H075S5R1G	VM3H075S5R5G	VM4H075S5GLG	VM4H075S5R1G	VM4H075S5R5G	VM4H075S5ERN
100	M90 M140	1-1/2"	Quad	VM3H100S5GLG	VM3H100S5R1G	VM3H100S5R5G	VM4H100S5GLG	VM4H100S5R1G	VM4H100S5R5G	VM4H100S5ERN
			Tri	VM3H106S5GLG	VM3H106S5R1G	VM3H106S5R5G	VM4H106S5GLG	VM4H106S5R1G	VM4H106S5R5G	VM4H106S5ERN
			480	VM3H105S5GLG	VM3H105S5R1G	VM3H105S5R5G	VM4H105S5GLG	VM4H105S5R1G	VM4H105S5R5G	VM4H105S5ERN
175 ⑥	M57	1-1/2"	Quad	VM3H170S5GLG	VM3H170S5R1G	VM3H170S5R5G	VM4H170S5GLG	VM4H170S5R1G	VM4H170S5R5G	VM4H170S5ERN
			Tri	VM3H176S5GLG	VM3H176S5R1G	VM3H176S5R5G	VM4H176S5GLG	VM4H176S5R1G	VM4H176S5R5G	VM4H176S5ERN
			480	VM3H175S5GLG	VM3H175S5R1G	VM3H175S5R5G	VM4H175S5GLG	VM4H175S5R1G	VM4H175S5R5G	VM4H175S5ERN
250 ⑥	M58	1-1/2"	Quad	VM3H250S5GLG	VM3H250S5R1G	VM3H250S5R5G	VM4H250S5GLG	VM4H250S5R1G	VM4H250S5R5G	VM4H250S5ERN
			Tri	VM3H256S5GLG	VM3H256S5R1G	VM3H256S5R5G	VM4H256S5GLG	VM4H256S5R1G	VM4H256S5R5G	VM4H256S5ERN
			480	VM3H255S5GLG	VM3H255S5R1G	VM3H255S5R5G	VM4H255S5GLG	VM4H255S5R1G	VM4H255S5R5G	VM4H255S5ERN

① See hazardous application data on pages L108-L111 for limitations.
② Catalog numbers shown are with guard (except enclosed reflector); to omit guard change ending G to N; e.g. VM3H070D5GLN
③ Catalog numbers shown are with 3/4" conduit openings, change 5 to 4 for 1-1/4"; e.g. VM3H070D4GLG.
④ Consult catalog logic for other available voltages.
⑤ Add suffix NR for restricted breathing; see page L54 for more information.
⑥ 175W M57 & 250W M58 Fixtures are EXPORT ONLY (EISA LAW).

Pendant
w/ 5-1/2"
Globe & Guard

Flexible Pendant
w/ 5-1/2"
Refractor & Guard

Pendant
w/ 7-3/4"
Globe & Guard

Flexible Pendant
w/ 7-3/4"
Refractor & Guard

Pendant
w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

CSA Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR CSA

VM 150-200 WATT METAL HALIDE PULSE PENDANT

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
150	M102 M142	3/4"	Quad	VM3P150A2GLG	VM3P150A2R1G	VM3P150A2R5G	VM4P150A2GLG	VM4P150A2R1G	VM4P150A2R5G	VM4P156A2ERN
			Tri	VM3P156A2GLG	VM3P156A2R1G	VM3P156A2R5G	VM4P156A2GLG	VM4P156A2R1G	VM4P156A2R5G	VM4P155A2ERN
			480	VM3P155A2GLG	VM3P155A2R1G	VM3P155A2R5G	VM4P155A2GLG	VM4P155A2R1G	VM4P155A2R5G	VM4P170A2ERN
175	M137 M152	3/4"	Quad	VM3P170A2GLG	VM3P170A2R1G	VM3P170A2R5G	VM4P170A2GLG	VM4P170A2R1G	VM4P170A2R5G	VM4P170A2ERN
			Tri	VM3P176A2GLG	VM3P176A2R1G	VM3P176A2R5G	VM4P176A2GLG	VM4P176A2R1G	VM4P176A2R5G	VM4P176A2ERN
			480	VM3P175A2GLG	VM3P175A2R1G	VM3P175A2R5G	VM4P175A2GLG	VM4P175A2R1G	VM4P175A2R5G	VM4P175A2ERN
200	M136	3/4"	Quad	VM3P200A2GLG	VM3P200A2R1G	VM3P200A2R5G	VM4P200A2GLG	VM4P200A2R1G	VM4P200A2R5G	VM4P200A2ERN
			Tri	VM3P206A2GLG	VM3P206A2R1G	VM3P206A2R5G	VM4P206A2GLG	VM4P206A2R1G	VM4P206A2R5G	VM4P206A2ERN
			480	VM3P205A2GLG	VM3P205A2R1G	VM3P205A2R5G	VM4P205A2GLG	VM4P205A2R1G	VM4P205A2R5G	VM4P205A2ERN

VM 150-200 WATT METAL HALIDE PULSE FLEXIBLE PENDANT

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
150	M102 M142	3/4"	Quad	VM3P150F2GLG	VM3P150F2R1G	VM3P150F2R5G	VM4P150F2GLG	VM4P150F2R1G	VM4P150F2R5G	VM4P156F2ERN
			Tri	VM3P156F2GLG	VM3P156F2R1G	VM3P156F2R5G	VM4P156F2GLG	VM4P156F2R1G	VM4P156F2R5G	VM4P155F2ERN
			480	VM3P155F2GLG	VM3P155F2R1G	VM3P155F2R5G	VM4P155F2GLG	VM4P155F2R1G	VM4P155F2R5G	VM4P170F2ERN
175	M137 M152	3/4"	Quad	VM3P170F2GLG	VM3P170F2R1G	VM3P170F2R5G	VM4P170F2GLG	VM4P170F2R1G	VM4P170F2R5G	VM4P170F2ERN
			Tri	VM3P176F2GLG	VM3P176F2R1G	VM3P176F2R5G	VM4P176F2GLG	VM4P176F2R1G	VM4P176F2R5G	VM4P176F2ERN
			480	VM3P175F2GLG	VM3P175F2R1G	VM3P175F2R5G	VM4P175F2GLG	VM4P175F2R1G	VM4P175F2R5G	VM4P175F2ERN
200	M136	3/4"	Quad	VM3P200F2GLG	VM3P200F2R1G	VM3P200F2R5G	VM4P200F2GLG	VM4P200F2R1G	VM4P200F2R5G	VM4P200F2ERN
			Tri	VM3P206F2GLG	VM3P206F2R1G	VM3P206F2R5G	VM4P206F2GLG	VM4P206F2R1G	VM4P206F2R5G	VM4P206F2ERN
			480	VM3P205F2GLG	VM3P205F2R1G	VM3P205F2R5G	VM4P205F2GLG	VM4P205F2R1G	VM4P205F2R5G	VM4P205F2ERN

① *See hazardous application data on pages L108-L111 for limitations.*
② *Catalog numbers shown are with guard (except enclosed reflector); to omit guard change ending G to N; e.g. VM3P150A2GLN*
③ *Catalog numbers shown are with 3/4" conduit openings; change 2 to 3 for 1"; e.g. VM3P150A3GLG.*
④ *Consult catalog logic for other available voltages.*
⑤ *Add suffix NR for restricted breathing; see page L54 for more information.*

HUBBELL®
KILLARK®

Ceiling
w/ 5-1/2"
Globe & Guard

Wall
w/ 5-1/2"
Refractor & Guard

Ceiling
w/ 7-3/4"
Globe & Guard

Wall
w/ 7-3/4"
Refractor & Guard

Ceiling
w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

CSA Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR CSA

VM 150-200 WATT METAL HALIDE PULSE CEILING

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE③	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
150	M102 M142	3/4"	Quad	VM3P150X2GLG	VM3P150X2R1G	VM3P150X2R5G	VM4P150X2GLG	VM4P150X2R1G	VM4P150X2R5G	VM4P150X2ERN
			Tri	VM3P156X2GLG	VM3P156X2R1G	VM3P156X2R5G	VM4P156X2GLG	VM4P156X2R1G	VM4P156X2R5G	VM4P156X2ERN
			480	VM3P155X2GLG	VM3P155X2R1G	VM3P155X2R5G	VM4P155X2GLG	VM4P155X2R1G	VM4P155X2R5G	VM4P155X2ERN
175	M137 M152	3/4"	Quad	VM3P170X2GLG	VM3P170X2R1G	VM3P170X2R5G	VM4P170X2GLG	VM4P170X2R1G	VM4P170X2R5G	VM4P170X2ERN
			Tri	VM3P176X2GLG	VM3P176X2R1G	VM3P176X2R5G	VM4P176X2GLG	VM4P176X2R1G	VM4P176X2R5G	VM4P176X2ERN
			480	VM3P175X2GLG	VM3P175X2R1G	VM3P175X2R5G	VM4P175X2GLG	VM4P175X2R1G	VM4P175X2R5G	VM4P175X2ERN
200	M136	3/4"	Quad	VM3P200X2GLG	VM3P200X2R1G	VM3P200X2R5G	VM4P200X2GLG	VM4P200X2R1G	VM4P200X2R5G	VM4P200X2ERN
			Tri	VM3P206X2GLG	VM3P206X2R1G	VM3P206X2R5G	VM4P206X2GLG	VM4P206X2R1G	VM4P206X2R5G	VM4P206X2ERN
			480	VM3P205X2GLG	VM3P205X2R1G	VM3P205X2R5G	VM4P205X2GLG	VM4P205X2R1G	VM4P205X2R5G	VM4P205X2ERN

VM 150-200 WATT METAL HALIDE PULSE WALL

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
150	M102 M142	3/4"	Quad	VM3P150B2GLG	VM3P150B2R1G	VM3P150B2R5G	VM4P150B2GLG	VM4P150B2R1G	VM4P150B2R5G	VM4P150B2ERN
			Tri	VM3P156B2GLG	VM3P156B2R1G	VM3P156B2R5G	VM4P156B2GLG	VM4P156B2R1G	VM4P156B2R5G	VM4P156B2ERN
			480	VM3P155B2GLG	VM3P155B2R1G	VM3P155B2R5G	VM4P155B2GLG	VM4P155B2R1G	VM4P155B2R5G	VM4P155B2ERN
175	M137 M152	3/4"	Quad	VM3P170B2GLG	VM3P170B2R1G	VM3P170B2R5G	VM4P170B2GLG	VM4P170B2R1G	VM4P170B2R5G	VM4P170B2ERN
			Tri	VM3P176B2GLG	VM3P176B2R1G	VM3P176B2R5G	VM4P176B2GLG	VM4P176B2R1G	VM4P176B2R5G	VM4P176B2ERN
			480	VM3P175B2GLG	VM3P175B2R1G	VM3P175B2R5G	VM4P175B2GLG	VM4P175B2R1G	VM4P175B2R5G	VM4P175B2ERN
200	M136	3/4"	Quad	VM3P200B2GLG	VM3P200B2R1G	VM3P200B2R5G	VM4P200B2GLG	VM4P200B2R1G	VM4P200B2R5G	VM4P200B2ERN
			Tri	VM3P206B2GLG	VM3P206B2R1G	VM3P206B2R5G	VM4P206B2GLG	VM4P206B2R1G	VM4P206B2R5G	VM4P206B2ERN
			480	VM3P205B2GLG	VM3P205B2R1G	VM3P205B2R5G	VM4P205B2GLG	VM4P205B2R1G	VM4P205B2R5G	VM4P205B2ERN

① *See hazardous application data on pages L108-L111 for limitations.*
② *Catalog numbers shown are with guard (except enclosed reflectors); to omit guard, change ending G to N; e.g. VM3P050X2GLN*
③ *Catalog numbers shown are with 3/4" conduit openings, change 2 to 3 for 1"; e.g. VM3P150X3GLG.*
④ *Consult catalog logic for other available voltages.*
⑤ *Add suffix NR for restricted breathing; see page L54 for more information.*

Cone
w/ 5-1/2"
Globe & Guard

EZ Adapter
w/ 5-1/2"
Refractor & Guard

Cone
w/ 7-3/4"
Globe & Guard

EZ Adapter
w/ 7-3/4"
Refractor & Guard

Cone
w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

CSA Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR CSA

VM 150-200 WATT METAL HALIDE PULSE CONE

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
150	M102 M142	3/4"	Quad	VM3P150C2GLG	VM3P150C2R1G	VM3P150C2R5G	VM4P150C2GLG	VM4P150C2R1G	VM4P150C2R5G	VM4P150C2ERN
			Tri	VM3P156C2GLG	VM3P156C2R1G	VM3P156C2R5G	VM4P156C2GLG	VM4P156C2R1G	VM4P156C2R5G	VM4P156C2ERN
			480	VM3P155C2GLG	VM3P155C2R1G	VM3P155C2R5G	VM4P155C2GLG	VM4P155C2R1G	VM4P155C2R5G	VM4P155C2ERN
175	M137 M152	3/4"	Quad	VM3P170C2GLG	VM3P170C2R1G	VM3P170C2R5G	VM4P170C2GLG	VM4P170C2R1G	VM4P170C2R5G	VM4P170C2ERN
			Tri	VM3P176C2GLG	VM3P176C2R1G	VM3P176C2R5G	VM4P176C2GLG	VM4P176C2R1G	VM4P176C2R5G	VM4P176C2ERN
			480	VM3P175C2GLG	VM3P175C2R1G	VM3P175C2R5G	VM4P175C2GLG	VM4P175C2R1G	VM4P175C2R5G	VM4P175C2ERN
200	M136	3/4"	Quad	VM3P200C2GLG	VM3P200C2R1G	VM3P200C2R5G	VM4P200C2GLG	VM4P200C2R1G	VM4P200C2R5G	VM4P200C2ERN
			Tri	VM3P206C2GLG	VM3P206C2R1G	VM3P206C2R5G	VM4P206C2GLG	VM4P206C2R1G	VM4P206C2R5G	VM4P206C2ERN
			480	VM3P205C2GLG	VM3P205C2R1G	VM3P205C2R5G	VM4P205C2GLG	VM4P205C2R1G	VM4P205C2R5G	VM4P205C2ERN

VM 150-200 WATT METAL HALIDE PULSE EZ ADAPTER

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE⑥	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
150	M102 M142	⑥	Quad	VM3P150EZGLG	VM3P150EZR1G	VM3P150EZR5G	VM4P150EZGLG	VM4P150EZR1G	VM4P150EZR5G	VM4P150EZERN
			Tri	VM3P156EZGLG	VM3P156EZR1G	VM3P156EZR5G	VM4P156EZGLG	VM4P156EZR1G	VM4P156EZR5G	VM4P156EZERN
			480	VM3P155EZGLG	VM3P155EZR1G	VM3P155EZR5G	VM4P155EZGLG	VM4P155EZR1G	VM4P155EZR5G	VM4P155EZERN
175	M137 M152	⑥	Quad	VM3P170EZGLG	VM3P170EZR1G	VM3P170EZR5G	VM4P170EZGLG	VM4P170EZR1G	VM4P170EZR5G	VM4P170EZERN
			Tri	VM3P176EZGLG	VM3P176EZR1G	VM3P176EZR5G	VM4P176EZGLG	VM4P176EZR1G	VM4P176EZR5G	VM4P176EZERN
			480	VM3P175EZGLG	VM3P175EZR1G	VM3P175EZR5G	VM4P175EZGLG	VM4P175EZR1G	VM4P175EZR5G	VM4P175EZERN
200	M136	⑥	Quad	VM3P200EZGLG	VM3P200EZR1G	VM3P200EZR5G	VM4P200EZGLG	VM4P200EZR1G	VM4P200EZR5G	VM4P200EZERN
			Tri	VM3P206EZGLG	VM3P206EZR1G	VM3P206EZR5G	VM4P206EZGLG	VM4P206EZR1G	VM4P206EZR5G	VM4P206EZERN
			480	VM3P205EZGLG	VM3P205EZR1G	VM3P205EZR5G	VM4P205EZGLG	VM4P205EZR1G	VM4P205EZR5G	VM4P205EZERN

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① *See hazardous application data on pages L108-L111 for limitations.*
② *Catalog numbers shown are with guard (except enclosed reflector); to omit guard change ending G to N; e.g. VM3P150C2GLN*
③ *Catalog numbers shown are with 3/4" conduit openings; change 2 to 3 for 1"; e.g. VM3P150C3GLG.*
④ *Consult catalog logic for other available voltages.*
⑤ *Add suffix NR for restricted breathing; see page L54 for more information.*
⑥ *VMEZA tank adapters UL "Classified" as an assembly for use between VM Tanks and EZ mounts. Order EZ mounts separately, see page L83.*

Stanchion 25°
w/ 5-1/2"
Globe & Guard

Stanchion Straight
w/ 5-1/2"
Refractor & Guard

Stanchion 25°
w/ 7-3/4"
Globe & Guard

Stanchion Straight
w/ 7-3/4"
Refractor & Guard

Stanchion 25°
w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR
Class I, Zone 2 Ex nR

VM 150-200 WATT METAL HALIDE PULSE STANCHION 25° ANGLE

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
150	M102 M142	1-1/2"	Quad	VM3P150D5GLG	VM3P150D5R1G	VM3P150D5R5G	VM4P150D5GLG	VM4P150D5R1G	VM4P150D5R5G	VM4P150D5ERN
			Tri	VM3P156D5GLG	VM3P156D5R1G	VM3P156D5R5G	VM4P156D5GLG	VM4P156D5R1G	VM4P156D5R5G	VM4P156D5ERN
			480	VM3P155D5GLG	VM3P155D5R1G	VM3P155D5R5G	VM4P155D5GLG	VM4P155D5R1G	VM4P155D5R5G	VM4P155D5ERN
175	M137 M152	1-1/2"	Quad	VM3P170D5GLG	VM3P170D5R1G	VM3P170D5R5G	VM4P170D5GLG	VM4P170D5R1G	VM4P170D5R5G	VM4P170D5ERN
			Tri	VM3P176D5GLG	VM3P176D5R1G	VM3P176D5R5G	VM4P176D5GLG	VM4P176D5R1G	VM4P176D5R5G	VM4P176D5ERN
			480	VM3P175D5GLG	VM3P175D5R1G	VM3P175D5R5G	VM4P175D5GLG	VM4P175D5R1G	VM4P175D5R5G	VM4P175D5ERN
200	M136	1-1/2"	Quad	VM3P200D5GLG	VM3P200D5R1G	VM3P200D5R5G	VM4P200D5GLG	VM4P200D5R1G	VM4P200D5R5G	VM4P200D5ERN
			Tri	VM3P206D5GLG	VM3P206D5R1G	VM3P206D5R5G	VM4P206D5GLG	VM4P206D5R1G	VM4P206D5R5G	VM4P206D5ERN
			480	VM3P205D5GLG	VM3P205D5R1G	VM3P205D5R5G	VM4P205D5GLG	VM4P205D5R1G	VM4P205D5R5G	VM4P205D5ERN

VM 150-200 WATT METAL HALIDE PULSE STANCHION STRAIGHT

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②			
WATTS	ANSI	HUB SIZE③	VOLTAGE④	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE I GLASS REFRACTOR & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFLECTOR
150	M102 M142	1-1/2"	Quad	VM3P150S5GLG	VM3P150S5R1G	VM3P150S5R5G	VM4P150S5GLG	VM4P150S5R1G	VM4P150S5R5G	VM4P150S5ERN
			Tri	VM3P156S5GLG	VM3P156S5R1G	VM3P156S5R5G	VM4P156S5GLG	VM4P156S5R1G	VM4P156S5R5G	VM4P156S5ERN
			480	VM3P155S5GLG	VM3P155S5R1G	VM3P155S5R5G	VM4P155S5GLG	VM4P155S5R1G	VM4P155S5R5G	VM4P155S5ERN
175	M137 M152	1-1/2"	Quad	VM3P170S5GLG	VM3P170S5R1G	VM3P170S5R5G	VM4P170S5GLG	VM4P170S5R1G	VM4P170S5R5G	VM4P170S5ERN
			Tri	VM3P176S5GLG	VM3P176S5R1G	VM3P176S5R5G	VM4P176S5GLG	VM4P176S5R1G	VM4P176S5R5G	VM4P176S5ERN
			480	VM3P175S5GLG	VM3P175S5R1G	VM3P175S5R5G	VM4P175S5GLG	VM4P175S5R1G	VM4P175S5R5G	VM4P175S5ERN
200	M136	1-1/2"	Quad	VM3P200S5GLG	VM3P200S5R1G	VM3P200S5R5G	VM4P200S5GLG	VM4P200S5R1G	VM4P200S5R5G	VM4P200S5ERN
			Tri	VM3P206S5GLG	VM3P206S5R1G	VM3P206S5R5G	VM4P206S5GLG	VM4P206S5R1G	VM4P206S5R5G	VM4P206S5ERN
			480	VM3P205S5GLG	VM3P205S5R1G	VM3P205S5R5G	VM4P205S5GLG	VM4P205S5R1G	VM4P205S5R5G	VM4P205S5ERN

① *See hazardous application data on pages L108-L111 for limitations.*
② *Catalog numbers shown are with guard (except enclosed reflectors); to omit guard change ending G to N; e.g. VM3P150D5GLN*
③ *Catalog numbers shown are with 1-1/2" conduit openings, change 5 to 4 for 1-1/4"; e.g. VM3P150D4GLG.*
④ *Consult catalog logic for other available voltages.*
⑤ *Add suffix NR for restricted breathing; see page L54 for more information.*

CERTILITE V
The Logical Choice

CertiLite®V Catalog Number Logic; 200-400 High Wattage (Mogul Base) HID Fixtures

VM 0 0 00 0 0 0 00 0 (NR⑤) 00

Series Constant

Optic Thread Size
5—7 3/4"

Lamp Type
S—HPS (200, 250, 400, 600)
H—MH (250, 400)
P—MHP (Pulse Start 250, 320, 350, 400)

Lamp Wattage
20—200 (HPS)
25—250 (HPS, MHP)
32—320 (MHP)
35—350 (MHP)
40—400 (HPS, MH⑬, MHP)
60—600 (HPS)

Voltage @ 60 Hertz ⓥ
0—Quadri-Volt (120, 208, 240, 277)
5—480V
6—Tri - 120, 277, 347 (Canada)
7—220V
8—220/240 50 Hz

Mounting Type
A—Pendant
X—Ceiling
B—Wall Bracket
C—Cone Top
D—Stanchion 25°
S—Stanchion Straight 90°
E—EZ Mount Adapter①
N—None (mount ordered separately)②

Entry (Mounts available)
2—3/4" NPT (A,B,C,X)
3—1" NPT (A,B,C,X)
4—1 1/4" NPT (D,S)
5—1 1/2" NPT (D,S)
6—3/4" NPT 5-Hub (X)
7—1" NPT 5-Hub (X)
8—M20 4-Hub (X)
9—M20 5-Hub (X)
Z—EZ Mount Adapter①
N—None (mount ordered separately)②

Optic
GL—Globe
ER—Enclosed Reflector
EP—Poylcarbonate Shielded Enclosed Reflector ⑪
S2—Type II Spin-Top Refractor
S5—Type V Spin-Top Refractor
FG—Silicone③ Coated Globe
TG—Teflon®④ Coated Globe
T2—Teflon®④ Coated Type II 12" Spin-Top Refractor
TV—Teflon®④ Coated Type V 12" Spin-Top Refractor

Guard
G—Globe Guard
N—No Guard⑥

Options
QA—Quartz Auxiliary⑦
BP—Ballast Protector 250-400W HPS only
F1—Fusing 120V⑧
F2—Fusing 208V⑧
F3—Fusing 240V⑧
F4—Fusing 277V⑧
F5—Fusing 480V⑧
F6—Fusing 347V⑧
F7—Fusing 220V⑧
F8—Fusing 240V 50 Hz⑧
P1—Photocell 120V⑨⑩
P2—Photocell 208-277V⑨⑩
P3—Photocell 347V⑨
Q1—QD Wired to 120V
Q2—QD Wired to 208V
Q3—QD Wired to 240V
Q4—QD Wired to 277V
Q5—QD Wired to 480V
Q6—QD Wired to 347V
Q7—QD 220V ⑫
Q8—QD 240V (50Hz) ⑫
TBx—Terminal Blocks
x = Voltage Code
AS—Assembled Fixture with Standard Lamp
AD—Assembled Fixture with Dual-Arc-Tube Lamp 250, 400 HPS only
AN—Assembled, no lamp
CS—Component Pack with Standard Lamp
CP—Component Pack-No Lamp

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① *Completes as "EZ", conduit mounting boxes ordered separately - See L83.*
② *NN mount ordered separately.*
③ *Silicone coated globe for additional impact protection.*
④ *Teflon® is a registered trademark of DuPont, Inc.*
⑤ *Restricted Breathing - See L54 for more information.*
⑥ *Order Guards for Spin-Tops & VMER40 separately. Consult factory for available lamp and voltage combinations.*
⑦ *QA not suitable for Class I, Div. 2/Zone 2 applications; consult factory for other hazardous applications.*
⑧ *Fusing not for Marine or Canadian installations.*
⑨ *Photo cells for Class I, Div. 2 only, or C1Z2 nR , not Class II.*
⑩ *Field connection to proper tap in case of Multitap Ballasts.*
⑪ *Not for use with wall or straight (90°) Stanchion.*
⑫ *QD = Quick Disconnect. Allows easy tank removal for maintenance. Electrician simply unplugs de-energized ballast from supply circuit.*
⑬ *400W M59 fixtures and EXPORT ONLY (EISA LAW).*

Pendant w/ Globe & Guard

Pendant w/ Spin-Top Refractor

Ceiling w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

SP Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR SP

VM 200-600 WATT HIGH PRESSURE SODIUM PENDANT

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR
200	S66	3/4"	Quad	VM5S200A2GLG	VM5S200A2S5N	VM5S200A2ERN	VM5S200A2EPN
			Tri	VM5S206A2GLG	VM5S206A2S5N	VM5S206A2ERN	VM5S206A2EPN
			480	VM5S205A2GLG	VM5S205A2S5N	VM5S205A2ERN	VM5S205A2EPN
250	S50	3/4"	Quad	VM5S250A2GLG	VM5S250A2S5N	VM5S250A2ERN	VM5S250A2EPN
			Tri	VM5S256A2GLG	VM5S256A2S5N	VM5S256A2ERN	VM5S256A2EPN
			480	VM5S255A2GLG	VM5S255A2S5N	VM5S255A2ERN	VM5S255A2EPN
400	S51	3/4"	Quad	VM5S400A2GLG	VM5S400A2S5N	VM5S400A2ERN	VM5S400A2EPN
			Tri	VM5S406A2GLG	VM5S406A2S5N	VM5S406A2ERN	VM5S406A2EPN
			480	VM5S405A2GLG	VM5S405A2S5N	VM5S405A2ERN	VM5S405A2EPN
600	S106	3/4"	Quad	—	—	VM5S600A2ERN	—
			Tri	—	—	VM5S606A2ERN	—
			480	—	—	VM5S605A2ERN	—

VM 200-600 WATT HIGH PRESSURE SODIUM CEILING

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR
200	S66	3/4"	Quad	VM5S200X2GLG	VM5S200X2S5N	VM5S200X2ERN	VM5S200X2EPN
			Tri	VM5S206X2GLG	VM5S206X2S5N	VM5S206X2ERN	VM5S206X2EPN
			480	VM5S205X2GLG	VM5S205X2S5N	VM5S205X2ERN	VM5S205X2EPN
250	S50	3/4"	Quad	VM5S250X2GLG	VM5S250X2S5N	VM5S250X2ERN	VM5S250X2EPN
			Tri	VM5S256X2GLG	VM5S256X2S5N	VM5S256X2ERN	VM5S256X2EPN
			480	VM5S255X2GLG	VM5S255X2S5N	VM5S255X2ERN	VM5S255X2EPN
400	S51	3/4"	Quad	VM5S400X2GLG	VM5S400X2S5N	VM5S400X2ERN	VM5S400X2EPN
			Tri	VM5S406X2GLG	VM5S406X2S5N	VM5S406X2ERN	VM5S406X2EPN
			480	VM5S405X2GLG	VM5S405X2S5N	VM5S405X2ERN	VM5S405X2EPN
600	S106	3/4"	Quad	—	—	VM5S600X2ERN	—
			Tri	—	—	VM5S606X2ERN	—
			480	—	—	VM5S605X2ERN	—

① *See hazardous application data on pages L112-L113 for limitations.*

② *Globe catalog number shown with guard. To omit guard, change G to N; e.g. VM5S200A2GLN. Order spin top and enclosed reflector guards separately.*

③ *Catalog numbers shown are with 3/4" conduit openings, change 2 to 3 for 1"; e.g. VM5S200A3GLG.*

④ *Consult catalog logic for other available voltages.*

⑤ *Add suffix NR for restricted breathing; see page L54 for more information.*

Wall w/ Globe & Guard

Wall w/ Spin-Top Refractor

Cone w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66
c UL us Listed - File E10514 (Hazardous & Marine)
SP Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR SP

VM 200-600 WATT HIGH PRESSURE SODIUM WALL

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR
200	S66	3/4"	Quad	VM5S200B2GLG	VM5S200B2S5N	VM5S200B2ERN	—
			Tri	VM5S206B2GLG	VM5S206B2S5N	VM5S206B2ERN	—
			480	VM5S205B2GLG	VM5S205B2S5N	VM5S205B2ERN	—
250	S50	3/4"	Quad	VM5S250B2GLG	VM5S250B2S5N	VM5S250B2ERN	—
			Tri	VM5S256B2GLG	VM5S256B2S5N	VM5S256B2ERN	—
			480	VM5S255B2GLG	VM5S255B2S5N	VM5S255B2ERN	—
400	S51	3/4"	Quad	VM5S400B2GLG	VM5S400B2S5N	VM5S400B2ERN	—
			Tri	VM5S406B2GLG	VM5S406B2S5N	VM5S406B2ERN	—
			480	VM5S405B2GLG	VM5S405B2S5N	VM5S405B2ERN	—
600	S106	3/4"	Quad	—	—	VM5S600B2ERN	—
			Tri	—	—	VM5S606B2ERN	—
			480	—	—	VM5S605B2ERN	—

VM 200-600 WATT HIGH PRESSURE SODIUM CONE

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR
200	S66	3/4"	Quad	VM5S200C2GLG	VM5S200C2S5N	VM5S200C2ERN	VM5S200C2EPN
			Tri	VM5S206C2GLG	VM5S206C2S5N	VM5S206C2ERN	VM5S206C2EPN
			480	VM5S205C2GLG	VM5S205C2S5N	VM5S205C2ERN	VM5S205C2EPN
250	S50	3/4"	Quad	VM5S250C2GLG	VM5S250C2S5N	VM5S250C2ERN	VM5S250C2EPN
			Tri	VM5S256C2GLG	VM5S256C2S5N	VM5S256C2ERN	VM5S256C2EPN
			480	VM5S255C2GLG	VM5S255C2S5N	VM5S255C2ERN	VM5S255C2EPN
400	S51	3/4"	Quad	VM5S400C2GLG	VM5S400C2S5N	VM5S400C2ERN	VM5S400C2EPN
			Tri	VM5S406C2GLG	VM5S406C2S5N	VM5S406C2ERN	VM5S406C2EPN
			480	VM5S405C2GLG	VM5S405C2S5N	VM5S405C2ERN	VM5S405C2EPN
600	S106	3/4"	Quad	—	—	VM5S600C2ERN	—
			Tri	—	—	VM5S606C2ERN	—
			480	—	—	VM5S605C2ERN	—

① *See hazardous application data on pages L112-L113 for limitations.*
② *Globe catalog number shown with guard. To omit guard, change G to N; e.g. VM5S200B2GLN. Order spin top and enclosed reflector guards separately.*
③ *Catalog numbers shown are with 3/4" conduit openings, change 2 to 3 for 1"; e.g. VM5S200B3GLG.*
④ *Consult catalog logic for other available voltages.*
⑤ *Add suffix NR for restricted breathing; see page L54 for more information.*

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Stanchion 25° w/ Globe & Guard

Stanchion 25° w/ Spin-Top Refractor

Stanchion Straight w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR
Class I, Zone 2 Ex nR

VM 200-600 WATT HIGH PRESSURE SODIUM STANCHION 25° ANGLE

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②		
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR
200	S66	1-1/2"	Quad	VM5S200D5GLG	VM5S200D5S5N	VM5S200D5ERN
			Tri	VM5S206D5GLG	VM5S206D5S5N	VM5S206D5ERN
			480	VM5S205D5GLG	VM5S205D5S5N	VM5S205D5ERN
250	S50	1-1/2"	Quad	VM5S250D5GLG	VM5S250D5S5N	VM5S250D5ERN
			Tri	VM5S256D5GLG	VM5S256D5S5N	VM5S256D5ERN
			480	VM5S255D5GLG	VM5S255D5S5N	VM5S255D5ERN
400	S51	1-1/2"	Quad	VM5S400D5GLG	VM5S400D5S5N	VM5S400D5ERN
			Tri	VM5S406D5GLG	VM5S406D5S5N	VM5S406D5ERN
			480	VM5S405D5GLG	VM5S405D5S5N	VM5S405D5ERN
600	S106	1-1/2"	Quad	—	—	VM5S600D5ERN
			Tri	—	—	VM5S606D5ERN
			480	—	—	VM5S605D5ERN

VM 200-600 WATT HIGH PRESSURE SODIUM STANCHION STRAIGHT

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②		
WATTS	ANSI	HUB SIZE③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR
200	S66	1-1/2"	Quad	VM5S200S5GLG	VM5S200S5S5N	VM5S200S5ERN
			Tri	VM5S206S5GLG	VM5S206S5S5N	VM5S206S5ERN
			480	VM5S205S5GLG	VM5S205S5S5N	VM5S205S5ERN
250	S50	1-1/2"	Quad	VM5S250S5GLG	VM5S250S5S5N	VM5S250S5ERN
			Tri	VM5S256S5GLG	VM5S256S5S5N	VM5S256S5ERN
			480	VM5S255S5GLG	VM5S255S5S5N	VM5S255S5ERN
400	S51	1-1/2"	Quad	VM5S400S5GLG	VM5S400S5S5N	VM5S400S5ERN
			Tri	VM5S406S5GLG	VM5S406S5S5N	VM5S406S5ERN
			480	VM5S405S5GLG	VM5S405S5S5N	VM5S405S5ERN
600	S106	1-1/2"	Quad	—	—	VM5S600S5ERN
			Tri	—	—	VM5S606S5ERN
			480	—	—	VM5S605S5ERN

① *See hazardous application data on pages L112-L113 for limitations.*

② *Globe catalog number shown with guard. To omit guard, change G to N; e.g. VM5S200D5GLN. Order spin top and enclosed reflector guards separately.*

③ *Catalog numbers shown are with 1-1/2" conduit openings, change 5 to 4 for 1-1/4"; e.g. VM5S200D4GLG.*

④ *Consult catalog logic for other available voltages.*

⑤ *Add suffix NR for restricted breathing; see page L54 for more information.*

EZ Adapter w/ Globe & Guard

EZ Adapter w/ Spin-Top Refractor

EZ Adapter w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR
Class I, Zone 2 Ex nR

VM 200-600 WATT HIGH PRESSURE SODIUM EZ ADAPTER							
DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR⑥
200	S66	③	Quad	VM5S200EZGLG	VM5S200EZS5N	VM5S200EZERN	VM5S200EZEPN
			Tri	VM5S206EZGLG	VM5S206EZS5N	VM5S206EZERN	VM5S206EZEPN
			480	VM5S205EZGLG	VM5S205EZS5N	VM5S205EZERN	VM5S205EZEPN
250	S50	③	Quad	VM5S250EZGLG	VM5S250EZS5N	VM5S250EZERN	VM5S250EZEPN
			Tri	VM5S256EZGLG	VM5S256EZS5N	VM5S256EZERN	VM5S256EZEPN
			480	VM5S255EZGLG	VM5S255EZS5N	VM5S255EZERN	VM5S255EZEPN
400	S51	③	Quad	VM5S400EZGLG	VM5S400EZS5N	VM5S400EZERN	VM5S400EZEPN
			Tri	VM5S406EZGLG	VM5S406EZS5N	VM5S406EZERN	VM5S406EZEPN
			480	VM5S405EZGLG	VM5S405EZS5N	VM5S405EZERN	VM5S405EZEPN
600	S106	③	Quad	—	—	VM5S600EZERN	—
			Tri	—	—	VM5S606EZERN	—
			480	—	—	VM5S605EZERN	—

Pendant

Ceiling

Wall Bracket

25° Stanchion

MOUNTING BOXES				
CATALOG NUMBER				HUB SIZE
PENDANT	CEILING	BRACKET	STANCHION	
EZA2	EZX2	EZB2	—	3/4"
EZA3	EZX3	EZB3	—	1"
—	—	—	EZD4A*	1-1/4"/1-1/2"*

**1-1/2" furnished with 1-1/2"-1-1/4" reducer and extension. Extension only part number EZDVMA.*

L

① *See hazardous application data on pages L112-L113 for limitations.*

② *Globe catalog number shown with guard. To omit guard, change G to N; e.g. VM5S200EZGLN. Order spin top and enclosed reflector guards separately.*

③ *VMEZA tank adapters UL "classified" as an assembly for use between VM tanks and EZ mounts. See above for separate ordering information*

④ *Consult catalog logic for other available voltages.*

⑤ *Add suffix NR for restricted breathing; see page L54 for more information.*

⑥ *VMEP40 not for use with EZ wall bracket.*

Pendant
w/ Globe &
Guard

Ceiling
w/ Globe &
Guard

Wall
w/ Spin-Top
Refractor

Cone
w/ Enclosed
Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

CSA Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR CSA

VM 400 WATT METAL HALIDE PENDANT

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR
400 ⑥	M59	3/4"	Quad	VM5H400A2GLG	VM5H400A2S5N	VM5H400A2ERN	VM5H400A2EPN
			Tri	VM5H406A2GLG	VM5H406A2S5N	VM5H406A2ERN	VM5H406A2EPN
			480	VM5H405A2GLG	VM5H405A2S5N	VM5H405A2ERN	VM5H405A2EPN

VM 400 WATT METAL HALIDE CEILING

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR
400 ⑥	M59	3/4"	Quad	VM5H400X2GLG	VM5H400X2S5N	VM5H400X2ERN	VM5H400X2EPN
			Tri	VM5H406X2GLG	VM5H406X2S5N	VM5H406X2ERN	VM5H406X2EPN
			480	VM5H405X2GLG	VM5H405X2S5N	VM5H405X2ERN	VM5H405X2EPN

VM 400 WATT METAL HALIDE WALL

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ③	VOLTAGE④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR
400 ⑥	M59	3/4"	Quad	VM5H400B2GLG	VM5H400B2S5N	VM5H400B2ERN	—
			Tri	VM5H406B2GLG	VM5H406B2S5N	VM5H406B2ERN	—
			480	VM5H405B2GLG	VM5H405B2S5N	VM5H405B2ERN	—

VM 400 WATT METAL HALIDE CONE

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR
400 ⑥	M59	3/4"	Quad	VM5H400C2GLG	VM5H400C2S5N	VM5H400C2ERN	VM5H400C2EPN
			Tri	VM5H406C2GLG	VM5H406C2S5N	VM5H406C2ERN	VM5H406C2EPN
			480	VM5H405C2GLG	VM5H405C2S5N	VM5H405C2ERN	VM5H405C2EPN

① *See hazardous application data on pages L112-L113 for limitations.*
② *Globe catalog number shown with guard. To omit guard, change G to N; e.g. VM5H400A2GLN. Order spin top and enclosed reflector guards separately.*
③ *Catalog numbers shown are with 3/4" conduit openings, change 2 to 3 for 1"; e.g. VM5H400A3GLG.*
④ *Consult catalog logic for other available voltages.*
⑤ *Add suffix NR for restricted breathing; see page L54 for more information.*
⑥ *400W M59 Fixtures are EXPORT ONLY (EISA LAW).*

Stanchion 25° w/ Globe & Guard

Stanchion 90° w/ Spin-Top Refractor

EZ Adapter w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66
c UL us Listed - File E10514 (Hazardous & Marine)
Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nA nR
Class I, Zone 2 Ex nR

VM 400 WATT METAL HALIDE STANCHION 25° ANGLE

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR
400 ⑥	M59	1-1/2"	Quad	VM5H400D5GLG	VM5H400D5S5N	VM5H400D5ERN	—
			Tri	VM5H406D5GLG	VM5H406D5S5N	VM5H406D5ERN	—
			480	VM5H405D5GLG	VM5H405D5S5N	VM5H405D5ERN	—

VM 400 WATT METAL HALIDE STANCHION STRAIGHT

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR
400 ⑥	M59	1-1/2"	Quad	VM5H400S5GLG	VM5H400S5S5N	VM5H400S5ERN	—
			Tri	VM5H406S5GLG	VM5H406S5S5N	VM5H406S5ERN	—
			480	VM5H405S5GLG	VM5H405S5S5N	VM5H405S5ERN	—

VM 400 WATT METAL HALIDE EZ ADAPTER

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ⑦	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR⑧
400 ⑥	M59	⑦	Quad	VM5H400EZGLG	VM5H400EZS5N	VM5H400EZERN	VM5H400EZEPN
			Tri	VM5H406EZGLG	VM5H406EZS5N	VM5H406EZERN	VM5H406EZEPN
			480	VM5H405EZGLG	VM5H405EZS5N	VM5H405EZERN	VM5H405EZEPN

① *See hazardous application data on pages L112-L113 for limitations.*
② *Globe catalog number shown with guard. To omit guard, change G to N; e.g. VM5H400D5GLN. Order spin top and enclosed reflector guards separately.*
③ *Catalog numbers shown with 1-1/2" conduit openings; change 5 to 4 for 1-1/4"; e.g. VM5H400D4GLG.*
④ *Consult catalog logic for other available voltages.*
⑤ *Add suffix NR for restricted breathing; see page L54 for more information.*
⑥ *400W M59 Fixtures are EXPORT ONLY (EISA LAW).*
⑦ *VMEZA tank adapters UL "classified" as an assembly for use between VM tanks and EZ mounts. Order EZ mounts separately. See page L83.*
⑧ *VMEP40 not for use with EZ wall bracket.*

CERTILITE®V SERIES • LIGHTING
METAL HALIDE PULSE, 400W MOGUL BASE HID

Pendant w/ Globe & Guard

Pendant w/ Spin-Top Refractor

Ceiling w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

SP Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR SP

VM 250-400 WATT METAL HALIDE PULSE PENDANT

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR
250	M138 M153	3/4"	Quad	VM5P250A2GLG	VM5P250A2S5N	VM5P250A2ERN	VM5P250A2EPN
			Tri	VM5P256A2GLG	VM5P256A2S5N	VM5P256A2ERN	VM5P256A2EPN
			480	VM5P255A2GLG	VM5P255A2S5N	VM5P255A2ERN	VM5P255A2EPN
320	M132 M154	3/4"	Quad	VM5P320A2GLG	VM5P320A2S5N	VM5P320A2ERN	VM5P320A2EPN
			Tri	VM5P326A2GLG	VM5P326A2S5N	VM5P326A2ERN	VM5P326A2EPN
			480	VM5P325A2GLG	VM5P325A2S5N	VM5P325A2ERN	VM5P325A2EPN
350	M131	3/4"	Quad	VM5P350A2GLG	VM5P350A2S5N	VM5P350A2ERN	VM5P350A2EPN
			Tri	VM5P356A2GLG	VM5P356A2S5N	VM5P356A2ERN	VM5P356A2EPN
			480	VM5P355A2GLG	VM5P355A2S5N	VM5P355A2ERN	VM5P355A2EPN
400	M135 M155	3/4"	Quad	VM5P400A2GLG	VM5P400A2S5N	VM5P400A2ERN	VM5P400A2EPN
			Tri	VM5P406A2GLG	VM5P406A2S5N	VM5P406A2ERN	VM5P406A2EPN
			480	VM5P405A2GLG	VM5P405A2S5N	VM5P405A2ERN	VM5P405A2EPN

VM 250-400 WATT METAL HALIDE PULSE CEILING

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR
250	M138 M153	3/4"	Quad	VM5P250X2GLG	VM5P250X2S5N	VM5P250X2ERN	VM5P250X2EPN
			Tri	VM5P256X2GLG	VM5P256X2S5N	VM5P256X2ERN	VM5P256X2EPN
			480	VM5P255X2GLG	VM5P255X2S5N	VM5P255X2ERN	VM5P255X2EPN
320	M132 M154	3/4"	Quad	VM5P320X2GLG	VM5P320X2S5N	VM5P320X2ERN	VM5P320X2EPN
			Tri	VM5P326X2GLG	VM5P326X2S5N	VM5P326X2ERN	VM5P326X2EPN
			480	VM5P325X2GLG	VM5P325X2S5N	VM5P325X2ERN	VM5P325X2EPN
350	M131	3/4"	Quad	VM5P350X2GLG	VM5P350X2S5N	VM5P350X2ERN	VM5P350X2EPN
			Tri	VM5P356X2GLG	VM5P356X2S5N	VM5P356X2ERN	VM5P356X2EPN
			480	VM5P355X2GLG	VM5P355X2S5N	VM5P355X2ERN	VM5P355X2EPN
400	M135 M155	3/4"	Quad	VM5P400X2GLG	VM5P400X2S5N	VM5P400X2ERN	VM5P400X2EPN
			Tri	VM5P406X2GLG	VM5P406X2S5N	VM5P406X2ERN	VM5P406X2EPN
			480	VM5P405X2GLG	VM5P405X2S5N	VM5P405X2ERN	VM5P405X2EPN

① *See hazardous application data on pages L112-L113 for limitations.*

② *Globe catalog number shown with guard. To omit guard, change G to N; e.g. VM5P250A2GLN. Order spin top and enclosed reflector guards separately.*

③ *Catalog numbers shown are with 3/4" conduit openings, change 2 to 3 for 1"; e.g. VM5P250A3GLG.*

④ *Consult catalog logic for other available voltages.*

⑤ *Add suffix NR for restricted breathing; see page L54 for more information.*

Wall w/ Globe & Guard

Wall w/ Spin-Top Refractor

Cone w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

SP Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR UL
Class I, Zone 2 Ex nR SP

VM 250-400 WATT METAL HALIDE PULSE WALL

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR
250	M138 M153	3/4"	Quad	VM5P250B2GLG	VM5P250B2S5N	VM5P250B2ERN	—
			Tri	VM5P256B2GLG	VM5P256B2S5N	VM5P256B2ERN	—
			480	VM5P255B2GLG	VM5P255B2S5N	VM5P255B2ERN	—
320	M132 M154	3/4"	Quad	VM5P320B2GLG	VM5P320B2S5N	VM5P320B2ERN	—
			Tri	VM5P326B2GLG	VM5P326B2S5N	VM5P326B2ERN	—
			480	VM5P325B2GLG	VM5P325B2S5N	VM5P325B2ERN	—
350	M131	3/4"	Quad	VM5P350B2GLG	VM5P350B2S5N	VM5P350B2ERN	—
			Tri	VM5P356B2GLG	VM5P356B2S5N	VM5P356B2ERN	—
			480	VM5P355B2GLG	VM5P355B2S5N	VM5P355B2ERN	—
400	M135 M155	3/4"	Quad	VM5P400B2GLG	VM5P400B2S5N	VM5P400B2ERN	—
			Tri	VM5P406B2GLG	VM5P406B2S5N	VM5P406B2ERN	—
			480	VM5P405B2GLG	VM5P405B2S5N	VM5P405B2ERN	—

VM 250-400 WATT METAL HALIDE PULSE CONE

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR
250	M138 M153	3/4"	Quad	VM5P250C2GLG	VM5P250C2S5N	VM5P250C2ERN	VM5P250C2EPN
			Tri	VM5P256C2GLG	VM5P256C2S5N	VM5P256C2ERN	VM5P256C2EPN
			480	VM5P255C2GLG	VM5P255C2S5N	VM5P255C2ERN	VM5P255C2EPN
320	M132 M154	3/4"	Quad	VM5P320C2GLG	VM5P320C2S5N	VM5P320C2ERN	VM5P320C2EPN
			Tri	VM5P326C2GLG	VM5P326C2S5N	VM5P326C2ERN	VM5P326C2EPN
			480	VM5P325C2GLG	VM5P325C2S5N	VM5P325C2ERN	VM5P325C2EPN
350	M131	3/4"	Quad	VM5P350C2GLG	VM5P350C2S5N	VM5P350C2ERN	VM5P350C2EPN
			Tri	VM5P356C2GLG	VM5P356C2S5N	VM5P356C2ERN	VM5P356C2EPN
			480	VM5P355C2GLG	VM5P355C2S5N	VM5P355C2ERN	VM5P355C2EPN
400	M135 M155	3/4"	Quad	VM5P400C2GLG	VM5P400C2S5N	VM5P400C2ERN	VM5P400C2EPN
			Tri	VM5P406C2GLG	VM5P406C2S5N	VM5P406C2ERN	VM5P406C2EPN
			480	VM5P405C2GLG	VM5P405C2S5N	VM5P405C2ERN	VM5P405C2EPN

① *See hazardous application data on pages L112-L113 for limitations.*
② *Globe catalog number shown with guard. To omit guard, change G to N; e.g. VM5P250B2GLN. Order spin top and enclosed reflector guards separately.*
③ *Catalog numbers shown are with 3/4" conduit openings, change 2 to 3 for 1"; e.g. VM5P250B3GLG.*
④ *Consult catalog logic for other available voltages.*
④ *Add suffix NR for restricted breathing; see page L54 for more information.*

HUBBELL® KILLARK®

Stanchion 25° w/ Globe & Guard

Stanchion 25° w/ Spin-Top Refractor

Stanchion Straight w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR
Class I, Zone 2 Ex nR

VM 250-400 WATT METAL HALIDE PULSE STANCHION 25° ANGLE

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②		
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR
250	M138 M153	1-1/2"	Quad	VM5P250D5GLG	VM5P250D5S5N	VM5P250D5ERN
			Tri	VM5P256D5GLG	VM5P256D5S5N	VM5P256D5ERN
			480	VM5P255D5GLG	VM5P255D5S5N	VM5P255D5ERN
320	M132 M154	1-1/2"	Quad	VM5P320D5GLG	VM5P320D5S5N	VM5P320D5ERN
			Tri	VM5P326D5GLG	VM5P326D5S5N	VM5P326D5ERN
			480	VM5P325D5GLG	VM5P325D5S5N	VM5P325D5ERN
350	M131	1-1/2"	Quad	VM5P350D5GLG	VM5P350D5S5N	VM5P350D5ERN
			Tri	VM5P356D5GLG	VM5P356D5S5N	VM5P356D5ERN
			480	VM5P355D5GLG	VM5P355D5S5N	VM5P355D5ERN
400	M135 M155	1-1/2"	Quad	VM5P400D5GLG	VM5P400D5S5N	VM5P400D5ERN
			Tri	VM5P406D5GLG	VM5P406D5S5N	VM5P406D5ERN
			480	VM5P405D5GLG	VM5P405D5S5N	VM5P405D5ERN

VM 250-400 WATT METAL HALIDE PULSE STANCHION STRAIGHT

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②		
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR
250	M138 M153	1-1/2"	Quad	VM5P250S5GLG	VM5P250S5S5N	VM5P250S5ERN
			Tri	VM5P256S5GLG	VM5P256S5S5N	VM5P256S5ERN
			480	VM5P255S5GLG	VM5P255S5S5N	VM5P255S5ERN
320	M132 M154	1-1/2"	Quad	VM5P320S5GLG	VM5P320S5S5N	VM5P320S5ERN
			Tri	VM5P326S5GLG	VM5P326S5S5N	VM5P326S5ERN
			480	VM5P325S5GLG	VM5P325S5S5N	VM5P325S5ERN
350	M131	1-1/2"	Quad	VM5P350S5GLG	VM5P350S5S5N	VM5P350S5ERN
			Tri	VM5P356S5GLG	VM5P356S5S5N	VM5P356S5ERN
			480	VM5P355S5GLG	VM5P355S5S5N	VM5P355S5ERN
400	M135 M155	1-1/2"	Quad	VM5P400S5GLG	VM5P400S5S5N	VM5P400S5ERN
			Tri	VM5P406S5GLG	VM5P406S5S5N	VM5P406S5ERN
			480	VM5P405S5GLG	VM5P405S5S5N	VM5P405S5ERN

① *See hazardous application data on pages L112-L113 for limitations.*

② *Globe catalog number shown with guard. To omit guard, change G to N; e.g. VM5P250D5GLN. Order spin top and enclosed reflector guards separately.*

③ *Catalog numbers shown with 1-1/2" conduit openings; change 5 to 4 for 1-1/4"; e.g. VM5P250D4GLG.*

④ *Consult catalog logic for other available voltages.*

⑤ *Add suffix NR for restricted breathing; see page L54 for more information.*

EZ Adapter w/ Globe & Guard

EZ Adapter w/ Spin-Top Refractor

EZ Adapter w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4X; IP66

c UL us Listed - File E10514 (Hazardous & Marine)

Certified - File LR11713

NR Restricted Breathing Option⑤
Class I, Zone 2 AEx nAnR
Class I, Zone 2 Ex nR

VM 250-400 WATT METAL HALIDE PULSE EZ ADAPTER

DESCRIPTION				7-3/4" OPTIC THREAD SIZE②			
WATTS	ANSI	HUB SIZE ③	VOLTAGE ④	GLOBE & GUARD	TYPE V SPIN-TOP GLASS REFRACTOR	ENCLOSED REFLECTOR	POLYCARBONATE SHIELDED ENCLOSED REFLECTOR⑥
250	M138 M153	③	Quad	VM5P250EZGLG	VM5P250EZS5N	VM5P250EZERN	VM5P250EZEPN
			Tri	VM5P256EZGLG	VM5P256EZS5N	VM5P256EZERN	VM5P256EZEPN
			480	VM5P255EZGLG	VM5P255EZS5N	VM5P255EZERN	VM5P255EZEPN
320	M132 M154	③	Quad	VM5P320EZGLG	VM5P320EZS5N	VM5P320EZERN	VM5P320EZEPN
			Tri	VM5P326EZGLG	VM5P326EZS5N	VM5P326EZERN	VM5P326EZEPN
			480	VM5P325EZGLG	VM5P325EZS5N	VM5P325EZERN	VM5P325EZEPN
350	M131	③	Quad	VM5P350EZGLG	VM5P350EZS5N	VM5P350EZERN	VM5P350EZEPN
			Tri	VM5P356EZGLG	VM5P356EZS5N	VM5P356EZERN	VM5P356EZEPN
			480	VM5P355EZGLG	VM5P355EZS5N	VM5P355EZERN	VM5P355EZEPN
400	M135 M155	③	Quad	VM5P400EZGLG	VM5P400EZS5N	VM5P400EZERN	VM5P400EZEPN
			Tri	VM5P406EZGLG	VM5P406EZS5N	VM5P406EZERN	VM5P406EZEPN
			480	VM5P405EZGLG	VM5P405EZS5N	VM5P405EZERN	VM5P405EZEPN

Pendant

Ceiling

Wall Bracket

25° Stanchion

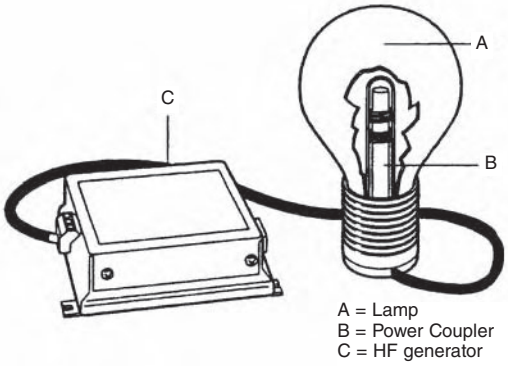
L

MOUNTING BOXES

CATALOG NUMBER				HUB SIZE
PENDANT	CEILING	BRACKET	STANCHION	
EZA2	EZX2	EZB2	—	3/4"
EZA3	EZX3	EZB3	—	1"
—	—	—	EZD4A*	1-1/4"/1-1/2"*

**1-1/2" furnished with 1-1/2"-1-1/4" reducer and extension. Extension only part number EZDVMA.*

① *See hazardous application data on pages L112-L113 for limitations.*
② *Globe catalog number shown with guard. To omit guard, change G to N; e.g. VM5P250EZGLN. Order spin top and enclosed reflector guards separately.*
③ *VMEZA tank adapters UL "classified" as an assembly for use between VM tanks and EZ mounts. See above for separate ordering information.*
④ *Consult catalog logic for other available voltages.*
⑤ *Add suffix NR for restricted breathing; see page L54 for more information.*
⑥ *VMEP40 not for use with EZ wall bracket.*



A = Lamp
B = Power Coupler
C = HF generator

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4x

Listed - File LR11713

CERTILITE®V LUMINAIRE WITH INDUCTION LIGHTING SYSTEM

APPLICATIONS

- Where long life lamp sources (up to 100,000 hours) ② are needed.
- In areas that require "instant on" illumination.
- Where cool globe temperatures are required.
- In dificult-to-reach installations.
- In cold environment applications.

FEATURES

- Almost maintenance-free Philips® QL Induction Lamp system.
- Includes lamp.
- Up to 100,000 hour life minimizes maintenance costs.
- Instant start and restart in low temperatures down to -40°C.
- White light with 80+ CRI (Color rendering Index).
- High lumen output & efficacy.
- Less than 10% THD (Total Hamonic Distortion) will not add electrical noise to circuits.

Philips® is a registered trademark of Koninklijke Philips Electronics N.V.

CertiLite®V Catalog Number Logic; 85-165W QL Induction Fixtures

VM 0 0 00 0 0 0 00 0 00

Series Constant

Optic Thread Size
1—5 1/2" Reduced Profile 55W
4—7 3/4" Medium Tank 85W
5—7 3/4" Large Tank 165W

Lamp Type
Q—QL Induction

Lamp Wattage
05—55W (VM1)
08—85W (VM4)
16—165W (VM5)⑨

Voltage @ 60 Hertz
1—120V (60 HZ)
32—200-277V (50/60 HZ)

Mounting Type
A—Pendant
X—Ceiling
B—Wall Bracket
C—Cone Top
D—Stanchion 25°
S—Stanchion 90°
E—EZ Mount Adapter④
N—None (mount ordered separately)⑤

Entry (Mounts available)
2—3/4" NPT (A,B,C,X)
3—1" NPT (A,B,C,X)
4—1 1/4" NPT (D,S)
5—1 1/2" NPT (D,S)
6—3/4" NPT 5-Hub (X)
7—1" NPT 5-Hub (X)
8—M20 4-Hub (X)
9—M20 5-Hub (X)
Z—EZ Mount Adapter④
N—None (mount ordered separately)⑤

Optic
GL—Globe⑨
R1—Type I Glass Refractor
R3—Type III Glass Refractor
R5—Type V Glass Refractor
S2—Type II 12" Spin-Top Refractor
S5—Type V 12" Spin-Top Refractor
ER—Enclosed Reflector
EP—Poylcarbonate Shielded Enclosed Reflector⑥

Guard
G—Guard (Globes & Glass refractors)
N—No Guard③

Options
P1—Photocell 120V
P2—Photocell 208-277V

QL SIZE	INITIAL LUMENS	NOMINAL LUMENS⑦	EFFICACY⑧
55 WATT	3800	3500	63.5
85 WATT	6500	6000	70
165 WATT	12500	12000	72.5

①*See hazardous application data on pages L108-L111 for limitations.*
②*Must not exceed 40°C ambient.*
③*Order Guards for Spin-Tops & VMER40 separately.*
④*Completes as "EZ", conduit mounts ordered separately - See L83.*
⑤*NN mount ordered separately.*
⑥*Not for use with wall or straight (90°) stanchion.*
⑦*At 100 hours; up to 75% of nominal value maintained at 60,000 hours.*
⑧*Lumens per watt.*
⑨*165W uses VMG25 in VM5 tank (or VMR25x all glass refractors).*

HUBBELL®
KILLARK®

Pendant w/ Globe & Guard

Ceiling w/ Globe & Guard

Wall w/ Spin-Top Refractor

Cone w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4x

Listed - File LR11713

VM 55-165W QL INDUCTION PENDANT② (INCLUDES LAMP)

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②		7-3/4" OPTIC THREAD SIZE ②		
WATTS	HUB SIZE③	VOLTAGE	TANK STYLE	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFRACTOR
55	3/4"	120	VM1	VM1Q051A2GLG	VM1Q051A2R5G	—	—	—
		200-277		VM1Q0532A2GLG	VM1Q0532A2R5G	—	—	—
85	3/4"	120	VM4	—	—	VM4Q081A2GLG	VM4Q081A2R5G	VM4Q081A2ERN
		200-277		—	—	VM4Q0832A2GLG	VM4Q0832A2R5G	VM4Q0832A2ERN
165	3/4"	120	VM5	—	—	VM5Q161A2GLG	VM5Q161A2R5G	VM5Q161A2ERN
		200-277		—	—	VM5Q1632A2GLG	VM5Q1632B2R5G	VM5Q1632A2ERN

VM 55-165W QL INDUCTION CEILING② (INCLUDES LAMP)

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②		7-3/4" OPTIC THREAD SIZE ②		
WATTS	HUB SIZE③	VOLTAGE	TANK STYLE	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFRACTOR
55	3/4"	120	VM1	VM1Q051X2GLG	VM1Q051X2R5G	—	—	—
		200-277		VM1Q0532X2GLG	VM1Q0532X2R5G	—	—	—
85	3/4"	120	VM4	—	—	VM4Q081X2GLG	VM4Q081X2R5G	VM4Q081X2ERN
		200-277		—	—	VM4Q0832X2GLG	VM4Q0832X2R5G	VM4Q0832X2ERN
165	3/4"	120	VM5	—	—	VM5Q161X2GLG	VM5Q161X2R5G	VM5Q161X2ERN
		200-277		—	—	VM5Q1632X2GLG	VM5Q1632X2R5G	VM5Q1632X2ERN

VM 55-165W QL INDUCTION WALL② (INCLUDES LAMP)

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②		7-3/4" OPTIC THREAD SIZE ②		
WATTS	HUB SIZE③	VOLTAGE	TANK STYLE	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFRACTOR
55	3/4"	120	VM1	VM1Q051B2GLG	VM1Q051B2R5G	—	—	—
		200-277		VM1Q0532B2GLG	VM1Q0532B2R5G	—	—	—
85	3/4"	120	VM4	—	—	VM4Q081B2GLG	VM4Q081B2R5G	VM4Q081B2ERN
		200-277		—	—	VM4Q0832B2GLG	VM4Q0832B2R5G	VM4Q0832B2ERN
165	3/4"	120	VM5	—	—	VM5Q161B2GLG	VM5Q161B2R5G	VM5Q161B2ERN
		200-277		—	—	VM5Q1632B2GLG	VM5Q1632B2R5G	VM5Q1632B2ERN

VM 55-165W QL INDUCTION CONE② (INCLUDES LAMP)

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②		7-3/4" OPTIC THREAD SIZE ②		
WATTS	HUB SIZE③	VOLTAGE	TANK STYLE	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFRACTOR
55	3/4"	120	VM1	VM1Q051C2GLG	VM1Q051C2R5G	—	—	—
		200-277		VM1Q0532C2GLG	VM1Q0532C2R5G	—	—	—
85	3/4"	120	VM4	—	—	VM4Q081C2GLG	VM4Q081C2R5G	VM4Q081C2ERN
		200-277		—	—	VM4Q0832C2GLG	VM4Q0832C2R5G	VM4Q0832C2ERN
165	3/4"	120	VM5	—	—	VM5Q161C2GLG	VM5Q161C2R5G	VM5Q161C2ERN
		200-277		—	—	VM5Q1632C2GLG	VM5Q1632C2R5G	VM5Q1632C2ERN

① *See hazardous application data on pages L108-L111 for limitations.*

② *Globe catalog number shown with guard. To omit guard, change G to N; e.g. VM4Q081A2GLN. Order spin top and enclosed reflector guards separately.*

③ *Catalog numbers shown are with 3/4" conduit openings, change 2 to 3 for 1"; e.g. VM4Q081A3GLG.*

L

HUBBELL
KILLARK®

Stanchion 25° w/ Globe & Guard

Stanchion 90° w/ Spin-Top Refractor

EZ Adapter w/ Enclosed Reflector

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
Suitable for wet locations
NEMA 3, 4, 4x

Listed - File LR11713

VM 55-165W QL INDUCTION 25° STANCHION② (INCLUDES LAMP)

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②		7-3/4" OPTIC THREAD SIZE ②		
WATTS	HUB SIZE③	VOLTAGE	TANK STYLE	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFRACTOR
55	1-1/2"	120	VM1	VM1Q051D5GLG	VM1Q051D5R5G	—	—	—
		200-277		VM1Q0532D5GLG	VM1Q0532D5R5G	—	—	—
85	1-1/2"	120	VM4	—	—	VM4Q081D5GLG	VM4Q081D5R5G	VM4Q081D5ERN
		200-277		—	—	VM4Q0832D5GLG	VM4Q0832D5R5G	VM4Q0832D5ERN
165	1-1/2"	120	VM5	—	—	VM5Q161D5GLG	VM5Q161D5R5G	VM5Q161D5ERN
		200-277		—	—	VM5Q1632D5GLG	VM5Q1632D5R5G	VM5Q1632D5ERN

VM 55-165W QL INDUCTION STRAIGHT STANCHION② (INCLUDES LAMP)

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②		7-3/4" OPTIC THREAD SIZE ②		
WATTS	HUB SIZE③	VOLTAGE	TANK STYLE	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFRACTOR
55	1-1/2"	120	VM1	VM1Q051S5GLG	VM1Q051S5R5G	—	—	—
		200-277		VM1Q0532S5GLG	VM1Q0532S5R5G	—	—	—
85	1-1/2"	120	VM4	—	—	VM4Q081S5GLG	VM4Q081S5R5G	VM4Q081S5ERN
		200-277		—	—	VM4Q0832S5GLG	VM4Q0832S5R5G	VM4Q0832S5ERN
165	1-1/2"	120	VM5	—	—	VM5Q161S5GLG	VM5Q161S5R5G	VM5Q161S5ERN
		200-277		—	—	VM5Q1632S5GLG	VM5Q1632S5R5G	VM5Q1632S5ERN

VM 55-165W QL INDUCTION EZ ADAPTER② (INCLUDES LAMP)

DESCRIPTION				5-1/2" OPTIC THREAD SIZE ②		7-3/4" OPTIC THREAD SIZE ②		
WATTS	HUB SIZE③	VOLTAGE	TANK STYLE	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	ENCLOSED REFRACTOR
55	④	120	VM1	VM1Q051EZGLG	VM1Q051EZR5G	—	—	—
		200-277		VM1Q0532EZGLG	VM1Q0532EZR5G	—	—	—
85	④	120	VM4	—	—	VM4Q081EZGLG	VM4Q081EZR5G	VM4Q081EZERN
		200-277		—	—	VM4Q0832EZGLG	VM4Q0832EZR5G	VM4Q0832EZERN
165	④	120	VM5	—	—	VM5Q161EZGLG	VM5Q161EZR5G	VM5Q161EZERN
		200-277		—	—	VM5Q1632EZGLG	VM5Q1632EZR5G	VM5Q1632EZERN

① *See hazardous application data on pages L108-L111 for limitations.*

② *Globe catalog number shown with guard. To omit guard, change G to N; e.g. VM4Q081D5GLN. Order spin top and enclosed reflector guards separately.*

③ *Stanchion catalog numbers shown are with 1-1/2" conduit openings, change "5" to "4" for 1-1/4"; e.g. VM4Q081D4GLG.*

④ *VMEZA tank adapters are UL "classified" as an assembly for use between VM tanks and EZ mounts. Order EZ mounts separately. See page L83.*

CERTILITE®V PHOTO CELL ACCESSORY

Photo Control (Field Installed in Splice cap)

Photo Control① (Factory Installed in ballast tank)

Photo Control Component (Patented)

PHOTO CONTROL FOR STANDARD AND HAZARDOUS CLASS I DIVISION 2 AREAS②			
CATALOG NUMBER	VOLTS	FREQUENCY	WATTS
HUB2PC120	120VAC	50/60Hz	400
HUB2PC227③	208-277VAC③	50/60Hz	400
HUB2PC347	347VAC	50/60Hz	440

① *Must be factory installed. Add P1 (for 120V), P2 (for 208-277V) or P3 (for 347V) suffixes are also for use with KFxxx - 76 Floods and KWP Series Wallpack Luminaires.*

② *Photo control cells for Class 1 Division 2 only.*

③ *Marked 220-277V, suitable for 208V.*

PHOTO CELL FIELD KITS*		
CATALOG NUMBER①	VOLTS	FREQUENCY
HUB2PC120FK	120VAC	50/60Hz
HUB2PC277FK	208-277VAC	50/60Hz
HUB2PC347FK	347VAC	50/60Hz

* *Includes instructions for KF/KWP Series.*

① *40˚C ambient max. C1 D2 (T3) to 400W max.*

Photo Control Component UL/CSA

FS COVER MOUNTED PHOTO CELLS*	
CATALOG NUMBER①②	VOLTS
VMFSPC1	120VAC
VMFSPC2	208-277VAC
VMFSPC3	347VAC

* *Includes photo cell and factory drilled cover and gasket.*

① *Order single gang FS box seperately.*

② *40˚C ambient max. T3 to 400W max.*

FACTORY SEALED

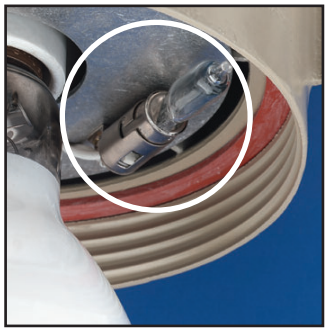
C1, DIV.2 & N4X

HKB-GL PHOTO CELLS	
CATALOG NUMBER①	VOLTS
VMHKPC1	120VAC
VMHKPC2	208-277VAC
VMHKPC3	347VAC

① *40˚C ambient T3 Rated.*

FACTORY SEALED

Class I, DIV. 1 BCD
Class II, DIV. 1&2 EFG
CLASS III
NEMA 3, 4X IP66



Auxiliary Lighting

Momentary voltage outages or dips can temporarily extinguish HID lamps which may require up to ten (10) minutes to restrike. To provide illumination during this period, about 10% of the fixtures should be specified with auxiliary lighting.

Quartz Auxiliary

Quartz auxiliary is available for all Certilite®V Series fixtures (except those with plastic refractors) by adding the suffix **"QA"** to the fixture catalog number. Example: VM3S050A2GLG-QA.

Low wattage fixtures with this option use 100 or 150 watt quartz lamps. High wattage fixtures can use up to 250 watt quartz lamps. Quartz lamps are not supplied with the fixture. Use quartz lamp type Q100 CL/DC (100W) or Q150 CL/DC (150W) DC Bayonet T-4 Base.

Due to the quartz envelope surface temperature (exceeding 600°C), fixtures with this option are not suitable for Class I, Division 2, Class I, Zone 2, some Class I, Zone 2 Ex nR, Class II and Class III hazardous locations. Contact the factory for specific fixture suitabilities.

Instant Restrike

Available for low wattage High Pressure Sodium Fixtures by adding Suffix **"IR"** to catalog number Example: VM3S050A2GLG-IR.

Additional instant restrike interior circuitry may decrease High Pressure Sodium lamp life. Feature will not affect fixture suitability in hazardous location applications.

Ballast Protection Circuit

Optional factory installed special ballast protector replaces the standard HPS ignitor and applies starting pulse to the lamp for 10 to 15 seconds each time voltage is supplied to the ballast. If the lamp has not ignited by the end of the time period, the starter will cease pulsing. Used to eliminate the continuous high voltage pulsing of the ignitor when end of life, lamp cycling, or missing lamp conditions exist. Available for HPS fixtures. Add suffix **"BP"** to fixture catalog number.

Notes: BP and IR cannot be used together.
QTZ and IR cannot beused together.

L


Pendant


Flexible Pendant


Ceiling


Wall


Cone Top


25° Stanchion


Straight Stanchion


EZ Adapter*
VMEZA

CERTILITE®V VM MOUNTING SPLICE BOXES

	CATALOG NUMBER							
HUB SIZE	PENDANT	FLEXIBLE PENDANT	CEILING 4 HUB	CEILING 5 HUB	WALL	CONE TOP	25 DEGREE STANCHION	90 DEGREE STANCHION
3/4"	VMA2B	VMF2B	VMX2B	VMX6B	VMB2B	VMC2B	—	—
1"	VMA3B	VMF3B	VMX3B	VMX7B	VMB3B	VMC3B	—	—
1-1/4"	—	—	—	—	—	—	VMD4B	VMS4B
1-1/2"	—	—	—	—	—	—	VMD5B	VMS5B
M-20	—	—	VMX8B**	VMX9B	—	—	—	—

**VMEZA is used between a ballast tank and an EZ mount-ordered separately. See L83 for more information.*
***VMX8B furnished with 3 non-metallic Ex plugs.*


VM1 Low Wattage
5-1/2" Optic Thread Size


VM2 Low Wattage
7-3/4" Optic Thread Size


VM3 Low Wattage
5-1/2" Optic Thread Size


VM4 Low Wattage
7-3/4" Optic Thread Size


VM5 High Wattage
7-3/4" Optic Thread Size

CERTILITE®V VM 35-600W BALLAST TANK ASSEMBLIES CATALOG NUMBERS

		MEDIUM BASE E26				MOGUL BASE E39 SOCKET								
		HPS		MH-MHP		HPS			MH -MHP			MH PULSE		
		LOW WATTAGE		LOW WATTAGE		LOW WATTAGE		HIGH WATTAGE	LOW WATTAGE		HIGH WATTAGE	LOW WATTAGE		HIGH WATTAGE
WATTS	VOLTAGE @ 60 Hz	5-1/2"	7-3/4"	5-1/2"	7-3/4"	5-1/2"	7-3/4"	7-3/4"	5-1/2"	7-3/4"	7-3/4"	5-1/2"	7-3/4"	7-3/4"
35	120	VM1S031	VM2S031	—	—	—	—	—	—	—	—	—	—	—
50	Quad	VM1S050	VM2S050	VM1H050	VM2H050	VM3S050	VM4S050	—	—	—	—	—	—	—
	Tri	—	—	VM1H056	VM2H056	VM3S056	VM4S056	—	—	—	—	—	—	—
	480	—	—	—	—	VM3S055	VM4S055	—	—	—	—	—	—	—
70	Quad	VM1S070	VM2S070	VM1H070	VM2H070	VM3S070	VM4S070	—	VM3H070	VM4H070	—	—	—	—
	Tri	VM1S076	VM2S076	VM1H076	VM2H076	VM3S076	VM4S076	—	VM3H076	VM4H076	—	—	—	—
	480	VM1S075	VM2S075	VM1H075	VM2H075	VM3S075	VM4S075		VM3H075	VM4H075	—	—	—	—
100	Quad	VM1S100	VM2S100	VM1H100	VM2H100	VM3S100	VM4S100	—	VM3H100	VM4H100	—	—	—	—
	Tri	VM1S106	VM2S106	VM1H106	VM2H106	VM3S106	VM4S106	—	VM3H106	VM4H106	—	—	—	—
	480	VM1S105	VM2S105	VM1H105	VM2H105	VM3S105	VM4S105		VM3H105	VM4H105	—	—	—	—
150	Quad	VM1S150	VM2S150	VM1P150	VM2P150	VM3S150	VM4S150	—	—	—	—	VM3P150	VM4P150	—
	Tri	VM1S156	VM2S156	VM1P156	VM2P156	VM3S156	VM4S156	—	—	—	—	VM3P156	VM4P156	—
	480	VM1S155	VM2S155	VM1P155	VM2P155	VM3S155	VM4S155	—	—	—	—	VM3P155	VM4P155	—
175	Quad	—	—	VM1P170	VM2P170	—	—	—	VM3H170	VM4H170	—	VM3P150	VM4P150	—
	Tri	—	—	VM1P176	VM2P176	—	—	—	VM3H176	VM4H176	—	VM3P156	VM4P156	—
	480	—	—	VM1P175	VM2P175	—	—	—	VM3H175	VM4H175	—	VM3P155	VM4P155	—
200	Quad	—	—	—	—	—	—	VM5S200	—	—	—	VM3P200	VM4P200	—
	Tri	—	—	—	—	—	—	VM5S206	—	—	—	VM3P206	VM4P206	—
	480	—	—	—	—	—	—	VM5S205	—	—	—	VM3P205	VM4P205	—
250	Quad	—	—	—	—	—	—	VM5S250	VM3H250	VM4H250	—	—	—	VM5P250
	Tri	—	—	—	—	—	—	VM5S256	VM3H256	VM4H256	—	—	—	VM5P256
	480	—	—	—	—	—	—	VM5S255	VM3H255	VM4H255	—	—	—	VM5P255
320	Quad	—	—	—	—	—	—	—	—	—	—	—	—	VM5P320
	Tri	—	—	—	—	—	—	—	—	—	—	—	—	VM5P326
	480	—	—	—	—	—	—	—	—	—	—	—	—	VM5P325
350	Quad	—	—	—	—	—	—	—	—	—	—	—	—	VM5P350
	Tri	—	—	—	—	—	—	—	—	—	—	—	—	VM5P356
	480	—	—	—	—	—	—	—	—	—	—	—	—	VM5P355
400	Quad	—	—	—	—	—	—	VM5S400	—	—	VM5H400	—	—	VM5P400
	Tri	—	—	—	—	—	—	VM5S406	—	—	VM5H406	—	—	VM5P406
	480	—	—	—	—	—	—	VM5S405	—	—	VM5H405	—	—	VM5P405
600	Quad	—	—	—	—	—	—	VM5S600	—	—	—	—	—	—
	Tri	—	—	—	—	—	—	VM5S606	—	—	—	—	—	—
	480	—	—	—	—	—	—	VM5S605	—	—	—	—	—	—

CERTILITE®V OPTICS & GUARDS

DESCRIPTION	 VM1/VM3 Low Wattage 5-1/2" Optic Thread Size		 VM2/VM4/VM5QL Low Wattage 7-3/4" Optic Thread Size		 VM5 High Wattage 7-3/4" Optic Thread Size	
	OPTICS	GUARD	OPTICS	GUARD	OPTICS	GUARD
Globe (glass)	VMG17	VMAG17	VMG25	VMAG25S	VMG40	VMAG40S
Refractor (all glass) Type V	VMR175	VMAG17	VMR255	VMAG25S	—	—
Refractor (all glass) Type I	VMR171⑦	VMAG17	VMR251⑦	VMAG25S	—	—
Refractor (all glass) Type III	—	—	VMR253⑦	VMAG25S	—	—
Refractor (spin top glass) 8" Type V	VZRG1550	VMRWG8	—	—	—	—
Refractor (spin top glass) 12" Type V	VZRG2550	VMRWG	VZRG4050①	VMRWG	VZRG4050	VMRWG
Refractor (spin top glass) 12" Type II	VZRG2520	VMRWG	VZRG4020①	VMRWG	VZRG4020	VMRWG
Refractor (spin top plastic) 12" Type V	VZRP175	VMRWG	—	—	—	—
Enclosed Reflector (glass lens)	—	—	VMER40	VMERG	VMER40	VMERG
Enclosed Reflector (plastic lens)	—	—	VMEP40	—	VMEP40	—
Globe (Tuffskin® coated)⑤	VMG17F	VMAG17	VMG25F	VMAG25S	VMG40F	VMAG40S
Globe (Teflon® coated)⑤	VMG17T	VMAG17	VMG25T	VMAG25S	VMG40T	VMAG40S
Refractor (Teflon coated) Type V	VMR175T	VMAG17	VMR255T	VMAG25S	—	—
Refractor (Teflon coated) Type I	VMR171T	VMAG17	VMR251T	VMAG25S	—	—
Refractor (Teflon coated) Type III	—	—	VMR253T	VMAG25S	—	—
Refractor (Spin Top Teflon coated) 8" Type V	—	VMRWG8	—	—	—	—
Refractor (Spin Top Teflon coated) 12" Type V	VZRG2550T	VMRWG	VZRG4050T①	VMRWG	VZRG4050T	VMRWG
Refractor (Spin Top Teflon coated) 12" Type II	VZRG2520T	VMRWG	VZRG4020T①	VMRWG	VZRG4020T	VMRWG

OPTICS


VMG17


VMR175
VMR171


VZRG1550


VZRG2550
VZRG2520
VZRP175⑥


VMG25


VMR255
VMR253
VMR251


VMG40


VMER40


VZRG4050
VZRG4020


VMEP40⑧

GUARDS


VMAG17②


VMAG17②


VMRWG8④


VMRWGS③


VMAG25S③


VMAG25S③


VMAG40S③


VMERG③


VMRWG8③

① *For reference VM5 Spin Top optics fit VM4 tanks, but VM3 tanks and optics are recommended for low wattage Spin Top applications. VM3 12" Spin Tops ship with a mogul-to-mogul extender for improved photometrics.*

② *Standard material, copper-free aluminum painted.*

③ *Standard material, 316 stainless steel.*

④ *Standard material, plated steel.*

⑤ *Tuffskin® is a registered trademark of Thomas Manufacturing, Co. Teflon® is a registered trademark of DuPont, Inc. Alzak is a registered trademark of Alcoa.*

⑥ *175W max; not hazloc listed*

⑦ *Type I (III) all-glass refractors align with fixture hinge. Ceiling mount unit utilizing these optics must have offset conduit feed.*

⑧ *For wall applications, mount must be spaced out.*

CERTILITE®V REFLECTORS

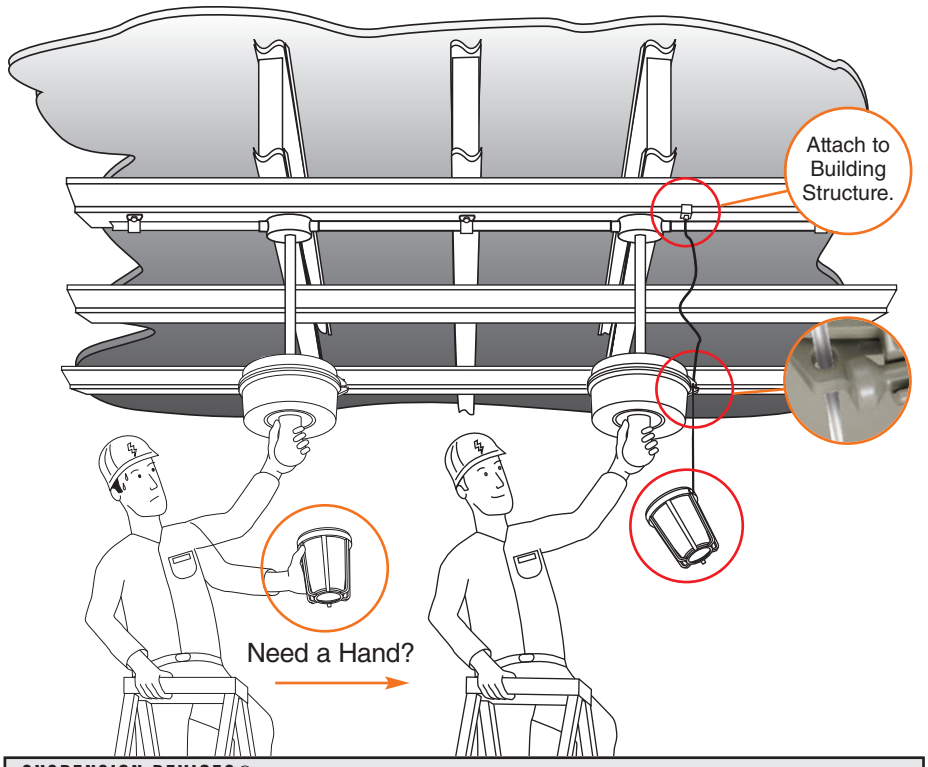
 VMPSD40	 VMPA40	 HRD400	 HRD400ALZ
Standard Dome Fiberglass White Reflector Dia: 16"	30° Angle Fiberglass White Reflector Dia: 16"	Deep Aluminum White Reflector Dia: 21"	Deep Aluminum Anodized Reflector Dia: 21"


VMAGBC

Bottom Closure for VMAG25S/VMAG40S

L

HUBBELL®
KILLARK®



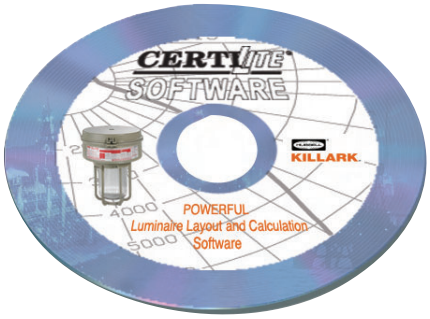
SUSPENSION DEVICES④

TANK	DESCRIPTION	CATALOG NUMBER
VM GLOBE & GUARD UNITS	"3rd hand" safety kits. 24" stainless cable holds globe using guard for lamp change out. Attaches to tank's built-in "Earthquake Tab".	VMAGSC④
VM (ALL TANKS)	10' Stainless Steel Safety Cable with loop grip. Drop limit 1'. Attaches to "Earthquake Tab" (L41) and to building structure (e.g. I-beam).	VMSC10

④ *VM2,VM4 and VM5 units require VMAGBC bottom closure, sold separately, in addition to guard.*

CERTILITE® DESIGN
LIGHTING DESIGN SOFTWARE

POWERFUL Luminaire Layout and Calculation Software



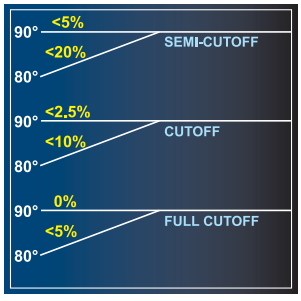
Software is used to determine number of fixtures required and their proper layout for various tasks and applications.

Contact you local Killark sales representative for availability.

DARK SKY KITS

VMDARK1	Gasket Kit	On VM2/VM4 "Full Cutoff" when used with HRD400 or HRD400ALZ
		On VM5 "Cutoff" when used with HRD400 or HRD400ALZ
VMER40	Enclosed Reflector	Enclosed Reflector "Full Cutoff" on VM2/VM4/VM5 as standard

Note: CertiLite®V luminaires may be configured for "Full Cutoff", or Semi-Cutoff photometric distribution. See page L56 for more information.



See page L56 for more information.

VMCHVM adapter for upgrading existing Crouse-Hinds® to Killark, see page L223 for more information.

- Existing box
- VMCHVM adapter shown in red for illustration
- New Killark VM series fixture

SOCKET REPLACEMENTS

0735015B	Mogul Socket VM3, VM4, VM5
VMBNKIT	Barrel nut and long bolt adapts older CertiLite tanks to newer CertiLiteV® mounts.

FUSE KITS

See catalog logic for factory installed fuses, or page L98-99 for field installation kits.

HUBBELL®
KILLARK®

GENERAL CROSS-REFERENCE FOR CERTILITE® TO CERTILITE®V***

	WATTS	ANSI LAMP TYPE		GLOBE & GUARD	SPIN-TOP REFRACTOR	ENCLOSED REFLECTOR	TANK ONLY
HPS	50	S68	Certilite®	VML①-①-1③GG	VML①-①-1②G58	—	VMLO-0-1②0
			Certilite®V	VM3S05②①①GLG	VM3S05②①①S8N	—	VM3S05②
	70	S62	Certilite®	VML①-①-4②GG	VML①-①-4②G58	—	VMLO-0-4②0
			Certilite®V	VM3S07②①①GLG	VM3S07②①①S8N	—	VM3S07②
	100	S54	Certilite®	VML①-①-5②GG	VML①-①-5②G58	—	VMLO-0-5②0
			Certilite®V	VM3S10②①①GLG	VM3S10②①①S8N	—	VM3S10②
	150	S55	Certilite®	VML①-①-9②GG	VML①-①-9②G58	—	VMLO-0-9②0
			Certilite®V	VM3S15②①①GLG	VM3S15②①①S8N	—	VM3S15②
	250	S50	Certilite®	VMV①-①-7②GG	VMV①-①-7②G5	VMV①-①-7②ER	VMVO-0-7②0
			Certilite®V	VM5S25②①①GLG	VM5S25②①①S5N	VM5S25②①①ERN	VM5S25②
	400	S51	Certilite®	VMV①-①-8②GG	VMV①-①-8②G5	VMV①-①-8②ER	VMVO-0-8②0
			Certilite®V	VM5S40②①①GLG	VM5S40②①①S5N	VM5S40②①①ERN	VM5S40②
MH ④	70	M98	Certilite®	VMM①-①-4②GG	VMM①-①-4②G58	—	VMMO-0-4②0
			Certilite®V	VM3H07②①①GLG	VM3H07②①①S8N	—	VM3H07②
	100	M90	Certilite®	VMM①-①-5②GG	VMM①-①-5②G58	—	VMMO-0-5②0
			Certilite®V	VM3H10②①①GLG	VM3H10②①①S8N	—	VM3H10②
	175	M57	Certilite®	VMM①-①-6②GG	VMM①-①-6②G58	—	VMMO-0-6②0
			Certilite®V	VM3H17②①①GLG	VM3H17②①①S5N	—	VM3H17②
	250	M58	Certilite®	VMM①-①-7②GG	VMM①-①-7②G58	—	VMMO-0-7②0
			Certilite®V	VM3H25②①①GLG	VM3H25②①①S5N	—	VM3H25②
	400	M59	Certilite®	VMF①-①-8②GG	VMF①-①-8②G5	VMF①-①-8②ER	VMFO-0-8②0
			Certilite®V	VM5H40②①①GLG	VM5H40②①①S5N	VM5H40②①①ERN	VM5H40②
MHP	175	M137	Certilite®	VMU①-①-6②GG	VMU①-①-6②G58	—	VMUO-0-6②0
			Certilite®V	VM3P17②①①GLG	VM3P17②①①S8N	—	VM3P17②
	250	M138	Certilite®	VMP①-①-7②GG	VMP①-①-7②G5	VMP①-①-7②ER	VMPO-0-7②0
			Certilite®V	VM5P25②①①GLG	VM5P25②①①S5N	VM5P25②①①ERN	VM5P25②
	320	M132	Certilite®	VMP①-①-32②GG	VMP①-①-32②G5	VMP①-①-32②ER	VMPO-0-32②0
			Certilite®V	VM5P32②①①GLG	VM5P32②①①S5N	VM5P32②①①ERN	VM5P32②
	350	M131	Certilite®	VMP①-①-35②GG	VMP①-①-35②G5	VMP①-①-35②ER	VMPO-0-35②0
			Certilite®V	VM5P35②①①GLG	VM5P35②①①S5N	VM5P35②①①ERN	VM5P35②
	400	M135	Certilite®	VMP①-①-8②GG	VMP①-①-8②G5	VMP①-①-8②ER	VMPO-0-8②0
			Certilite®V	VM5P40②①①GLG	VM5P40②①①S5N	VM5P40②①①ERN	VM5P40②
MV	100	H38	Certilite®	VMK①-①-5②GG	VMK①-①-5②G58	—	VMKO-0-5②0
			Certilite®V	VM3M10②①①GLG	VM3M10②①①S8N	—	VM3M10②
	175	H39	Certilite®	VMK①-①-6②GG	VMK①-①-6②G58	—	VMKO-0-6②0
			Certilite®V	VM3M17②①①GLG	VM3M17②①①S8N	—	VM3M17②
	250	H37	Certilite®	VMK①-①-7②GG	VMK①-①-7②G58	—	VMKO-0-7②0
			Certilite®V	VM3M25②①①GLG	VM3M25②①①S8N	—	VM3M25②
	400	H33	Certilite®	VME①-①-8②GG	VME①-①-8②G5	VME①-①-8②ER	VMEO-0-8②0
			Certilite®V	VM5M40②①①GLG	VM5M40②①①S5N	VM5M40②①①ERN	VM5M40②

*** See catalog logic for more information regarding additional conduit sizing and fixture options and accessories.

④ 175-400W MH Fixtures are EXPORT ONLY (EISA LAW).

COMPONENTS

	CertiLite®	CertiLite®V	DESCRIPTION
MOUNTS	VMA-2	VMA2B	3/4" Pendant
	VMA-3	VMA3B	1" Pendant
	VMB-2	VMB2B	3/4" Wall Bracket
	VMB-3	VMB3B	1" Wall Bracket
	VMC-2	VMC2B	3/4" Cone Top
	VMD-4	VMD4B	1-1/4" 25° Stanchion
	VMD-5	VMD5B	1-1/2" 25° Stanchion
	VMDS-5	VMS5B	1-1/2" 90° Stanchion
	VMX-2	VMX2B	3/4" Ceiling
	VMX-3	VMX3B	1" Ceiling
OPTICS	VMG-17	VMG17	5-1/2" GLOBE
	VMGT-17	VMG17F	TUFFSKIN GLOBE
	VMGTC-17	VMG17T	TELFON GLOBE
	VMG-40	VMG40	7-3/4" HIGH WATT GLOBE
	VZRG-1550	VZRG1550	8" SPIN-TOP V REFRACTOR
	VZRG-2550	VZRG2550	12" SPIN-TOP V REFRACTOR
	VZRG-2510	VZRG2520	12" SPIN-TOP II REFRACTOR
	VZRP-175	VZRP175	12" POLY REFRACTOR
	VZRG-4050	VZRG4050	12" SPIN-TOP V REFRACTOR
	VZRG-4020	VZRG4020	12" SPIN-TOP II REFRACTOR
	VMER40	VMER40	ENCLOSED REFLECTOR
GUARDS	VMAG-17	VMAG17	5-1/2" GLOBE GUARD
	VMAG-40	VMAG40S	HIGH WATT GLOBE GUARD
	VMRWG-8	VMRWG8	8" SPIN-TOP GUARD
	VMRWG	VMRWG	12" SPIN-TOP GUARD
REFLECTORS	VMPSD-17	VMPSD40	WHITE REFLECTOR③
	VMPA-17	VMPA40	WHITE ANGLE REFLECTOR③
	VMPSD-40	VMPSD40	WHITE REFLECTOR
	VMPA-40	VMPA40	WHITE ANGLE REFLECTOR
	HRD-400	HRD400	DEEP WHITE REFLECTOR
	HRD-400ALZ	HRD400ALZ	DEEP ALZAK REFLECTOR

③ All Certilite®V tanks use "40" reflectors.

MOUNT CODES ① ①

Certilite® ①-①	Certilite®V ①①	DESCRIPTION
A-2	A2	3/4" Pendant
A-3	A3	1" Pendant
B-2	B2	3/4" Wall Bracket
B-3	B3	1" Wall Bracket
C-2	C2	3/4" Cone Top
D-4	D4	1-1/4" 25° Stanchion
D-5	D5	1-1/2" 25° Stanchion
S-5	S5	1-1/2" 90° Stanchion
X-2	X2	3/4" Ceiling
X-3	X3	1" Ceiling

VOLTAGE CODES ②

Certilite®	Certilite®V	DESCRIPTION
0	0	Quad-Tap 120, 208, 240, 277V 60Hz
6	6	Tri-Tap 120, 277, 347V 60Hz
5	5	480V 60Hz
7	7	220V 60Hz
8	8	240V 50Hz

OPTIONS

Certilite®	Certilite®V	DESCRIPTION
QTZ	QA	Quartz Auxiliary
IR	IR	Instant Restart
BP	BP	Ballast Protector
NR	NR	Restricted Breathing
SU103	AS	Assembled w/Standard Lamp

CertiLite® VM Fixture

CertiLite®V Fixture

L

HUBBELL®
KILLARK®

HID BALLAST DATA & FUSE KITS①

LAMP SOURCE	LAMP WATTS/TYPE	VOLTAGE	CURRENT (AMPS) START	CURRENT (AMPS) OPERATING	CURRENT (AMPS) OPEN	INPUT WATTS	BALLAST CIRCUIT②	REGULATION	MIN. START	VM FUSE KIT	EZ FUSE KIT
HPS	35 S-76	120	.78	.38	.65	46	R/HPF	±5% VOLTAGE* ±5% WATTAGE	-40C -40F	1VM-2	—
HPS	50 S-68	120	.58	.58	1.24	66	HX/HPF	±5% VOLTAGE* ±12% WATTAGE	-40C -40F	1VM-5	1FK-5
		208	.35	.33	.59					2VM-3	2FK-3
		240	.30	.29	.50					2VM-3	2FK-3
		277	.24	.25	.44					1VM-2	1FK-2
		220-240/50	.32	.32	.55	66	HX/HPF	±10% VOLTAGE* ±10% WATTAGE	-40C -40F	1VM-2	1FK-2
HPS	70 S-62	120	.75	.81	1.45	93	HX/HPF	±5% VOLTAGE* ±12% WATTAGE	-40C -40F	1VM-5	1FK-5
		208	.45	.47	.85					2VM-3	2FK-3
		240	.35	.40	.75					2VM-2	2FK-2
		277	.37	.35	.65					1VM-2	1FK-2
		480	.21	.21	.36					2VM-2	2FK-2
		347	.28	.30	0.52					1VM-2	1FK-2
		220-240/50	.45	.46	.75	94	HX/HPF	±5% VOLTAGE* ±5% WATTAGE	-40C -40F	1VM-2	1FK-2
HPS	100 S-54	120	1.30	1.15	2.20	130	HX/HPF	±5% VOLTAGE* ±12% WATTAGE	-40C -40F	1VM-7	1FK-7
		208	.76	.67	1.27					2VM-5	2FK-5
		240	.66	.58	1.10					2VM-3	2FK-3
		277	.60	.50	.85					1VM-3	1FK-3
		480	0.35	0.29	.55					2VM-3	2FK-3
		347	.44	.39	.70					1VM-3	1FK-3
		220-240/50	.56/.51	.67/.62	1.28/1.17					1VM-4	1FK-4
HPS	150 (55 VOLT LAMP) S-55	120	2.00	1.65	2.80	188	HX/HPF	±5% VOLTAGE* ±12% WATTAGE	-40C -40F	1VM-10	1FK-10
		208	1.15	.95	1.60					2VM-5	2FK-5
		240	1.00	.83	1.40					2VM-5	2FK-5
		277	.85	.72	1.25					1VM-4	1FK-4
		480	.50	.42	.70					2VM-2	2FK-2
		347	.52	.59	.92					1VM-3	1FK-3
		220-240/50	1.27/1.16	.91/.83	1.52/1.40					1VM-5	1FK-5
HPS	200 S-66	120	1.50	2.2	1.3	240	CWA	±10% VOLTAGE* ±8% WATTAGE	-40C -40F	1VM-6	—
		208	.90	1.28	.75					2VM-4	—
		240	.75	1.11	.65					2VM-3	—
		277	.65	.96	.60					1VM-3	—
		480	.35	.58	.58					2VM-2	—
HPS	250 S-50	120	1.80	2.75	1.50	295	CWA	±10% VOLTAGE* ±5% WATTAGE	-40C -40F	1VM-7	1FK-7
		208	1.00	1.60	.87					2VM-4	2FK-4
		240	.90	1.38	.75					2VM-4	2FK-4
		277	.78	1.20	.65					1VM-3	1FK-3
		480	.38	.69	.37					2VM-2	2FK-2
		347	.56	.93	.75					1VM-2	1FK-2
		220-240/50	1.00/.90	.91/.83	.90/.80					1VM-4	1FK-4
HPS	400 S-51	120	2.82	4.30	1.83	464	CWA	±10% VOLTAGE* ±5% WATTAGE	-40C -40F	1VM-10	1FK-10
		208	1.56	2.48	1.15					2VM-8	2FK-8
		240	1.36	2.15	.84					2VM-5	2FK-5
		277	1.18	1.86	.71					1VM-5	1FK-5
		480	.60	1.00	.75					2VM-3	2FK-3
		347	1.05	1.40	.75					1VM-5	1FK-5
		220-240/50	1.65/1.50	2.30/2.10	1.20/1.10					1VM-6	1FK-6
HPS	600 S-106	120	5.25	5.50	3.0	685	CWA	±10% VOLTAGE* ±10% WATTAGE	-40C -40F	1VM-20	—
		208	3.00	3.25	1.75					2VM-15	—
		240	2.60	2.85	1.80					2VM-10	—
		277	2.15	2.50	1.40					1VM-10	—
		480	1.2	1.43	.75					2VM-4	—
		347	1.7	2.00	1.10					1VM-5	—
MH	50 M-110	120	.46	.58	1.2	67	HX-HPF	±5% VOLTAGE ±10% WATTAGE	-30C -20F	1VM-3	1FK-3
		208	.27	.33	.68					2VM-2	2FK-2
		240	.17	.21	.59					2VM-2	2FK-2
		277	.20	.25	.51					1VM-2	1FK-2
		347	.21	.24	.48					1VM-2	1FK-2
MH	70 M-98	120	.80	.85	1.70	90	HX-HPF	±5% VOLTAGE ±12% WATTAGE	-30C -20F	1VM-4	1FK-4
		208	.50	.50	1.04					2VM-3	2FK-3
		240	.43	.43	.87					2VM-2	2FK-2
		277	.39	.39	.78					1VM-2	1FK-2
		480	0.19	0.23	.50					2VM-1	2FK-1
		347	.30	.30	.60					1VM-2	1FK-2
MH	100 M-90	120	1.20	1.15	2.3	129	HX-HPF	±5% VOLTAGE ±12% WATTAGE	-30C -20F	1VM-6	1FK-6
		208	.70	1.50	.60					2VM-4	2FK-4
		240	.61	1.30	.55					2VM-3	2FK-3
		277	.55	1.15	.45					1VM-3	1FK-3
		480	0.30	0.30	0.55					2VM-2	2FK-2
		347	.40	.90	.40					1VM-2	1FK-2
		220-240/50	.45/.41	52/.51	.60/.85					1VM-4	1FK-4
MH	175 M-57	120	.80	1.80	1.80	210	CWA	±10% VOLTAGE ±5% WATTAGE	-30C -20F	1VM-5	1FK-5
		208	.42	1.04	1.04					2VM-3	2FK-3
		240	.42	.90	.90					2VM-3	2FK-3
		277	.35	.78	.78					1VM-2	1FK-2
		480	.22	.45	.45					2VM-2	2FK-2
		347	.42	.62	.62					1VM-2	1FK-2
		220-240/50	.60/.55	.98/.90	97/.89					1VM-3	1FK-3
MH	250 M-58	120	1.25	2.60	2.50	295	CWA	±10% VOLTAGE ±5% WATTAGE	-30C -20F	1VM-8	1FK-8
		208	.65	1.50	1.58					2VM-5	2FK-5
		240	.60	1.30	1.25					2VM-5	2FK-5
		277	.50	1.12	1.10					1VM-3	1FK-3
		480	.25	.65	.65					2VM-2	2FK-2
		347	.90	.95	.65					1VM-3	1FK-3
		220-240/50	.94/.86	1.35/1.24	1.20/1.10					1VM-4	1FK-4
MH	400 M-59	120	1.10	4.00	3.80	458	CWA	±10% VOLTAGE ±5% WATTAGE	-30C -20F	1VM-10	1FK-10
		208	.70	2.30	2.20					2VM-7	2FK-7
		240	.52	2.00	1.90					2VM-5	2FK-5
		277	.45	1.75	1.65					1VM-5	1FK-5
		480	.38	1.00	1.00					2VM-4	2FK-4
		347	1.20	1.40	1.35					1VM-4	2FK-4
		220-240/50	1.30/1.19	2.20/2.00	2.10/1.93					1VM-6	2FK-6

① *Fuse kits, for field installation, must be used within guidelines of governing Electric Codes. Fuses not permitted by CSA C22.2 no. 137 for Canada.*

② *All ballasts circuits are High Power Factor 90%+.*

** Lamp watts: within ANSI trapezoid limitations.*

Consult major lamp & ballast manufacturer catalogs if more detailed data is needed.

HUBBELL®
KILLARK®

HID BALLAST DATA & FUSE KIT①

LAMP SOURCE	LAMP WATTS/TYPE	VOLTAGE	CURRENT (AMPS) START	CURRENT (AMPS) OPERATING	CURRENT (AMPS) OPEN	INPUT WATTS	BALLAST CIRCUIT②	REGULATION	MIN. START	VM FUSE KIT	EZ FUSE KIT
MHP	125 M-150	120	0.85	1.40	0.90	155	CWA	±10% VOLTAGE ±10% WATTAGE	-30C -20F	1VM-4	1FK-4
		208	0.50	0.80	0.55					2VM-3	2FK-3
		240	0.40	0.70	0.45					2VM-2	2FK-2
		277	0.35	0.60	0.40					1VM-2	1FK-2
		480	0.20	0.35	0.25					2VM-1	2FK-1
		347	0.30	0.45	0.25					1VM-1	2FK-2
MHP	150 M-102	120	1.75	1.60	3.65	185	HX-HPF	±5% VOLTAGE ±12% WATTAGE	-30C -20F	1VM-10	1FK-10
		208	1.30	1.00	2.10					2VM-5	2FK-5
		240	0.85	0.80	1.80					2VM-5	2FK-5
		277	0.77	0.70	1.58					1VM-4	1FK-4
		480	0.45	0.42	0.81					2VM-3	2FK-3
		347	0.30	0.62	0.98					1VM-3	1FK-3
MHP	175 M-137	120	0.95	1.80	1.80	208	CWA	±10% VOLTAGE ±10% WATTAGE	-30C -20F	1VM-5	1FK-5
		208	0.55	1.05	1.05					2VM-3	2FK-3
		240	0.45	0.90	0.90					2VM-3	2FK-3
		277	0.40	0.80	0.80					1VM-2	1FK-2
		480	0.25	0.50	0.45					2VM-2	2FK-2
		347	0.40	0.70	0.60					1VM-2	1FK-2
MHP	250 M-138	120	2.30	2.50	1.40	291	CWA	±10% VOLTAGE ±10% WATTAGE	-30C -20F	1VM-8	1FK-8
		208	1.30	1.45	0.80					2VM-5	2FK-5
		240	1.15	1.25	0.70					2VM-5	2FK-5
		277	1.00	1.10	0.60					1VM-3	1FK-3
		480	0.21	0.57	0.48					2VM-2	2FK-2
		347	0.45	0.95	0.75					1VM-3	1FK-3
MHP	320 M-132	120	1.80	3.25	2.30	368	CWA	±10% VOLTAGE ±10% WATTAGE	-30C -20F	1VM-8	1FK-8
		208	1.05	1.90	1.35					2VM-6	2FK-6
		240	0.30	1.65	1.15					2VM-5	2FK-5
		277	0.80	1.40	1.00					1VM-3	1FK-3
		480	0.45	0.80	0.60					2VM-5	2FK-5
		347	0.70	1.10	0.80					1VM-3	1FK-3
MHP	350 M-131	120	2.20	3.40	2.20	400	CWA	±10% VOLTAGE ±10% WATTAGE	-30C -20F	1VM-10	1FK-10
		208	1.30	2.00	1.30					2VM-7	2FK-7
		240	1.10	1.70	1.10					2VM-5	2FK-5
		277	1.00	1.50	1.00					1VM-5	1FK-5
		480	0.60	0.85	0.60					2VM-3	2FK-3
		347	0.85	1.20	0.80					1VM-3	1FK-3
MHP	400 M-135	120	2.85	3.80	2.20	452	CWA	±10% VOLTAGE ±10% WATTAGE	-30C -20F	1VM-10	1FK-10
		208	1.65	2.20	1.50					2VM-7	2FK-7
		240	1.45	1.90	1.10					2VM-5	2FK-5
		277	1.25	1.65	0.95					1VM-5	1FK-5
		480	0.75	1.00	0.60					2VM-3	2FK-3
		347	1.10	1.35	0.75					1VM-4	1FK-4

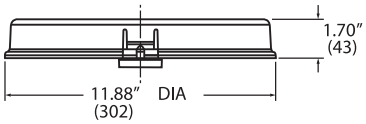
①Fuse kits, for field installation, must be used within guidelines of governing Electric Codes. Fuses not permitted by CSA C22.2 no.137 for Canada.
②All ballasts circuits are High Power Factor 90%+.
③Nominal voltages measured at 115V or 230V.
** Lamp watts: within ANSI trapezoid limitations .*
Consult major lamp & ballast manufacturer catalogs if more detailed data is needed.

QL INDUCTION BALLAST DATA

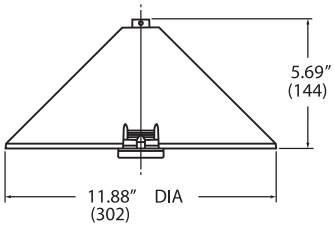
LAMP SOURCE	LAMP WATTS/TYPE	VOLTAGE	INRUSH CURRENT .005 SEC	NOMINAL OPERATING CURRENT	THD	REGULATION	MIN. START
Induction	55	120	16A	.46A	<10%	±20V, ±2% W	-40C -40F
		200-277	12A	.26A			
Induction	85	120	16A	.73A	<10%	±20V, ±2% W	-40C -40F
		200-277	12A	.40A			
Induction	165	120	28A	1.42A	<10%	±20V, ±2% W	-40C -40F
		200-277	24A	.74A			

L

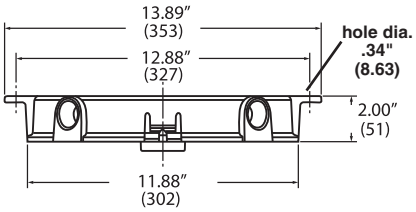
DIMENSIONS



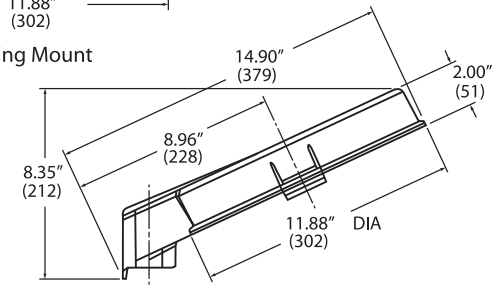
Pendant Mount



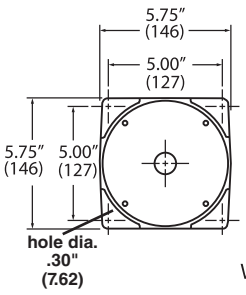
Cone Mount

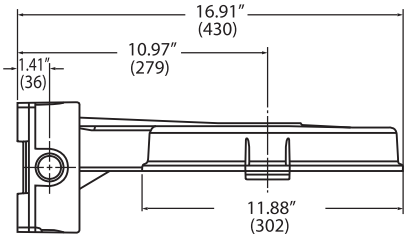


Ceiling Mount

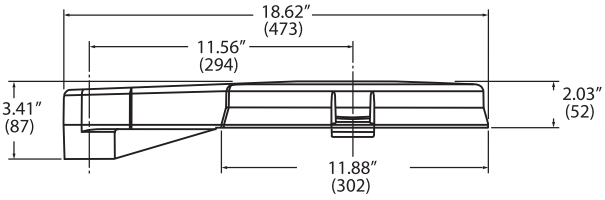


Stanchion(25°) Mount

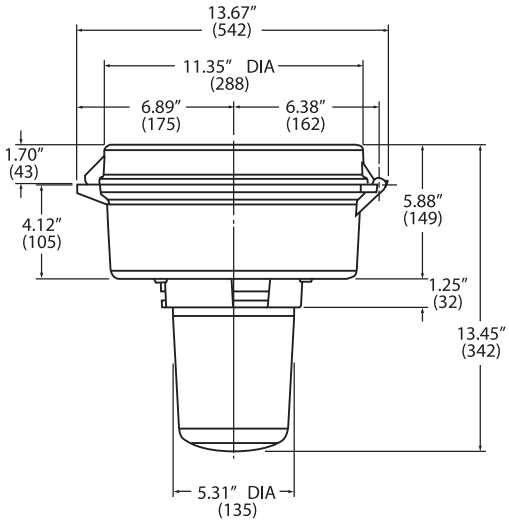




Wall Bracket Mount

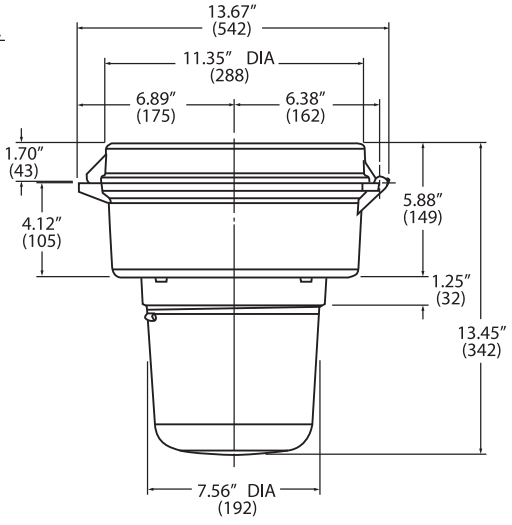


Stanchion(0°) Mount

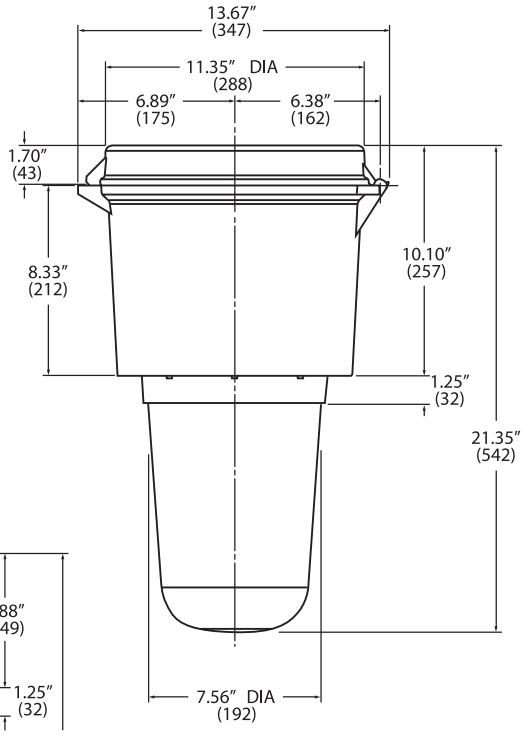


VM3 Fixture

For VM1 & VM2 height, deduct 1.56" (40mm) from the VM3 or VM4 tank respectively, or overall dimensions with same mount and optic. All other dimensions are the same.

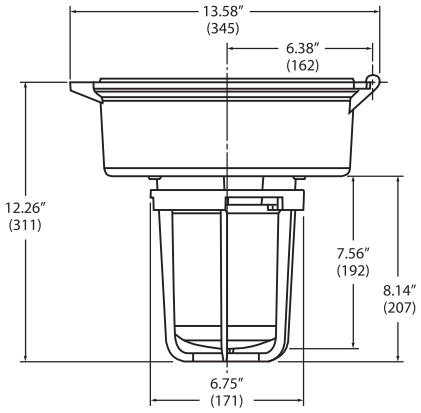


VM4 Fixture

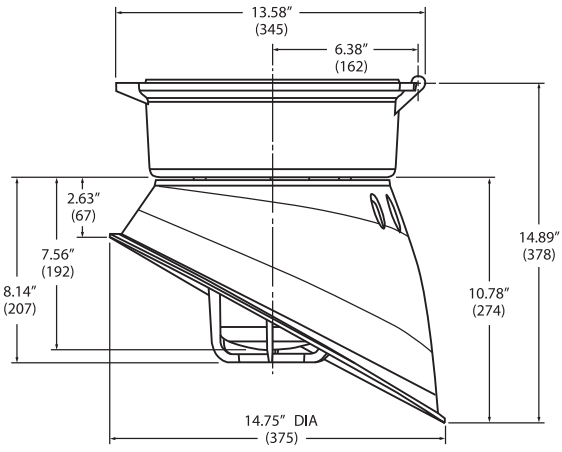


VM5 Fixture

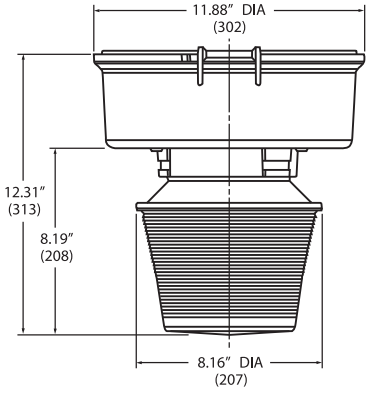
HUBBELL®
KILLARK®



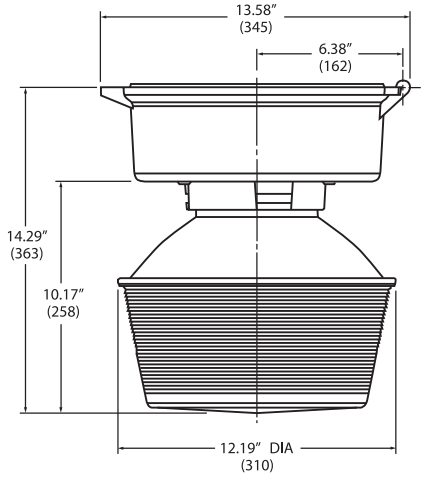
VM3 BALLAST TANK
5-1/2″ OPTICS GLOBE OR REFRACTOR
VMAG17 GLOBE GUARD



VM3 BALLAST TANK
VMG17 5-1/2″ OPTICS GLOBE
VMPA-40 ANGLED REFLECTOR

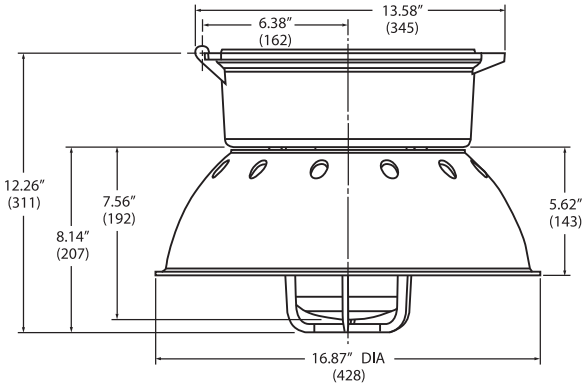


VM3 BALLAST TANK
VZRG-1550 8″ SPUN REFRACTOR



VM3 BALLAST TANK
VZRG 12″ SPUN REFRACTOR

For VM1 & VM2 height, deduct 1.56" (40mm) from the VM3 or VM4 tank respectively, or overall dimensions with same mount and optic. All other dimensions are the same.



VM3 BALLAST TANK
VMG17 5-1/2″ OPTICS GLOBE
VMPSD-40 DOME REFLECTOR

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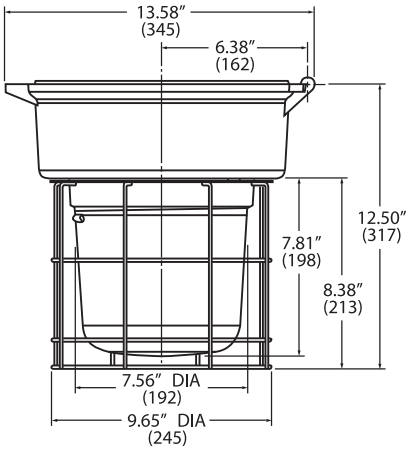
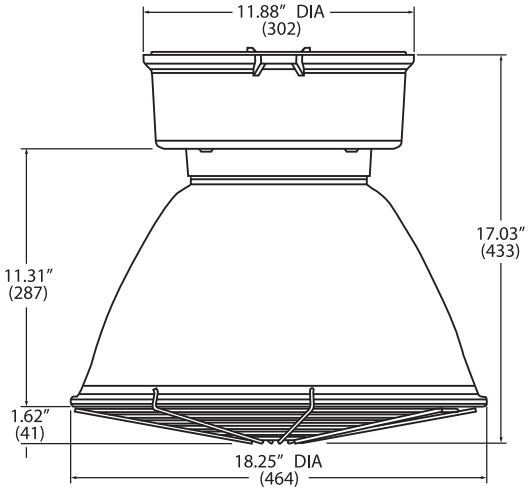
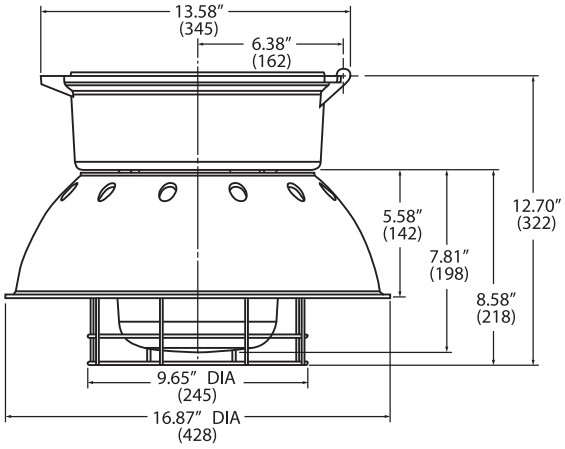


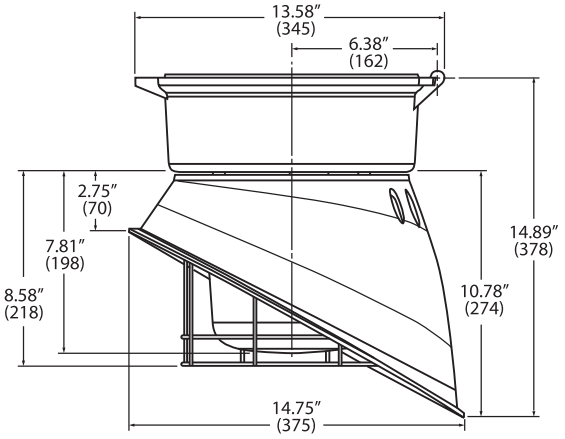
VM4 BALLAST TANK
7-3/4″ OPTICS GLOBE (VMG25)
OR REFRACTOR (VMR25 SERIES)
VMAG255 WIRE GUARD



VM4 BALLAST TANK
VMER40 ENCLOSED REFLECTOR
VMERG GUARD



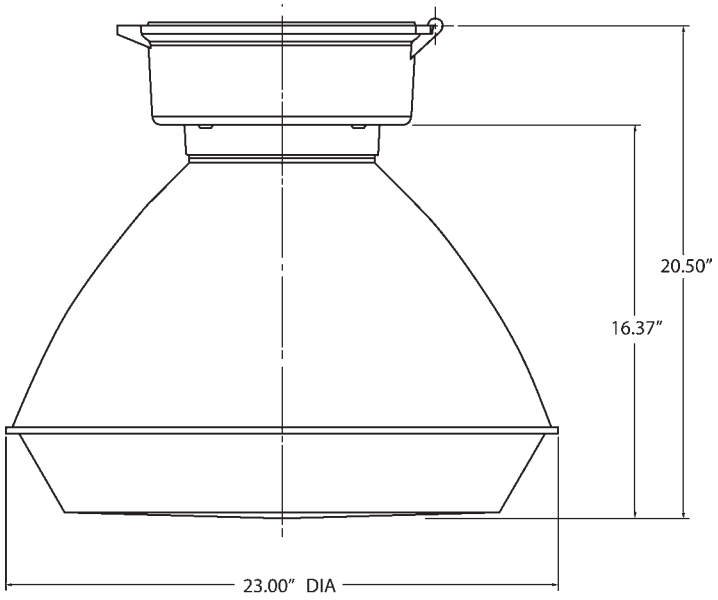
VM4 BALLAST TANK
VMG25 7-3/4″ OPTICS GLOBE
VMAG255 WIRE GUARD
VMPSD-40 DOME REFLECTOR



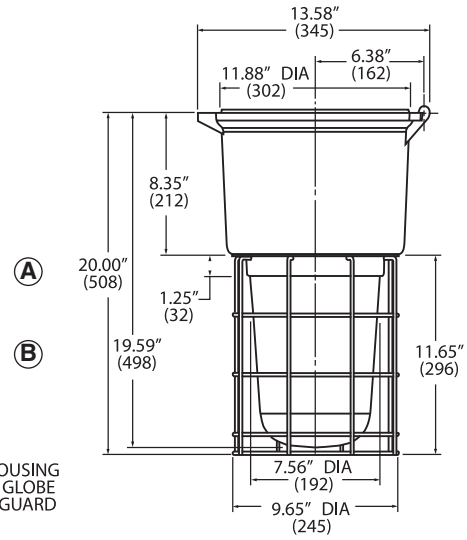
VM4 BALLAST TANK
VMG25 7-3/4″ OPTICS GLOBE
VMAG255 WIRE GUARD
VMPA-40 ANGLE REFLECTOR

For VM1 & VM2 height, deduct 1.56" (40mm) from the VM3 or VM4 tank respectively, or overall dimensions with same mount and optic. All other dimensions are the same.

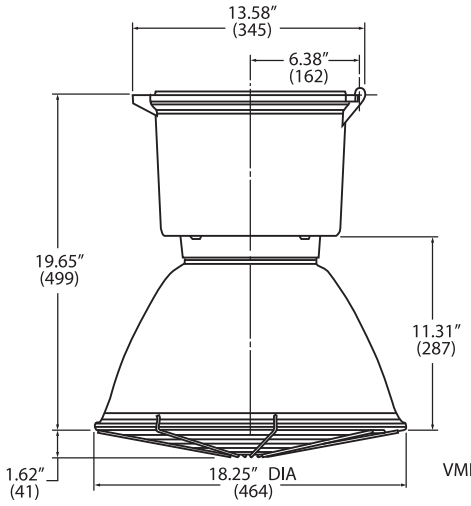
VM4
W/VMEP40



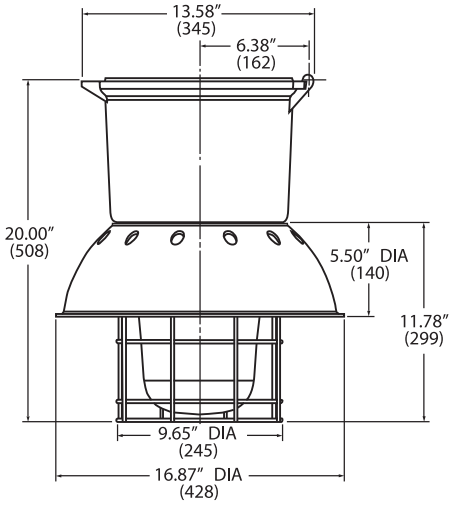
VM4 with VMEP40 Optic



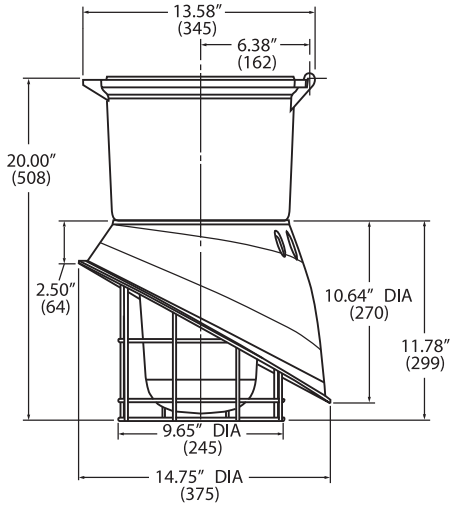
VM5 BALLAST HOUSING
VMG-40 OPTICS GLOBE
VMAG40S WIRE GUARD



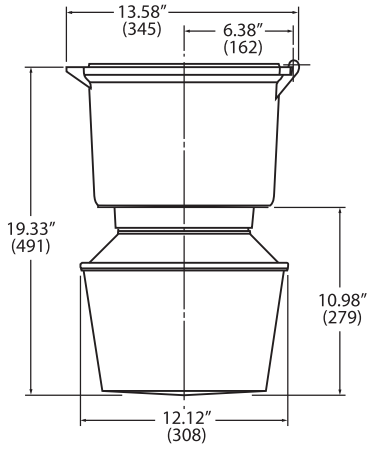
VM5 BALLAST HOUSING
VMER40 ENCLOSED REFLECTOR
VMERG WIRE GUARD



VM5 BALLAST HOUSING
VMG-40 OPTICS GLOBE
VMAG40S WIRE GUARD
VMPSD-40 DOME REFLECTOR



VM5 BALLAST HOUSING
VMG-40 OPTICS GLOBE
VMAG40S WIRE GUARD
VMPA-40 ANGLE REFLECTOR

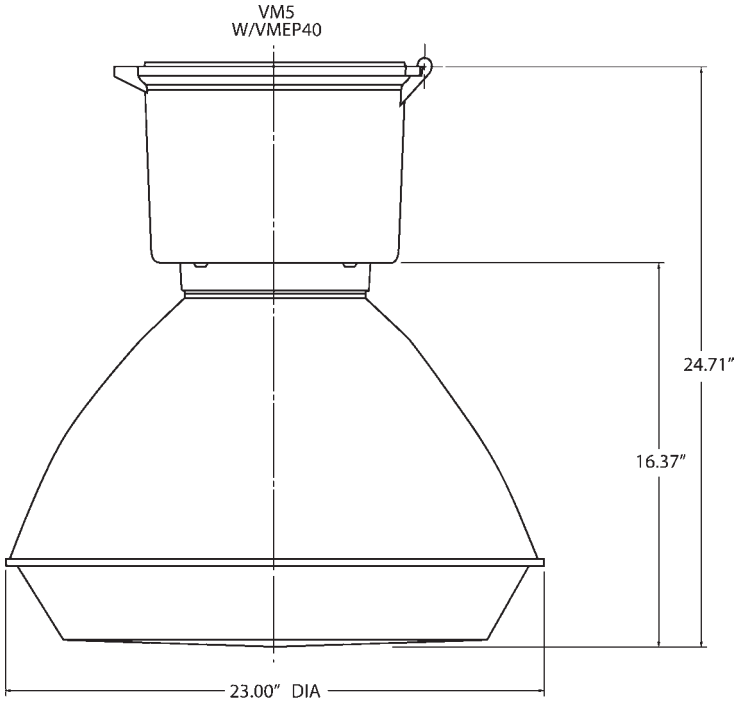


VM5 BALLAST HOUSING
12″ SPUN TOP REFRACTOR OPTICS

QL 165W uses VM5 tank and VMG25 series optics, VMAG25S guard

Ⓐ 16.59 (421)

Ⓑ 16.11 (409)



VM5 with VMEP40 Optic

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VM1/VM2 SERIES THERMAL PERFORMANCE DATA①
CLASS I DIVISION 2 GROUPS A,B,C,D / ZONE 2 GROUPS IIC, IIB, IIA

DESCRIPTION			VM1 SERIES**					VM2 SERIES**					
LAMP TYPE	LAMP WATTAGE	AMBIENT °C	GLOBE ONLY	GLOBE W/ REFLECTOR	VMR	REFRACTORS VZRG 8"	REFRACTORS VZRG 12"	GLOBE ONLY	GLOBE W/ REFLECTOR	REFRACTOR VMR	ENCLOSED REFLECTORS VMER40	ENCLOSED REFLECTORS VMEP40	SUPPLY WIRE °C
HPS	35	40	T3C	T3C	T3C	T3C	T3C	T3C	T3C	T3C	T3C	T3C	60
		55	T3B	T3B	T3B	T3B	T3B	T3B	T3B	T3B	T3B	T3B	75
		65	T3A	T3A	T3A	T3A	T3A	T3A	T3A	T3A	T3A	T3A	75
HPS	50	40	T3	T3	T3	T3	T3	T3	T3	T3	T3	T3	60
		55	T3	T3	T3	T3	T3	T3	T3	T3	T3	T3	75
		65	T3	T3	T3	T3	T3	T3	T3	T3	T3	T3	90
HPS	70	40	T2C	T2C	T2C	T2C	T2C	T2C	T2C	T2C	T2C	T2C	75
		55	T2C	T2C	T2C	T2C	T2C	T2C	T2B	T2C	T2C	T2C	90
		65	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	90
HPS	100	40	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	75
		55	T2C	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	90
		65	—	—	—	—	—	—	—	—	—	—	—
HPS	150	40	325°C	325°C	325°C	325°C	325°C	325°C	325°C	325°C	325°C	325°C	90
		55	325°C	325°C	325°C	325°C	325°C	325°C	325°C	325°C	325°C	325°C	90
		65	—	—	—	—	—	—	—	—	—	—	—
MH	50	40	T3	T3	T3	T3	T3	T3	T3	T3	T3	T3	60
		55	T3	T3	T3	T3	T3	T2D	T2D	T2D	T2D	T2D	75
		65	T2D	T2D	T2D	T2D	T2D	T2D	T2D	T2D	T2D	T2D	90
MH	70	40	T2C	T2C	T2C	T2C	T2C	T2C	T2C	T2C	T2C	T2C	750
		55	T2C	T2B	T2C	T2C	T2C	T2C	T2C	T2C	T2C	T2C	75
		65	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	90
MH	100	40	T2B	T2B	T2B	T2B	T2B	T2A	T2A	T2B	T2B	T2B	75
		55	T2A	T2A	T2A	T2A	T2A	T2A	T2A	T2A	T2A	T2A	90
		65	T2A	T2A	T2A	T2A	T2A	T2A	T2A	T2A	T2A	T2A	105
MHP	150/125	40	350°C	350°C	350°C	350°C	350°C	325°C	325°C	325°C	325°C	325°C	90
		55	350°C	350°C	350°C	350°C	350°C	325°C	325°C	325°C	325°C	325°C	90
		65	—	—	—	—	—	—	—	—	—	—	—
MHP	175	40	450°C	450°C	450°C	450°C	450°C	450°C	450°C	450°C	450°C	450°C	90
		55	—	—	—	—	—	450°C	450°C	450°C	450°C	450°C	105
		65	—	—	—	—	—	—	—	—	—	—	—
QL	55	40	T3C	T3C	T3C	T3C	T3C	—	—	—	—	—	-75
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—

T-CODE & TEMPERATURE RANGE CONVERSION TABLE °C

T1	350	325	T2	T2A	T2B	T2C	T2D	T3	T3A	T3B	T3C	T4	T4A	T5	T6
351-450	326-350	301-325	281-300	261-280	231-260	216-230	201-215	181-200	166-180	161-165	136-160	121-135	101-120	86-100	<=85

① Data does not apply to luminaries with auxiliary quartz lighting; consult factory with requirements. The suitability of these fixtures for Class I Division 2 / Zone 2 locations must be determined for each application based on NEC® Articles 501.125(B) or 505.

*** VM1 Series accepts 5-1/2" threaded optics; VM2 accepts 7-3/4" optics.*

— Not available.

VM1/VM2 SERIES THERMAL PERFORMANCE DATA①
CLASS I ZONE 2 RESTRICTED BREATHING

DESCRIPTION			VM1 SERIES**			VM2 SERIES**					
LAMP TYPE	LAMP WATTAGE	AMBIENT °C	GLOBE ONLY	GLOBE W/ REFLECTOR	REFRACTOR VMR	GLOBE ONLY	GLOBE W/ REFLECTOR	REFRACTOR VMR	ENCLOSED REFLECTORS VMER40	ENCLOSED REFLECTORS VMEP40	SUPPLY WIRE °C
HPS	50	40	T5	T4	T5	T5	T4	T5	T4	T4	60
		55	T4	T4	T4	T4	T4	T4	T4	T4	75
		65	T4	T4	T4	T4	T4	T4	T4	T4	90
HPS	70	40	T4	T4	T4	T4	T4	T4	T4	T4	75
		55	T4	T4	T4	T4	T4	T4	T4	T4	90
		65	T4	T4	T4	T4	T4	T4	T4	T4	90
HPS	100	40	T3	T3	T3	T3	T3	T3	T3	T3	90
		55	T3	T3	T3	T3	T3	T3	T3	T3	90
		65	—	—	—	—	—	—	—	—	—
HPS	150	40	T3	T3	T3	T3	T3	T3	T3	T3	90
		55	T3	T3	T3	T3	T3	T3	T3	T3	90
		65	—	—	—	—	—	—	—	—	—
MH	50	40	T6	T5	T6	T5	T5	T5	T5	T5	60
		55	T4	T4	T4	T4	T4	T4	T4	T4	75
		65	T4	T4	T4	T4	T4	T4	T4	T4	90
MH	70	40	T5	T5	T5	T4	T4	T4	T4	T4	75
		55	T4	T4	T4	T4	T4	T4	T4	T4	75
		65	T4	T4	T4	T4	T4	T4	T4	T4	90
MH	100	40	T4	T4	T4	T4	T4	T4	T4	T4	75
		55	T3	T3	T3	T3	T3	T3	T3	T3	90
		65	T3	T3	T3	T3	T3	T3	T3	T3	105
MHP	150/125	40	T3	T3	T3	T3	T3	T3	T3	T3	90
		55	T3	T3	T3	T3	T3	T3	T3	T3	90
		65	—	—	—	—	—	—	—	—	—
MHP	175	40	T3	T3	T3	T3	T3	T3	T3	T3	90
		55	—	—	—	T3	T3	T3	T3	T3	105
		65	—	—	—	—	—	—	—	—	—
HPS	35	40	T6	T6	T6	T6	T6	T6	T6	T6	60
		55	T5	T5	T5	T5	T5	T5	T5	T5	75
		65	T5	T5	T5	T5	T5	T5	T5	T5	90

T-CODE & TEMPERATURE RANGE CONVERSION TABLE °C

T1	350	325	T2	T2A	T2B	T2C	T2D	T3	T3A	T3B	T3C	T4	T4A	T5	T6
351-450	326-350	301-325	281-300	261-280	231-260	216-230	201-215	181-200	166-180	161-165	136-160	121-135	101-120	86-100	<=85

L

① Data does not apply to luminaries with auxiliary quartz lighting; consult factory with requirements. The suitability of these fixtures for Class I Zone 2 AEx nAR II locations must be determined for each application based on NEC® Article 505.

*** VM1 Series accepts 5-1/2" threaded optics; VM2 accepts 7-3/4" optics.*

— Not available.

VM1/VM2 SERIES THERMAL PERFORMANCE DATA①
CLASS II DIVISIONS 1 & 2 GROUPS E,F,G & CLASS III*

DESCRIPTION			VM1 SERIES**					VM2 SERIES**					
LAMP TYPE	LAMP WATTAGE	AMBIENT °C	GLOBE ONLY	GLOBE W/ REFLECTOR	VMR	REFRACTORS VZRG 8"	REFRACTORS VZRG 12"	GLOBE ONLY	GLOBE W/ REFLECTOR	REFRACTOR VMR	ENCLOSED REFLECTORS VMER40	ENCLOSED REFLECTORS VMEP40	SUPPLY WIRE °C
HPS	35	40	T4A	T4A	T4A	T4A	T4A	T6	T6	T6	T6	T6	60
		55	T4	T4	T4	T4	T4	T5	T5	T5	T5	T5	75
		65	T4	T4	T4	T4	T4	T4A	T4A	T4A	T4A	T4A	75
HPS	50	40	T4A	T4A	T4A	T4A	T4A	T6	T6	T6	T6	T6	60
		55	T4	T4	T4	T4	T4	T5	T5	T5	T5	T5	75
		65	T4	T4	T4	T4	T4	T5	T4A	T4A	T4A	T4A	90
HPS	70	40	T4A	T4A	T4A	T4A	T4A	T5	T5	T5	T5	T5	75
		55	T4	T4	T4	T4	T4	T4A	T4A	T4A	T4A	T4A	75
		65	T4	T4	T4	T4	T4	T4A	T4A	T4A	T4A	T4A	90
HPS	100	40	T3C	T3C	T3C	T3C	T3C	T4A	T4A	T4A	T4A	T4A	90
		55	T3C	T3C	T3C	T3C	T3C	T4	T4	T4	T4	T4	90
		65	—	—	—	—	—	—	—	—	—	—	—
HPS	150	40	T3C	T3C	T3C	T3C	T3C	T4	T4	T4	T4	T4	90
		55	—	—	—	—	—	T3C	T3C	T3C	T3C	T3C	90
		65	—	—	—	—	—	—	—	—	—	—	—
MH	50	40	T4A	T4A	T4A	T4A	T4A	T5	T5	T5	T5	T5	60
		55	T4	T4	T4	T4	T4	T4A	T4A	T4A	T4A	T4A	75
		65	T3C	T3C	T3C	T3C	T3C	T4A	T4A	T4A	T4A	T4A	90
MH	70	40	T4A	T4A	T4A	T4A	T4A	T5	T5	T5	T5	T5	75
		55	T4	T4	T4	T4	T4	T4A	T4A	T4A	T4A	T4A	75
		65	T3C	T3C	T3C	T3C	T3C	T4A	T4A	T4A	T4A	T4A	90
MH	100	40	T4	T4	T4	T4	T4	T4A	T4A	T4A	T4A	T4A	75
		55	T3C	T3C	T3C	T3C	T3C	T4	T4	T4	T4	T4	90
		65	T3C	T3C	T3C	T3C	T3C	T4	T4	T4	T4	T4	105
MHP	150/125	40	T3C	T3C	T3C	T3C	T3C	T4	T4	T4	T4	T4	90
		55	T3A	T3A	T3A	T3A	T3A	T3C	T3C	T3C	T3C	T3C	90
		65	—	—	—	—	—	—	—	—	—	—	—
MHP	175	40	—	—	—	—	—	T3C	T3C	T3C	T3C	T3C	90
		55	—	—	—	—	—	T3C	T3C	T3C	T3C	T3C	105
		65	—	—	—	—	—	—	—	—	—	—	—
QL	55	40	EFG	EFG	EFG	EFG	EFG	—	—	—	—	—	75

T-CODE & TEMPERATURE RANGE CONVERSION TABLE °C ② ③

T1	350	325	T2	T2A	T2B	T2C	T2D	T3	T3A	T3B	T3C	T4	T4A	T5	T6
351-450	326-350	301-325	281-300	261-280	231-260	216-230	201-215	181-200	166-180	161-165	136-160	121-135	101-120	86-100	<=85

① Data does not apply to luminaries with auxiliary quartz lighting; consult factory with requirements.
② Limit for E & F.
③ Limit for G & Class III.
** Luminaries rated for Group G (=<165°C), T3B are also suitable for Class III applications; Luminaries rated for E & F ≤ 200°C (T3).*
*** VM1 Series accepts 5-1/2" threaded optics; VM2 accepts 7-3/4" optics.*
— Not available.

VM1/VM2 SERIES THERMAL PERFORMANCE DATA① ②
"SIMULTANEOUS PRESENCE" CLASS I DIVISION 2 (LAMP TEMPERATURE IN DUST CONDITIONS) & CLASS II DIVISION I

DESCRIPTION			VM1 SERIES**					VM2 SERIES**					
LAMP TYPE	LAMP WATTAGE	AMBIENT °C	GLOBE ONLY	GLOBE W/ REFLECTOR	VMR	REFRACTORS VZRG 8"	REFRACTORS VZRG 12"	GLOBE ONLY	GLOBE W/ REFLECTOR	REFRACTOR VMR	ENCLOSED REFLECTORS VMER40	ENCLOSED REFLECTORS VMEP40	SUPPLY WIRE °C
HPS	35	40	T3A	T3A	T3A	T3A	T3A	T2D	T2D	T2D	T2D	T2D	60
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
HPS	50	40	T2C	T2C	T2C	T2C	T2C	T2D	T2D	T2D	T2D	T2D	60
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
HPS	70	40	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	75
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
HPS	100	40	T2A	T2A	T2A	T2A	T2A	T2B	T2B	T2B	T2B	T2B	75
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
HPS	150	40	325°C	325°C	325°C	325°C	325°C	325°C	325°C	325°C	325°C	325°C	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MH	50	40	T2B	T2B	T2B	T2B	T2B	T2C	T3C	T3C	T3C	T3C	75
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MH	70	40	T2B	T2B	T2B	T2B	T2B	T2C	T2C	T2C	T2C	T2C	75
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MH	100	40	T2	T2	T2	T2	T2	T2A	T2A	T2A	T2A	T2A	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MHP	150/125	40	350°C	350°C	350°C	350°C	350°C	350°C	350°C	350°C	350°C	350°C	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MHP	175	40	—	—	—	—	—	450°C	450°C	450°C	450°C	450°C	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—

T-CODE & TEMPERATURE RANGE CONVERSION TABLE °C

T1	350	325	T2	T2A	T2B	T2C	T2D	T3	T3A	T3B	T3C	T4	T4A	T5	T6
351-450	326-350	301-325	281-300	261-280	231-260	216-230	201-215	181-200	166-180	161-165	136-160	121-135	101-120	86-100	<=85

① Data does not apply to luminaries with auxiliary quartz lighting; consult factory with requirements.
② Table shows lamp temperature inside dust covered optic - see Class II table for Groups E, F, G and Class III data.
*** VM1 Series accepts 5-1/2" threaded optics; VM2 accepts 7-3/4" optics.*
— Not available.

L

VM3/VM4 SERIES THERMAL PERFORMANCE DATA①
CLASS I DIVISION 2 GROUPS A,B,C,D / ZONE 2 GROUPS IIC, IIB, IIA

DESCRIPTION			VM3 SERIES**					VM4 SERIES**					
LAMP TYPE	LAMP WATTAGE	AMBIENT °C	GLOBE ONLY	GLOBE W/ REFLECTOR	VMR	REFRACTORS VZRG 8"	REFRACTORS VZRG 12"	GLOBE ONLY	GLOBE W/ REFLECTOR	REFRACTOR VMR	ENCLOSED REFLECTORS VMER40	ENCLOSED REFLECTORS VMEP40	SUPPLY WIRE °C
HPS	50	40	T3B	T3B	T3B	T3B	T3B	T3C	T3C	T3C	T3C	T3C	90
		55	T3A	T3A	T3A	T3A	T3A	T3B	T3B	T3B	T3B	T3B	90
		65	T3	T3	T3	T3	T3	T3	T3	T3	T3	T3	90
HPS	70	40	T3	T3	T3	T3	T3A	T3A	T3A	T3A	T3A	T3A	90
		55	T3	T3	T3	T3	T3	T3	T3A	T3	T3	T3	90
		65	T3	T3	T3	T3	T3	T3	T3	T3	T3	T3	90
HPS	100	40	T2D	T2D	T2D	T2D	T3	T3	T3	T3	T3	T3	90
		55	T2C	T2C	T2C	T2C	T2C	T2D	T2D	T2D	T2D	T2D	90
		65	T2C	T2C	T2C	T2C	T2C	T2C	T2C	T2C	T2C	T2C	110
HPS	150	40	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	90
		55	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	T2B	90
		65	—	—	—	—	—	—	—	—	—	—	—
MH	70	40	T3B	T3A	T3B	T3A	T3C	T3C	T3C	T3C	T3C	T3C	90
		55	T3	T3	T3	T3	T3	T3C	T3B	T3C	T3C	T3C	90
		65	T2D	T2D	T2D	T3	T3	T3A	T3A	T3A	T3A	T3A	90
MH	100	40	T3	T3	T3	T3	T3A	T3A	T3	T3A	T3A	T3A	90
		55	T3	T3	T3	T3	T2D	T3	T3	T3	T3	T3	90
		65	T2D	T2D	T2D	T2D	T2D	T3	T3	T3	T3	T3	90
MH	175	40	T2A	T2A	T2A	T2B	T2B	T2B	T2B	T2B	T2B	T2B	90
		55	T2	T2	T2	T2	T2	T2A	T2A	T2A	T2A	T2A	110
		65	—	—	—	—	—	—	—	—	—	—	—
MH	250	40	325°C	325°C	325°C	T2	T2	T2	T2	T2	T2	T2	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MHP	125/150/175	40	T2A	T2A	T2A	T2B	T2B	T2B	T2B	T2B	T2B	T2B	90
		55	T2A	T2A	T2A	T2A	T2A	T2A	T2A	T2A	T2A	T2A	110
		65	—	—	—	—	—	T2A	T2A	T2A	T2A	T2A	110
MHP	200	40	T2A	T2A	T2A	T2B	T2B	T2B	T2B	T2B	T2B	T2B	90
		55	T2	T2	T2	T2	T2	T2A	T2A	T2A	T2A	T2A	110
		65	—	—	—	—	—	—	—	—	—	—	—
QL	85	40	—	—	—	—	—	T3	T3	T3	T3	T3	75
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—

T-CODE & TEMPERATURE RANGE CONVERSION TABLE °C

T1	350	325	T2	T2A	T2B	T2C	T2D	T3	T3A	T3B	T3C	T4	T4A	T5	T6
351-450	326-350	301-325	281-300	261-280	231-260	216-230	201-215	181-200	166-180	161-165	136-160	121-135	101-120	86-100	<=85

① *Data does not apply to luminaries with auxiliary quartz lighting; consult factory with requirements. The suitability of these fixtures for Class I Division 2 / Zone 2 locations must be determined for each application based on NEC® Articles 501.125(B) or 505.*

** *VM3 Series accepts 5-1/2" threaded optics; VM4 accepts 7-3/4" threaded optics.*

— *Not available.*

VM3/VM4 SERIES THERMAL PERFORMANCE DATA①
CLASS I ZONE 2 RESTRICTED BREATHING

DESCRIPTION			VM3 SERIES**			VM4 SERIES**					
LAMP TYPE	LAMP WATTAGE	AMBIENT °C	GLOBE ONLY	GLOBE W/ REFLECTOR	REFRACTOR VMR	GLOBE ONLY	GLOBE W/ REFLECTOR	REFRACTOR VMR	ENCLOSED REFLECTORS VMER40	ENCLOSED REFLECTORS VMEP40	SUPPLY WIRE °C
HPS	50	40	T6	T6	T6	T6	T6	T6	T6	T6	90
		55	T5	T5	T5	T6	T6	T6	T6	T6	90
		65	T4	T4	T4	T5	T5	T5	T5	T5	90
HPS	70	40	T5	T5	T5	T6	T6	T6	T6	T6	90
		55	T5	T5	T5	T5	T5	T5	T5	T5	90
		65	T4	T4	T4	T5	T5	T5	T5	T5	90
HPS	100	40	T5	T5	T5	T5	T5	T5	T5	T5	90
		55	T4	T4	T4	T5	T5	T5	T5	T5	90
		65	T4	T4	T4	T4	T4	T4	T4	T4	110
HPS	150	40	T4	T4	T4	T4	T4	T4	T4	T4	90
		55	T3	T3	T3	T4	T4	T4	T4	T4	90
		65	—	—	—	—	—	—	—	—	—
MH	70	40	T5	T5	T5	T5	T6	T6	T6	T6	90
		55	T4	T4	T4	T5	T5	T5	T5	T5	90
		65	T4	T4	T4	T4	T4	T4	T4	T4	90
MH	100	40	T4	T4	T4	T5	T5	T5	T5	T5	90
		55	T4	T4	T4	T5	T4	T4	T4	T4	90
		65	T4	T4	T4	T4	T4	T4	T4	T4	90
MH	175	40	T3	T3	T3	T4	T4	T4	T4	T4	90
		55	T3	T3	T3	T4	T4	T4	T4	T4	110
		65	—	—	—	—	—	—	—	—	—
MH	250	40	T3	T3	T3	T3	T3	T3	T3	T3	90
		55	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—
MHP	150/175	40	T3	T3	T3	T4	T4	T4	T4	T4	90
		55	T3	T3	T3	T4	T4	T4	T4	T4	90
		65	—	—	—	T3	T3	T3	T3	T3	110
MHP	200	40	T3	T3	T3	T4	T4	T4	T4	T4	90
		55	T3	T3	T3	T3	T3	T3	T3	T3	110
		65	—	—	—	—	—	—	—	—	—

T-CODE & TEMPERATURE RANGE CONVERSION TABLE °C

T1	350	325	T2	T2A	T2B	T2C	T2D	T3	T3A	T3B	T3C	T4	T4A	T5	T6
351-450	326-350	301-325	281-300	261-280	231-260	216-230	201-215	181-200	166-180	161-165	136-160	121-135	101-120	86-100	<=85

L

① Data does not apply to luminaries with auxiliary quartz lighting; consult factory with requirements. The suitability of these fixtures for Class I Zone 2 AEx nAR II locations must be determined for each application based on NEC® Article 505. Restricted breathing fixture with photo cell T3 only.

*** VM3 Series accepts 5-1/2" threaded optics; VM4 accepts 7-3/4" threaded optics.*

— Not available.

VM3/VM4 SERIES THERMAL PERFORMANCE DATA①
CLASS II DIVISIONS 1 & 2 GROUPS E,F,G & CLASS III*

DESCRIPTION			VM3 SERIES**					VM4 SERIES**					
LAMP TYPE	LAMP WATTAGE	AMBIENT °C	GLOBE ONLY	GLOBE W/ REFLECTOR	VMR	REFRACTORS VZRG 8"	REFRACTORS VZRG 12"	GLOBE ONLY	GLOBE W/ REFLECTOR	REFRACTOR VMR	ENCLOSED REFLECTORS VMER40	ENCLOSED REFLECTORS VMEP40	SUPPLY WIRE °C
HPS	50	40	T3C	T3C	T3C	T3C	T3C	T3B	T3B	T3B	T3B	T3B	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
HPS	70	40	T3C	T3C	T3C	T3C	T3C	T3B	T3B	T3B	T3B	T3B	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
HPS	100	40	T3C	T3C	T3C	T3C	T3C	T3B	T3B	T3B	T3B	T3B	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
HPS	150	40	T3C	T3C	T3C	T3C	T3C	T3B	T3B	T3B	T3B	T3B	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MH	70	40	T3C	T3C	T3C	T3C	T3C	T3B	T3B	T3B	T3B	T3B	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MH	100	40	T3C	T3C	T3C	T3C	T3C	T3B	T3B	T3B	T3B	T3B	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MH	175	40	—	—	—	—	—	T3B	T3B	T3B	T3B	T3B	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MH	250	40	—	—	—	—	—	T3B	T3B	T3B	T3B	T3B	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MHP	150/175	40	—	—	—	—	—	T3B	T3B	T3B	T3B	T3B	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MHP	200	40	—	—	—	—	—	T3B	T3B	T3B	T3B	T3B	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
QL	85	40	—	—	—	—	—	T3B	T3B	T3B	T4	T4	75
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—

T-CODE & TEMPERATURE RANGE CONVERSION TABLE °C ② ③

T1	350	325	T2	T2A	T2B	T2C	T2D	T3	T3A	T3B	T3C	T4	T4A	T5	T6
351-450	326-350	301-325	281-300	261-280	231-260	216-230	201-215	181-200	166-180	161-165	136-160	121-135	101-120	86-100	<=85

① Data does not apply to luminaries with auxiliary quartz lighting; consult factory with requirements.

② Limit for E & F.

③ Limit for G & Class III.

** Luminaries rated for Group G (=<165°C), T3B are also suitable for Class III applications; Luminaries rated for E & F ≤ 200°C (T3).*

*** VM3 Series accepts 5-1/2" threaded optics; VM4 accepts 7-3/4" optics.*

— Not available.

VM3/VM4 SERIES THERMAL PERFORMANCE DATA① ②
"SIMULTANEOUS PRESENCE" CLASS I DIVISION 2 (LAMP TEMPERATURE IN DUST CONDITIONS) & CLASS II DIVISION I

DESCRIPTION			VM3 SERIES**					VM4 SERIES**					
LAMP TYPE	LAMP WATTAGE	AMBIENT °C	GLOBE ONLY	GLOBE W/ REFLECTOR	VMR	REFRACTORS VZRG 8"	REFRACTORS VZRG 12"	GLOBE ONLY	GLOBE W/ REFLECTOR	REFRACTOR VMR	ENCLOSED REFLECTORS VMER40	ENCLOSED REFLECTORS VMEP40	SUPPLY WIRE °C
HPS	50	40	T3	T2D	T3	T3	T3	T3B	T3A	T3B	T3A	T3A	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
HPS	70	40	T3	T2D	T3	T3	T3	T3	T3	T3	T3	T3A	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
HPS	100	40	T2C	T2C	T2C	T2C	T2C	T2D	T2D	T2D	T2D	T3	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
HPS	150	40	T2A	T2A	T2A	T2A	T2A	T2B	T2B	T2B	T2B	T2B	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MH	70	40	T3A	T3A	T3A	T3A	T3A	T3C	T3B	T3C	T3C	T3C	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MH	100	40	T2D	T2D	T2D	T2D	T2D	T3	T3	T3	T3	T3	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MH	175	40	—	—	—	—	—	T2A	T2A	T2A	T2A	T2A	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MH	250	40	—	—	—	—	—	325°C	325°C	325°C	325°C	325°C	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MHP	150/175	40	—	—	—	—	—	T2A	T2A	T2A	T2A	T2A	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MHP	200	40	—	—	—	—	—	T2A	T2A	T2A	T2A	T2A	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—

T-CODE & TEMPERATURE RANGE CONVERSION TABLE °C

T1	350	325	T2	T2A	T2B	T2C	T2D	T3	T3A	T3B	T3C	T4	T4A	T5	T6
351-450	326-350	301-325	281-300	261-280	231-260	216-230	201-215	181-200	166-180	161-165	136-160	121-135	101-120	86-100	<=85

① Data does not apply to luminaries with auxiliary quartz lighting; consult factory with requirements.

② Table shows lamp temperature inside dust covered optic - see Class II table for Groups E, F, G and Class III data.

*** VM3 Series accepts 5-1/2" threaded optics; VM4 accepts 7-3/4" optics.*

— Not available.

L

VM5 SERIES THERMAL PERFORMANCE DATA①

DESCRIPTION			CLASS I DIVISION 2 GROUPS A, B, C, D / ZONE 2 GROUPS IIC, IIB, IIA					CLASS I ZONE 2, "RESTRICTED BREATHING"②				
LAMP TYPE	LAMP WATTAGE	AMBIENT °C	GLOBE ONLY	GLOBE W/ REFLECTOR	REFRACTOR VZRG 12"	ENCLOSED REFLECTORS VMER40	ENCLOSED REFLECTORS VMEP40	GLOBE ONLY	GLOBE W/ REFLECTOR	ENCLOSED REFLECTORS VMER40	ENCLOSED REFLECTORS VMEP40	SUPPLY WIRE °C
HPS	200	40	325°C	325°C	325°C	T2	T2	T3	T3	T4	T4	90
		55	350°C	350°C	350°C	325°C	325°C	T3	T3	T3	T3	125
		65	—	—	—	—	—	—	—	—	—	—
HPS	250	40	325°C	325°C	325°C	T2	T2	T3	T3	T4	T4	90
		55	350°C	350°C	350°C	325°C	325°C	T3	T3	T3	T3	125
		65	350°C	350°C	350°C	325°C	325°C	T3	T3	T4	T4	125
HPS	400	40	350°C	450°C	350°C	350°C	350°C	T3	T3	T3	T3	90
		55	450°C	—	450°C	450°C	450°C	T3	—	T3	T3	125
		65	—	—	—	—	—	—	—	—	—	—
HPS	600	40	—	—	—	450°C	450°C	—	—	T3	T3	90
		55	—	—	—	450°C	450°C	—	—	T3	T3	125
		65	—	—	—	—	—	—	—	—	—	—
MH	250	40	T2	325°C	T2	T2	T2	T3	T3	T3	T3	90
		55	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—
MH	400	40	T2	325°C	T2	T2	T2	T3	T3	T3	T3	90
		55	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—
MHP	250	40	T2B	T2B	T2B	T2B	T2B	T4	T4	T4	T4	90
		55	T2A	T2A	T2A	T2B	T2B	T3	T3	T3	T3	90
		65	—	—	—	—	—	—	—	—	—	—
MHP	320	40	T2B	T2B	T2B	T2B	T2B	T4	T4	T4	T4	90
		55	T2A	T2A	T2A	T2B	T2B	T3	T3	T3	T3	90
		65	T2A	—	T2A	T2A	T2A	T3	—	T3	T3	125
MHP	350	40	T2A	T2A	T2A	T2B	T2B	T3	T3	T4	T4	90
		55	T2	T2	T2A	T2A	T2A	T3	T3	T3	T3	125
		65	—	—	—	—	—	—	—	—	—	—
MHP	400	40	T2A	T2A	T2A	T2B	T2B	T3	T3	T4	T4	90
		55	T2	T2	T2A	T2A	T2A	T3	T3	T3	T3	125
		65	—	—	—	—	—	—	—	—	—	—
QL	165	40	T3	T3	T3	T3A	T3A	T6	T5	T6	T6	75
		55	—	—	—	—	—	—	—	—	—	—
	③	65	—	—	—	—	—	—	—	—	—	—

T-CODE & TEMPERATURE RANGE CONVERSION TABLE °C

T1	350	325	T2	T2A	T2B	T2C	T2D	T3	T3A	T3B	T3C	T4	T4A	T5	T6
351-450	326-350	301-325	281-300	261-280	231-260	216-230	201-215	181-200	166-180	161-165	136-160	121-135	101-120	86-100	<=85

① Data does not apply to luminaries with auxiliary quartz lighting; consult factory with requirements. The suitability of these fixtures for Class I Zone 2 AEx nAR II locations must be determined for each application based on NEC® Article 505. Restricted breathing fixture with photo cell T3 only.

② See L50 for Restricted Breathing Information.

③ VM5Q uses VM4 optics including VMG25 and VMR25x all glass refractors.

— Not available

VM5 SERIES THERMAL PERFORMANCE DATA① ②

DESCRIPTION			CLASS II DIVISION 1 & 2 GROUPS E,F,G & CLASS III*					SIMULTANEOUS PRESENCE② LAMP TEMP. IN DUST CONDITIONS					
LAMP TYPE	LAMP WATTAGE	AMBIENT °C	GLOBE ONLY	GLOBE W/ REFLECTOR	REFRACTOR VZRG 12"	ENCLOSED REFLECTORS		GLOBE ONLY	GLOBE W/ REFLECTOR	REFRACTOR VZRG 12"	ENCLOSED REFLECTORS		SUPPLY WIRE °C
						VMER40	VMEP40				VMER40	VMEP40	
HPS	200	40	T3C	T3C	T4A	T4	T4	350°C	350°C	325°C	325°C	325°C	90
		55	—	—	T4	T3C	T3C	—	—	350°C	350°C	350°C	125
		65	—	—	—	—	—	—	—	—	—	—	—
HPS	250	40	T3C	T3C	T4A	T4	T4	350°C	350°C	325°C	325°C	325°C	90
		55	—	—	T4	T3C	T3C	—	—	350°C	350°C	350°C	125
		65	—	—	T4	T3C	T3C	—	—	350°C	350°C	350°C	125
HPS	400	40	T3B	T3B	T4	T4	T4	T1	T1	350°C	350°C	350°C	90
		55	—	—	T3C	T3B	T3B	—	—	T1	T1	T1	125
		65	—	—	—	—	—	—	—	—	—	—	—
MH	250	40	—	—	T4	T4	T4	—	—	325°C	325°C	325°C	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MH	400	40	—	—	T4	T4	T4	—	—	325°C	325°C	325°C	90
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—
MHP	250	40	—	—	T4	T4	T4	—	—	T2B	T2B	T2B	90
		55	—	—	T4	T4	T4	—	—	T2A	T2A	T2A	90
		65	—	—	—	—	—	—	—	—	—	—	—
MHP	320	40	—	—	T4	T4	T4	—	—	T2B	T2B	T2B	90
		55	—	—	T3C	T3C	T3C	—	—	T2A	T2A	T2A	90
		65	—	—	—	—	—	—	—	—	—	—	—
MHP	350	40	—	—	T4	T4	T4	—	—	T2A	T2A	T2A	90
		55	—	—	T3C	T3C	T3C	—	—	T2	T2	T2	125
		65	—	—	—	—	—	—	—	—	—	—	—
MHP	400	40	—	—	T4	T4	T4	—	—	T2A	T2A	T2A	90
		55	—	—	T3C	T3C	T3C	—	—	T2	T2	T2	125
		65	—	—	—	—	—	—	—	—	—	—	—
QL	165 ⑤	40	T3C	T3C	T3C	T3C	T3C	—	—	—	—	—	75
		55	—	—	—	—	—	—	—	—	—	—	—
		65	—	—	—	—	—	—	—	—	—	—	—

T-CODE & TEMPERATURE RANGE CONVERSION TABLE °C ③ ④

T1	350	325	T2	T2A	T2B	T2C	T2D	T3	T3A	T3B	T3C	T4	T4A	T5	T6
351-450	326-350	301-325	281-300	261-280	231-260	216-230	201-215	181-200	166-180	161-165	136-160	121-135	101-120	86-100	<=85

L

*** Table shows lamp temperature inside optic dust conditions, see Class II table for Groups E, F, G data.

① Data does not apply to luminaries with auxiliary quartz lighting; consult factory with requirements.

② Table shows lamp temperature inside dust covered optic - see Class II table for Groups E, F, G and Class III data.

③ Limit for E & F.

④ Limit for G & Class III.

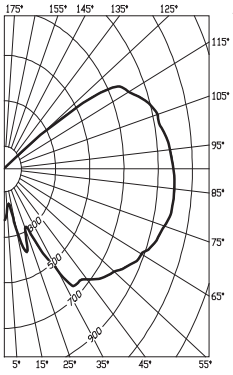
⑤ VM5Q uses VM4 optics including VMG25 and VMR25x all glass refractors.

* Luminares rated for Group G (=<165°C), T3B are also suitable for Class III applications; Luminaries rated for E & F ≤ 200°C (T3).

— Not available.

HIGH PRESSURE SODIUM-VM1, VM3
With Globe Only
35-150 Watt
Mogul Base

CANDLEPOWER – 100 WATT
9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



ANGLE	CP	ANGLE	CP
0	227.	95.0	974.
5.0	175.	100.0	946.
10.0	152.	105.0	925.
15.0	255.	110.0	880.
20.0	391.	115.0	803.
25.0	284.	120.0	706.
30.0	390.	125.0	273.
35.0	542.	130.0	22.
40.0	662.	135.0	12.
45.0	687.	140.0	9.
50.0	744.	145.0	7.
55.0	788.	150.0	5.
60.0	843.	155.0	2.
65.0	887.	160.0	1.
70.0	941.	165.0	1.
75.0	968.	170.0	0.
80.0	994.	175.0	0.
85.0	1001.	180.0	0.
90.0	990.		

Efficiency 84.0%

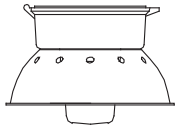
COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.91 .91 .91 .91	.85 .85 .85 .85	.74 .74 .74	.64 .64 .64	.55 .55 .55	.50
1	.77 .71 .66 .61	.72 .66 .61 .57	.56 .52 .49	.47 .44 .42	.39 .37 .35	.30
2	.68 .59 .52 .45	.63 .55 .48 .42	.46 .41 .36	.39 .34 .31	.31 .28 .25	.21
3	.61 .50 .42 .35	.56 .46 .39 .33	.39 .33 .28	.32 .28 .23	.26 .22 .19	.16
4	.55 .43 .35 .28	.50 .40 .32 .26	.33 .27 .22	.28 .22 .18	.22 .18 .15	.11
5	.50 .37 .29 .23	.45 .35 .27 .21	.29 .23 .18	.24 .19 .15	.19 .15 .12	.09
6	.45 .33 .25 .19	.41 .30 .23 .17	.26 .19 .15	.21 .16 .12	.17 .13 .09	.07
7	.41 .29 .21 .16	.38 .27 .20 .14	.23 .17 .12	.19 .14 .10	.15 .11 .08	.05
8	.38 .26 .18 .13	.35 .24 .17 .12	.20 .14 .10	.17 .12 .08	.13 .09 .06	.04
9	.35 .23 .16 .11	.32 .22 .15 .10	.18 .12 .08	.15 .10 .07	.12 .08 .05	.03
10	.32 .21 .14 .09	.30 .19 .13 .08	.16 .11 .07	.13 .09 .05	.11 .07 .04	.02

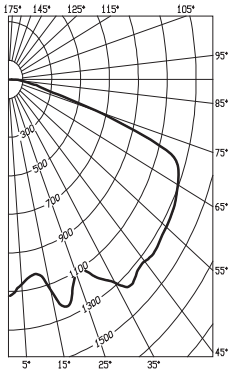
SPACING TO MOUNTING HEIGHT RATIO - 3.3

Test No. HPK09950

HIGH PRESSURE SODIUM-VM1, VM3
With Globe & Dome Reflector
35-150 Watt
Mogul Base



CANDLEPOWER – 100 WATT
9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



ANGLE	CP	ANGLE	CP
0	1126.	95.0	25.
5.0	1067.	100.0	23.
10.0	1025.	105.0	43.
15.0	1127.	110.0	138.
20.0	1241.	115.0	132.
25.0	1113.	120.0	31.
30.0	1178.	125.0	11.
35.0	1286.	130.0	10.
40.0	1357.	135.0	9.
45.0	1334.	140.0	9.
50.0	1347.	145.0	8.
55.0	1331.	150.0	7.
60.0	1325.	155.0	6.
65.0	1295.	160.0	6.
70.0	1233.	165.0	5.
75.0	647.	170.0	5.
80.0	228.	175.0	5.
85.0	105.	180.0	5.
90.0	21.		

Efficiency 66.7%

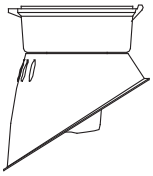
COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.78 .78 .78 .78	.76 .76 .76 .76	.72 .72 .72	.69 .69 .69	.65 .65 .65	.64
1	.70 .67 .64 .61	.68 .65 .62 .60	.62 .59 .57	.59 .57 .55	.56 .54 .53	.51
2	.63 .57 .52 .48	.61 .56 .51 .47	.53 .49 .46	.51 .47 .45	.48 .46 .43	.42
3	.57 .49 .44 .39	.55 .48 .43 .38	.46 .41 .37	.44 .40 .36	.42 .38 .35	.34
4	.51 .43 .36 .31	.50 .41 .36 .31	.39 .34 .30	.38 .33 .29	.36 .32 .29	.27
5	.46 .37 .30 .26	.45 .36 .30 .25	.34 .29 .25	.33 .28 .24	.31 .27 .24	.22
6	.42 .33 .26 .22	.41 .32 .26 .21	.30 .25 .21	.29 .24 .21	.28 .24 .20	.19
7	.39 .29 .23 .18	.37 .28 .22 .18	.27 .22 .18	.26 .21 .17	.25 .20 .17	.16
8	.36 .26 .20 .15	.34 .25 .19 .15	.24 .19 .15	.23 .18 .15	.22 .18 .14	.13
9	.33 .23 .17 .13	.32 .23 .17 .13	.22 .16 .13	.21 .16 .13	.20 .16 .12	.11
10	.30 .20 .14 .11	.29 .20 .14 .11	.19 .14 .10	.18 .13 .10	.17 .13 .10	.09

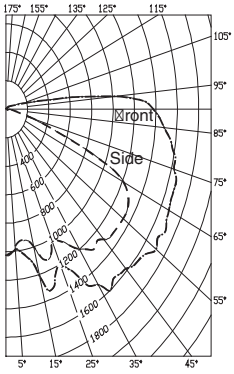
SPACING TO MOUNTING HEIGHT RATIO - 1.8

Test No. HPK09951

HIGH PRESSURE SODIUM-VM1, VM3
With Globe & Angle Reflector
35-150 Watt
Mogul Base



CANDLEPOWER – 100 WATT
9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



Front ANGLE	Front CP	Side ANGLE	Side CP
0	1026.	0	1026.
5.0	985.	5.0	981.
15.0	1191.	15.0	995.
25.0	1210.	25.0	1019.
35.0	1503.	35.0	1200.
45.0	1585.	45.0	1296.
45.0	1719.	45.0	1337.
65.0	1681.	65.0	1219.
75.0	1626.	75.0	276.
85.0	1484.	85.0	61.
90.0	1377.	145.0	17.
95.0	1011.	95.0	13.
105.0	163.	105.0	10.
115.0	46.	115.0	10.
125.0	13.	125.0	9.
135.0	5.	135.0	8.
145.0	5.	145.0	7.
155.0	5.	155.0	5.
165.0	4.	165.0	4.
175.0	3.	175.0	3.
180.0	3.	180.0	3.

Efficiency 64.9%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.76 .76 .76 .76	.74 .74 .74 .74	.69 .69 .69	.66 .66 .66	.62 .62 .62	.60
1	.67 .63 .59 .56	.65 .61 .57 .54	.57 .54 .52	.54 .51 .49	.51 .49 .47	.45
2	.60 .54 .48 .44	.58 .52 .47 .43	.49 .45 .41	.46 .43 .40	.43 .41 .38	.36
3	.54 .46 .40 .36	.52 .45 .39 .35	.42 .38 .34	.40 .36 .33	.38 .34 .31	.30
4	.49 .40 .34 .29	.47 .39 .33 .29	.37 .32 .28	.35 .30 .27	.33 .29 .26	.24
5	.45 .35 .29 .24	.43 .34 .28 .24	.32 .27 .23	.31 .26 .22	.29 .25 .22	.20
6	.41 .31 .25 .21	.39 .31 .25 .20	.29 .24 .20	.27 .23 .19	.26 .22 .19	.17
7	.38 .28 .22 .17	.36 .27 .21 .17	.26 .20 .17	.24 .20 .16	.23 .19 .16	.14
8	.34 .25 .19 .15	.33 .24 .19 .15	.23 .18 .14	.22 .17 .14	.21 .17 .13	.12
9	.32 .22 .17 .13	.31 .22 .16 .13	.21 .16 .12	.20 .15 .12	.19 .15 .12	.10
10	.29 .20 .14 .10	.28 .19 .14 .10	.18 .13 .10	.17 .13 .10	.16 .12 .09	.08

SPACING TO MOUNTING HEIGHT RATIO - 1.7

Test No. HPK09952

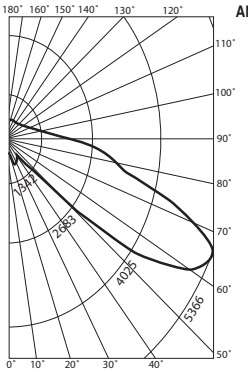
HUBBELL®
KILLARK®

HIGH PRESSURE SODIUM-VM1, VM3

With Type I All Glass Refractor
35-150 Watt
Mogul Base

CANDLEPOWER – 100 WATT

9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



ANGLE	CP	ANGLE	CP
0	213.	85	2652.
5	250.	90	1969.
15	533.	95	1301.
25	506.	105	763.
35	457.	115	602.
45	839.	125	294.
55	2742.	135	107.
60	4365.	145	32.
65	5265.	155	3.
70	5304.	165	1.
75	4269.	175	0.
80	3162.	180	0.

Efficiency 86.2%

Angle Vertical
CP 90° Horizontal

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.99 .99 .99 .99	.95 .95 .95 .95	.87 .87 .87	.81 .81 .81	.74 .74 .74	.71
1	.83 .76 .70 .64	.79 .72 .67 .61	.66 .61 .57	.60 .56 .52	.54 .51 .48	.45
2	.72 .61 .52 .44	.68 .58 .49 .42	.52 .45 .39	.46 .41 .36	.42 .37 .33	.30
3	.63 .50 .40 .32	.59 .47 .38 .31	.42 .34 .28	.38 .31 .26	.33 .28 .23	.20
4	.56 .42 .32 .24	.52 .40 .30 .23	.35 .27 .21	.31 .24 .19	.28 .22 .17	.14
5	.50 .36 .26 .19	.47 .34 .25 .18	.30 .22 .16	.27 .20 .14	.23 .18 .13	.10
6	.46 .31 .22 .15	.43 .30 .21 .14	.26 .19 .13	.23 .17 .11	.21 .15 .10	.08
7	.42 .28 .19 .12	.39 .26 .18 .12	.23 .16 .10	.21 .14 .09	.18 .13 .08	.06
8	.39 .25 .16 .10	.36 .24 .15 .10	.21 .14 .09	.19 .12 .08	.17 .11 .07	.05
9	.36 .23 .14 .09	.34 .21 .14 .08	.19 .12 .07	.17 .11 .07	.15 .10 .06	.04
10	.34 .21 .13 .08	.32 .20 .12 .07	.18 .11 .06	.16 .10 .06	.14 .09 .05	.03

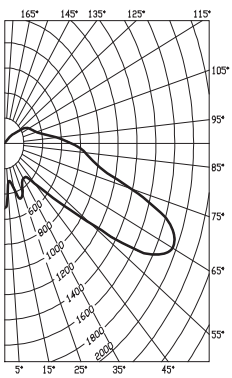
SPACING TO MOUNTING HEIGHT RATIO - 6.76 90-270°

HIGH PRESSURE SODIUM-VM1, VM3

With Type V All Glass Refractor
35-150 Watt
Mogul Base

CANDLEPOWER – 100 WATT

9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



ANGLE	CP	ANGLE	CP
0	519.	95.0	550.
5.0	354.	100.0	418.
10.0	307.	105.0	349.
15.0	358.	110.0	312.
20.0	467.	115.0	279.
25.0	446.	120.0	247.
30.0	370.	125.0	168.
35.0	340.	130.0	117.
40.0	343.	135.0	75.
45.0	450.	140.0	45.
50.0	676.	145.0	25.
55.0	1092.	150.0	7.
60.0	1760.	155.0	2.
65.0	1958.	160.0	1.
70.0	1857.	165.0	1.
75.0	1377.	170.0	0.
80.0	995.	175.0	0.
85.0	858.	180.0	0.
90.0	711.		

Efficiency 81.7%

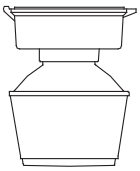
COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.93 .93 .93 .93	.89 .89 .89 .89	.81 .81 .81	.75 .75 .75	.68 .68 .68	.65
1	.78 .72 .66 .61	.74 .68 .63 .58	.62 .58 .54	.56 .52 .49	.50 .48 .45	.42
2	.68 .58 .50 .43	.64 .55 .48 .41	.49 .43 .38	.44 .39 .35	.39 .35 .32	.29
3	.60 .48 .39 .32	.56 .45 .37 .30	.40 .33 .28	.36 .30 .25	.32 .27 .23	.20
4	.53 .40 .30 .23	.49 .38 .29 .22	.33 .26 .20	.29 .23 .19	.26 .21 .16	.13
5	.47 .34 .25 .18	.44 .32 .23 .17	.28 .21 .15	.25 .19 .14	.22 .16 .12	.09
6	.43 .30 .21 .14	.40 .28 .20 .14	.25 .18 .12	.22 .16 .11	.19 .14 .10	.07
7	.40 .26 .18 .12	.37 .25 .17 .11	.22 .15 .10	.20 .13 .09	.17 .12 .08	.06
8	.36 .24 .16 .10	.34 .22 .15 .09	.20 .13 .08	.18 .12 .07	.15 .10 .06	.04
9	.34 .22 .14 .09	.32 .20 .13 .08	.18 .12 .07	.16 .11 .07	.14 .09 .06	.04
10	.32 .20 .12 .07	.30 .19 .12 .07	.17 .11 .06	.15 .09 .06	.13 .08 .05	.03

SPACING TO MOUNTING HEIGHT RATIO - 1.1

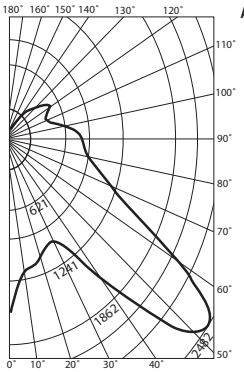
HIGH PRESSURE SODIUM-VM1, VM3

With Type II 12" Spin-Top Refractor
35-150 Watt
Mogul Base



CANDLEPOWER – 100 WATT

9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



	Front		Side	
ANGLE	CP	ANGLE	CP
0	1504.	85.0	707.
5.0	1329.	90.0	643.
15.0	1094.	95.0	572.
25.0	1057.	105.0	369.
35.0	1306.	115.0	349.
45.0	2230.	125.0	400.
55.0	2482.	135.0	342.
60.0	2089.	145.0	273.
65.0	1477.	155.0	182.
70.0	1148.	165.0	64.
75.0	925.	175.0	0.
80.0	798.	180.0	0.

Angle Vertical
CP 75° Horizontal

Efficiency 64.9%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.84 .84 .84 .84	.80 .80 .80 .80	.73 .73 .73	.66 .66 .66	.60 .60 .60	.57
1	.75 .70 .66 .62	.71 .67 .63 .60	.60 .57 .55	.54 .52 .50	.49 .47 .45	.42
2	.67 .59 .53 .48	.63 .56 .51 .46	.51 .46 .43	.46 .42 .39	.41 .38 .36	.33
3	.60 .51 .44 .39	.56 .48 .42 .37	.43 .38 .34	.39 .35 .31	.35 .31 .29	.26
4	.54 .44 .37 .31	.51 .42 .35 .30	.38 .32 .28	.34 .29 .25	.30 .26 .23	.21
5	.49 .39 .31 .26	.46 .37 .30 .25	.33 .27 .23	.30 .25 .21	.26 .22 .19	.17
6	.45 .34 .27 .22	.42 .32 .26 .21	.29 .23 .19	.26 .21 .18	.23 .19 .16	.14
7	.41 .30 .23 .18	.39 .29 .22 .18	.26 .20 .16	.23 .19 .15	.21 .17 .14	.12
8	.38 .27 .20 .16	.36 .26 .20 .15	.23 .18 .14	.21 .16 .13	.19 .15 .12	.10
9	.35 .25 .18 .14	.33 .23 .17 .13	.21 .16 .12	.19 .15 .11	.17 .13 .10	.09
10	.33 .22 .16 .12	.31 .21 .16 .12	.19 .14 .11	.18 .13 .10	.16 .12 .09	.08

SPACING TO MOUNTING HEIGHT RATIO - 1.36 0 -180°

Test No. HPK09954

Test No. HPK09953

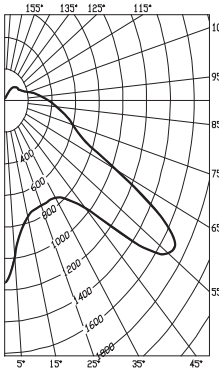
Test No. HPK09483

HIGH PRESSURE SODIUM-VM1, VM3

With Type V 8" Spin-Top Refractor
35-150 Watt
Mogul Base

CANDLEPOWER – 100 WATT

9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



ANGLE	CP	ANGLE	CP
0	1160.	95.0	312.
5.0	986.	100.0	258.
10.0	827.	105.0	204.
15.0	761.	110.0	169.
20.0	739.	115.0	149.
25.0	731.	120.0	136.
30.0	739.	125.0	135.
35.0	753.	130.0	133.
40.0	821.	135.0	123.
45.0	950.	140.0	109.
50.0	1366.	145.0	86.
55.0	1684.	150.0	59.
60.0	1595.	155.0	31.
65.0	1067.	160.0	5.
70.0	696.	165.0	1.
75.0	597.	170.0	0.
80.0	527.	175.0	0.
85.0	447.	180.0	0.
90.0	372.		

Efficiency 69.1%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

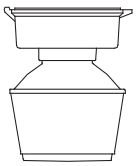
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50	30	10	0
% WALL REFLECTANCE 1w	70	50	70	50	30	30	30	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance							
0	.79	.79	.79	.79	.76	.76	.76	.76	.71	.71	.71	.65	.65	.65	.61	.61	.61	.58
1	.70	.66	.62	.59	.67	.63	.60	.57	.58	.56	.53	.54	.52	.50	.50	.48	.46	.44
2	.63	.56	.50	.46	.60	.54	.48	.44	.49	.45	.42	.45	.42	.39	.42	.39	.37	.34
3	.56	.48	.41	.36	.53	.46	.40	.35	.42	.37	.33	.39	.34	.31	.36	.32	.29	.27
4	.51	.41	.34	.29	.48	.39	.33	.28	.36	.31	.27	.33	.29	.25	.31	.27	.24	.22
5	.46	.35	.28	.23	.43	.34	.28	.23	.31	.26	.21	.29	.24	.20	.26	.22	.19	.17
6	.41	.31	.24	.19	.39	.29	.23	.18	.27	.21	.17	.25	.20	.16	.23	.19	.15	.14
7	.37	.27	.20	.15	.35	.26	.19	.15	.23	.18	.14	.22	.17	.13	.20	.15	.12	.10
8	.34	.24	.17	.13	.32	.23	.17	.12	.21	.16	.12	.19	.15	.11	.18	.14	.10	.09
9	.32	.21	.15	.11	.30	.21	.15	.11	.19	.14	.10	.17	.13	.09	.16	.12	.09	.07
10	.29	.19	.13	.09	.28	.19	.13	.09	.17	.12	.09	.16	.11	.08	.15	.11	.08	.06

SPACING TO MOUNTING HEIGHT RATIO - 0.8

Test No. HPK09472

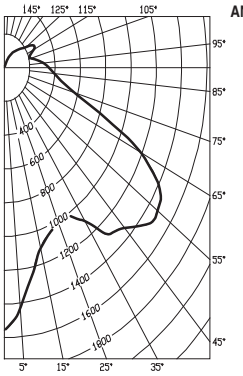
HIGH PRESSURE SODIUM-VM1, VM3

With Type V 12" Spin-Top Refractor
35-150 Watt
Mogul Base



CANDLEPOWER – 100 WATT

9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



ANGLE	CP	ANGLE	CP
0	1555.	95.0	316.
5.0	1437.	100.0	258.
10.0	1254.	105.0	214.
15.0	1106.	110.0	213.
20.0	1045.	115.0	254.
25.0	1005.	120.0	268.
30.0	1212.	125.0	226.
35.0	1108.	130.0	179.
40.0	1291.	135.0	155.
45.0	1346.	140.0	133.
50.0	1449.	145.0	109.
55.0	1474.	150.0	80.
60.0	1414.	155.0	53.
65.0	1189.	160.0	27.
70.0	827.	165.0	9.
75.0	576.	170.0	0.
80.0	464.	175.0	0.
85.0	398.	180.0	0.
90.0	357.		

Efficiency 78.4%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

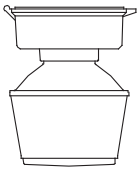
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50	30	10	0
% WALL REFLECTANCE 1w	70	50	70	50	30	30	30	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance							
0	.90	.90	.90	.90	.87	.87	.87	.87	.80	.80	.80	.74	.74	.74	.68	.68	.68	.65
1	.80	.76	.72	.68	.77	.73	.69	.66	.67	.64	.61	.62	.59	.57	.57	.55	.53	.50
2	.72	.65	.59	.54	.69	.62	.57	.52	.57	.53	.49	.53	.49	.46	.49	.46	.43	.41
3	.65	.56	.49	.44	.62	.54	.48	.42	.50	.44	.40	.46	.41	.38	.42	.30	.35	.33
4	.59	.49	.41	.35	.56	.47	.40	.34	.43	.37	.33	.40	.35	.31	.36	.32	.29	.27
5	.53	.42	.35	.29	.51	.41	.34	.28	.38	.31	.27	.35	.29	.25	.32	.27	.24	.22
6	.49	.37	.30	.25	.46	.36	.29	.24	.33	.27	.23	.31	.25	.21	.28	.24	.20	.18
7	.45	.33	.26	.21	.42	.32	.25	.20	.29	.23	.19	.27	.22	.18	.25	.20	.17	.15
8	.41	.29	.22	.17	.39	.28	.22	.17	.26	.20	.16	.24	.19	.15	.22	.18	.14	.13
9	.38	.27	.20	.15	.36	.26	.19	.15	.24	.18	.14	.22	.17	.13	.20	.16	.12	.11
10	.35	.23	.27	.12	.33	.23	.16	.12	.21	.15	.11	.19	.14	.11	.18	.13	.10	.09

SPACING TO MOUNTING HEIGHT RATIO - 0.9

Test No. HPK09479

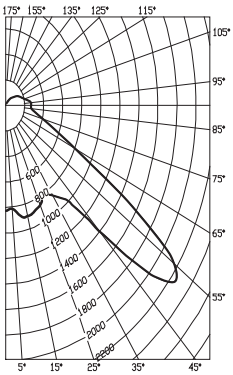
HIGH PRESSURE SODIUM-VM1, VM3

With Type V 12" Spin-Top Poly Refractor
35-150 Watt
Mogul Base



CANDLEPOWER – 100 WATT

9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



ANGLE	CP	ANGLE	CP
0	829.	95.0	267.
5.0	810.	100.0	239.
10.0	874.	105.0	202.
15.0	901.	110.0	181.
20.0	887.	115.0	165.
25.0	864.	120.0	145.
30.0	815.	125.0	123.
35.0	863.	130.0	102.
40.0	956.	135.0	84.
45.0	1370.	140.0	68.
50.0	2123.	145.0	51.
55.0	2162.	150.0	34.
60.0	1438.	155.0	19.
65.0	823.	160.0	6.
70.0	.556	165.0	1.
75.0	407.	170.0	0.
80.0	319.	175.0	0.
85.0	275.	180.0	0.
90.0	265.		

Efficiency 70.6%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

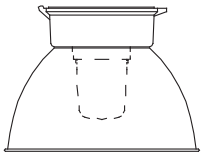
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50	30	10	0
% WALL REFLECTANCE 1w	70	50	70	50	30	30	30	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance							
0	.82	.82	.82	.82	.79	.79	.79	.79	.73	.73	.73	.68	.68	.68	.63	.63	.63	.61
1	.73	.70	.66	.63	.70	.67	.64	.61	.62	.60	.57	.58	.56	.54	.54	.52	.51	.49
2	.66	.60	.55	.50	.63	.58	.53	.49	.54	.50	.46	.50	.47	.44	.47	.44	.42	.40
3	.60	.52	.46	.41	.57	.50	.44	.40	.47	.42	.38	.43	.39	.36	.40	.37	.34	.32
4	.54	.45	.38	.33	.51	.43	.37	.32	.40	.35	.31	.37	.33	.29	.35	.31	.28	.26
5	.49	.39	.32	.27	.46	.37	.31	.26	.35	.29	.25	.32	.28	.24	.30	.26	.23	.21
6	.44	.34	.27	.22	.42	.32	.26	.21	.30	.25	.20	.28	.23	.19	.26	.22	.19	.17
7	.40	.29	.22	.18	.38	.28	.22	.17	.26	.20	.16	.24	.19	.16	.22	.18	.15	.13
8	.36	.25	.19	.14	.34	.25	.18	.14	.23	.17	.13	.21	.16	.13	.20	.15	.12	.10
9	.33	.23	.17	.12	.32	.22	.16	.12	.21	.15	.11	.19	.14	.11	.18	.13	.10	.09
10	.30	.20	.14	.10	.29	.19	.14	.10	.18	.13	.09	.17	.12	.09	.15	.11	.08	.07

SPACING TO MOUNTING HEIGHT RATIO - 2.8

Test No. HPK09478

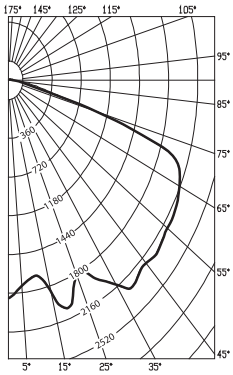
HIGH PRESSURE SODIUM-VM1, VM3

With Globe & Full Cutoff Deep White Reflector*
35-150 Watt
Mogul Base



CANDLEPOWER – 100 WATT

9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



ANGLE	CP	ANGLE	CP
0	1918.	95.0	0.
5.0	1906.	100.0	0.
10.0	1911.	105.0	0.
15.0	1903.	110.0	0.
20.0	1976.	115.0	0.
25.0	1778.	120.0	0.
30.0	1742.	125.0	0.
35.0	1849.	130.0	0.
40.0	1986.	135.0	0.
45.0	1807.	140.0	0.
50.0	1701.	145.0	0.
55.0	1023.	150.0	0.
60.0	757.	155.0	0.
65.0	588.	160.0	0.
70.0	438.	165.0	0.
75.0	303.	170.0	0.
80.0	181.	175.0	0.
85.0	77.	180.0	0.
90.0	0.		

Efficiency 65.2%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance											
0	.75	.75	.75	.75	.74	.74	.74	.74	.70	.70	.70	.67	.67	.67	.65	.65	.65	.63
1	.70	.67	.64	.62	.68	.65	.63	.61	.63	.61	.59	.60	.59	.57	.58	.57	.56	.54
2	.64	.60	.56	.53	.63	.58	.55	.52	.56	.53	.51	.54	.52	.50	.52	.50	.49	.47
3	.59	.53	.49	.45	.58	.52	.48	.45	.51	.47	.44	.49	.46	.43	.47	.45	.43	.41
4	.54	.48	.42	.39	.53	.47	.42	.38	.45	.41	.38	.44	.40	.37	.42	.39	.37	.36
5	.50	.43	.37	.33	.49	.42	.37	.33	.41	.36	.33	.39	.36	.33	.38	.35	.32	.31
6	.46	.38	.33	.29	.45	.38	.33	.29	.37	.32	.29	.36	.32	.29	.35	.31	.28	.27
7	.43	.34	.29	.25	.42	.34	.29	.25	.33	.28	.25	.32	.28	.25	.31	.28	.25	.24
8	.39	.31	.26	.22	.38	.31	.26	.22	.30	.25	.22	.29	.25	.22	.28	.24	.22	.20
9	.36	.28	.23	.19	.35	.28	.23	.19	.27	.22	.19	.26	.22	.19	.26	.22	.19	.18
10	.33	.24	.19	.16	.32	.24	.19	.16	.23	.19	.16	.23	.18	.16	.22	.18	.15	.14

SPACING TO MOUNTING HEIGHT RATIO - 1.5

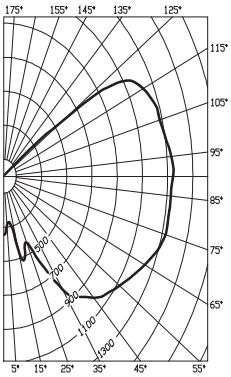
Values using Spacer Kit

METAL HALIDE, METAL HALIDE PULSE-VM1, VM3

With Globe
50-250 Watt
Mogul Base

CANDLEPOWER – 175 WATT

14000 lumens
For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH watt multiply by 0.64
For 250 MH watt multiply by 1.46
For 150 MHP watt multiply by 1.00
For 175 MHP watt multiply by 1.25
For 200 MHP watt multiply by 1.50



ANGLE	CP	ANGLE	CP
0	348.	95.0	1337.
5.0	297.	100.0	1306.
10.0	277.	105.0	1286.
15.0	411.	110.0	1269.
20.0	501.	115.0	1226.
25.0	430.	120.0	1128.
30.0	598.	125.0	616.
35.0	807.	130.0	56.
40.0	923.	135.0	20.
45.0	1007.	140.0	13.
50.0	1070.	145.0	10.
55.0	1120.	150.0	7.
60.0	1173.	155.0	3.
65.0	1235.	160.0	2.
70.0	1290.	165.0	2.
75.0	1327.	170.0	0.
80.0	1326.	175.0	0.
85.0	1328.	180.0	0.
90.0	1347.		

Efficiency 81.0%

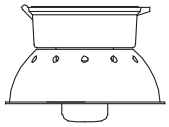
COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance											
0	.88	.88	.88	.88	.83	.83	.83	.83	.72	.72	.72	.62	.62	.62	.52	.52	.52	.48
1	.76	.70	.64	.60	.70	.65	.60	.56	.55	.51	.48	.46	.43	.41	.38	.36	.34	.30
2	.67	.58	.51	.45	.61	.54	.47	.42	.45	.40	.36	.38	.34	.30	.30	.27	.25	.21
3	.60	.49	.41	.35	.55	.46	.38	.33	.38	.33	.28	.32	.27	.23	.25	.22	.19	.15
4	.54	.42	.34	.28	.49	.39	.32	.26	.33	.27	.22	.27	.22	.18	.22	.18	.15	.11
5	.49	.37	.29	.23	.44	.34	.27	.21	.29	.22	.18	.23	.18	.15	.19	.15	.11	.09
6	.44	.33	.25	.19	.41	.30	.23	.17	.25	.19	.15	.21	.16	.12	.16	.12	.09	.07
7	.41	.29	.21	.16	.37	.27	.20	.15	.22	.16	.12	.18	.13	.10	.14	.11	.08	.05
8	.37	.26	.18	.13	.34	.24	.17	.12	.20	.14	.10	.16	.12	.08	.13	.09	.06	.04
9	.35	.23	.16	.11	.32	.21	.15	.10	.18	.12	.09	.15	.10	.07	.12	.08	.05	.03
10	.32	.21	.14	.09	.29	.19	.13	.09	.16	.11	.05	.13	.09	.05	.10	.07	.04	.02

SPACING TO MOUNTING HEIGHT RATIO - 3.0

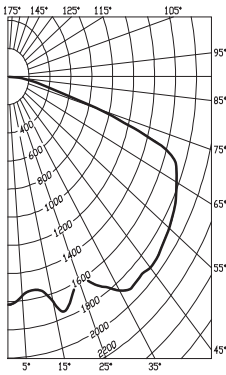
METAL HALIDE, METAL HALIDE PULSE-VM1, VM3

With Globe and Dome Reflector
50-250 Watt
Mogul Base



CANDLEPOWER – 175 WATT

14000 lumens
For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH watt multiply by 0.64
For 250 MH watt multiply by 1.46
For 150 MHP watt multiply by 1.00
For 175 MHP watt multiply by 1.25
For 200 MHP watt multiply by 1.50



ANGLE	CP	ANGLE	CP
0	1624.	95.0	37.
5.0	1566.	100.0	35.
10.0	1536.	105.0	47.
15.0	1652.	110.0	148.
20.0	1719.	115.0	212.
25.0	1606.	120.0	63.
30.0	1717.	125.0	15.
35.0	1856.	130.0	13.
40.0	1906.	135.0	12.
45.0	1920.	140.0	11.
50.0	1902.	145.0	11.
55.0	1879.	150.0	9.
60.0	1837.	155.0	8.
65.0	1783.	160.0	7.
70.0	1677.	165.0	7.
75.0	885.	170.0	6.
80.0	324.	175.0	6.
85.0	137.	180.0	7.
90.0	35.		

Efficiency 63.7%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance											
0	.75	.75	.75	.75	.73	.73	.73	.73	.69	.69	.69	.66	.66	.66	.63	.63	.63	.61
1	.68	.64	.61	.59	.66	.63	.60	.57	.59	.57	.55	.57	.55	.53	.54	.52	.51	.49
2	.61	.55	.51	.47	.59	.54	.50	.46	.51	.48	.44	.49	.46	.43	.46	.44	.42	.40
3	.55	.48	.42	.38	.53	.47	.41	.37	.44	.40	.36	.42	.38	.35	.40	.37	.34	.33
4	.50	.41	.35	.30	.48	.40	.34	.30	.38	.33	.29	.36	.32	.29	.35	.31	.28	.26
5	.45	.36	.30	.25	.43	.35	.29	.25	.33	.28	.24	.32	.27	.24	.30	.26	.23	.22
6	.41	.32	.26	.21	.40	.31	.25	.21	.30	.24	.21	.28	.24	.20	.27	.23	.20	.18
7	.37	.28	.22	.18	.36	.27	.22	.18	.26	.21	.17	.25	.20	.17	.24	.20	.17	.15
8	.34	.25	.19	.15	.33	.24	.19	.15	.23	.18	.15	.22	.18	.14	.21	.17	.14	.13
9	.32	.22	.17	.13	.31	.22	.17	.13	.21	.16	.13	.20	.16	.12	.19	.15	.12	.11
10	.29	.20	.14	.10	.28	.19	.14	.10	.18	.14	.10	.18	.13	.10	.17	.13	.10	.09

SPACING TO MOUNTING HEIGHT RATIO - 1.8

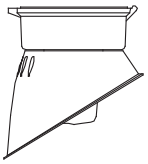
Test No. HPK10116

Test No. HPK09935

Test No. HPK09936

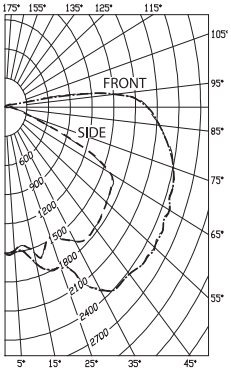
METAL HALIDE, METAL HALIDE PULSE-VM1, VM3

With Globe and
Angle Reflector
50-250 Watt
Mogul Base



CANDLEPOWER – 175 WATT

14000 lumens
For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH watt multiply by 0.64
For 250 MH watt multiply by 1.46
For 150 MHP watt multiply by 1.00
For 175 MHP watt multiply by 1.25
For 200 MHP watt multiply by 1.50



Front ANGLE	CP	Side ANGLE	CP
0.0	1506.	0.0	1506.
5.0	1478.	5.0	1486.
15.0	1676.	15.0	1548.
25.0	1770.	25.0	1467.
35.0	2281.	35.0	1684.
45.0	2429.	45.0	1750.
55.0	2520.	55.0	1698.
65.0	2507.	65.0	1579.
75.0	2396.	75.0	409.
85.0	2149.	85.0	87.
90.0	1964.	90.0	24.
95.0	1523.	95.0	20.
105.0	240.	105.0	14.
115.0	64.	115.0	14.
125.0	18.	125.0	13.
135.0	6.	135.0	10.
145.0	6.	145.0	9.
155.0	6.	155.0	7.
165.0	5.	165.0	5.
175.0	4.	175.0	4.
180.0	4.	165.0	4.

Efficiency 62.4%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.73 .73 .73 .73	.71 .71 .71 .71	.67 .67 .67	.63 .63 .63	.60 .60 .60	.58
1	.65 .61 .57 .54	.63 .59 .56 .53	.55 .53 .50	.52 .50 .48	.49 .47 .46	.44
2	.58 .52 .47 .43	.56 .50 .46 .42	.47 .44 .40	.45 .41 .39	.42 .39 .37	.35
3	.53 .45 .39 .35	.51 .44 .39 .34	.41 .37 .33	.39 .35 .32	.37 .33 .31	.29
4	.48 .39 .33 .29	.46 .38 .32 .28	.36 .31 .27	.34 .30 .26	.32 .28 .25	.24
5	.44 .35 .28 .24	.42 .34 .28 .23	.32 .27 .23	.30 .26 .22	.28 .24 .21	.20
6	.40 .31 .25 .20	.38 .30 .24 .20	.28 .23 .19	.27 .22 .19	.25 .21 .18	.17
7	.37 .27 .21 .17	.35 .27 .21 .17	.25 .20 .17	.24 .19 .16	.23 .19 .16	.14
8	.34 .24 .19 .15	.32 .24 .18 .14	.22 .18 .14	.21 .17 .14	.20 .16 .13	.12
9	.31 .22 .16 .13	.30 .21 .16 .12	.20 .15 .12	.19 .15 .12	.18 .14 .12	.10
10	.28 .19 .14 .10	.27 .19 .14 .10	.18 .13 .10	.17 .13 .10	.16 .12 .09	.08

SPACING TO MOUNTING HEIGHT RATIO - 1.7

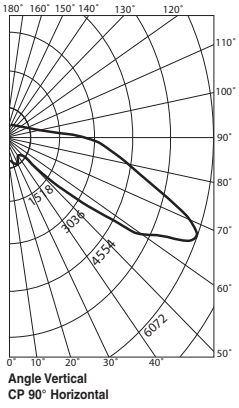
Test No. HPK09937

METAL HALIDE, METAL HALIDE PULSE-VM1, VM3

With Type I All
Glass Refractor
50-250 Watt
Mogul Base

CANDLEPOWER – 175 WATT

14000 lumens
For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH watt multiply by 0.64
For 250 MH watt multiply by 1.46
For 150 MHP watt multiply by 1.00
For 175 MHP watt multiply by 1.25
For 200 MHP watt multiply by 1.50



Angle Vertical
CP 90° Horizontal

ANGLE	CP	ANGLE	CP
0	433.	85.0	3813.
5.0	447.	90.0	3154.
15.0	703.	95.0	2185.
25.0	642.	105.0	1047.
35.0	598.	115.0	794.
45.0	1049.	125.0	389.
55.0	3738.	135.0	137.
60.0	5513.	145.0	40.
65.0	5774.	155.0	4.
70.0	6031.	165.0	2.
75.0	4991.	175.0	0.
80.0	4211.	180.0	0.

Efficiency 86.8%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

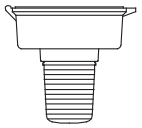
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.99 .99 .99 .99	.95 .95 .95 .95	.87 .87 .87	.80 .80 .80	.73 .73 .73	.70
1	.83 .76 .69 .63	.79 .72 .66 .61	.65 .60 .56	.58 .54 .51	.52 .49 .46	.43
2	.72 .61 .52 .44	.67 .58 .49 .42	.51 .44 .39	.46 .40 .35	.40 .36 .32	.28
3	.63 .50 .40 .32	.59 .47 .38 .31	.42 .34 .28	.37 .31 .25	.32 .27 .22	.19
4	.56 .42 .32 .24	.52 .40 .30 .23	.35 .27 .21	.31 .24 .19	.27 .21 .17	.14
5	.51 .36 .26 .19	.47 .34 .25 .18	.30 .22 .16	.27 .20 .14	.23 .17 .13	.10
6	.46 .32 .22 .15	.43 .30 .21 .15	.26 .19 .13	.23 .17 .11	.20 .14 .10	.07
7	.42 .28 .19 .13	.39 .27 .18 .12	.24 .16 .11	.21 .14 .09	.18 .12 .08	.06
8	.39 .25 .17 .11	.37 .24 .16 .10	.21 .14 .09	.19 .12 .08	.16 .11 .07	.05
9	.36 .23 .15 .09	.34 .22 .14 .09	.19 .12 .08	.17 .11 .07	.15 .10 .06	.04
10	.34 .21 .13 .08	.32 .20 .12 .07	.18 .11 .07	.16 .10 .06	.14 .09 .05	.03

SPACING TO MOUNTING HEIGHT RATIO - 5.7 90-270°

Test No. HPK09980

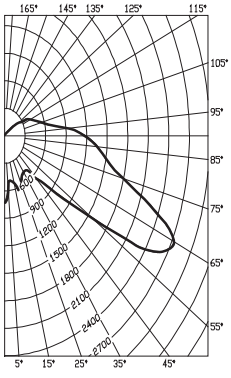
METAL HALIDE, METAL HALIDE PULSE-VM1, VM3

with Type V All
Glass Refractor
50-250 Watt
Mogul Base



CANDLEPOWER – 175 WATT

14000 lumens
For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH watt multiply by 0.64
For 250 MH watt multiply by 1.46
For 150 MHP watt multiply by 1.00
For 175 MHP watt multiply by 1.25
For 200 MHP watt multiply by 1.50



ANGLE	CP	ANGLE	CP
0	731.	95.0	927.
5.0	562.	100.0	673.
10.0	489.	105.0	542.
15.0	542.	110.0	475.
20.0	640.	115.0	420.
25.0	592.	120.0	370.
30.0	519.	125.0	256.
35.0	498.	130.0	171.
40.0	491.	135.0	106.
45.0	641.	140.0	65.
50.0	921.	145.0	35.
55.0	1545.	150.0	9.
60.0	2543.	155.0	3.
65.0	2730.	160.0	1.
70.0	2320.	165.0	1.
75.0	1789.	170.0	0.
80.0	1509.	175.0	0.
85.0	1367.	180.0	0.
90.0	1186.		

Efficiency 79.7%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

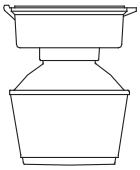
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.90 .90 .90 .90	.86 .86 .86 .86	.79 .79 .79	.72 .72 .72	.66 .66 .66	.63
1	.76 .70 .64 .59	.72 .66 .61 .57	.60 .56 .52	.54 .50 .47	.48 .45 .43	.40
2	.66 .57 .49 .42	.62 .54 .46 .40	.48 .42 .37	.43 .38 .33	.38 .34 .30	.27
3	.58 .47 .38 .31	.55 .44 .36 .30	.39 .33 .27	.35 .29 .24	.30 .26 .22	.19
4	.52 .39 .30 .23	.48 .37 .29 .22	.33 .25 .20	.29 .23 .18	.25 .20 .16	.13
5	.46 .33 .24 .18	.43 .31 .23 .17	.28 .20 .15	.24 .18 .13	.21 .16 .12	.09
6	.42 .29 .21 .14	.39 .28 .20 .14	.24 .17 .12	.21 .15 .11	.18 .13 .09	.07
7	.39 .26 .18 .12	.36 .25 .17 .11	.22 .15 .10	.19 .13 .09	.16 .11 .08	.05
8	.36 .23 .15 .10	.33 .22 .15 .09	.19 .13 .08	.17 .11 .07	.15 .10 .06	.04
9	.33 .21 .14 .09	.31 .20 .13 .08	.18 .12 .07	.16 .10 .06	.14 .09 .06	.04
10	.31 .19 .12 .08	.29 .18 .12 .07	.16 .10 .06	.14 .09 .05	.13 .08 .05	.03

SPACING TO MOUNTING HEIGHT RATIO - 1.1

Test No. HPK09946

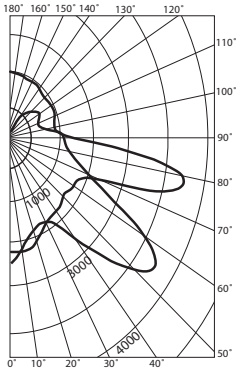
METAL HALIDE, METAL HALIDE PULSE-VM1, VM3

With Type II 12" Spin-Top Refractor
50-250 Watt
Mogul Base



CANDLEPOWER – 175 WATT

14000 lumens
For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH watt multiply by 0.64
For 250 MH watt multiply by 1.46
For 150 MHP watt multiply by 1.00
For 175 MHP watt multiply by 1.25
For 200 MHP watt multiply by 1.50



Angle Vertical
CP 75° Horizontal

ANGLE	CP	ANGLE	CP
0.0	2111.	85.0	1076.
5.0	1908.	90.0	989.
15.0	1598.	95.0	888.
25.0	1521.	105.0	569.
35.0	1810.	115.0	522.
45.0	3016.	125.0	588.
55.0	3608.	135.0	498.
60.0	3065.	145.0	380.
65.0	2257.	155.0	239.
70.0	1712.	165.0	84.
75.0	1367.	175.0	0.
80.0	1182.	180.0	0.

Efficiency 75.1%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.85 .85 .85 .85	.81 .81 .81 .81	.74 .74 .74	.67 .67 .67	.60 .60 .60	.57
1	.75 .71 .67 .63	.71 .67 .63 .60	.61 .58 .55	.55 .52 .50	.49 .47 .46	.43
2	.67 .60 .54 .49	.63 .57 .51 .47	.51 .47 .43	.46 .42 .39	.41 .38 .36	.33
3	.60 .51 .44 .39	.57 .49 .42 .37	.44 .39 .34	.39 .35 .31	.35 .32 .29	.26
4	.54 .44 .37 .31	.51 .42 .35 .30	.38 .32 .28	.34 .29 .26	.30 .27 .23	.21
5	.49 .39 .31 .26	.46 .37 .30 .25	.33 .27 .23	.30 .25 .21	.27 .23 .19	.17
6	.45 .34 .27 .22	.42 .33 .26 .21	.29 .24 .19	.26 .22 .18	.24 .19 .16	.14
7	.41 .31 .23 .19	.39 .29 .23 .18	.26 .21 .16	.24 .19 .15	.21 .17 .14	.12
8	.38 .27 .21 .16	.36 .26 .20 .15	.24 .18 .14	.21 .17 .13	.19 .15 .12	.10
9	.35 .25 .18 .14	.33 .24 .18 .13	.21 .16 .12	.19 .15 .11	.17 .13 .10	.09
10	.33 .23 .16 .12	.31 .22 .16 .12	.20 .14 .11	.18 .13 .10	.16 .12 .09	.08

SPACING TO MOUNTING HEIGHT RATIO - 1.48 0-180°

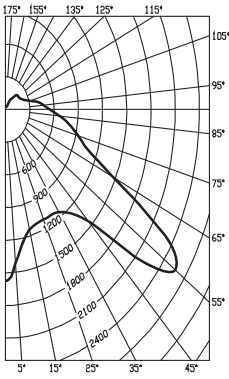
Test No. HPK09482

METAL HALIDE, METAL HALIDE PULSE-VM1, VM3

With Type V 8" Spin-Top Refractor
50-250 Watt
Mogul Base

CANDLEPOWER – 175 WATT

14000 lumens
For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH watt multiply by 0.64
For 250 MH watt multiply by 1.46
For 150 MHP watt multiply by 1.00
For 175 MHP watt multiply by 1.25
For 200 MHP watt multiply by 1.50



ANGLE	CP	ANGLE	CP
0.0	1574.	95.0	475.
5.0	1427.	100.0	396.
10.0	1229.	105.0	313.
15.0	1147.	110.0	257.
20.0	1116.	115.0	226.
25.0	1109.	120.0	203.
30.0	1125.	125.0	200.
35.0	1151.	130.0	194.
40.0	1243.	135.0	179.
45.0	1455.	140.0	159.
50.0	2116.	145.0	127.
55.0	2565.	150.0	88.
60.0	2223.	155.0	46.
65.0	1469.	160.0	7.
70.0	1089.	165.0	2.
75.0	930.	170.0	0.
80.0	809.	175.0	0.
85.0	672.	180.0	0.
90.0	560.		

Efficiency 70.2%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

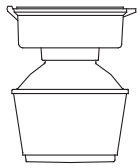
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.81 .81 .81 .81	.78 .78 .78 .78	.72 .72 .72	.66 .66 .66	.62 .62 .62	.59
1	.71 .67 .63 .59	.68 .64 .61 .57	.59 .56 .54	.54 .52 .50	.50 .48 .47	.44
2	.64 .57 .51 .46	.61 .54 .49 .45	.50 .46 .42	.46 .43 .40	.42 .40 .37	.35
3	.57 .49 .42 .37	.54 .47 .41 .36	.43 .38 .34	.40 .35 .32	.36 .33 .30	.28
4	.51 .42 .35 .29	.49 .40 .34 .29	.37 .31 .27	.34 .29 .25	.31 .27 .24	.22
5	.46 .36 .29 .24	.44 .35 .28 .23	.32 .26 .22	.29 .24 .21	.27 .23 .19	.17
6	.42 .32 .25 .20	.40 .30 .24 .19	.28 .22 .18	.26 .21 .17	.24 .19 .16	.14
7	.38 .28 .21 .16	.36 .27 .20 .16	.24 .19 .15	.22 .17 .14	.21 .16 .13	.11
8	.35 .24 .18 .13	.33 .23 .17 .13	.22 .16 .12	.20 .15 .11	.18 .14 .11	.09
9	.32 .22 .16 .11	.31 .21 .15 .11	.20 .14 .11	.18 .13 .10	.17 .12 .09	.08
10	.30 .20 .14 .09	.28 .19 .13 .09	.17 .12 .09	.16 .11 .08	.15 .11 .08	.06

SPACING TO MOUNTING HEIGHT RATIO - 1.0

Test No. HPK09473

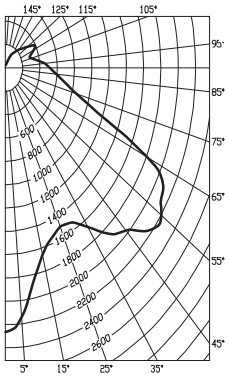
METAL HALIDE, METAL HALIDE PULSE-VM1, VM3

With Type V 12" Spin-Top Refractor
50-250 Watt
Mogul Base



CANDLEPOWER – 175 WATT

14000 lumens
For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH watt multiply by 0.64
For 250 MH watt multiply by 1.46
For 150 MHP watt multiply by 1.00
For 175 MHP watt multiply by 1.25
For 200 MHP watt multiply by 1.50



ANGLE	CP	ANGLE	CP
0.0	2261.	95.0	451.
5.0	2146.	100.0	380.
10.0	1868.	105.0	314.
15.0	1657.	110.0	305.
20.0	1555.	115.0	368.
25.0	1502.	120.0	391.
30.0	1534.	125.0	321.
35.0	1664.	130.0	260.
40.0	1857.	135.0	222.
45.0	1970.	140.0	191.
50.0	2168.	145.0	155.
55.0	2205.	150.0	115.
60.0	2104.	155.0	80.
65.0	1809.	160.0	41.
70.0	1176.	165.0	12.
75.0	845.	170.0	0.
80.0	696.	175.0	0.
85.0	604.	180.0	0.
90.0	517.		

Efficiency 78.8%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.91 .91 .91 .91	.87 .87 .87 .87	.81 .81 .81	.74 .74 .74	.69 .69 .69	.66
1	.81 .76 .72 .69	.77 .73 .70 .66	.68 .65 .62	.62 .60 .58	.57 .55 .54	.51
2	.73 .66 .59 .54	.70 .63 .57 .53	.58 .53 .50	.53 .50 .47	.49 .46 .44	.41
3	.66 .57 .50 .44	.63 .54 .48 .43	.50 .45 .40	.46 .42 .38	.43 .39 .36	.34
4	.59 .49 .41 .36	.56 .47 .40 .35	.43 .38 .33	.40 .35 .31	.37 .33 .29	.27
5	.54 .43 .35 .29	.51 .41 .34 .29	.38 .32 .27	.35 .30 .26	.32 .28 .24	.22
6	.49 .38 .30 .25	.47 .36 .29 .24	.34 .27 .23	.31 .26 .22	.29 .24 .20	.18
7	.45 .33 .26 .21	.43 .32 .25 .20	.30 .24 .19	.27 .22 .18	.25 .21 .17	.15
8	.41 .30 .22 .18	.39 .29 .22 .17	.26 .20 .16	.24 .19 .15	.23 .18 .15	.13
9	.38 .27 .20 .15	.36 .26 .19 .15	.24 .18 .14	.22 .17 .13	.20 .16 .13	.11
10	.35 .24 .17 .13	.33 .23 .16 .12	.21 .15 .12	.20 .14 .11	.18 .14 .10	.09

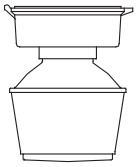
SPACING TO MOUNTING HEIGHT RATIO - .9

Test No. HPK09475

L

METAL HALIDE, METAL HALIDE PULSE-VM1, VM3

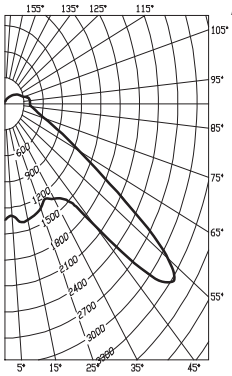
With Type V 12" Spin-Top Poly Refractor
50-250 Watt
Mogul Base



CANDLEPOWER – 175 WATT

14000 lumens

For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH watt multiply by 0.64
For 150 MHP watt multiply by 1.00
For 175 MHP watt multiply by 1.25



ANGLE	CP	ANGLE	CP
0.0	1346.	95.0	398.
5.0	1290.	100.0	361.
10.0	1380.	105.0	306.
15.0	1389.	110.0	268.
20.0	1365.	115.0	247.
25.0	1319.	120.0	217.
30.0	1264.	125.0	182.
35.0	1342.	130.0	151.
40.0	1436.	135.0	124.
45.0	1961.	140.0	101.
50.0	3177.	145.0	77.
55.0	3107.	150.0	51.
60.0	2035.	155.0	29.
65.0	1273.	160.0	9.
70.0	892.	165.0	2.
75.0	643.	170.0	0.
80.0	501.	175.0	0.
85.0	430.	180.0	0.
90.0	394.		

Efficiency 71.9%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

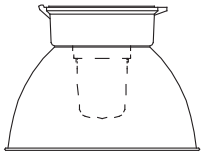
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.83 .83 .83 .83	.80 .80 .80 .80	.74 .74 .74	.69 .69 .69	.64 .64 .64	.62
1	.74 .70 .67 .64	.71 .68 .65 .62	.63 .60 .58	.58 .56 .54	.54 .53 .51	.49
2	.67 .61 .55 .51	.64 .58 .54 .49	.54 .50 .47	.50 .47 .44	.47 .44 .42	.40
3	.61 .52 .46 .41	.58 .51 .45 .40	.47 .42 .38	.44 .40 .36	.41 .37 .35	.33
4	.54 .45 .38 .33	.52 .44 .37 .32	.41 .35 .31	.38 .33 .30	.35 .31 .28	.26
5	.49 .39 .32 .27	.47 .38 .31 .26	.35 .30 .25	.33 .28 .24	.30 .26 .23	.21
6	.45 .34 .27 .22	.42 .33 .26 .22	.31 .25 .21	.28 .24 .20	.26 .22 .19	.17
7	.40 .30 .23 .18	.38 .29 .22 .18	.27 .21 .17	.25 .20 .16	.23 .19 .15	.13
8	.37 .26 .19 .15	.35 .25 .19 .14	.23 .18 .14	.22 .17 .13	.20 .16 .12	.11
9	.34 .23 .17 .13	.32 .23 .16 .12	.21 .16 .12	.19 .15 .11	.18 .14 .11	.09
10	.31 .21 .14 .10	.29 .20 .14 .10	.18 .13 .09	.17 .12 .09	.16 .12 .09	.07

SPACING TO MOUNTING HEIGHT RATIO - 2.6

Test No. HPK09477

METAL HALIDE, METAL HALIDE PULSE-VM1, VM3

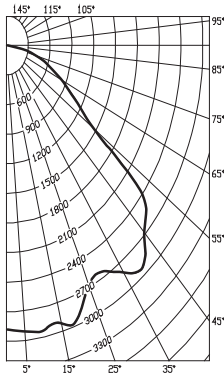
with Globe and Full Cutoff Deep White Reflector*
50-250 Watt
Mogul Base



CANDLEPOWER – 175 WATT

14000 lumens

For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH watt multiply by 0.64
For 250 MH watt multiply by 1.46
For 150 MHP watt multiply by 1.00
For 175 MHP watt multiply by 1.25
For 200 MHP watt multiply by 1.50



ANGLE	CP	ANGLE	CP
0.0	2879.	95.0	0.
5.0	2911.	100.0	0.
10.0	2938.	105.0	0.
15.0	2913.	110.0	0.
20.0	2914.	115.0	0.
25.0	2678.	120.0	0.
30.0	2648.	125.0	0.
35.0	2810.	130.0	0.
40.0	2926.	135.0	0.
45.0	2682.	140.0	0.
50.0	2492.	145.0	0.
55.0	1443.	150.0	0.
60.0	1107.	155.0	0.
65.0	849.	160.0	0.
70.0	637.	165.0	0.
75.0	442.	170.0	0.
80.0	265.	175.0	0.
85.0	110.	180.0	0.
90.0	0.		

Efficiency 65.5%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.76 .76 .76 .76	.74 .74 .74 .74	.71 .71 .71	.68 .68 .68	.65 .65 .65	.64
1	.70 .67 .65 .63	.68 .66 .64 .62	.63 .61 .60	.61 .59 .58	.58 .57 .56	.55
2	.65 .60 .56 .53	.63 .59 .55 .52	.57 .54 .51	.55 .52 .50	.53 .51 .49	.48
3	.60 .54 .49 .46	.58 .53 .49 .45	.51 .48 .45	.49 .46 .44	.48 .45 .43	.42
4	.55 .48 .43 .39	.54 .47 .43 .39	.46 .42 .38	.44 .41 .38	.43 .40 .37	.36
5	.51 .43 .38 .34	.49 .43 .38 .34	.41 .37 .34	.40 .36 .33	.39 .36 .33	.32
6	.47 .39 .34 .30	.46 .38 .33 .30	.37 .33 .29	.36 .32 .29	.35 .32 .29	.28
7	.43 .35 .30 .26	.42 .35 .30 .26	.34 .29 .26	.33 .29 .26	.32 .28 .25	.24
8	.40 .32 .26 .23	.39 .31 .26 .23	.30 .26 .22	.29 .25 .22	.29 .25 .22	.21
9	.37 .28 .23 .20	.36 .28 .23 .20	.27 .23 .20	.27 .23 .20	.26 .22 .19	.18
10	.33 .25 .20 .16	.32 .24 .19 .16	.24 .19 .16	.23 .19 .16	.23 .19 .16	.15

SPACING TO MOUNTING HEIGHT RATIO - 1.5

Values using Dark Sky gasket kit

Test No. HPK10118

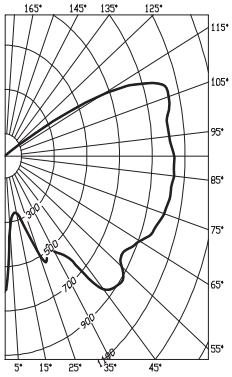
HIGH PRESSURE SODIUM-VM2, VM4

With Globe
35-150 Watt
Mogul Base

CANDLEPOWER – 100 WATT

9500 lumens

For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



ANGLE	CP	ANGLE	CP
0.0	614.	95.0	1007.
5.0	331.	100.0	1004.
10.0	265.	105.0	1035.
15.0	267.	110.0	963.
20.0	325.	115.0	649.
25.0	486.	120.0	177.
30.0	501.	125.0	37.
35.0	523.	130.0	22.
40.0	599.	135.0	15.
45.0	852.	140.0	10.
50.0	903.	145.0	8.
55.0	872.	150.0	6.
60.0	849.	155.0	4.
65.0	907.	160.0	2
70.0	970.	165.0	1.
75.0	1006.	170.0	0.
80.0	1026.	175.0	0.
85.0	1036.	180.0	0.
90.0	1035.		

Efficiency 84.6%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.94 .94 .94 .94	.88 .88 .88 .88	.78 .78 .78	.68 .68 .68	.59 .59 .59	.55
1	.80 .74 .68 .63	.74 .69 .64 .59	.59 .55 .52	.51 .47 .45	.43 .40 .38	.34
2	.71 .61 .54 .47	.65 .57 .50 .44	.49 .43 .38	.41 .37 .33	.34 .31 .28	.24
3	.63 .52 .44 .37	.58 .48 .41 .35	.41 .35 .30	.35 .30 .26	.29 .25 .21	.18
4	.57 .45 .36 .29	.52 .42 .34 .27	.36 .29 .24	.30 .25 .20	.25 .20 .17	.14
5	.52 .39 .30 .24	.47 .36 .28 .22	.31 .24 .19	.26 .21 .16	.21 .17 .13	.11
6	.47 .34 .26 .20	.43 .32 .24 .19	.27 .21 .16	.23 .18 .13	.19 .14 .11	.08
7	.43 .30 .22 .17	.40 .28 .21 .15	.24 .18 .13	.20 .15 .11	.17 .12 .09	.07
8	.40 .27 .19 .14	.36 .25 .18 .13	.22 .15 .11	.18 .13 .09	.15 .11 .07	.05
9	.37 .24 .17 .12	.34 .23 .16 .11	.19 .14 .09	.16 .11 .08	.13 .09 .06	.04
10	.34 .22 .15 .10	.31 .20 .14 .09	.17 .12 .08	.14 .10 .06	.12 .08 .05	.03

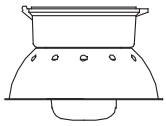
SPACING TO MOUNTING HEIGHT RATIO - 1.9

Test No. HPK09955

HUBBELL®
KILLARK®

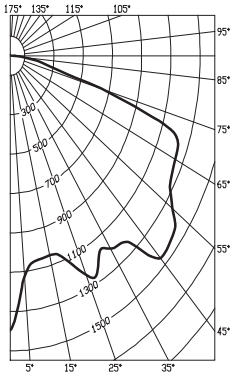
HIGH PRESSURE SODIUM-VM2, VM4

With Globe and
Dome Reflector
35-150 Watt
Mogul Base



CANDLEPOWER – 100 WATT

9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



ANGLE	CP	ANGLE	CP
0.0	1399.	95.0	33.
5.0	1123.	100.0	32.
10.0	1052.	105.0	52.
15.0	1049.	110.0	138.
20.0	1100.	115.0	119.
25.0	1227.	120.0	2.
30.0	1205.	125.0	21.
35.0	1197.	130.0	10.
40.0	1235.	135.0	9.
45.0	1452.	140.0	8.
50.0	1441.	145.0	8.
55.0	1358.	150.0	8.
60.0	1268.	155.0	7.
65.0	1248.	160.0	6.
70.0	1217.	165.0	5.
75.0	643.	170.0	5.
80.0	232.	175.0	5.
85.0	110.	180.0	5.
90.0	32.		

Efficiency 66.5%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

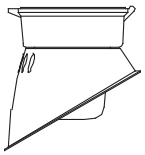
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.79 .79 .79 .79	.77 .77 .77 .77	.73 .73 .73	.69 .69 .69	.66 .66 .66	.64
1	.71 .68 .64 .61	.69 .66 .63 .60	.62 .60 .58	.59 .57 .56	.57 .55 .54	.52
2	.64 .58 .53 .49	.62 .57 .52 .48	.54 .50 .47	.51 .48 .45	.49 .46 .44	.42
3	.58 .50 .44 .39	.56 .49 .43 .39	.46 .42 .38	.44 .40 .37	.42 .39 .36	.34
4	.52 .43 .37 .32	.50 .42 .36 .31	.40 .35 .31	.38 .34 .30	.36 .33 .29	.28
5	.47 .38 .31 .26	.45 .37 .31 .26	.35 .30 .25	.33 .29 .25	.32 .28 .24	.23
6	.43 .33 .27 .22	.41 .32 .26 .22	.31 .26 .21	.30 .25 .21	.28 .24 .21	.19
7	.39 .29 .23 .19	.38 .29 .23 .18	.27 .22 .18	.26 .21 .18	.25 .21 .17	.16
8	.36 .26 .20 .16	.35 .26 .20 .16	.24 .19 .15	.23 .19 .15	.22 .18 .15	.13
9	.33 .23 .18 .13	.32 .23 .17 .13	.22 .17 .13	.21 .16 .13	.20 .16 .13	.11
10	.30 .20 .15 .11	.29 .20 .14 .11	.19 .14 .11	.18 .14 .10	.18 .13 .10	.09

SPACING TO MOUNTING HEIGHT RATIO - 1.3

Test No. HPK09956

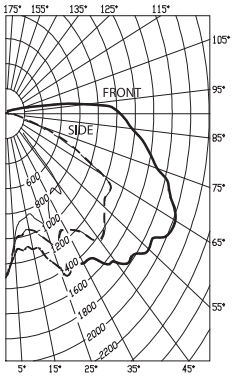
HIGH PRESSURE SODIUM-VM2, VM4

With Globe and
Angle Reflector
35-150 Watt
Mogul Base



CANDLEPOWER – 100 WATT

9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



Front ANGLE	CP	Side ANGLE	CP
0.0	1312.	0.0	1312.
5.0	1131.	5.0	1060.
15.0	1124.	15.0	956.
25.0	1366.	25.0	1143.
35.0	1464.	35.0	1155.
45.0	1671.	45.0	1440.
55.0	1892.	55.0	1320.
65.0	2017.	65.0	1143.
75.0	1700.	75.0	339.
85.0	1372.	85.0	81.
90.0	1243.	90.0	30.
95.0	895.	95.0	20.
105.0	161.	105.0	12.
115.0	52.	115.0	10.
125.0	16.	125.0	10.
135.0	7.	135.0	8.
145.0	5.	145.0	6.
155.0	4.	155.0	5.
165.0	4.	165.0	4.
175.0	3.	175.0	3.
180.0	3.	165.0	3.

Efficiency 65.7%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.78 .78 .78 .78	.76 .76 .76 .76	.71 .71 .71	.67 .67 .67	.63 .63 .63	.62
1	.69 .64 .61 .57	.66 .62 .59 .56	.59 .56 .53	.55 .53 .51	.52 .50 .48	.47
2	.62 .55 .50 .45	.59 .53 .48 .44	.50 .46 .42	.47 .44 .41	.45 .42 .39	.37
3	.56 .48 .42 .37	.54 .46 .41 .36	.44 .39 .35	.41 .37 .34	.39 .35 .32	.31
4	.50 .42 .35 .30	.49 .40 .34 .30	.38 .33 .29	.36 .31 .28	.34 .30 .27	.25
5	.46 .37 .30 .25	.44 .35 .29 .25	.34 .28 .24	.32 .27 .23	.30 .26 .23	.21
6	.42 .32 .26 .21	.41 .32 .25 .21	.30 .25 .20	.28 .24 .20	.27 .23 .19	.18
7	.39 .29 .23 .18	.37 .28 .22 .18	.27 .21 .17	.25 .20 .17	.24 .20 .16	.15
8	.35 .26 .20 .15	.34 .25 .19 .15	.24 .19 .15	.23 .18 .14	.21 .17 .14	.13
9	.33 .23 .17 .13	.32 .23 .17 .13	.21 .16 .13	.20 .16 .12	.19 .15 .12	.11
10	.30 .20 .14 .11	.29 .20 .14 .10	.19 .14 .10	.18 .13 .10	.17 .13 .10	.08

SPACING TO MOUNTING HEIGHT RATIO - 1.3

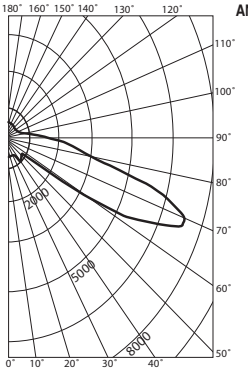
Test No. HPK09957

HIGH PRESSURE SODIUM-VM2, VM4

With Type I All
Glass Refractor
35-150 Watt
Mogul Base

CANDLEPOWER – 100 WATT

9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



ANGLE	CP	ANGLE	CP
0	806.	85.0	2161.
5.0	561.	90.0	1446.
15.0	517.	95.0	1037.
25.0	669.	105.0	592.
35.0	921.	115.0	399.
45.0	777.	125.0	192.
55.0	2076.	135.0	105.
60.0	4845.	145.0	89.
65.0	6434.	155.0	34.
70.0	6638.	165.0	1.
75.0	4655.	175.0	0.
80.0	2893.	180.0	0.

Angle Vertical
CP 90° Horizontal

Efficiency 82.1%

COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.95 .95 .95 .95	.91 .91 .91 .91	.85 .85 .85	.79 .79 .79	.73 .73 .73	.71
1	.81 .74 .69 .63	.77 .71 .66 .61	.65 .61 .57	.60 .56 .53	.55 .52 .50	.47
2	.70 .60 .51 .44	.66 .57 .49 .43	.52 .45 .40	.47 .42 .37	.43 .38 .35	.32
3	.61 .49 .40 .32	.58 .47 .38 .31	.42 .35 .29	.38 .32 .27	.34 .29 .25	.22
4	.54 .41 .32 .24	.51 .39 .30 .23	.35 .28 .22	.32 .25 .20	.29 .23 .18	.16
5	.49 .35 .26 .19	.46 .34 .25 .18	.30 .23 .17	.27 .21 .15	.24 .19 .14	.12
6	.44 .31 .22 .15	.42 .29 .21 .15	.26 .19 .13	.24 .17 .12	.21 .16 .11	.09
7	.41 .27 .19 .12	.38 .26 .18 .12	.23 .16 .11	.21 .15 .10	.19 .13 .09	.07
8	.38 .24 .16 .10	.35 .23 .15 .10	.21 .14 .09	.19 .13 .08	.17 .12 .08	.06
9	.35 .22 .14 .09	.33 .21 .14 .09	.19 .13 .08	.17 .11 .07	.16 .10 .07	.05
10	.33 .20 .13 .08	.31 .19 .12 .07	.18 .11 .07	.16 .10 .06	.14 .09 .06	.04

SPACING TO MOUNTING HEIGHT RATIO - 1.64 90-270°

Test No. HPK09960

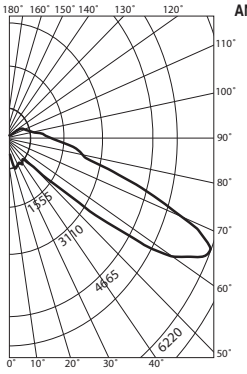
L

HIGH PRESSURE SODIUM-VM2, VM4

With Type III All Glass Refractor
35-150 Watt
Mogul Base

CANDLEPOWER – 100 WATT

9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



ANGLE	CP	ANGLE	CP
0	1341.	85.0	1905.
5.0	515.	90.0	1369.
15.0	670.	95.0	1002.
25.0	721.	105.0	610.
35.0	885.	115.0	507.
45.0	764.	125.0	235.
55.0	2033.	135.0	151.
60.0	4230.	145.0	123.
65.0	5791.	155.0	36.
70.0	6081.	165.0	1.
75.0	3906.	175.0	0.
80.0	2425.	180.0	0.

Efficiency 79.2%

Angle Vertical
CP 75° Horizontal

COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.91 .91 .91 .91	.88 .88 .88 .88	.81 .81 .81	.75 .75 .75	.70 .70 .70	.67
1	.78 .71 .66 .61	.74 .68 .63 .59	.63 .58 .55	.57 .54 .51	.52 .50 .47	.44
2	.67 .57 .49 .43	.63 .55 .47 .41	.50 .43 .38	.45 .40 .35	.41 .37 .33	.30
3	.59 .47 .38 .31	.55 .45 .36 .30	.40 .33 .28	.36 .31 .26	.33 .28 .24	.21
4	.52 .40 .30 .23	.49 .38 .29 .22	.34 .27 .21	.30 .24 .19	.27 .22 .17	.15
5	.47 .34 .25 .18	.44 .32 .24 .18	.29 .22 .16	.26 .20 .15	.23 .18 .13	.11
6	.43 .30 .21 .15	.40 .28 .20 .14	.25 .18 .13	.23 .17 .12	.20 .15 .11	.08
7	.39 .26 .18 .12	.37 .25 .17 .12	.23 .16 .11	.20 .14 .10	.18 .13 .09	.07
8	.36 .24 .16 .10	.34 .22 .15 .10	.20 .14 .09	.18 .12 .08	.16 .11 .07	.05
9	.34 .21 .14 .09	.32 .20 .13 .08	.19 .12 .08	.17 .11 .07	.15 .10 .06	.05
10	.31 .20 .12 .08	.30 .19 .12 .07	.17 .11 .07	.15 .10 .06	.14 .09 .06	.04

SPACING TO MOUNTING HEIGHT RATIO - 0.16 0-180°

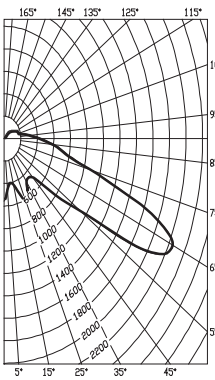
Test No. HPK09962

HIGH PRESSURE SODIUM-VM2, VM4

With Type V All Glass Refractor
35-150 Watt
Mogul Base

CANDLEPOWER – 100 WATT

9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



ANGLE	CP	ANGLE	CP
0	556.	95.0	338.
5.0	433.	100.0	262.
10.0	393.	105.0	196.
15.0	419.	110.0	184.
20.0	510.	115.0	174.
25.0	640.	120.0	152.
30.0	566.	125.0	134.
35.0	468.	130.0	113.
40.0	449.	135.0	101.
45.0	484.	140.0	86.
50.0	737.	145.0	75.
55.0	1105.	150.0	50.
60.0	2025.	155.0	18.
65.0	2255.	160.0	4.
70.0	1822.	165.0	1.
75.0	1107.	170.0	0.
80.0	767.	175.0	0.
85.0	612.	180.0	0.
90.0	458.		

Efficiency 77.1%

COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

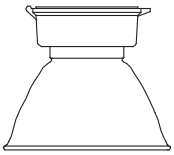
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.88 .88 .88 .88	.84 .84 .84 .84	.78 .78 .78	.73 .73 .73	.68 .68 .68	.65
1	.75 .70 .65 .60	.72 .67 .62 .58	.61 .58 .54	.56 .53 .51	.52 .49 .47	.45
2	.66 .57 .49 .43	.62 .54 .48 .42	.50 .44 .39	.45 .41 .37	.41 .38 .34	.32
3	.58 .47 .38 .32	.54 .45 .37 .31	.41 .34 .29	.37 .31 .27	.34 .29 .25	.23
4	.51 .39 .30 .23	.48 .37 .29 .23	.34 .27 .21	.30 .24 .20	.27 .22 .18	.16
5	.45 .33 .24 .18	.43 .31 .23 .17	.28 .21 .16	.25 .19 .15	.23 .18 .13	.11
6	.41 .29 .20 .14	.39 .27 .20 .14	.25 .18 .13	.22 .16 .12	.20 .15 .11	.09
7	.38 .26 .18 .12	.36 .24 .17 .12	.22 .16 .11	.20 .14 .10	.18 .13 .09	.07
8	.35 .23 .15 .10	.33 .22 .15 .10	.20 .14 .09	.18 .12 .08	.16 .11 .08	.06
9	.33 .21 .14 .09	.31 .20 .13 .09	.18 .12 .08	.17 .11 .07	.15 .10 .07	.05
10	.30 .19 .12 .08	.29 .18 .12 .07	.17 .11 .07	.15 .10 .06	.14 .09 .06	.04

SPACING TO MOUNTING HEIGHT RATIO - 1.4

Test No. HPK09959

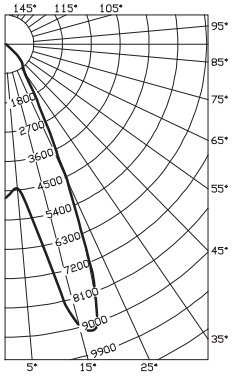
HIGH PRESSURE SODIUM-VM2, VM4

With Enclosed Reflector
35-150 Watt
Mogul Base



CANDLEPOWER – 100 WATT

9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



ANGLE	CP	ANGLE	CP
0	4742.	95.0	0.
5.0	4454.	100.0	0.
10.0	5878.	105.0	0.
15.0	8942.	110.0	0.
20.0	8200.	115.0	0.
25.0	4433.	120.0	0.
30.0	1992.	125.0	0.
35.0	1141.	130.0	0.
40.0	881.	135.0	0.
45.0	769.	140.0	0.
50.0	156.	145.0	0.
55.0	49.	150.0	0.
60.0	27.	155.0	0.
65.0	16.	160.0	0.
70.0	10.	165.0	0.
75.0	6.	170.0	0.
80.0	4.	175.0	0.
85.0	2.	180.0	0.
90.0	0.		

Efficiency 66.1%

COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.80 .80 .80 .80	.78 .78 .78 .78	.75 .75 .75	.72 .72 .72	.69 .69 .69	.67
1	.77 .76 .75 .74	.76 .75 .73 .72	.72 .71 .70	.69 .69 .68	.67 .67 .66	.65
2	.75 .73 .71 .69	.74 .72 .70 .68	.70 .68 .67	.68 .67 .66	.66 .65 .64	.63
3	.73 .70 .68 .66	.72 .69 .67 .65	.68 .66 .64	.66 .65 .63	.65 .63 .62	.62
4	.71 .67 .65 .63	.70 .67 .64 .62	.65 .63 .62	.64 .62 .61	.63 .62 .60	.60
5	.69 .65 .62 .60	.68 .64 .62 .60	.63 .61 .59	.62 .60 .59	.61 .60 .59	.58
6	.67 .63 .60 .58	.66 .62 .60 .58	.61 .59 .58	.61 .59 .57	.60 .58 .57	.56
7	.65 .61 .58 .56	.64 .60 .58 .56	.60 .57 .56	.59 .57 .55	.58 .56 .55	.54
8	.63 .59 .56 .54	.62 .58 .56 .54	.58 .55 .54	.57 .55 .53	.56 .55 .53	.53
9	.61 .56 .54 .52	.60 .56 .53 .52	.56 .53 .52	.55 .53 .51	.55 .53 .51	.51
10	.57 .52 .49 .47	.57 .52 .49 .47	.52 .49 .47	.51 .49 .47	.51 .49 .47	.46

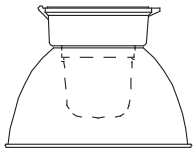
SPACING TO MOUNTING HEIGHT RATIO - 1.0

Test No. HPK09958

HUBBELL®
KILLARK®

HIGH PRESSURE SODIUM-VM2, VM4

With Globe & full Cutoff
Deep White Reflector*
35-150 Watt
Mogul Base

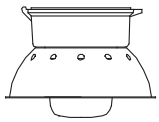


METAL HALIDE, METAL HALIDE PULSE-VM2, VM4

With Globe
50-250 Watt
Mogul Base

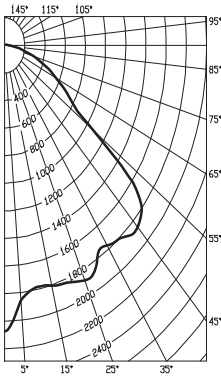
METAL HALIDE, METAL HALIDE PULSE-VM2, VM4

With Globe &
Dome Reflector
50-250 Watt
Mogul Base



CANDLEPOWER – 100 WATT

9500 lumens
For 35 watt multiply by 0.236
For 50 watt multiply by 0.42
For 70 watt multiply by 0.68
For 150 watt multiply by 1.68



ANGLE	CP	ANGLE	CP
0	2081.	95.0	0.
5.0	863.	100.0	0.
10.0	784.	105.0	0.
15.0	1807.	110.0	0.
20.0	1826.	115.0	0.
25.0	1884.	120.0	0.
30.0	1825.	125.0	0.
35.0	1772.	130.0	0.
40.0	1817.	135.0	0.
45.0	1862.	140.0	0.
50.0	1759.	145.0	0.
55.0	1060.	150.0	0.
60.0	736.	155.0	0.
65.0	577	160.0	0.
70.0	430.	165.0	0.
75.0	298.	170.0	0.
80.0	177.	175.0	0.
85.0	75.	180.0	0.
90.0	0.		

Efficiency 64.4%

COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.76 .76 .76 .76	.74 .74 .74 .74	.71 .71 .71	.68 .68 .68	.65 .65 .65	.64
1	.70 .67 .65 .62	.68 .66 .63 .61	.63 .61 .59	.61 .59 .58	.58 .57 .56	.55
2	.65 .60 .56 .53	.63 .59 .55 .52	.57 .54 .51	.54 .52 .50	.53 .51 .49	.47
3	.60 .54 .49 .45	.58 .53 .48 .45	.51 .47 .44	.49 .46 .43	.48 .45 .43	.41
4	.55 .48 .43 .39	.53 .47 .42 .39	.45 .41 .38	.44 .40 .38	.43 .40 .37	.36
5	.50 .43 .38 .34	.49 .42 .37 .33	.41 .36 .33	.40 .36 .33	.38 .35 .32	.31
6	.47 .39 .33 .29	.45 .38 .33 .29	.37 .32 .29	.36 .32 .29	.35 .31 .29	.27
7	.43 .35 .29 .26	.42 .34 .29 .25	.33 .29 .25	.32 .28 .25	.31 .28 .25	.24
8	.40 .31 .26 .22	.39 .31 .26 .22	.30 .25 .22	.29 .25 .22	.28 .25 .22	.21
9	.36 .28 .23 .19	.36 .28 .23 .19	.27 .22 .19	.26 .22 .19	.26 .22 .19	.18
10	.33 .24 .19 .16	.32 .24 .19 .16	.23 .19 .16	.23 .18 .16	.22 .18 .15	.14

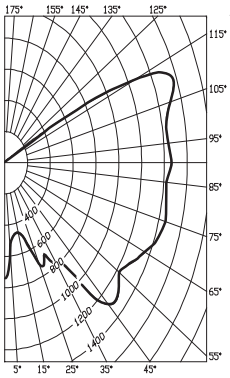
SPACING TO MOUNTING HEIGHT RATIO - 1.3

Values using Dark Sky gasket kit

Test No. HPK10125

CANDLEPOWER – 175 WATT

14000 lumens
For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH multiply by 0.64
For 250 MH multiply by 1.46
For 150 MHP multiply by 1.00
For 175 MHP multiply by 1.25
For 200 MHP multiply by 1.50



ANGLE	CP	ANGLE	CP
0	741.	95.0	1439.
5.0	566.	100.0	1436.
10.0	466.	105.0	1501.
15.0	459.	110.0	1567.
20.0	521.	115.0	1273.
25.0	717.	120.0	435.
30.0	681.	125.0	87.
35.0	824.	130.0	39.
40.0	936.	135.0	27.
45.0	1289.	140.0	17.
50.0	1304.	145.0	13.
55.0	1231.	150.0	10.
60.0	1287.	155.0	7.
65.0	1359.	160.0	3.
70.0	1423.	165.0	2.
75.0	1457.	170.0	0.
80.0	1436.	175.0	0.
85.0	1423.	180.0	0.
90.0	1459.		

Efficiency 85.8%

COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

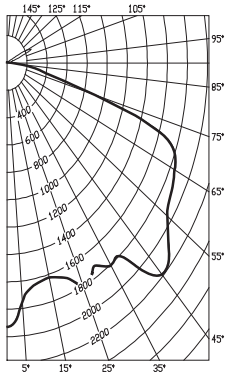
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.95 .95 .95 .95	.89 .89 .89 .89	.78 .78 .78	.68 .68 .68	.59 .59 .59	.54
1	.81 .75 .70 .65	.75 .70 .65 .60	.60 .56 .53	.51 .48 .45	.43 .41 .38	.34
2	.72 .63 .55 .49	.66 .58 .51 .45	.50 .44 .39	.42 .38 .34	.35 .31 .28	.24
3	.65 .53 .45 .38	.59 .50 .42 .36	.42 .36 .31	.35 .30 .26	.29 .25 .22	.18
4	.58 .46 .37 .30	.53 .43 .35 .28	.36 .30 .25	.30 .25 .21	.25 .21 .17	.14
5	.53 .40 .31 .25	.48 .37 .29 .23	.32 .25 .20	.26 .21 .17	.22 .17 .14	.11
6	.48 .35 .27 .21	.44 .33 .25 .19	.28 .21 .17	.23 .18 .14	.19 .15 .11	.09
7	.44 .31 .23 .17	.40 .29 .22 .16	.25 .18 .14	.21 .15 .12	.17 .13 .09	.07
8	.40 .28 .20 .15	.37 .26 .19 .14	.22 .16 .12	.18 .13 .10	.15 .11 .08	.05
9	.37 .25 .18 .12	.34 .23 .16 .12	.20 .14 .10	.17 .12 .08	.14 .09 .06	.04
10	.34 .22 .15 .10	.32 .21 .14 .10	.18 .12 .08	.15 .10 .07	.12 .08 .05	.03

SPACING TO MOUNTING HEIGHT RATIO - 2.3

Test No. HPK09919

CANDLEPOWER – 175 WATT

14000 lumens
For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH multiply by 0.64
For 250 MH multiply by 1.46
For 150 MHP multiply by 1.00
For 175 MHP multiply by 1.25
For 200 MHP multiply by 1.50



ANGLE	CP	ANGLE	CP
0	1925.	95.0	49.
5.0	1750.	100.0	46.
10.0	1644.	105.0	64.
15.0	1626.	110.0	199.
20.0	1667.	115.0	225.
25.0	1816.	120.0	38.
30.0	1725.	125.0	17.
35.0	1811.	130.0	14.
40.0	1877.	135.0	13.
45.0	2180.	140.0	11.
50.0	2115.	145.0	11.
55.0	1952.	150.0	10.
60.0	1893.	155.0	9.
65.0	1839.	160.0	8.
70.0	1753.	165.0	7.
75.0	950.	170.0	7.
80.0	348.	175.0	6.
85.0	153.	180.0	7.
90.0	52.		

Efficiency 67.1%

COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.80 .80 .80 .80	.77 .77 .77 .77	.73 .73 .73	.70 .70 .70	.66 .66 .66	.65
1	.72 .68 .65 .62	.70 .66 .63 .61	.63 .61 .58	.60 .58 .56	.57 .55 .54	.52
2	.65 .59 .54 .49	.63 .57 .52 .49	.54 .50 .47	.52 .48 .46	.49 .46 .44	.42
3	.58 .51 .45 .40	.56 .49 .44 .39	.47 .42 .38	.45 .41 .37	.43 .39 .36	.35
4	.53 .44 .37 .32	.51 .43 .37 .32	.41 .35 .31	.39 .34 .30	.37 .33 .30	.28
5	.48 .38 .32 .27	.46 .37 .31 .26	.35 .30 .26	.34 .29 .25	.32 .28 .25	.23
6	.44 .34 .27 .23	.42 .33 .27 .22	.31 .26 .22	.30 .25 .21	.29 .24 .21	.19
7	.40 .30 .23 .19	.38 .29 .23 .19	.28 .22 .18	.27 .22 .18	.25 .21 .18	.16
8	.36 .24 .18 .14	.35 .26 .20 .16	.25 .19 .16	.24 .19 .15	.23 .18 .15	.14
9	.34 .24 .18 .14	.33 .23 .18 .14	.22 .17 .13	.21 .17 .13	.20 .16 .13	.12
10	.31 .21 .15 .11	.30 .20 .15 .11	.19 .14 .11	.19 .14 .11	.18 .14 .10	.09

SPACING TO MOUNTING HEIGHT RATIO - 1.5

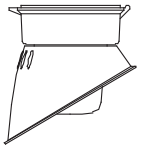
Test No. HPK09920

L

HUBBELL®
KILLARK®

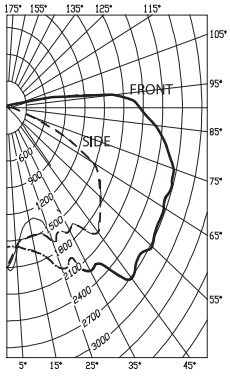
METAL HALIDE, METAL HALIDE PULSE-VM2, VM4

With Globe &
Angle Reflector
50-250 Watt
Mogul Base



CANDLEPOWER – 175 WATT

14000 lumens
For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH multiply by 0.64
For 250 MH multiply by 1.46
For 150 MHP multiply by 1.00
For 175 MHP multiply by 1.25
For 200 MHP multiply by 1.50



Front ANGLE	CP	Side ANGL	CP
0.0	1795.	0.0	1795.
5.0	1573.	5.0	1595.
15.0	1676.	15.0	1484.
25.0	1997.	25.0	1649.
35.0	2244.	35.0	1694.
45.0	2722.	45.0	1980.
55.0	2726.	55.0	1764.
65.0	2660.	65.0	1451.
75.0	2656.	75.0	452.
85.0	2293.	85.0	109.
90.0	2050.	90.0	42.
95.0	1598.	95.0	28.
105.0	243.	100.0	16.
115.0	75.	115.0	14.
125.0	24.	125.0	13.
135.0	10.	135.0	11.
145.0	6.	145.0	8.
155.0	6.	155.0	6.
165.0	5.	165.0	5.
175.0	4.	175.0	4.
180.0	4.	180.0	4.

Efficiency 65.0%

COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.77 .77 .77 .77	.75 .75 .75 .75	.70 .70 .70	.66 .66 .66	.63 .63 .63	.61
1	.68 .64 .60 .57	.66 .62 .59 .55	.58 .55 .53	.55 .52 .50	.51 .50 .48	.46
2	.61 .55 .49 .45	.59 .53 .48 .44	.50 .46 .42	.47 .44 .41	.44 .41 .39	.37
3	.56 .48 .42 .37	.53 .46 .41 .36	.43 .39 .35	.41 .37 .34	.39 .35 .32	.31
4	.50 .42 .35 .30	.48 .40 .34 .30	.38 .33 .29	.36 .31 .28	.34 .30 .27	.25
5	.46 .37 .30 .25	.44 .36 .29 .25	.34 .28 .24	.32 .27 .23	.30 .26 .23	.21
6	.42 .33 .26 .22	.40 .32 .26 .21	.30 .25 .21	.28 .24 .20	.27 .23 .20	.18
7	.39 .29 .23 .18	.37 .28 .22 .18	.27 .21 .18	.25 .21 .17	.24 .20 .17	.15
8	.35 .26 .20 .16	.34 .25 .19 .15	.24 .19 .15	.23 .18 .15	.21 .17 .14	.13
9	.33 .23 .17 .13	.31 .23 .17 .13	.21 .16 .13	.20 .16 .13	.19 .15 .12	.11
10	.30 .20 .15 .11	.29 .20 .14 .11	.19 .14 .10	.18 .13 .10	.17 .13 .10	.09

SPACING TO MOUNTING HEIGHT RATIO - 1.6

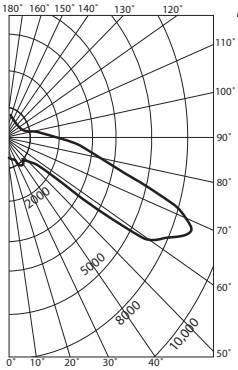
Test No. HPK09921

METAL HALIDE, METAL HALIDE PULSE-VM2, VM4

With Type I All
Glass Refractor
50-250 Watt
Mogul Base

CANDLEPOWER – 175 WATT

14000 lumens
For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH multiply by 0.64
For 250 MH multiply by 1.46
For 150 MHP multiply by 1.00
For 175 MHP multiply by 1.25
For 200 MHP multiply by 1.50



ANGLE	CP	ANGLE	CP
0	931.	85.0	2901.
5.0	822.	90.0	1775.
15.0	765.	95.0	1272.
25.0	904.	105.0	746.
35.0	1163.	115.0	514.
45.0	1137.	125.0	267.
55.0	2712.	135.0	153
60.0	7019.	145.0	130.
65.0	9087.	155.0	48.
70.0	7767.	165.0	2.
75.0	5367.	175.0	0.
80.0	3839.	180.0	0.

Efficiency 80.1%

Angle Vertical
CP 90° Horizontal

COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.93 .93 .93 .93	.89 .89 .89 .89	.83 .83 .83	.77 .77 .77	.71 .71 .71	.68
1	.78 .72 .66 .61	.75 .69 .64 .59	.63 .59 .55	.58 .54 .51	.53 .50 .48	.45
2	.68 .58 .50 .43	.64 .55 .48 .41	.50 .44 .38	.45 .40 .36	.41 .37 .33	.30
3	.59 .47 .38 .31	.56 .45 .37 .30	.41 .34 .28	.37 .31 .26	.33 .28 .24	.21
4	.53 .40 .30 .23	.50 .38 .29 .22	.34 .27 .21	.31 .24 .19	.27 .22 .18	.15
5	.47 .34 .25 .18	.45 .33 .24 .17	.29 .22 .16	.26 .20 .15	.23 .18 .14	.11
6	.43 .30 .21 .15	.41 .28 .20 .14	.26 .18 .13	.23 .17 .12	.21 .15 .11	.08
7	.40 .26 .18 .12	.37 .25 .17 .12	.23 .16 .11	.20 .14 .10	.18 .13 .09	.07
8	.36 .24 .16 .10	.34 .23 .15 .10	.20 .14 .09	.18 .12 .08	.17 .11 .07	.05
9	.34 .21 .14 .09	.32 .20 .13 .08	.19 .12 .08	.17 .11 .07	.15 .10 .06	.04
10	.32 .20 .12 .08	.30 .19 .12 .07	.17 .11 .07	.15 .10 .06	.14 .09 .05	.04

SPACING TO MOUNTING HEIGHT RATIO - 1.82 90-270°

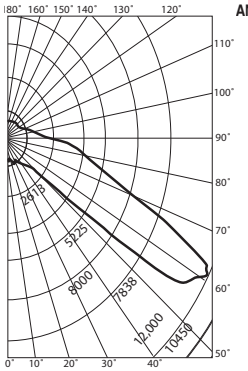
Test No. HPK09934

METAL HALIDE, METAL HALIDE PULSE-VM2, VM4

With Type III All
Glass Refractor
50-250 Watt
Mogul Base

CANDLEPOWER – 175 WATT

14000 lumens
For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH multiply by 0.64
For 250 MH multiply by 1.46
For 150 MHP multiply by 1.00
For 175 MHP multiply by 1.25
For 200 MHP multiply by 1.50



ANGLE	CP	ANGLE	CP
0	1124.	85.0	3401.
5.0	892.	90.0	2106.
15.0	933.	95.0	1538.
25.0	999.	105.0	950.
35.0	1321.	115.0	775.
45.0	1435.	125.0	388.
55.0	4091.	135.0	234.
60.0	9397.	145.0	191.
65.0	10450.	155.0	52.
70.0	8609.	165.0	2.
75.0	5577.	175.0	0.
80.0	4262.	180.0	0.

Efficiency 79.6%

Angle Vertical
CP 75° Horizontal

COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.92 .92 .92 .92	.88 .88 .88 .88	.82 .82 .82	.76 .76 .76	.70 .70 .70	.67
1	.78 .72 .66 .61	.74 .68 .63 .59	.63 .58 .55	.57 .54 .51	.52 .50 .47	.44
2	.67 .57 .49 .43	.64 .55 .47 .41	.50 .44 .38	.45 .40 .35	.41 .36 .33	.30
3	.59 .47 .38 .31	.56 .45 .37 .30	.41 .33 .28	.36 .31 .26	.33 .28 .24	.21
4	.52 .40 .30 .23	.49 .38 .29 .23	.34 .27 .21	.30 .24 .19	.27 .22 .17	.15
5	.47 .34 .25 .18	.44 .32 .24 .18	.29 .22 .16	.26 .20 .15	.23 .18 .13	.11
6	.43 .30 .21 .15	.40 .28 .20 .14	.25 .18 .13	.23 .17 .12	.20 .15 .11	.08
7	.39 .26 .18 .12	.37 .25 .17 .12	.23 .16 .11	.20 .14 .10	.18 .13 .09	.07
8	.36 .24 .16 .10	.34 .23 .15 .10	.20 .14 .09	.18 .12 .08	.16 .11 .07	.05
9	.34 .21 .14 .09	.32 .20 .13 .08	.19 .12 .08	.17 .11 .07	.15 .10 .06	.04
10	.32 .20 .12 .08	.30 .19 .12 .07	.17 .11 .07	.15 .10 .06	.14 .09 .05	.04

SPACING TO MOUNTING HEIGHT RATIO - .74 0-180°

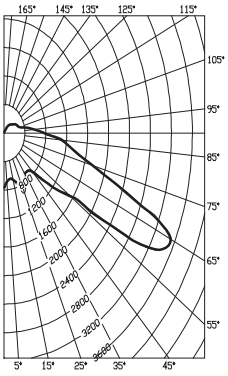
Test No. HPK09930

METAL HALIDE, METAL HALIDE PULSE-VM2, VM4

With Type V All
Glass Refractor
50-250 Watt
Mogul Base

CANDLEPOWER – 175 WATT

14000 lumens
For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH multiply by 0.68
For 250 MH multiply by 1.46
For 150 MHP multiply by 1.00
For 175 MHP multiply by 1.25
For 200 MHP multiply by 1.50



ANGLE	CP	ANGLE	CP
0	770.	95.0	565.
5.0	690.	100.0	429.
10.0	645.	105.0	325.
15.0	677.	110.0	291.
20.0	797.	115.0	272.
25.0	927.	120.0	234.
30.0	801.	125.0	203.
35.0	715.	130.0	171.
40.0	687.	135.0	150.
45.0	737.	140.0	129.
50.0	1105.	145.0	114.
55.0	1498.	150.0	75.
60.0	3262.	155.0	27.
65.0	3523.	160.0	6.
70.0	2597.	165.0	2.
75.0	1739.	170.0	0.
80.0	1325.	175.0	0.
85.0	1064.	180.0	0.
90.0	765.		

Efficiency 81.2%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

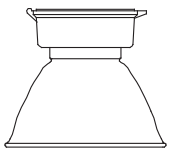
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance											
0	.92	.92	.92	.92	.89	.89	.89	.89	.82	.82	.82	.76	.76	.76	.71	.71	.71	.68
1	.79	.73	.67	.62	.75	.70	.65	.60	.64	.60	.56	.59	.55	.52	.54	.51	.49	.46
2	.69	.59	.51	.45	.65	.56	.49	.43	.51	.46	.40	.47	.42	.38	.43	.39	.35	.32
3	.60	.49	.40	.33	.57	.46	.38	.32	.42	.35	.30	.38	.32	.27	.34	.30	.25	.23
4	.53	.40	.31	.24	.50	.38	.30	.23	.35	.27	.22	.31	.25	.20	.28	.23	.18	.16
5	.47	.34	.25	.18	.45	.32	.24	.18	.29	.22	.16	.26	.20	.15	.24	.18	.14	.11
6	.43	.30	.21	.15	.41	.29	.20	.14	.26	.19	.13	.23	.17	.12	.21	.15	.11	.09
7	.40	.27	.18	.13	.37	.26	.18	.12	.23	.16	.11	.21	.15	.10	.19	.13	.09	.07
8	.37	.24	.16	.11	.35	.23	.15	.10	.21	.14	.09	.19	.13	.09	.17	.12	.08	.06
9	.34	.22	.14	.09	.32	.21	.14	.09	.19	.13	.08	.17	.12	.08	.16	.11	.07	.05
10	.32	.20	.13	.08	.30	.19	.12	.08	.17	.11	.07	.16	.10	.06	.14	.09	.06	.04

SPACING TO MOUNTING HEIGHT RATIO - 1.4

Test No. HPK09929

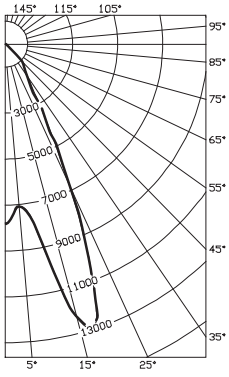
METAL HALIDE, METAL HALIDE PULSE-VM2, VM4

With Enclosed Reflector
50-250 Watt
Mogul Base



CANDLEPOWER – 175 WATT

14000 lumens
For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH multiply by 0.68
For 250 MH multiply by 1.46
For 150 MHP multiply by 1.00
For 175 MHP multiply by 1.25
For 200 MHP multiply by 1.50



ANGLE	CP	ANGLE	CP
0	7782.	95.0	0.
5.0	7098.	100.0	0.
10.0	8370.	105.0	0.
15.0	12328.	110.0	0.
20.0	11704.	115.0	0.
25.0	6692.	120.0	0.
30.0	3144.	125.0	0.
35.0	1799.	130.0	0.
40.0	1352.	135.0	0.
45.0	1136.	140.0	0.
50.0	253.	145.0	0.
55.0	86.	150.0	0.
60.0	47.	155.0	0.
65.0	29.	160.0	0.
70.0	19.	165.0	0.
75.0	12.	170.0	0.
80.0	7.	175.0	0.
85.0	4.	180.0	0.
90.0	0.		

Efficiency 66.0%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

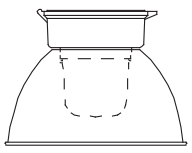
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance											
0	.80	.80	.80	.80	.78	.78	.78	.78	.75	.75	.75	.71	.71	.71	.69	.69	.69	.67
1	.77	.76	.75	.73	.76	.74	.73	.72	.72	.71	.70	.69	.69	.68	.67	.66	.66	.65
2	.75	.73	.71	.69	.74	.71	.70	.68	.69	.68	.67	.67	.66	.65	.66	.65	.64	.63
3	.73	.70	.67	.65	.71	.69	.67	.65	.67	.65	.64	.66	.64	.63	.64	.63	.62	.61
4	.70	.67	.64	.62	.69	.66	.64	.62	.65	.63	.61	.64	.62	.61	.62	.61	.60	.59
5	.68	.64	.62	.60	.67	.64	.61	.59	.63	.61	.59	.62	.60	.58	.61	.59	.58	.57
6	.66	.62	.59	.57	.66	.62	.59	.57	.61	.59	.57	.60	.58	.57	.59	.58	.56	.56
7	.64	.60	.57	.55	.64	.60	.57	.55	.59	.57	.55	.58	.56	.55	.58	.56	.54	.54
8	.62	.58	.55	.53	.62	.58	.55	.53	.57	.55	.53	.56	.54	.53	.56	.54	.52	.52
9	.60	.56	.53	.51	.60	.55	.53	.51	.55	.52	.51	.54	.52	.51	.54	.52	.50	.50
10	.56	.51	.48	.46	.56	.51	.48	.46	.51	.48	.46	.50	.48	.46	.50	.48	.46	.45

SPACING TO MOUNTING HEIGHT RATIO - 1.0

Test No. HPK09922

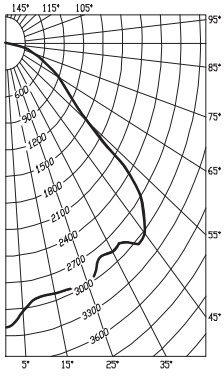
METAL HALIDE, METAL HALIDE PULSE-VM2, VM4

With Globe & Full Cutoff
50-250 Watt
Mogul Base



CANDLEPOWER – 175 WATT

14000 lumens
For 50 MH watt multiply by 0.29
For 70 MH watt multiply by 0.40
For 100 MH multiply by 0.68
For 250 MH multiply by 1.46
For 150 MHP multiply by 1.00
For 175 MHP multiply by 1.25
For 200 MHP multiply by 1.50



ANGLE	CP	ANGLE	CP
0	3208.	95.0	0.
5.0	3031.	100.0	0.
10.0	2916.	105.0	0.
15.0	2924.	110.0	0.
20.0	2947.	115.0	0.
25.0	2989.	120.0	0.
30.0	2841.	125.0	0.
35.0	2855.	130.0	0.
40.0	2923.	135.0	0.
45.0	3017.	140.0	0.
50.0	2745.	145.0	0.
55.0	1591.	150.0	0.
60.0	1147.	155.0	0.
65.0	889.	160.0	0.
70.0	665.	165.0	0.
75.0	464.	170.0	0.
80.0	278.	175.0	0.
85.0	116.	180.0	0.
90.0	0.		

Efficiency 69.1%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

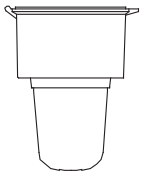
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance											
0	.81	.81	.81	.81	.79	.79	.79	.79	.76	.76	.76	.73	.73	.73	.70	.70	.70	.68
1	.75	.72	.70	.67	.73	.71	.68	.66	.68	.66	.64	.65	.64	.62	.63	.61	.60	.59
2	.69	.64	.60	.57	.68	.63	.59	.56	.61	.58	.55	.59	.56	.54	.57	.55	.53	.51
3	.64	.58	.53	.49	.63	.57	.52	.49	.55	.51	.48	.53	.50	.47	.51	.49	.46	.45
4	.59	.52	.46	.42	.57	.51	.46	.42	.49	.45	.41	.48	.44	.41	.46	.43	.40	.39
5	.54	.46	.41	.36	.53	.46	.40	.36	.44	.39	.36	.43	.39	.36	.42	.38	.35	.34
6	.50	.42	.36	.32	.49	.41	.36	.32	.40	.35	.32	.39	.35	.31	.38	.34	.31	.30
7	.46	.37	.32	.28	.45	.37	.32	.28	.36	.31	.27	.35	.31	.27	.34	.30	.27	.26
8	.43	.34	.28	.24	.42	.33	.28	.24	.32	.27	.24	.31	.27	.24	.31	.27	.24	.22
9	.39	.30	.25	.21	.38	.30	.25	.21	.29	.24	.21	.28	.24	.21	.28	.24	.21	.19
10	.35	.26	.21	.17	.35	.26	.21	.17	.25	.20	.17	.25	.20	.17	.24	.20	.17	.16

SPACING TO MOUNTING HEIGHT RATIO - 1.4

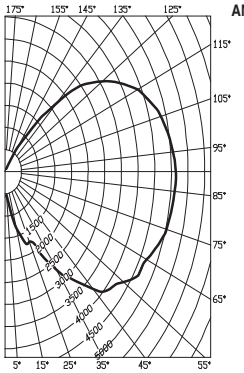
*Values using Dark Sky gasket kit

Test No. HPK10129

HIGH PRESSURE SODIUM-VM5
With Globe
200-400 Watt
Mogul Base



CANDLEPOWER – 400 WATT
51000 lumens
For 200 watt multiply by 0.43
For 250 watt multiply by 0.53



ANGLE	CP	ANGLE	CP
0	563.	95.0	5076.
5.0	518.	100.0	4976.
10.0	801.	105.0	4846.
15.0	1271.	110.0	4658.
20.0	1697.	115.0	4383.
25.0	1751.	120.0	4013.
30.0	2066.	125.0	3556.
35.0	2723.	130.0	3050.
40.0	3176.	135.0	2237.
45.0	3744.	140.0	1388.
50.0	4122.	145.0	653.
55.0	4341.	150.0	113.
60.0	4639.	155.0	32.
65.0	4708.	160.0	19.
70.0	4877.	165.0	9.
75.0	5015.	170.0	0.
80.0	5086.	175.0	0.
85.0	5124.	180.0	0.
90.0	5136.		

Efficiency 89.6%

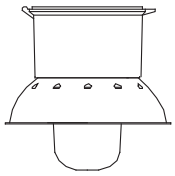
COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.97 .97 .97 .97	.90 .90 .90 .90	.77 .77 .77	.66 .66 .66	.55 .55 .55	.50
1	.83 .77 .71 .66	.76 .71 .66 .61	.59 .56 .52	.49 .46 .43	.40 .37 .35	.30
2	.73 .64 .56 .50	.67 .59 .52 .46	.49 .44 .39	.40 .36 .32	.32 .28 .26	.21
3	.66 .55 .46 .39	.60 .50 .42 .36	.42 .35 .30	.34 .29 .25	.26 .23 .19	.16
4	.59 .47 .38 .31	.54 .43 .35 .29	.36 .29 .24	.29 .24 .19	.22 .18 .15	.12
5	.54 .41 .32 .25	.49 .37 .29 .23	.31 .24 .19	.25 .20 .16	.19 .15 .12	.09
6	.49 .36 .27 .21	.45 .33 .25 .19	.27 .21 .16	.22 .17 .13	.17 .13 .10	.07
7	.45 .32 .23 .18	.41 .29 .22 .16	.24 .18 .13	.19 .14 .10	.15 .11 .08	.05
8	.41 .28 .20 .15	.37 .26 .19 .13	.21 .15 .11	.17 .12 .09	.13 .09 .06	.04
9	.38 .25 .18 .13	.35 .23 .16 .12	.19 .13 .09	.16 .11 .07	.12 .08 .05	.03
10	.35 .23 .15 .11	.32 .21 .14 .10	.17 .12 .08	.14 .09 .06	.11 .07 .04	.02

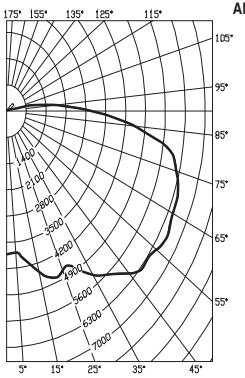
SPACING TO MOUNTING HEIGHT RATIO - 4.3

Test No. HPK09924

HIGH PRESSURE SODIUM-VM5
With Globe & Reflector
200-400 Watt
Mogul Base



CANDLEPOWER – 400 WATT
51000 lumens
For 200 watt multiply by 0.43
For 250 watt multiply by 0.53



ANGLE	CP	ANGLE	CP
0	3828.	95.0	1835.
5.0	3788.	100.0	692.
10.0	4046.	105.0	137.
15.0	4430.	110.0	135.
20.0	4752.	115.0	120.
25.0	4674.	120.0	246.
30.0	4837.	125.0	314.
35.0	5337.	130.0	302.
40.0	5676.	135.0	271.
45.0	6115.	140.0	93.
50.0	6352.	145.0	38.
55.0	6439.	150.0	37.
60.0	6562.	155.0	31.
65.0	6474.	160.0	25.
70.0	6419.	165.0	23.
75.0	6211.	170.0	20.
80.0	5784.	175.0	17.
85.0	4480.	180.0	0.
90.0	3031.		

Efficiency 75.3%

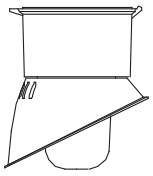
COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.88 .88 .88 .88	.85 .85 .85 .85	.80 .80 .80	.76 .76 .76	.72 .72 .72	.70
1	.76 .70 .65 .60	.73 .68 .63 .59	.63 .59 .56	.59 .56 .53	.55 .53 .50	.48
2	.67 .58 .51 .45	.64 .56 .50 .44	.52 .47 .42	.49 .44 .40	.46 .42 .38	.36
3	.60 .49 .42 .35	.57 .48 .40 .34	.44 .38 .33	.41 .36 .32	.39 .34 .30	.28
4	.54 .42 .34 .28	.51 .41 .33 .27	.38 .32 .26	.36 .30 .25	.33 .28 .24	.22
5	.49 .37 .29 .23	.46 .36 .28 .22	.33 .27 .21	.31 .25 .21	.29 .24 .20	.18
6	.44 .33 .25 .19	.42 .31 .24 .19	.29 .23 .18	.28 .22 .17	.26 .21 .17	.15
7	.41 .29 .21 .16	.39 .28 .21 .16	.26 .20 .15	.24 .19 .14	.23 .18 .14	.12
8	.37 .26 .18 .13	.36 .25 .18 .13	.23 .17 .13	.22 .16 .12	.20 .15 .12	.10
9	.35 .23 .16 .11	.33 .22 .16 .11	.21 .15 .11	.20 .14 .10	.19 .14 .10	.08
10	.32 .20 .14 .09	.30 .20 .13 .09	.19 .13 .09	.17 .12 .08	.16 .12 .08	.07

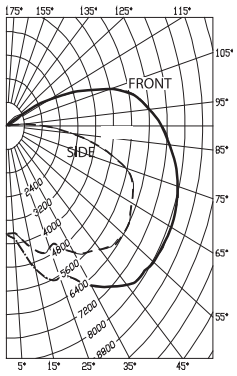
SPACING TO MOUNTING HEIGHT RATIO - 2.2

Test No. HPK09927

HIGH PRESSURE SODIUM-VM5
With Globe & Angle Reflector
200-400 Watt
Mogul Base



CANDLEPOWER – 400 WATT
51000 lumens
For 200 watt multiply by 0.43
For 250 watt multiply by 0.53



Front ANGLE	Front CP	Side ANGL	Side CP
0.0	3671.	0.0	3671.
5.0	3848.	5.0	3650.
15.0	4977.	15.0	4318.
25.0	5665.	25.0	4556.
35.0	6622.	35.0	5230.
45.0	7632.	45.0	5923.
55.0	8016.	55.0	6362.
65.0	8138.	65.0	6188.
75.0	7962.	75.0	5540.
85.0	7360.	85.0	2953.
90.0	6987.	90.0	1639.
95.0	6468.	95.0	566.
105.0	4805.	100.0	97.
115.0	2021.	115.0	80.
125.0	166.	125.0	62.
135.0	60.	135.0	48.
140.0	42.	140.0	41.
145.0	30.	145.0	45.
155.0	20.	155.0	28.
165.0	15.	165.0	18.
175.0	12.	175.0	12.
180.0	0.	180.0	0.

Efficiency 71.6%

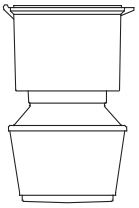
COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.83 .83 .83 .83	.80 .80 .80 .80	.74 .74 .74	.69 .69 .69	.64 .64 .64	.61
1	.72 .67 .63 .59	.69 .64 .60 .57	.59 .56 .53	.55 .52 .50	.50 .48 .46	.44
2	.64 .57 .50 .45	.61 .54 .49 .44	.50 .45 .41	.46 .42 .39	.42 .39 .36	.34
3	.58 .49 .42 .36	.55 .47 .40 .35	.43 .38 .33	.40 .35 .31	.36 .33 .29	.27
4	.52 .42 .35 .29	.49 .40 .34 .28	.37 .31 .27	.34 .29 .25	.31 .27 .24	.22
5	.47 .37 .29 .24	.45 .35 .28 .23	.32 .27 .22	.30 .25 .21	.27 .23 .20	.18
6	.43 .32 .25 .20	.41 .31 .24 .20	.29 .23 .19	.26 .21 .18	.24 .20 .17	.15
7	.39 .29 .22 .17	.37 .27 .21 .16	.25 .20 .15	.23 .18 .15	.22 .17 .14	.12
8	.36 .25 .19 .14	.34 .24 .18 .14	.23 .17 .13	.21 .16 .12	.19 .15 .12	.10
9	.33 .23 .16 .12	.32 .22 .16 .12	.20 .15 .11	.19 .14 .11	.17 .13 .10	.08
10	.30 .20 .14 .10	.29 .19 .13 .09	.18 .13 .09	.17 .12 .08	.15 .11 .08	.06

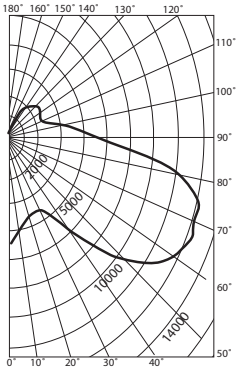
SPACING TO MOUNTING HEIGHT RATIO - 2.2

Test No. HPK09928

HIGH PRESSURE SODIUM-VM5
With Type II 12" Spintop Refractor
200-400 Watt
Mogul Base



CANDLEPOWER – 400 WATT
51000 lumens
For 200 watt multiply by 0.43
For 250 watt multiply by 0.53



ANGLE	CP	ANGLE	CP
0	5783.	85.0	8444.
5.0	5146.	90.0	5658.
15.0	4341.	95.0	4295.
25.0	4133.	105.0	2609.
35.0	4569.	115.0	1903.
45.0	7301.	125.0	2030.
55.0	10633.	135.0	1964.
60.0	11449.	145.0	1415.
65.0	11950.	155.0	764.
70.0	11914.	165.0	200.
75.0	11449.	175.0	0.
80.0	10538.	180.0	0.

Efficiency 78.7%

Angle Vertical, CP 75° Horizontal

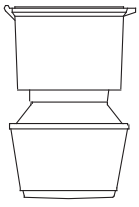
COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	0	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance												
0	.89	.89	.89	.89	.85	.85	.85	.85	.78	.78	.78	.71	.71	.71	.64	.64	.64	.61
1	.77	.72	.67	.63	.73	.68	.64	.60	.62	.58	.55	.55	.53	.50	.50	.48	.45	.42
2	.68	.60	.53	.47	.64	.56	.50	.45	.51	.45	.41	.45	.41	.37	.40	.37	.34	.31
3	.61	.50	.42	.36	.57	.48	.40	.34	.43	.37	.32	.38	.33	.29	.34	.30	.26	.23
4	.54	.43	.35	.28	.51	.41	.33	.27	.36	.30	.25	.32	.27	.23	.29	.24	.21	.18
5	.49	.37	.29	.23	.46	.35	.28	.22	.32	.25	.20	.28	.23	.18	.25	.20	.17	.14
6	.45	.33	.25	.19	.42	.31	.24	.18	.28	.21	.17	.25	.19	.15	.22	.17	.14	.11
7	.41	.29	.21	.16	.39	.28	.20	.15	.25	.19	.14	.22	.17	.13	.20	.15	.11	.09
8	.38	.26	.19	.14	.36	.25	.18	.13	.22	.16	.12	.20	.15	.11	.18	.13	.10	.08
9	.35	.24	.17	.12	.33	.23	.16	.11	.20	.14	.10	.18	.13	.09	.16	.12	.08	.07
10	.33	.22	.15	.10	.31	.21	.14	.10	.19	.13	.09	.17	.12	.08	.15	.10	.07	.06

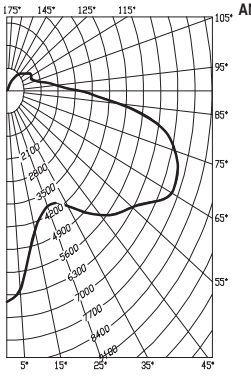
SPACING TO MOUNTING HEIGHT RATIO - 1.38 0-180°

Test No. HPK09932

HIGH PRESSURE SODIUM-VM5
With Type V 12" Spintop Reflector
200-400 Watt
Mogul Base



CANDLEPOWER – 400 WATT
51000 lumens
For 200 watt multiply by 0.43
For 250 watt multiply by 0.53



ANGLE	CP	ANGLE	CP
0	6501.	95.0	2033.
5.0	6106.	100.0	1561.
10.0	5125.	105.0	1178.
15.0	4402.	110.0	1065.
20.0	4098.	115.0	1121.
25.0	3941.	120.0	1099.
30.0	4003.	125.0	955.
35.0	4315.	130.0	818.
40.0	4900.	135.0	688.
45.0	5411.	140.0	566.
50.0	5865.	145.0	433.
55.0	6247.	150.0	326.
60.0	6844.	155.0	237.
65.0	7429.	160.0	118.
70.0	7453.	165.0	32.
75.0	7142.	170.0	0.
80.0	6432.	175.0	0.
85.0	4703.	180.0	0.
90.0	2943.		

Efficiency 83.6%

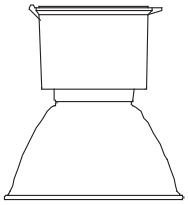
COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	0	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance												
0	.96	.96	.96	.96	.93	.93	.93	.93	.86	.86	.86	.80	.80	.80	.74	.74	.74	.71
1	.83	.77	.71	.67	.79	.74	.69	.64	.68	.64	.60	.62	.59	.56	.57	.54	.52	.49
2	.73	.63	.55	.49	.69	.60	.53	.47	.55	.49	.44	.50	.45	.41	.46	.42	.38	.35
3	.64	.53	.44	.37	.61	.51	.42	.36	.46	.39	.34	.42	.36	.31	.38	.33	.29	.26
4	.58	.46	.37	.30	.55	.44	.35	.29	.40	.33	.27	.36	.30	.25	.33	.28	.24	.21
5	.53	.40	.31	.24	.50	.38	.30	.23	.35	.27	.22	.32	.25	.20	.29	.23	.19	.17
6	.48	.35	.26	.20	.45	.33	.25	.19	.30	.23	.18	.28	.22	.17	.25	.20	.16	.13
7	.44	.31	.22	.16	.41	.29	.22	.16	.27	.20	.15	.25	.18	.14	.22	.17	.13	.11
8	.41	.28	.20	.14	.38	.27	.19	.14	.24	.18	.13	.22	.16	.12	.20	.15	.11	.09
9	.38	.25	.17	.12	.36	.24	.17	.12	.22	.16	.11	.20	.14	.10	.18	.13	.10	.08
10	.35	.23	.15	.11	.33	.22	.15	.10	.20	.14	.10	.18	.13	.09	.17	.12	.08	.07

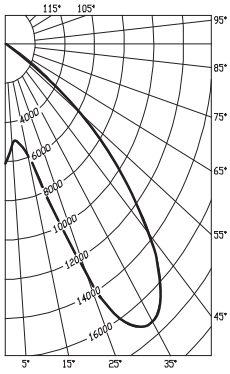
SPACING TO MOUNTING HEIGHT RATIO - .8

Test No. HPK09931

HIGH PRESSURE SODIUM-VM5
With Enclosed Reflector
200-600 Watt
Mogul Base



CANDLEPOWER – 400 WATT
51000 lumens
For 200 watt multiply by 0.43
For 250 watt multiply by 0.53
For 600 watt multiply by 1.76



ANGLE	CP	ANGLE	CP
0	6143.	95.0	0.
5.0	5212.	100.0	0.
10.0	5113.	105.0	0.
15.0	5867.	110.0	0.
20.0	8229.	115.0	0.
25.0	13084.	120.0	0.
30.0	16492.	125.0	0.
35.0	17256.	130.0	0.
40.0	16279.	135.0	0.
45.0	13771.	140.0	0.
50.0	10012.	145.0	0.
55.0	5931.	150.0	0.
60.0	2913.	155.0	0.
65.0	1160.	160.0	0.
70.0	263.	165.0	0.
75.0	128.	170.0	0.
80.0	60.	175.0	0.
85.0	27.	180.0	0.
90.0	0.		

Efficiency 71.1%

COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	0	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance												
0	.85	.85	.85	.85	.83	.83	.83	.83	.79	.79	.79	.76	.76	.76	.73	.73	.73	.71
1	.79	.77	.75	.72	.78	.75	.73	.71	.72	.71	.69	.70	.68	.67	.67	.66	.65	.64
2	.74	.70	.66	.63	.73	.68	.65	.62	.66	.63	.61	.64	.62	.59	.62	.60	.58	.57
3	.69	.63	.59	.55	.68	.62	.58	.54	.60	.57	.54	.58	.55	.53	.57	.54	.52	.51
4	.64	.56	.51	.47	.62	.56	.51	.47	.54	.50	.46	.52	.49	.46	.51	.48	.45	.44
5	.58	.51	.45	.41	.57	.50	.45	.41	.48	.44	.40	.47	.43	.40	.46	.42	.39	.38
6	.54	.45	.39	.35	.52	.44	.39	.35	.43	.38	.35	.42	.38	.34	.41	.37	.34	.33
7	.49	.40	.34	.30	.48	.39	.34	.30	.38	.33	.29	.37	.33	.29	.36	.32	.29	.28
8	.44	.35	.29	.25	.43	.34	.29	.25	.34	.28	.25	.33	.28	.25	.32	.28	.24	.23
9	.40	.31	.25	.21	.39	.30	.25	.21	.29	.24	.21	.29	.24	.20	.28	.24	.20	.19
10	.35	.25	.19	.15	.34	.25	.19	.15	.24	.19	.15	.23	.19	.15	.23	.18	.15	.14

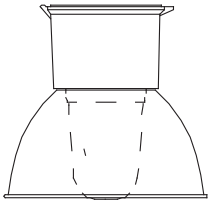
SPACING TO MOUNTING HEIGHT RATIO - 2.3

Test No. HPK09933

L

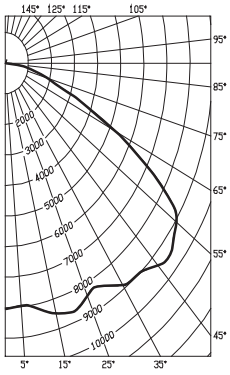
HIGH PRESSURE SODIUM-VM5

With Globe & Deep White Reflector
200-400 Watt
Mogul Base



CANDLEPOWER – 400 WATT

51000 lumens
For 200 watt multiply by 0.43
For 250 watt multiply by 0.53



ANGLE	CP	ANGLE	CP
0	8039.	95.0	29.
5.0	7957.	100.0	36.
10.0	8160.	105.0	43.
15.0	8458.	110.0	49.
20.0	8642.	115.0	54.
25.0	8404.	120.0	59.
30.0	8416.	125.0	63.
35.0	8850.	130.0	64.
40.0	9018.	135.0	55.
45.0	9370.	140.0	43.
50.0	9428.	145.0	108.
55.0	9050.	150.0	88.
60.0	7641.	155.0	26.
65.0	5305.	160.0	15.
70.0	3143.	165.0	11.
75.0	1895.	170.0	0.
80.0	1073.	175.0	0.
85.0	448.	180.0	0.
90.0	30.		

Efficiency 70.4%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

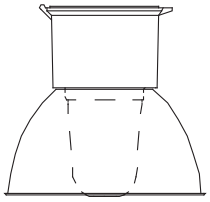
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.84 .84 .84 .84	.82 .82 .82 .82	.78 .78 .78	.75 .75 .75	.72 .72 .72	.70
1	.77 .74 .71 .68	.75 .72 .69 .67	.69 .67 .65	.66 .64 .62	.63 .62 .60	.59
2	.70 .65 .60 .56	.68 .63 .59 .55	.61 .57 .54	.58 .55 .53	.56 .54 .51	.50
3	.64 .57 .51 .47	.62 .56 .51 .46	.54 .49 .45	.52 .48 .45	.50 .46 .44	.42
4	.58 .50 .43 .39	.57 .49 .43 .38	.47 .42 .38	.45 .41 .37	.44 .40 .37	.35
5	.53 .44 .37 .32	.51 .43 .37 .32	.41 .36 .32	.40 .35 .31	.38 .34 .31	.29
6	.48 .39 .32 .28	.47 .38 .32 .28	.37 .31 .27	.35 .31 .27	.34 .30 .27	.25
7	.44 .34 .28 .23	.43 .34 .28 .23	.33 .27 .23	.31 .26 .23	.30 .26 .23	.21
8	.41 .30 .24 .20	.39 .30 .24 .20	.29 .23 .20	.28 .23 .19	.27 .23 .19	.18
9	.37 .27 .21 .17	.36 .27 .21 .17	.26 .21 .17	.25 .20 .17	.24 .20 .17	.15
10	.34 .24 .18 .14	.33 .23 .18 .14	.23 .17 .14	.22 .17 .14	.21 .17 .13	.12

SPACING TO MOUNTING HEIGHT RATIO - 1.7

Test No. HPK09925

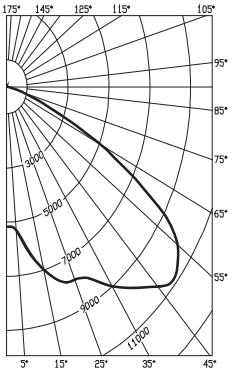
HIGH PRESSURE SODIUM-VM5

With Globe & Deep Alzak Reflector
200-400 Watt
Mogul Base



CANDLEPOWER – 400 WATT

51000 lumens
For 200 watt multiply by 0.43
For 250 watt multiply by 0.53



ANGLE	CP	ANGLE	CP
0	5167.	95.0	14.
5.0	5283.	100.0	14.
10.0	6074.	105.0	14.
15.0	6962.	110.0	15.
20.0	7637.	115.0	14.
25.0	7876.	120.0	14.
30.0	8220.	125.0	13.
35.0	9004.	130.0	12.
40.0	9663.	135.0	11.
45.0	10471.	140.0	13.
50.0	10790.	145.0	86.
55.0	10201.	150.0	74.
60.0	8174.	155.0	19.
65.0	5041.	160.0	15.
70.0	2326.	165.0	10.
75.0	1015.	170.0	0.
80.0	426.	175.0	0.
85.0	153.	180.0	0.
90.0	21.		

Efficiency 69.2%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

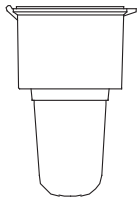
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.83 .83 .83 .83	.81 .81 .81 .81	.77 .77 .77	.74 .74 .74	.71 .71 .71	.69
1	.76 .73 .70 .68	.74 .71 .69 .67	.68 .66 .64	.66 .64 .62	.63 .62 .60	.59
2	.70 .64 .60 .56	.68 .63 .59 .55	.60 .57 .54	.58 .55 .53	.56 .54 .52	.50
3	.64 .57 .51 .47	.62 .55 .50 .46	.53 .49 .46	.51 .48 .45	.50 .47 .44	.42
4	.57 .49 .43 .38	.56 .48 .43 .38	.46 .42 .38	.45 .41 .37	.43 .40 .37	.35
5	.52 .43 .37 .32	.51 .42 .36 .32	.41 .35 .31	.39 .35 .31	.38 .34 .31	.29
6	.47 .38 .31 .27	.46 .37 .31 .27	.36 .30 .26	.35 .30 .26	.33 .29 .26	.24
7	.43 .33 .27 .22	.42 .32 .26 .22	.31 .26 .22	.30 .25 .22	.29 .25 .21	.20
8	.39 .29 .23 .18	.38 .28 .22 .18	.27 .22 .18	.27 .22 .18	.26 .21 .18	.16
9	.36 .26 .20 .16	.35 .25 .19 .15	.25 .19 .15	.24 .19 .15	.23 .18 .15	.14
10	.32 .22 .16 .12	.31 .22 .16 .12	.21 .16 .12	.20 .15 .12	.20 .15 .12	.10

SPACING TO MOUNTING HEIGHT RATIO - 2.5

Test No. HPK09926

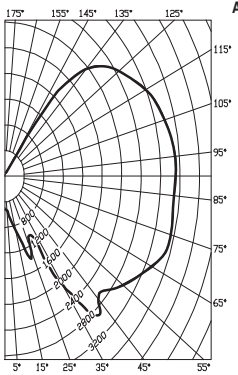
METAL HALIDE, METAL HALIDE PULSE-VM5

With Globe
250-400 Watt
Mogul Base



CANDLEPOWER – 400 WATT

36000 lumens
For 250 MH multiply by 0.61
For 250 MHP multiply by 0.66
For 320 MHP multiply by 0.92
For 350 MHP multiply by 1.00
For 400 MHP multiply by 1.22



ANGLE	CP	ANGLE	CP
0	529.	95.0	3527.
5.0	538.	100.0	3475.
10.0	690.	105.0	3403.
15.0	896.	110.0	3325.
20.0	1223.	115.0	3203.
25.0	1288.	120.0	3026.
30.0	1074.	125.0	2854.
35.0	2101.	130.0	2667.
40.0	2807.	135.0	2379.
45.0	2718.	140.0	1779.
50.0	2770.	145.0	508.
55.0	2942.	150.0	55.
60.0	3133.	155.0	26.
65.0	3353.	160.0	15.
70.0	3493.	165.0	8.
75.0	3530.	170.0	0.
80.0	3489.	175.0	0.
85.0	3497.	180.0	0.
90.0	3523.		

Efficiency 92.4%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	100 100 100 100	.92 .92 .92 .92	.79 .79 .79	.66 .66 .66	.55 .55 .55	.50
1	.86 .79 .73 .68	.78 .73 .68 .63	.61 .57 .53	.50 .47 .44	.40 .38 .36	.31
2	.76 .66 .58 .52	.69 .61 .54 .48	.50 .45 .40	.41 .37 .33	.32 .29 .26	.22
3	.68 .57 .48 .41	.62 .52 .44 .38	.43 .37 .31	.35 .30 .26	.27 .23 .20	.16
4	.61 .49 .40 .33	.56 .45 .36 .30	.37 .30 .25	.29 .24 .20	.23 .19 .15	.12
5	.55 .42 .33 .27	.50 .39 .31 .24	.32 .25 .20	.26 .20 .16	.20 .16 .12	.09
6	.51 .37 .28 .22	.46 .34 .26 .20	.28 .22 .17	.23 .17 .13	.17 .13 .10	.07
7	.46 .33 .25 .18	.42 .30 .22 .17	.25 .19 .14	.20 .15 .11	.15 .11 .08	.05
8	.43 .29 .21 .16	.39 .27 .19 .14	.22 .16 .12	.18 .13 .09	.14 .10 .07	.04
9	.39 .26 .19 .13	.36 .24 .17 .12	.20 .14 .10	.16 .11 .08	.12 .08 .05	.03
10	.36 .24 .16 .11	.33 .22 .15 .10	.18 .12 .08	.14 .10 .06	.11 .07 .04	.02

SPACING TO MOUNTING HEIGHT RATIO - 3.6

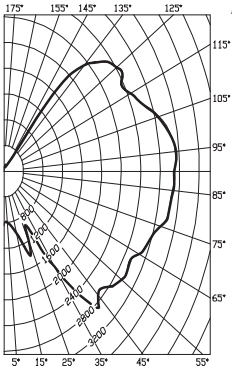
Test No. HPK09911

METAL HALIDE, METAL HALIDE PULSE - VM5

With Globe & Guard
250-400 Watt
Mogul Base

CANDLEPOWER – 400 WATT

36000 lumens
For 250 MH multiply by 0.61
For 250 MHP multiply by 0.66
For 320 MHP multiply by 0.92
For 350 MHP multiply by 1.00
For 400 MHP multiply by 1.22



ANGLE	CP	ANGLE	CP
0	844.	95.0	3523.
5.0	804.	100.0	3454.
10.0	877.	105.0	3290.
15.0	998.	110.0	3030.
20.0	1266.	115.0	2863.
25.0	1240.	120.0	2764.
30.0	1071.	125.0	2832.
35.0	1830.	130.0	2643.
40.0	2625.	135.0	2324.
45.0	2730.	140.0	1482.
50.0	2787.	145.0	191.
55.0	2934.	150.0	107.
60.0	2932.	155.0	106.
65.0	3052.	160.0	109.
70.0	3155.	165.0	110.
75.0	3309.	170.0	0.
80.0	3433.	175.0	0.
85.0	3465.	180.0	0.
90.0	3496.		

Efficiency 88.7%

COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

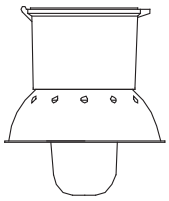
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50		30		10		0	
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance											
0	.96	.96	.96	.96	.89	.89	.89	.89	.76	.76	.76	.76	.64	.64	.64	.64	.53	.53	.53	.53	.48
1	.82	.76	.70	.65	.75	.70	.65	.61	.58	.55	.51	.48	.45	.42	.38	.36	.34	.29
2	.73	.64	.56	.50	.66	.58	.52	.46	.48	.43	.39	.39	.35	.32	.31	.28	.25	.21
3	.65	.54	.46	.39	.59	.50	.42	.36	.41	.35	.30	.33	.29	.25	.26	.22	.19	.15
4	.59	.47	.38	.31	.53	.43	.35	.29	.35	.29	.24	.28	.23	.19	.22	.18	.15	.12
5	.53	.41	.32	.26	.48	.37	.29	.24	.31	.24	.20	.25	.20	.16	.19	.15	.12	.09
6	.49	.36	.27	.21	.44	.33	.25	.20	.27	.21	.16	.22	.17	.13	.17	.13	.10	.07
7	.45	.32	.24	.18	.40	.29	.22	.16	.24	.18	.14	.19	.14	.11	.15	.11	.08	.05
8	.41	.28	.20	.15	.37	.26	.19	.14	.21	.16	.11	.17	.12	.09	.13	.09	.06	.04
9	.38	.26	.18	.13	.34	.23	.17	.12	.19	.14	.10	.15	.11	.07	.12	.08	.05	.03
10	.35	.23	.16	.11	.32	.21	.14	.10	.17	.12	.08	.14	.09	.06	.11	.07	.04	.02

SPACING TO MOUNTING HEIGHT RATIO - 3.2

Test No. HPK09912

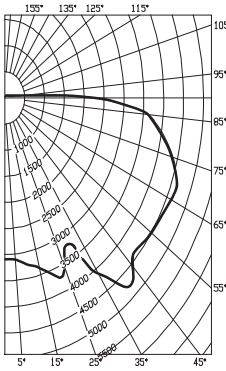
METAL HALIDE, METAL HALIDE PULSE - VM5

With Globe &
Dome Reflector
250-400 Watt
Mogul Base



CANDLEPOWER – 400 WATT

36000 lumens
For 250 MH multiply by 0.61
For 250 MHP multiply by 0.66
For 320 MHP multiply by 0.92
For 350 MHP multiply by 1.00
For 400 MHP multiply by 1.22



ANGLE	CP	ANGLE	CP
0	3088.	95.0	551.
5.0	3105.	100.0	125.
10.0	3239.	105.0	106.
15.0	3370.	110.0	95.
20.0	3603.	115.0	83.
25.0	3544.	120.0	70.
30.0	3218.	125.0	171.
35.0	4119.	130.0	441.
40.0	4720.	135.0	257.
45.0	4510.	140.0	35.
50.0	4417.	145.0	36.
55.0	4478.	150.0	25.
60.0	4526.	155.0	21.
65.0	4629.	160.0	18.
70.0	4602.	165.0	15.
75.0	4381.	170.0	14.
80.0	4047.	175.0	12.
85.0	3613.	180.0	11.
90.0	2234.		

Efficiency 76.1%

COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

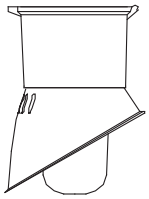
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50		30		10		0	
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance											
0	.90	.90	.90	.90	.87	.87	.87	.87	.83	.83	.83	.78	.78	.78	.78	.74	.74	.74	.73
1	.76	.71	.65	.61	.74	.68	.64	.59	.64	.60	.57	.61	.57	.54	.57	.54	.52	.50
2	.68	.59	.51	.45	.65	.57	.50	.44	.53	.48	.43	.50	.45	.41	.47	.43	.40	.38
3	.61	.50	.42	.36	.58	.48	.41	.35	.46	.39	.34	.43	.37	.33	.40	.36	.32	.29
4	.54	.43	.35	.28	.52	.42	.34	.28	.39	.32	.27	.37	.31	.26	.35	.30	.25	.23
5	.49	.37	.29	.23	.47	.36	.29	.23	.34	.27	.22	.32	.26	.21	.30	.25	.21	.19
6	.45	.33	.25	.19	.43	.32	.25	.19	.30	.24	.19	.29	.23	.18	.27	.22	.18	.16
7	.41	.29	.22	.16	.40	.29	.21	.16	.27	.20	.16	.25	.20	.15	.24	.19	.15	.13
8	.38	.26	.19	.14	.36	.25	.18	.13	.24	.18	.13	.23	.17	.13	.22	.16	.12	.11
9	.35	.24	.16	.12	.34	.23	.16	.12	.22	.16	.11	.21	.15	.11	.20	.14	.11	.09
10	.32	.21	.14	.09	.31	.20	.14	.09	.19	.13	.09	.18	.13	.09	.17	.12	.09	.07

SPACING TO MOUNTING HEIGHT RATIO - 2.0

Test No. HPK09918

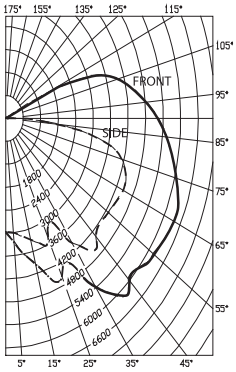
METAL HALIDE, METAL HALIDE PULSE - VM5

With Globe & Angle Reflector
250-400 Watt
Mogul Base



CANDLEPOWER – 400 WATT

36000 lumens
For 250 MH multiply by 0.61
For 250 MHP multiply by 0.66
For 320 MHP multiply by 0.92
For 350 MHP multiply by 1.00
For 400 MHP multiply by 1.22



Front ANGLE	Front CP	Side ANGL	Side CP
0.0	2962.	0.0	2962.
5.0	3212.	5.0	2991.
15.0	3923.	15.0	3278.
25.0	4545.	25.0	3440.
35.0	5416.	35.0	3975.
45.0	5946.	45.0	4381.
55.0	6169.	55.0	4289.
65.0	6365.	65.0	4443.
75.0	6074.	75.0	4137.
85.0	5553.	85.0	1868.
90.0	5239.	90.0	502.
95.0	4849.	95.0	145.
105.0	3991.	100.0	76.
115.0	1680.	115.0	57.
125.0	83.	125.0	46.
135.0	41.	135.0	35.
145.0	33.	145.0	31.
155.0	13.	155.0	19.
165.0	10.	165.0	13.
175.0	8.	175.0	8.
180.0	6.	180.0	6.

Efficiency 73.3%

COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

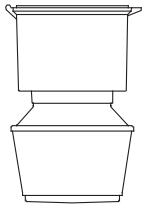
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50		30		10		0	
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance											
0	.85	.85	.85	.85	.82	.82	.82	.82	.76	.76	.76	.70	.70	.70	.65	.65	.65	.63
1	.74	.69	.65	.61	.71	.66	.62	.59	.61	.58	.55	.56	.54	.51	.52	.50	.48	.46
2	.66	.59	.52	.47	.63	.56	.50	.46	.52	.47	.43	.48	.44	.40	.44	.41	.38	.36
3	.60	.50	.43	.38	.57	.48	.42	.37	.45	.39	.35	.41	.37	.33	.38	.34	.31	.29
4	.54	.44	.36	.30	.51	.42	.35	.30	.39	.33	.28	.36	.31	.27	.33	.29	.25	.23
5	.49	.38	.31	.25	.46	.37	.30	.24	.34	.28	.23	.31	.26	.22	.29	.24	.21	.19
6	.45	.34	.26	.21	.42	.32	.26	.21	.30	.24	.20	.28	.22	.19	.26	.21	.18	.16
7	.41	.30	.23	.18	.39	.29	.22	.17	.27	.21	.16	.25	.19	.16	.23	.18	.15	.13
8	.37	.26	.20	.15	.36	.25	.19	.15	.24	.18	.14	.22	.17	.13	.20	.16	.12	.11
9	.35	.24	.17	.13	.33	.23	.17	.12	.21	.16	.12	.20	.15	.11	.18	.14	.11	.09
10	.32	.21	.15	.10	.30	.20	.14	.10	.19	.13	.10	.17	.12	.09	.16	.12	.08	.07

SPACING TO MOUNTING HEIGHT RATIO - 2.2

Test No. HPK09917

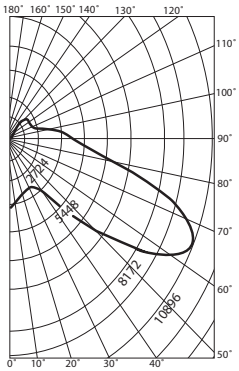
METAL HALIDE, METAL HALIDE PULSE-VM5

With Type II 12" Spintop Refractor
250-400 Watt
Mogul Base



CANDLEPOWER – 400 WATT

36000 lumens
For 250 MH multiply by 0.61
For 250 MHP multiply by 0.66
For 320 MHP multiply by 0.92
For 350 MHP multiply by 1.00
For 400 MHP multiply by 1.22



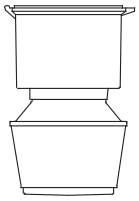
ANGLE	CP	ANGLE	CP
0	3548.	85.0	3897.
5.0	3303.	90.0	3203.
15.0	2932.	95.0	2829.
25.0	2791.	105.0	1774.
35.0	3115.	115.0	1293.
45.0	5458.	125.0	1303.
55.0	8761.	135.0	1335.
60.0	10352.	145.0	1046.
65.0	10896.	155.0	621.
70.0	10085.	165.0	178.
75.0	8039.	175.0	0.
80.0	5379.	180.0	0.

Angle Vertical
CP 75° Horizontal

Efficiency 78.8%

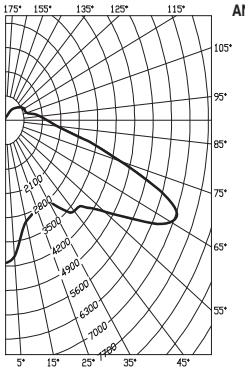
METAL HALIDE, METAL HALIDE PULSE-VM5

With Type V 12" Spintop Refractor
250-400 Watt
Mogul Base



CANDLEPOWER – 400 WATT

36000 lumens
For 250 MH multiply by 0.61
For 250 MHP multiply by 0.66
For 320 MHP multiply by 0.92
For 350 MHP multiply by 1.00
For 400 MHP multiply by 1.22

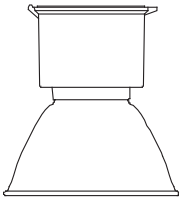


ANGLE	CP	ANGLE	CP
0	4106.	95.0	1359.
5.0	3914.	100.0	1093.
10.0	3394.	105.0	856.
15.0	3010.	110.0	786.
20.0	2887.	115.0	823.
25.0	2709.	120.0	748.
30.0	2679.	125.0	621.
35.0	2886.	130.0	559.
40.0	3317.	135.0	511.
45.0	3681.	140.0	424.
50.0	3856.	145.0	316.
55.0	4557.	150.0	226.
60.0	5736.	155.0	161.
65.0	6936.	160.0	85.
70.0	6547.	165.0	26.
75.0	4564.	170.0	0.
80.0	3005.	175.0	0.
85.0	2015.	180.0	0.
90.0	1593.		

Efficiency 82.3%

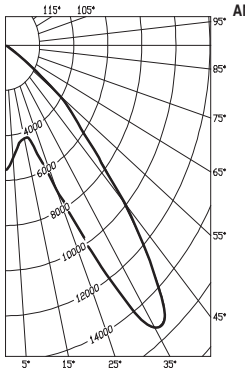
METAL HALIDE, METAL HALIDE PULSE-VM5

With Enclosed Reflector
250-400 Watt
Mogul Base



CANDLEPOWER – 400 WATT

36000 lumens
For 250 MH multiply by 0.61
For 250 MHP multiply by 0.66
For 320 MHP multiply by 0.92
For 350 MHP multiply by 1.00
For 400 MHP multiply by 1.22



ANGLE	CP	ANGLE	CP
0	5576.	95.0	0.
5.0	5010.	100.0	0.
10.0	4513.	105.0	0.
15.0	4291.	110.0	0.
20.0	4758.	115.0	0.
25.0	6978.	120.0	0.
30.0	11554.	125.0	0.
35.0	15300.	130.0	0.
40.0	14033.	135.0	0.
45.0	9613.	140.0	0.
50.0	5974.	145.0	0.
55.0	3716.	150.0	0.
60.0	1324.	155.0	0.
65.0	521.	160.0	0.
70.0	295.	165.0	0.
75.0	143.	170.0	0.
80.0	60.	175.0	0.
85.0	21.	180.0	0.
90.0	0.		

Efficiency 71.5%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.89 .89 .89 .89	.85 .85 .85 .85	.77 .77 .77	.70 .70 .70	.64 .64 .64	.61
1	.78 .73 .68 .64	.74 .69 .65 .61	.62 .59 .56	.56 .53 .51	.50 .48 .46	.43
2	.69 .60 .53 .48	.65 .57 .51 .46	.51 .46 .42	.46 .42 .38	.41 .38 .35	.32
3	.61 .51 .43 .37	.57 .48 .41 .35	.43 .37 .32	.38 .33 .29	.34 .30 .27	.24
4	.55 .44 .35 .29	.51 .41 .34 .28	.37 .30 .25	.33 .27 .23	.29 .25 .21	.18
5	.50 .38 .30 .23	.46 .36 .28 .22	.32 .25 .21	.28 .23 .19	.25 .20 .17	.14
6	.45 .33 .25 .19	.42 .31 .24 .19	.28 .22 .17	.25 .19 .15	.22 .17 .14	.12
7	.41 .29 .22 .16	.39 .28 .21 .16	.25 .19 .14	.22 .17 .13	.20 .15 .11	.09
8	.38 .26 .19 .14	.36 .25 .18 .13	.22 .16 .12	.20 .15 .11	.18 .13 .10	.08
9	.35 .24 .17 .12	.33 .23 .16 .11	.20 .14 .10	.18 .13 .09	.16 .12 .08	.07
10	.33 .22 .15 .10	.31 .20 .14 .10	.18 .13 .09	.16 .12 .08	.15 .10 .07	.06

SPACING TO MOUNTING HEIGHT RATIO - 1.88 0-180°

Test No. HPK10081

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.95 .95 .95 .95	.91 .91 .91 .91	.84 .84 .84	.78 .78 .78	.73 .73 .73	.70
1	.82 .77 .72 .67	.79 .74 .69 .65	.68 .64 .61	.62 .59 .56	.57 .55 .53	.50
2	.73 .64 .56 .50	.69 .61 .54 .48	.56 .50 .45	.51 .46 .42	.47 .43 .40	.37
3	.64 .53 .45 .38	.61 .51 .43 .37	.47 .40 .35	.43 .37 .33	.39 .34 .30	.28
4	.57 .45 .36 .30	.54 .43 .35 .29	.39 .32 .27	.36 .30 .25	.33 .28 .23	.21
5	.52 .39 .30 .23	.49 .37 .29 .23	.34 .27 .21	.31 .25 .20	.28 .23 .18	.16
6	.47 .34 .26 .20	.45 .33 .25 .19	.30 .23 .18	.27 .21 .17	.25 .20 .15	.13
7	.43 .30 .22 .16	.41 .29 .21 .16	.27 .20 .15	.24 .18 .14	.22 .17 .13	.11
8	.40 .27 .19 .14	.38 .26 .19 .13	.24 .17 .13	.22 .16 .12	.20 .15 .11	.09
9	.37 .25 .17 .12	.35 .24 .17 .12	.22 .15 .11	.20 .14 .10	.18 .13 .09	.08
10	.34 .22 .15 .10	.32 .21 .14 .10	.19 .13 .09	.18 .12 .08	.16 .11 .08	.06

SPACING TO MOUNTING HEIGHT RATIO - .9

Test No. HPK10078

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

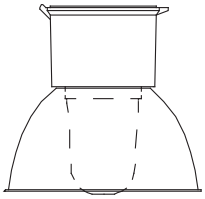
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.86 .86 .86 .86	.84 .84 .84 .84	.80 .80 .80	.77 .77 .77	.74 .74 .74	.72
1	.81 .78 .76 .73	.79 .76 .74 .72	.73 .72 .70	.71 .69 .68	.68 .67 .66	.65
2	.75 .71 .67 .64	.73 .69 .66 .63	.67 .64 .62	.65 .62 .60	.63 .61 .59	.58
3	.70 .64 .59 .56	.68 .63 .59 .55	.61 .57 .54	.59 .56 .53	.57 .55 .52	.51
4	.64 .57 .52 .48	.63 .56 .51 .47	.54 .50 .47	.53 .49 .46	.51 .48 .46	.44
5	.59 .51 .45 .41	.58 .50 .45 .41	.49 .44 .40	.47 .43 .40	.46 .43 .40	.38
6	.54 .45 .39 .35	.53 .44 .39 .35	.43 .38 .35	.42 .38 .34	.41 .37 .34	.33
7	.49 .40 .34 .29	.48 .39 .33 .29	.38 .33 .29	.37 .32 .29	.36 .32 .29	.27
8	.44 .35 .28 .24	.43 .34 .28 .24	.33 .28 .24	.32 .27 .24	.31 .27 .24	.22
9	.40 .30 .24 .20	.39 .29 .24 .20	.29 .23 .20	.28 .23 .19	.27 .23 .19	.18
10	.35 .25 .18 .14	.34 .24 .18 .14	.23 .18 .14	.23 .18 .14	.22 .17 .14	.13

SPACING TO MOUNTING HEIGHT RATIO - 2.1

Test No. HPK10077

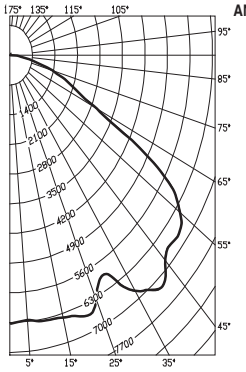
METAL HALIDE, METAL HALIDE PULSE-VM5

With Globe & Deep White Reflector
250-400 Watt
Mogul Base



CANDLEPOWER – 400 WATT

36000 lumens
For 250 MH multiply by 0.61
For 250 MHP multiply by 0.66
For 320 MHP multiply by 0.92
For 350 MHP multiply by 1.00
For 400 MHP multiply by 1.22



ANGLE	CP	ANGLE	CP
0	6298.	95.0	21.
5.0	6273.	100.0	26.
10.0	6354.	105.0	30.
15.0	6408.	110.0	35.
20.0	6542.	115.0	39.
25.0	6352.	120.0	42.
30.0	5943.	125.0	44.
35.0	6787.	130.0	45.
40.0	7215.	135.0	37.
45.0	6823.	140.0	33.
50.0	6732.	145.0	183.
55.0	6471.	150.0	35.
60.0	5358.	155.0	20.
65.0	2951.	160.0	12.
70.0	2049.	165.0	8.
75.0	1303.	170.0	0.
80.0	706.	175.0	0.
85.0	272.	180.0	0.
90.0	18.		

Efficiency 71.6%

COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

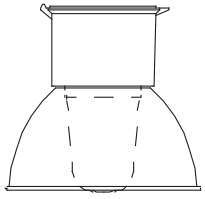
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance											
0	.84	.84	.84	.84	.82	.82	.82	.82	.79	.79	.79	.70
1	.78	.74	.71	.69	.76	.73	.70	.68	.70	.67	.65	.60
2	.71	.66	.61	.57	.69	.64	.60	.57	.62	.58	.55	.51
3	.65	.58	.53	.48	.63	.57	.52	.48	.55	.50	.47	.44
4	.59	.51	.45	.40	.58	.50	.44	.40	.48	.43	.39	.37
5	.54	.45	.39	.34	.53	.44	.38	.34	.43	.38	.34	.31
6	.50	.40	.34	.29	.48	.40	.34	.29	.38	.33	.29	.27
7	.45	.36	.29	.25	.44	.35	.29	.25	.34	.28	.24	.23
8	.42	.32	.25	.21	.40	.31	.25	.21	.30	.25	.21	.19
9	.38	.28	.22	.18	.37	.28	.22	.18	.27	.22	.18	.16
10	.35	.25	.19	.15	.34	.24	.19	.15	.24	.18	.15	.13

SPACING TO MOUNTING HEIGHT RATIO - 1.6

Test No. HPK09915

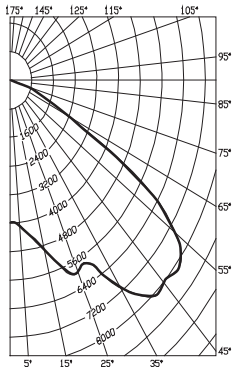
METAL HALIDE, METAL HALIDE PULSE-VM5

With Globe & Deep Alzak Reflector
250-400 Watt
Mogul Base



CANDLEPOWER – 400 WATT

36000 lumens
For 250 MH multiply by 0.61
For 250 MHP multiply by 0.66
For 320 MHP multiply by 0.92
For 350 MHP multiply by 1.00
For 400 MHP multiply by 1.22



ANGLE	CP	ANGLE	CP
0	3982.	95.0	9.
5.0	4067.	100.0	10.
10.0	4471.	105.0	10.
15.0	4949.	110.0	11.
20.0	5584.	115.0	10.
25.0	5932.	120.0	10.
30.0	5933.	125.0	10.
35.0	7123.	130.0	9.
40.0	7950.	135.0	8.
45.0	8017.	140.0	14.
50.0	8145.	145.0	173.
55.0	7441.	150.0	25.
60.0	5491.	155.0	16.
65.0	2411.	160.0	12.
70.0	1327.	165.0	7.
75.0	651.	170.0	0.
80.0	268.	175.0	0.
85.0	90.	180.0	0.
90.0	10.		

Efficiency 70.8%

COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

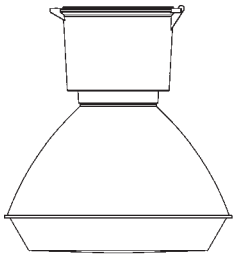
% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance											
0	.83	.83	.83	.83	.81	.81	.81	.81	.78	.78	.78	.70
1	.77	.74	.71	.69	.75	.72	.70	.68	.69	.67	.65	.60
2	.71	.66	.61	.58	.69	.64	.60	.57	.62	.58	.56	.52
3	.65	.58	.53	.49	.63	.57	.52	.48	.55	.51	.47	.44
4	.59	.51	.45	.40	.57	.50	.44	.40	.48	.43	.40	.37
5	.54	.45	.39	.34	.52	.44	.38	.34	.42	.37	.33	.31
6	.49	.39	.33	.28	.47	.39	.33	.28	.37	.32	.28	.26
7	.44	.34	.28	.23	.43	.34	.28	.23	.33	.27	.23	.21
8	.40	.30	.24	.19	.39	.30	.24	.19	.29	.23	.19	.17
9	.37	.27	.21	.16	.36	.26	.20	.16	.25	.20	.16	.15
10	.33	.23	.17	.13	.32	.22	.17	.13	.22	.16	.13	.11

SPACING TO MOUNTING HEIGHT RATIO - 2.5

Test No. HPK09914

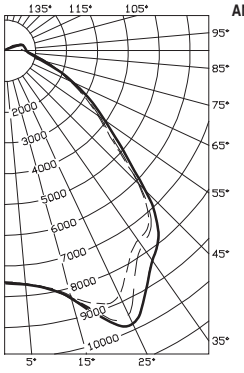
METAL HALIDE, METAL HALIDE PULSE-VM5

With Enclosed Poly Shielded Reflector
250-400 Watt
Mogul Base



CANDLEPOWER – 400 WATT

36000 lumens
For 250 MH multiply by 0.61
For 250 MHP multiply by 0.66
For 320 MHP multiply by 0.92
For 350 MHP multiply by 1.00
For 400 MHP multiply by 1.22



ANGLE	CP	ANGLE	CP
0	7528.	95.0	542.
5.0	7607.	100.0	498.
10.0	7813.	105.0	463.
15.0	8263.	110.0	429.
20.0	8750.	115.0	365.
25.0	8768.	120.0	277.
30.0	7997.	125.0	174.
35.0	7518.	130.0	75.
40.0	7245.	135.0	12.
45.0	6107.	140.0	0.
50.0	4565.	145.0	0.
55.0	3680.	150.0	0.
60.0	2976.	155.0	0.
65.0	2334.	160.0	0.
70.0	1816.	165.0	0.
75.0	1408.	170.0	0.
80.0	1073.	175.0	0.
85.0	800.	180.0	.
90.0	614.		

Efficiency 63.4%

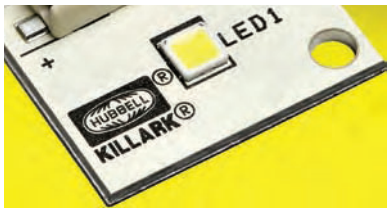
COEFFICIENTS OF UTILIZATION --- ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80		70		50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance											
0	.75	.75	.75	.75	.72	.72	.72	.72	.68	.68	.68	.59
1	.69	.66	.63	.61	.66	.64	.61	.59	.60	.58	.57	.50
2	.63	.59	.55	.51	.61	.57	.54	.50	.54	.51	.49	.44
3	.59	.53	.48	.44	.57	.51	.47	.44	.49	.45	.43	.39
4	.54	.47	.42	.38	.52	.46	.41	.38	.44	.40	.37	.34
5	.50	.43	.37	.34	.48	.42	.37	.33	.40	.36	.33	.30
6	.46	.39	.33	.30	.45	.38	.33	.29	.36	.32	.29	.27
7	.43	.35	.30	.26	.42	.34	.29	.26	.33	.29	.26	.23
8	.40	.32	.27	.23	.39	.31	.26	.23	.30	.26	.23	.21
9	.37	.29	.24	.21	.36	.28	.24	.20	.27	.23	.20	.18
10	.34	.25	.20	.17	.33	.25	.20	.17	.24	.20	.17	.15

SPACING TO MOUNTING HEIGHT RATIO - 1.5

Test No. HPK09904

LED Technology



Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III, Div. 1 & 2
Suitable for wet locations
Marine
NEMA 3, 4, 4X
Factory Sealed

Certified - File LR11713

FEATURES-SPECIFICATIONS

HOSTILE*LITE*® LED

Applications
HOSTILE*LITE*® EML LED Series fixtures are designed for installations where moisture, dirt, dust, corrosion and vibration may be present, or NEMA 3 and 4x areas where wind, water, snow or high ambients can be expected. They can be used in locations made hazardous due to the presence of flammable or explosive gases, vapors and combustible dusts as defined by the NEC.

Applications include classified areas such as paint manufacturing plants, ammunition facilities, oil and gas producing and refining plants, off-shore and dockside installations, tank farms, pipeline pumping stations and marine loading and fuel transfer terminals.

Compliances
- UL-8750 for LED lighting
- UL-844 Electric Lighting Fixtures for use in Hazardous Locations
- UL Marine Type Electric Lighting Fixtures
- CSA C22.2 no. 137-M1981 Electric Luminaires for use in Hazardous Locations
- NEMA 3, 4, 4X, 7CD, 9EFG

Materials
- Ballast tank, splice box and guards corrosion resistant copper-free aluminum alloy
- Baked powder epoxy/polyester finish, electrostatically applied for complete, uniform corrosion protection
- All external hardware - Stainless Steel
- Reflectors are aluminum with white finish

LED Luminaire Features and Standards
- Compact Explosion-proof with Traditional Industrial Appearance and Suitability
- Fluted or Exclusive Clear Globe; Dome or Angle Reflectors
- Optional Mounting arrangements including Pendant, Wall, Ceiling, and Stanchion
- EML LED Housings can be retrofitted to existing EZ splice boxes; upgrade from Incandescent, Fluorescent or HID
- Energy Savings - less than 50 Watts of Power
- Long Life - 50,000 - 55,000 Maintenance Free Hours to 70% Initial Lumens
- Crisp White Light for Excellent Color Rendering - Chromaticity Avg. 4950°K (CCT); 69 CRI
- Ambient suitability -40°C to 55°C
- Instant on - including after power interruption
- "World Voltage" 120-277VAC 50/60Hz
- Solder-LESS LED Board Connections – Vibration Resistant
- Dual Drivers - Redundant Systems (built-in backup)
- LM80-08* Measurement of lumen maintenance for LED light sources
- LM79-08* Certified "Absolute" Photometry, including Chromaticity Color for Solid State Lighting
- L70 Values - Industry Nomenclature for Hours of use to 70% of Initial Lumens
- Factory Sealed Construction - no external seal required, simply wire mounting cap and thread-in fixture to install

* LM-xx are Illumination Engineering Society Standards designed to promote uniformity in testing procedures among test labs and manufacturers. For more information go to www.ies.org

Catalog Number Logic

EMLC 45 30 A2 G AN - ASSEMBLED

Tank & Globe with Driver and LEDs
EMLC — Tank w/Clear Globe
EML — Tank w/Fluted Globe

Wattage
45

Voltage
30 — 120-277VAC 50/60Hz

Guard
G = Guard

Mounting Type
A2 — 3/4" Pendant
A3 — 1" Pendant
X2 — 3/4" Ceiling
X3 — 1" Ceiling
B2 — 3/4" Bracket
B3 — 1" Bracket
D4 — 1-1/4" / 1-1/2" Stanchion

Accessories (sold separately)
ERSD30 — Dome Reflector
ERA30 — Angle Reflector

HUBBELL
KILLARK®


Pendant


Ceiling


Wall


Stanchion

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III, Div. 1 & 2
Suitable for wet locations
Marine
NEMA 3, 4, 4X
Factory Sealed

Certified - File LR11713

ORDERING INFORMATION

EML SERIES PENDANT WITH OPTIC AND GUARD①

WATTS	HUB SIZE②	VOLTAGE④	FLUTED GLOBE & GUARD	CLEAR GLOBE & GUARD*
45	3/4"	120-277VAC	EML4530A2G	EMLC4530A2G

EML SERIES CEILING WITH OPTIC AND GUARD①

WATTS	HUB SIZE②	VOLTAGE④	FLUTED GLOBE & GUARD	CLEAR GLOBE & GUARD*
45	3/4"	120-277VAC	EML4530X2G	EMLC4530X2G

EML SERIES WALL WITH OPTIC AND GUARD①

WATTS	HUB SIZE②	VOLTAGE④	FLUTED GLOBE & GUARD	CLEAR GLOBE & GUARD*
45	3/4"	120-277VAC	EML4530B2G	EMLC4530B2G

EML SERIES 25º STANCHION WITH OPTIC AND GUARD①

WATTS	HUB SIZE③	VOLTAGE④	FLUTED GLOBE & GUARD	CLEAR GLOBE & GUARD*
45	1-1/4"/1-1/2"	120-277VAC	EML4530D4G	EMLC4530D4G

① Catalog numbers shown are with Guard; Omit G if guard not required e.g. EML4530A2.
② Catalog numbers shown are with 3/4" conduit openings; change "2" to "3" for 1" e.g. EML4530A3G.
③ Stanchion conduit hub size supplied is 1-1/2" with 1-1/2" to 1-1/4" reducer for 1-1/4" mounting (refer to catalog logic).
④ 120VAC through 277VAC 50/60Hz.
** Exclusive from KILLARK; clear globe for maximum brightness.*

L

Pendant

Ceiling

Wall Bracket

25° Stanchion

EZ MOUNTING BRACKETS				
CATALOG NUMBER				HUB SIZE
PENDANT	CEILING	WALL	STANCHION	
EZA2	EZX2	EZB2	—	3/4"
EZA3	EZX3	EZB3	—	1"
—	—	—	EZD4*	1-1/4" / 1-1/2"*

** 1-1/2" furnished with 1-1/2" - 1-1/4" reducer*

EML - EMLC LED ACCESSORIES	
DESCRIPTION	CATALOG NUMBER
Guard①	EMG2
Dome Reflector②	ERSD30
Angle Reflector②	ERA30
CIDI C2D1 N4X Photocell 120VAC	VMHKPC1
CIDI C2D1 N4X Photocell 208-277VAC	VMHKPC2
Replacement Fluted Globe & Support	EMGS3
Replacement Clear Globe & Support	EMGS2
Adapter to old Killark "H" Series or Crouse Hinds®	EAC/EACH③

① *Guards are cast of copper-free aluminum with electrostatically applied epoxy/polyester.*
② *Reflectors are aluminum with white finish.*
③ *Adapters for discontinued Killark "H" Series and Crouse Hinds® available. See page L200 for more information.*

EMG2

Factory Sealed
Photocell VMHKPC1

ERSD30 Standard Dome

EMGS3
EMGS2

ERA30 Angle Dome

EAC/EACH

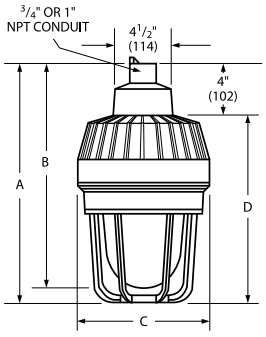
EML4530
EMLC4530

EML(C) LED HOUSINGS & GLOBE, DRIVERS AND LEDS - ELECTRICAL RATINGS					
CAT. NO.	VOLTAGE 50/60HZ	WATTAGE	AMPS 120/277	CIL④	WEIGHT
EML(C)4530	120-277VAC	49.4	.412/.178	3960	26 LBS

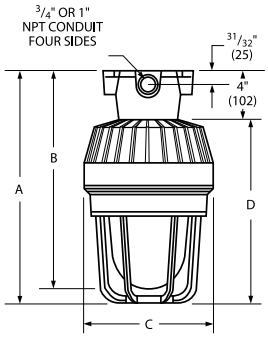
④ *CIL = Calculated Initial Lumens of LED component based on mfg. data and driver current INSIDE the optic. This value is provided as a reference only for comparison to traditional light sources such as incandescent, HID, or fluorescent which use initial values in "relative" photometry. KILLARK LED luminaires are tested using the Absolute photometry method (LM79-08), which calculates delivered lumens only. KILLARK's LED luminaires provide very bright white 5000O K (CCT) color and can appear brighter than traditional light sources with higher lumen values under both photopic and scotopic conditions.*

THERMAL PERFORMANCE DATA					
CAT. NO.	AMBIENT	C1D1/C1Z1	C2D1	L70	SUPPLY WIRE
EML(C)4530	40ºC	T6	T4A (EFG)	55,000 HRS	75°C
EML(C)4530	55ºC	T5	T4 (EFG)	50,000 HRS	90°C

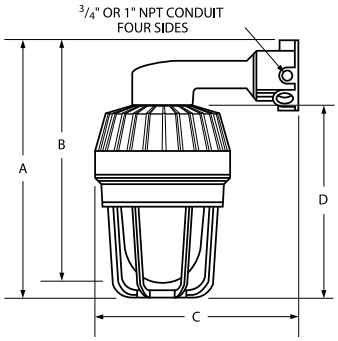
Pendant



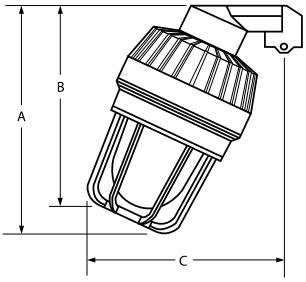
Ceiling

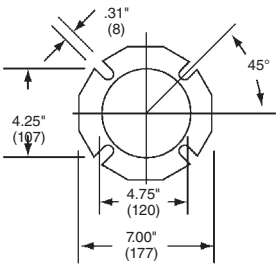


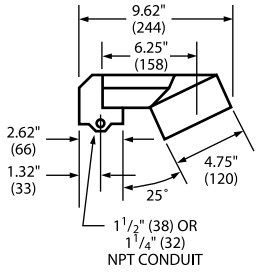
Wall

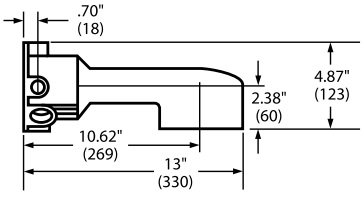


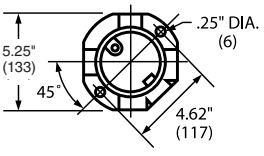
25° Stanchion







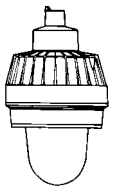




EML(C) DIMENSIONS①				
TYPE	A	B	C	D
Pendant	15-15/16" (404)	15-1/16" (382)	8-13/16" (224)	11-15/16" (303)
Ceiling	15-15/16" (404)	15-1/16" (382)	8-13/16" (224)	11-15/16" (303)
Wall	16-13/16" (426)	15-15/16" (404)	15" (379)	11-15/16" (303)
Stanchion	15-1/8" (384)	14" (356)	13-1/2" (343)	

① *See L143 for reflector dimensions.*

LED 45 Watt Fluted Globe Only



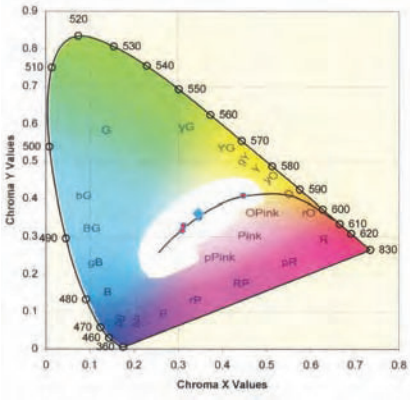
Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-30	424	N.A.	14.7%
0-40	720	N.A.	25.0%
0-60	1463	N.A.	50.8%
0-90	2479	N.A.	86.1%
90-120	396	N.A.	13.7%
90-130	400	N.A.	13.9%
90-150	401	N.A.	13.9%
90-180	401	N.A.	13.9%
0-180	2880	N.A.	100.00

Absolute Photometry
Total Luminaire Efficiency = N.A.%
Spacing to Mounting Height Ratio 1.2

CANDLEPOWER DISTRIBUTION

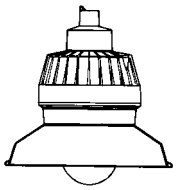
VERT ANG	HORIZONTAL ANGLE 0	22.5	45	67.5	90
0	581.	581.	581.	581.	581.
5	622.	583.	605.	633.	609.
10	580.	519.	524.	514.	535.
15	519.	509.	484.	488.	508.
20	466.	472.	512.	508.	473.
25	481.	486.	489.	485.	481.
30	458.	444.	448.	458.	453.
35	476.	459.	491.	466.	461.
40	490.	494.	489.	486.	499.
45	484.	487.	490.	481.	474.
50	433.	452.	429.	424.	437.
55	418.	425.	420.	387.	399.
60	432.	438.	432.	413.	409.
65	409.	415.	408.	418.	401.
70	351.	363.	375.	382.	362.
75	299.	311.	319.	327.	319.
80	263.	284.	292.	298.	285.
85	233.	249.	252.	260.	242.
90	196.	216.	217.	226.	207.
95	173.	186.	188.	195.	182.
100	150.	157.	160.	169.	156.
105	131.	136.	132.	139.	129.
110	109.	106.	99.	104.	101.
115	57.	50.	48.	46.	59.
120	25.	23.	22.	22.	29.
125	4.	4.	4.	4.	5.
130	3.	2.	2.	2.	3.
135	2.	1.	2.	2.	3.
140	0.	0.	0.	0.	0.
145	0.	0.	0.	0.	0.
150	0.	0.	0.	0.	0.
155	0.	0.	0.	0.	0.
160	0.	0.	0.	0.	0.
165	0.	0.	0.	0.	0.
170	0.	0.	0.	0.	0.
175	0.	0.	0.	0.	0.
180	0.	0.	0.	0.	0.



Chromaticity 4976°K (CCT); 69.4 CRI
Certified Report BAL15296.0

L

LED 45 Watt Fluted Globe & Dome Reflector



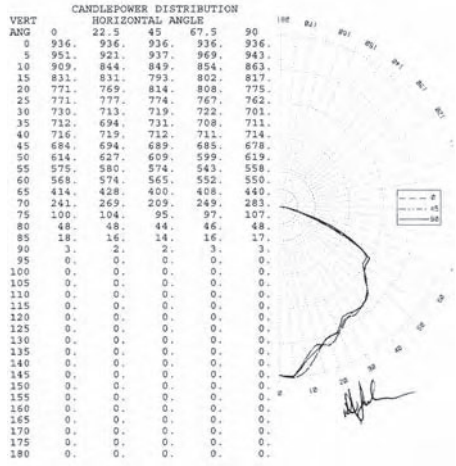
Zonal Lumen Summary

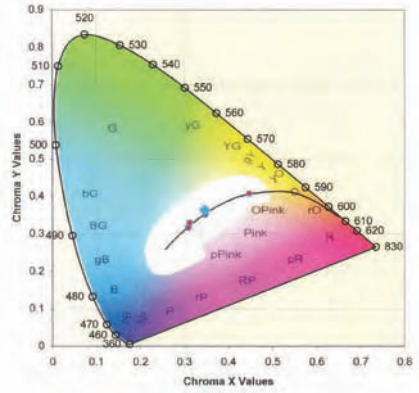
Zone	Lumens	%Lamp	%Fixt
0-30	677	N.A.	25.1%
0-40	1124	N.A.	41.6%
0-60	2164	N.A.	80.2%
0-90	2700	N.A.	100.0%
90-120	0	N.A.	0.0%
90-130	0	N.A.	0.0%
90-150	0	N.A.	0.0%
90-180	0	N.A.	0.0%
0-180	2700	N.A.	100

Absolute Photometry
Total Luminaire Efficiency = N.A.%
Spacing to Mounting Height Ratio 1.2

CANDLEPOWER DISTRIBUTION

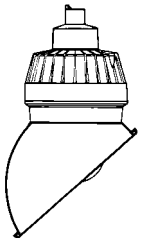
VERT ANG	HORIZONTAL ANGLE 0	22.5	45	67.5	90
0	936.	936.	936.	936.	936.
5	951.	921.	937.	969.	943.
10	909.	844.	849.	854.	863.
15	831.	831.	793.	802.	817.
20	771.	769.	814.	808.	775.
25	771.	777.	774.	767.	762.
30	730.	713.	719.	722.	701.
35	712.	694.	731.	708.	711.
40	716.	719.	712.	711.	714.
45	684.	694.	689.	685.	678.
50	614.	627.	609.	599.	619.
55	575.	580.	574.	543.	558.
60	568.	574.	565.	552.	550.
65	414.	428.	400.	408.	440.
70	241.	269.	209.	249.	283.
75	100.	104.	95.	97.	107.
80	48.	48.	44.	46.	48.
85	18.	16.	14.	16.	17.
90	3.	2.	2.	3.	3.
95	0.	0.	0.	0.	0.
100	0.	0.	0.	0.	0.
105	0.	0.	0.	0.	0.
110	0.	0.	0.	0.	0.
115	0.	0.	0.	0.	0.
120	0.	0.	0.	0.	0.
125	0.	0.	0.	0.	0.
130	0.	0.	0.	0.	0.
135	0.	0.	0.	0.	0.
140	0.	0.	0.	0.	0.
145	0.	0.	0.	0.	0.
150	0.	0.	0.	0.	0.
155	0.	0.	0.	0.	0.
160	0.	0.	0.	0.	0.
165	0.	0.	0.	0.	0.
170	0.	0.	0.	0.	0.
175	0.	0.	0.	0.	0.
180	0.	0.	0.	0.	0.





Chromaticity 4949°K (CCT); 69.0 CRI
Certified Report BAL15297.0

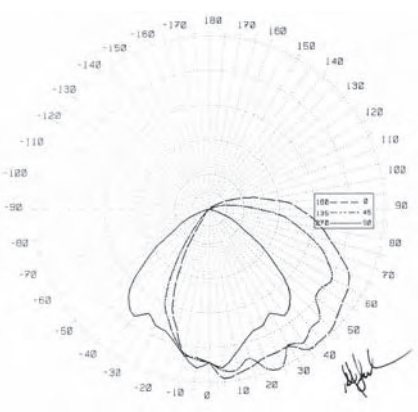
LED 45 Watt Fluted Globe & Angle Reflector

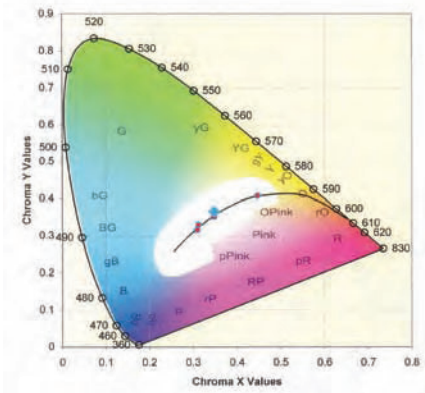


Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-30	602	N.A.	23.7%
0-40	943	N.A.	37.1%
0-60	1619	N.A.	63.7%
0-90	2350	N.A.	92.5%
90-120	185	N.A.	7.3%
90-130	190	N.A.	7.5%
90-150	190	N.A.	7.5%
90-180	190	N.A.	7.5%
0-180	2540	N.A.	100

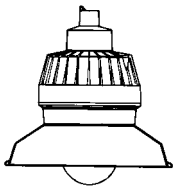
Absolute Photometry
Total Luminaire Efficiency = N.A.%
Spacing to Mounting Height Ratio NA





Chromaticity 4912°K (CCT); 68.8 CRI
Certified Report BAL15298.0

LED 45 Watt Clear Globe & Dome Reflector



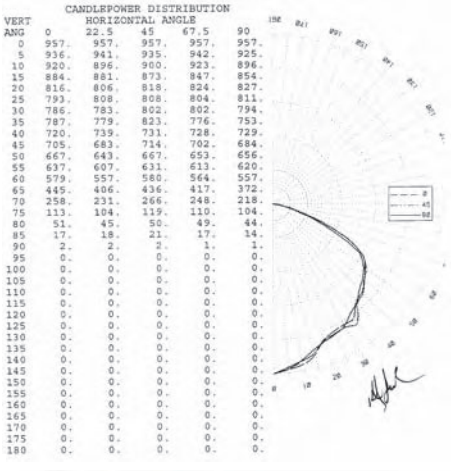
Zonal Lumen Summary

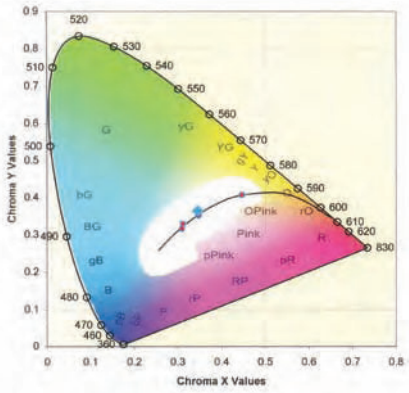
Zone	Lumens	%Lamp	%Fixt
0-30	708	N.A.	24.9%
0-40	1203	N.A.	42.2%
0-60	2299	N.A.	80.7%
0-90	2850	N.A.	100.0%
90-120	0	N.A.	0.0%
90-130	0	N.A.	0.0%
90-150	0	N.A.	0.0%
90-180	0	N.A.	0.0%
0-180	2850	N.A.	100

Absolute Photometry
Total Luminaire Efficiency = N.A.%
Spacing to Mounting Height Ratio 1.3

CANDLEPOWER DISTRIBUTION

VERT ANG	HORIZONTAL ANGLE 0	22.5	45	67.5	90
0	957.	957.	957.	957.	957.
5	936.	941.	935.	942.	925.
10	920.	896.	900.	923.	896.
15	884.	881.	873.	847.	854.
20	816.	806.	818.	824.	827.
25	793.	808.	808.	804.	811.
30	786.	783.	802.	802.	794.
35	787.	779.	823.	776.	753.
40	720.	739.	731.	728.	729.
45	705.	683.	714.	702.	684.
50	667.	643.	667.	653.	656.
55	637.	607.	631.	613.	620.
60	579.	557.	580.	564.	557.
65	445.	406.	436.	417.	372.
70	258.	231.	266.	248.	218.
75	113.	104.	119.	110.	104.
80	51.	45.	50.	49.	44.
85	17.	18.	21.	17.	14.
90	2.	2.	2.	1.	1.
95	0.	0.	0.	0.	0.
100	0.	0.	0.	0.	0.
105	0.	0.	0.	0.	0.
110	0.	0.	0.	0.	0.
115	0.	0.	0.	0.	0.
120	0.	0.	0.	0.	0.
125	0.	0.	0.	0.	0.
130	0.	0.	0.	0.	0.
135	0.	0.	0.	0.	0.
140	0.	0.	0.	0.	0.
145	0.	0.	0.	0.	0.
150	0.	0.	0.	0.	0.
155	0.	0.	0.	0.	0.
160	0.	0.	0.	0.	0.
165	0.	0.	0.	0.	0.
170	0.	0.	0.	0.	0.
175	0.	0.	0.	0.	0.
180	0.	0.	0.	0.	0.





Chromaticity 4970°K (CCT); 69.1 CRI
Certified Report BAL15300.0

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III, Div. 1 & 2
Suitable for wet locations
Marine
NEMA 3, 4, 4X
Factory Sealed

Listed - Files E10514 and E91793 (Marine)

Certified - File LR11713

FEATURES-SPECIFICATIONS

HOSTILE*LITE*®

Applications

HOSTILE*LITE*® EM, EB, & EQ Series fixtures are designed for installations where moisture, dirt, dust, corrosion and vibration may be present, or NEMA 3 and 4x areas where wind, water, snow or high ambients can be expected. They can be used in locations made hazardous due to the presence of flammable or explosive gases, vapors and combustible dusts as defined by the NEC.

Applications include classified areas such as paint manufacturing plants, ammunition facilities, oil and gas producing and refining plants, off-shore and dockside installations, tank farms, pipeline pumping stations and marine loading and fuel transfer terminals.

Features:

- Four light sources—Incandescent, compact fluorescent, high pressure sodium and metal halide
- Mounting choice—Pendant, ceiling, 25˚ stanchion or 90˚ wall mount, all with "wireless" design that allows fast, easy fixture installation
- Factory sealed—No external seal needed. Simply wire mounting cap and thread on fixture to install
- Compact size—Medium base incandescent and HID lamps, plus PL fluorescent lamps allow smaller fixture design
- Corrosion resistant—Copper-free aluminum die-cast construction. Baked powder epoxy finish, electrostatically applied. Exposed hardware is 316 grade stainless steel

Accessories

- Available with or without guard, standard dome or 25˚ angle reflector, exit sign and inner colored globes

Compliances

- UL-844 Electric Lighting Fixtures for use in Hazardous Locations
- UL Marine Type Electric Lighting Fixtures
- UL-1598 Standard for Fluorescent, Incandescent and HID fixtures
- CSA C22.2 no. 137-M1981 Electric Luminaires for use in Hazardous Locations
- NEMA 3, 4, 4X, 7CD, 9EFG

Catalog Number Logic

E 0 0 00 0 00 0 - 00 (CEN)*

Series Constant

Lamp Base
M—Medium Base
B—Bi-Pin Base
Q—Quad-Pin Base

Lamp Type
I—Incandescent
F—Fluorescent (lamp included)
S—HPS
H—MH

Lamp Wattage
15—150W, A-21, INC
20—300W, PS-25, INC
30—300W, PS-30, INC
13—(1) 13W, Bi-Pin FLUOR
26—(2) 13W Bi-Pin EBF or (1) Quad-Pin EQF 26 Watt FLUOR
32—Quad-Pin FLUOR
42—Quad-Pin FLUOR
52—Quad-Pin FLUOR (2 X 26)
64—Quad-Pin FLUOR (2 X 32)
84—Quad-Pin FLUOR (2 X 42)
35—35W, HPS
05—50W, HPS, MH
07—70W, HPS, MH
10—100W, HPS, MH
15—150W, HPS

Voltage @ 60 Hertz Ⓥ
0—Quadri-Volt (120, 208, 240, 277)
1—120
4—277
5—480
6—347 Canada (70,100MH/HPS)
30—120-277 50/60 Hz EQF Series Only

Mounting Type
A2—3/4" Pendant
A3—1" Pendant
X2—3/4" Ceiling
X3—1" Ceiling
B2—3/4" Bracket
B3—1" Bracket
D4—1-1/4"/1-1/2" Stanchion

Guard
G—Omit G if guard is not required

Options
ML—UL Marine Listing for EMI. Standard on EMS, EMM and EMH. Not available on EBF, EQF
SU103—Assembled w/Lamp

*CEN (CENELEC) approval option available on certain models. See page L144 for more information.
Ⓥ Consult factory for available lamp and voltage combinations.

L

HUBBELL®
KILLARK®


Pendant


Ceiling


Wall


Stanchion

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III, Div. 1 & 2
Suitable for wet locations
Marine
NEMA 3, 4, 4X
Factory Sealed

Listed - Files E10514 and E91793 (Marine)

Certified - File LR11713

FEATURES-SPECIFICATIONS

EM 60–300W MEDIUM BASE INCANDESCENT①

LAMP TYPE	LAMP/WATTS	LAMP SIZE	CATALOG NUMBER④			
			PENDANT 3/4"②	CEILING 3/4"②	WALL 3/4"②	STANCHION 1-1/4"③
INC	60, 75, 100, 150	A-19, A-21	EMI15A2G	EMI15X2G	EMI15B2G	EMI15D4G
	100, 150, 200, 300	A-23, PS-25	EMI20A2G	EMI20X2G	EMI20B2G	EMI20D4G
	200, 300	PS-25, PS-30	EMI30A2G	EMI30X2G	EMI30B2G	EMI30D4G

EBF 13-26W Bi-Pin COMPACT FLUORESCENT①

LAMP TYPE	Bi-Pin FLUORESCENT		CATALOG NUMBER④			
	LAMP INCLUDED	LINE VOLTAGE @60Hz	PENDANT 3/4"②	CEILING 3/4"②	WALL 3/4"②	STANCHION 1-1/4"③
COMPACT FLUOR.	13 (1 X 13)	120	EBF131A2G	EBF131X2G	EBF131B2G	EBF131D4G
		277	EBF134A2G	EBF134X2G	EBF134B2G	EBF134D4G
	26 (2 X 13)	120	EBF261A2G	EBF261X2G	EBF261B2G	EBF261D4G
		277	EBF264A2G	EBF264X2G	EBF264B2G	EBF264D4G

EQF 26-42W WORLD VOLTAGE QUAD-PIN COMPACT FLUORESCENT①

LAMP TYPE	Quad-Pin FLUORESCENT		CATALOG NUMBER④			
	LAMP INCLUDED	LINE VOLTAGE	PENDANT 3/4"②	CEILING 3/4"②	WALL 3/4"②	STANCHION 1-1/4"③
COMPACT FLUOR.	26 Watt⑤	120-277VAC 50-60Hz	EQF2630A2G	EQF2630X2G	EQF2630B2G	EQF2630D4G
	32 Watt⑤	120-277VAC 50-60Hz	EQF3230A2G	EQF3230X2G	EQF3230B2G	EQF3230D4G
	42 Watt⑤	120-277VAC 50-60Hz	EQF4230A2G	EQF4230X2G	EQF4230B2G	EQF4230D4G
	52 Watt (2 X 26)	120-277VAC 50-60Hz	EQF5230A2G	EQF5230X2G	EQF5230B2G	EQF5230D4G
	64 Watt (2 X 32)	120-277VAC 50-60Hz	EQF6430A2G	EQF6430X2G	EQF6430B2G	EQF6430D4G
	84 Watt (2 X 42)	120-277VAC 50-60Hz	EQF8430A2G	EQF8430X2G	EQF8430B2G	EQF8430D4G

① See Hazardous Location Application Data on pages L144-145 for specific suitabilities.
② For 1" pendant, ceiling and wall hubs, substitute "3" for "2" in catalog number; example: EBF131A3G.
③ Stanchion conduit hub size supplied is 1-1/2" with 1-1/2" to 1-1/4" reducer for 1-1/4" mounting. (refer to catalog logic).
④ Luminaire catalog numbers include guards. To order luminaire without guard, omit last letter "G" from catalog number.
⑤ EQF 26-42 Watt fixtures use a tank extension ring and are 2.5" taller than EBF fixtures.
NOTE: Reflectors must be ordered separately (see page L140). All luminaires are designed for mounting with lamp in base up position.


Pendant


Ceiling


Wall


Stanchion

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III, Div. 1 & 2
Suitable for wet locations
Marine
NEMA 3, 4, 4X
Factory Sealed

Listed - Files E10514 and E91793 (Marine)

Certified - File LR11713

FEATURES-SPECIFICATIONS

EM 35-150W MEDIUM BASE HIGH PRESSURE SODIUM①④

LAMP TYPE	LAMP WATTS	ANSI LAMP TYPE	VOLTAGE @60 HERTZ	CATALOG NUMBER④			
				PENDANT 3/4"②	CEILING 3/4"②	WALL 3/4"②	STANCHION 1-1/4"③
HPS	35	S-76	120	EMS351A2G	EMS351X2G	EMS351B2G	EMS351D4G
	50	S-68	120, 208, 240, 277	EMS050A2G	EMS050X2G	EMS050B2G	EMS050D4G
	70	S-62	120, 208, 240, 277	EMS070A2G	EMS070X2G	EMS070B2G	EMS070D4G
	70	S-62	480	EMS075A2G	EMS075X2G	EMS075B2G	EMS075D4G
	100	S-54	120, 208, 240, 277	EMS100A2G	EMS100X2G	EMS100B2G	EMS100D4G
	100	S-54	480	EMS105A2G	EMS105X2G	EMS105B2G	EMS105D4G
	150	S-55	120	EMS151A2G	EMS151X2G	EMS151B2G	EMS151D4G

EM 50-100W MEDIUM BASE METAL HALIDE①④

LAMP TYPE	LAMP WATTS	ANSI LAMP TYPE	VOLTAGE @60 HERTZ	CATALOG NUMBER④			
				PENDANT 3/4"②	CEILING 3/4"②	WALL 3/4"②	STANCHION 1-1/4"③
MH	50	M-110	120, 208, 240, 277	EMH050A2G	EMH050X2G	EMH050B2G	EMH050D4G
	70	M-98	120, 208, 240, 277	EMH070A2G	EMH070X2G	EMH070B2G	EMH070D4G
	100	M-90	120, 208, 240, 277	EMH100A2G	EMH100X2G	EMH100B2G	EMH100D4G

① See Hazardous Location Application Data on page L144-145 for specific suitabilities.
② For 1" pendant, ceiling and wall hubs, substitute "3" for "2" in catalog number; example: EMS351A3G.
③ Stanchion conduit hub size supplied is 1-1/2" with 1-1/2" to 1-1/4" reducer for 1-1/4" mounting. (refer to catalog logic).
④ Luminaire catalog numbers include guards. To order luminaire without guard, omit last letter "G" from catalog number.
NOTE: Reflectors must be ordered separately (see page L140). All luminaires are designed for mounting with lamp in base up position.

Listed - Files E10514 and E91793 (Marine)

Certified - File LR11713

EMI15/20/EBF

EMI30 & HID

Pendant

Ceiling

Wall Bracket

25° Stanchion

Housing, Globe and Globe Support Assemblies①

INCANDESCENT			
CATALOG NUMBER	LAMP TYPE	WATTS	VOLTS③
EMI15	A-19 A-19, A-21 A-21	60, 75 100 150	250 MAX. VAC
EMI20	A-23, PS-25 A-23, PS-25 PS-25	150 200 300	250 MAX. VAC
EMI30	PS-25 PS-30	200 300	250 MAX. VAC

FLUORESCENT with lamp(s)*			
CATALOG NUMBER	ANSI LAMP TYPE	WATTS	VOLTS
EBF131 EBF134	Bi-Pin Fluorescent	13	120VAC 277VAC
EBF261 EBF264	Bi-Pin Fluorescent	26 (2x13)	120VAC 277VAC
EQF2630 EQF3230 EQF4230 EQF5230 EQF6430 EQF8430	Quad Pin Fluorescent	26 32 42 52 (2X26) 64 (2X32) 84 (2X42)	120-277 VAC 50-60Hz

HPS			
CATALOG NUMBER	ANSI LAMP TYPE	WATTS	VOLTS @60HZ.
EMS351	S-76	35	120
EMS050	S-68	50	Quadri-Volt
EMS070 EMS075	S-62	70	Quadri-Volt 480
EMS100 EMS105	S-54	100	Quadri-Volt 480
EMS151	S-55	150	120

METAL HALIDE			
CATALOG NUMBER	ANSI LAMP TYPE	WATTS	VOLTS @60HZ.
EMH050	M-110	50	Quadri-Volt
EMH070	M-98	70	Quadri-Volt
EMH100	M-90	100	Quadri-Volt

MOUNTING BOXES				
CATALOG NUMBER				HUB SIZE
PENDANT	CEILING	BRACKET	STANCHION	
EZA2	EZX2	EZB2	—	3/4"
EZA3	EZX3	EZB3	—	1"
—	—	—	EZD4*	1-1/4"/1-1/2"*

**1-1/2" furnished with 1-1/2"-1-1/4" reducer*

HIC-BEIGE replacement wiring plug for EZBx Wall Bracket

EZCUP

Close up plug for EZ mounting boxes. Used for maintenance when fixture is removed for service.

EMG1

EMG2

EAC②

Standard Dome

Angle Dome

GUARDS		
CATALOG NUMBER	SERIES	LAMP TYPE
EMG1	EMI15	INC
	EMI20	INC
	EBF	Bi-Pin
	EQF (26, 32, 42)	Quad-Pin
EMG2	EMI30	INC
	EMS	HPS
	EMH	MH
	ESX	Strobe
	EQF (52, 64, 84)	Quad-Pin

Guards are cast of copper-free aluminum with electrostatically applied epoxy/polyester finish.

① *Assemblies may be ordered with the CEN (CENELEC) suffix. See page L144 for more information.*

② *Adapters for discontinued Killark "H" Series and Crouse Hinds® available. See page L224 for more information.*

③ *UL fixture rating; socket rated 600V.*

** Consult factory for 52, 64 and 84 Watt availability.*

REFLECTORS		
CATALOG NUMBER		SERIES
STANDARD DOME	ANGLE	
ERSD15	ERA15	EMI15/EMI20
		EBF
		EQF
ERSD30	ERA30	EMI30
		EMS
		EMH
		EQF (52, 64, 84)

Reflectors are aluminum with white finish.

FACTORY SEALED

Class I, DIV. 1 BCD
Class II, DIV. 1&2 EFG
CLASS III
NEMA 3, 4X IP66
*40°C ambient T3 Rated

PHOTO CELL FIELD KITS WITH HKB-GL BOX AND COVER	
CATALOG NUMBER	VOLTS
VMHKPC1	120VAC
VMHKPC2	208-277VAC
VMHKPC3	347VAC

Exit Sign Accessory

Replacement Globe & Support Assemblies

REPLACEMENT GLOBE AND GLOBE SUPPORTS			
CATALOG NUMBER①	SERIES	LAMP TYPE	MAX. WATTAGE
EMGS1	EMI15	INC	150
	EMI20	INC	300
	EBF13/26	PL Bi-Pin Fluorescent	26
	EQF	PL Quad-Pin Fluorescent	26, 32, 42
EMGS2② EMGS3	EMI30	INC	300
	EMS	HPS	150
	EMH	MH	100
	EQF	PL Quad-Pin Fluorescent	52, 62, 84

① EMGS1, EMGS3 are internally fluted glass.
② EMGS2 is smooth clear glass used for ESX strobe.

Hazardous Locations Exit Sign

Applications

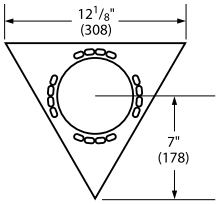
For use in hazardous areas to mark exits over doorways and in hallways.

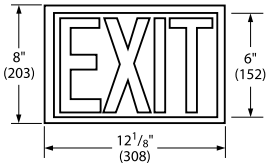
Features

- Three sided illuminated sign visible from all three sides
- EXIT printed in 6" high red letters with 3/4" strokes as required by OSHA. Sign has open bottom providing light on exit area while illuminating the panel

EXIT SIGN	
CATALOG NUMBER	DESCRIPTION
HEXA-100	Fits EMI15, EMI20, EBF/EQF/EEQ Series without guard * (Fixture not included)

** EQF to 42W*





EM Series

EB Series

Female EZTB

Male EZCB

REPLACEMENT SOCKETS	
CATALOG NUMBER	DESCRIPTION
EMRS	EM Series E-26 Medium Base
EBRS	EB Series

REPLACEMENT CONNECTION BLOCKS	
CATALOG NUMBER	DESCRIPTION
EZTB	Female
EZCB	Male

L

REPLACEMENT FLUORESCENT LAMPS	
CATALOG NUMBER	SIZE & TYPE
MPL13	13W Bi-Pin
MQL26	26W Quad-Pin
MQL32	32W Quad-Pin
MQL42	42W Quad-Pin

COLORED GLOBE KITS FOR HAZARDOUS LOCATIONS②	
KIT NO.	GLOBE COLOR
KT-100SU41R	RED
KT-100SU41G	GREEN

Used to modify EMI20 Series only fixtures to accept a colored inner globe. The kit includes the globe plus an adapter assembly and mounting instructions.

② Maximum lamp size A-21 150 Watt.

EM/EB BALLAST DATA								
LAMP SOURCE	LAMP WATTS/TYPE	VOLTAGE @ 60 HERTZ	START (AMPS)	OPERATING (AMPS)	OPEN (AMPS)	BALLAST CIRCUIT	REGULATION	MIN. START
(1) Bi-Pin Fluorescent	13W (1 X 13)	120 277	.39 .35	.30	—	NPF	—	32°F (0°C)
(2) Bi-Pin Fluorescent	26W (2 X 13)	120 277	.78 .70	.60	—	NPF	—	32°F (0°C)
Quad-Pin Fluorescent	26W 32W 42W	120-277	—	.24(120)/.11(277) .31(120)/.13(277) .38(120)/.18(277)	—	HPF	ELECTRONIC	0°F (-18°C)
Quad-Pin Fluorescent	52W (2X26) 64W (2X36) 84W (2X42)	120-277	—	.48(120)/.22(277) .62(120)/.26(277) .76(120)/.36(277)	—	HPF	ELECTRONIC	0°F (-18°C)
HPS	35W S-76	120	.55	.40	.65	R-HPF①	±5% Line Voltage*	0°F (-40°C)
HPS	50W S-68	120	.58	.58	1.24	HX-HPF①	±5% Line Voltage*	0°F (-40°C)
		208	.35	.33	.59			
		240	.30	.29	.50			
		277	.24	.25	.44			
HPS	70W S-62	120	.75	.81	1.45	HX-HPF①	±5% Line Voltage*	0°F (-40°C)
		208	.45	.47	.85			
		240	.37	.40	.75			
		277	.35	.35	.65			
		480	.21	.21	.36			
HPS	100W S-54	120	1.30	1.15	2.20	HX-HPF①	±5% Line Voltage*	0°F (-40°C)
		208	.76	.66	1.27			
		240	.66	.57	1.10			
		277	.60	.49	.85			
		480	.33	.28	.57			
HPS	150W S-55	120	2.20	1.50	2.35	HX-HPF①	±5% Line Voltage*	0°F (-40°C)
MH	50W M-110	120	.87	.60	1.16	HX-HPF①	±5% Line Voltage ±12% Lamp Watts	-20°F (-30°C)
		208	.51	.35	.67			
		240	.47	.30	.57			
		277	.39	.25	.50			
MH	70W M-98	120	.80	.85	1.70	HX-HPF①	±5% Line Voltage ±12% Lamp Watts	-20°F (-30°C)
		208	.50	.50	1.04			
		240	.43	.43	.87			
		277	.39	.37	.78			
MH	100W M-90	120	1.20	1.15	2.30	HX-HPF①	±5% Line Voltage ±12% Lamp Watts	-20°F (-30°C)
		208	.70	.60	1.30			
		240	.61	.55	1.10			
		277	.55	.45	.95			

** Lamp watts within ANSI Trapezoid limitations.*
① Ballast circuits are High Power Factor 90%+.


Pendant


Ceiling


Wall

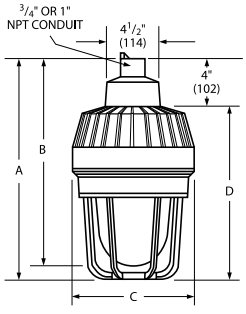

Stanchion

FEATURES-SPECIFICATIONS

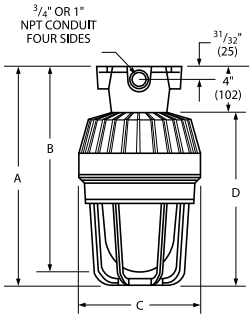
EM/EMB/ESX DIMENSIONS

SERIES	PENDANT				CEILING				WALL				STANCHION		
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C
EMI15 EMI20 EBF13 EBF26	14-5/16" (363)	13-11/16" (346)	7-7/16" (188)	10-5/16" (261)	14-5/16" (363)	13-11/16" (347)	7-7/16" (188)	10-5/16" (261)	15-13/16" (385)	14-7/16" (366)	14-1/2" (369)	10-5/16" (26)	14" (256)	13-1/4" (337)	13" (330)
EQF to 42W EEQ	16-13/16" (427)	16-3/16" (411)	7-7/16" (188)	12-5/8" (321)	16-13/16" (427)	16-3/16" (411)	7-7/16" (188)	12-5/8" (321)	18-5/16" (465)	16-15/16" (430)	14-1/2" (368)	12-5/8" (321)	16-1/4" (413)	15-3/4" (400)	15-1/4" (387)
EMI30 EMH EMS ESX EQF 52, 64, 84	15-15/16" (404)	15-1/16" (382)	8-13/16" (224)	11-15/16" (303)	15-15/16" (404)	15-1/16" (382)	8-13/16" (224)	11-15/16" (303)	16-13/16" (426)	15-13/16" (404)	15" (379)	11-15/16" (303)	15-1/8" (384)	14" (356)	13-1/2" (343)

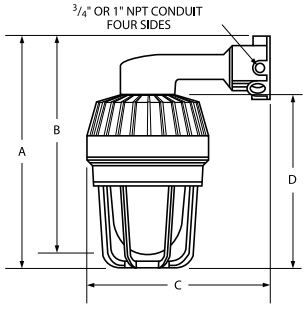
Pendant



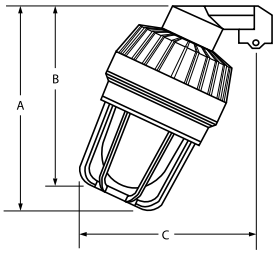
Ceiling

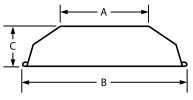


Wall

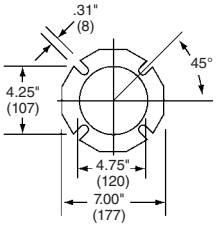


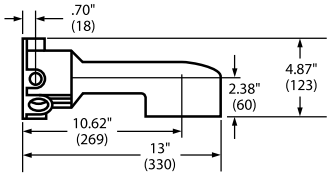
25° Stanchion

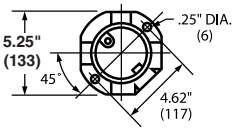


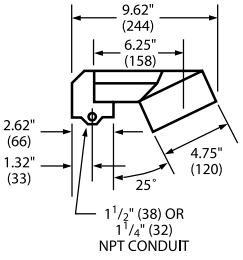


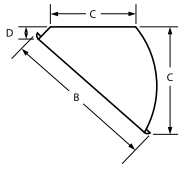
Standard Dome











Angle

REFLECTOR DIMENSIONS

SERIES	STANDARD DOME			ANGLE			
	A	B	C	A	B	C	D
EMI15/EMI20 EBF/EQF to 42W	7-3/8" (187)	14" (356)	3-3/4" (95)	7" (178)	11-1/2" (292)	7-3/4" (197)	1" (25)
EMI30/EMS EMH EQF 52, 64, 84	8-3/4" (222)	16-1/8" (409)	3-15/16" (100)	8-3/4" (222)	14-3/16" (360)	7-3/4" (197)	1" (25)

L

HUBBELL®
KILLARK®

EM/EB/EQ HAZARDOUS LOCATION DATA–CLASS I, DIV. 1 & 2①②

FIXTURE SERIES	LAMP TYPE/SIZE MAX.	LAMP WATTS	RATED AMBIENT °C	SUPPLY WIRE SUITABLE FOR °C MIN.	CLASS I, DIVISIONS 1 & 2 MAXIMUM SURFACE TEMPERATURE °C UL/CSA WITH OR WITHOUT REFLECTOR		
					TEMP. I.D.	ACTUAL TEMP.	UL/CSA GROUPS
EMI15	INC A-19	60	40	75	T6	79	C,D
			55	75	T6		C,D
			65	75	T4A		C,D
EMI15	INC A-19	75	40	75	T4A	103	C,D
			55	90	T4A		C,D
			65	90	T4		C,D
EMI15	INC A-19	100	40	75	T4A	103	C,D
			55	90	T4A		C,D
			65	90	T4		C,D
EMI15	INC A-21	100	40	75	T4A	101	C,D
			55	90	T4A		C,D
			65	90	T4		C,D
EMI15	INC A-21	150	40	75	T4	123	C,D
			55	90	T3C		C,D
			65	90	T3C		C,D
EMI20	INC A-23	100	40	90	T4A	107	C,D
			55	90	T4		C,D
			65	90	T4		C,D
EMI20	INC A-23	150	40	90	T4	132	C,D
			55	90	T3C		C,D
			65	111	T3C		C,D
EMI20	INC PS-25	150	40	90	T4	126	C,D
			55	110	T3C		C,D
			65	110	T3C		C,D
EMI20	INC A-23	200	40	90	T3C	146	C,D
			55	90	T3B		C,D
			65	110	T3A		C,D
EMI20	INC PS-25	200	40	90	T3C	154	C,D
			55	90	T3A		C,D
			65	110	T3A		C,D
EMI20	INC PS-25	300	40	90	T3	190	C,D
			55	110	T2D		C,D
			65				C,D
EMI30	INC PS-25	200	40	110	T3C	146	C,D
			55	110	T3B		C,D
			65	125	T3A		C,D
EMI30	INC PS-25	300	40	110	T3C	143	C,D
			55	110	T3B		C,D
			65	125	T3A		C,D
EMI30	INC PS-30	200	40	110	T3C	146	C,D
			55	110	T3B		C,D
			65	125	T3A		C,D
EMI30	INC PS-30	300	40	110	T3C	146	C,D
			55	110	T3B		C,D
			65	125	T3A		C,D
EBF13	1 13W Bi-Pin	13	40	75	T6	62	C,D
			55	90	T6		C,D
			65	90	T5		C,D
EBF26	2 13W Bi-Pin	26	40	75	T6	62	C,D
			55	90	T6		C,D
			65	90	T5		C,D
EQF26	1 26W Quad-Pin	26	40	75	T6	75	C,D
EQF32	1 32W Quad-Pin	32	40	75	T6	75	C,D
EQF42	1 42W Quad-Pin	42	40	75	T6	75	C,D
EQF52	2 26W Quad-Pin	52	40	75	T6	85	C,D
EQF64	2 32W Quad-Pin	64	40	75	T6	85	C,D
EQF84	2 42W Quad-Pin	84	40	75	T6	85	C,D
EMS35	HPS S-70	35	40	75	T6	65	C,D
			55	90	T5		C,D
			65	90	T4A		C,D
EMS05	HPS S-68	50	40	75	T6	68	C,D
			55	75	T6		C,D
			65	90	T5		C,D
EMS07	HPS S-62	70	40	75	T6	83	C,D
			55	90	T5		C,D
			65	90	T4A		C,D
EMS100	HPS S-54	100	40	75	T5	99	C,D
			55	90	T4A		C,D
			65	110	T4A		C,D
EMS151	HPS S-55	150	40	75	T4A	119	C,D
			55	90	T4		C,D
			65	110	T3C		C,D
EMH05	MH M-110	50	40	75	T6	78	C,D
			55	90	T5		C,D
			65	110	T4A		C,D
EMH07	MH M-98	75	40	75	T5	95	C,D
			55	90	T4A		C,D
			65	110	T4A		C,D
EMH100	MH M-90	100	40	75	T4A	101	C,D
			55	90	T4		C,D
			65	110	T3C		C,D

① *Do not install where marked operating temperature exceeds ignition temperature of hazardous atmosphere.*
② *See Class II table for simultaneous presence ratings.*

HOSTILE*LITE*®

CEN Option

Applications

Killark EM/EB/ESX series fixtures are available with a European "Certificate of Conformity" from PTB (Physikalisch-Technische Bundesanstalt), the approval agency based in Germany. Fixtures with this rating will be useful for Original Equipment Manufacturers and others who build and ship apparatus into European markets.

This approval is granted by PTB with the use of a special ground lug and label. Fixtures carrying an EEx d IIB approval are automatically granted an IP54 (ingress protection) rating. See Temperature Code chart below for PTB certified ratings. Killark EM/EB/ESX fixtures with the PTB rating and labels still carry all UL & CSA ratings.

Fixture housing/globe/globe support assemblies (e.g. EM120 CEN) may be ordered with the CEN suffix. Complete fixture numbers, with the CEN suffix, will be shipped with the mounting boxes, guards and accessories as component parts. Reflectors and other accessory parts, as listed on pages L123-124, may be used. Killark fixtures are NPT tapped and plugged with at least one conduit hole open.

Compliances

- EN 50014:1992
- EN 50018:1994

EEx d IIB T6 (or T5-T2)

PTB No. Ex-98.E.1076

MAXIMUM AMBIENT TEMPERATURE RANGE -20°C TO 40°C

TYPE OF LUMINAIRE	TYPE OF ENCLOSURE	FORM OF THE LAMP	MAXIMUM WATTAGE	TEMPERATURE CLASS
EMI15	EMO20	A-19/A-21	150W	T4
EMI20	EMO20	A-23/PS-25	300W	T3
EMI30	EMO30	PS-25/PS-30	300W	T2
EMH05	EMO30	BD17/M-110	50W	T6
EMH07	EMO30	BD17/M-98	70W	T5
EMH10	EMO30	BD17/M-90	100W	T4
EMS35	EMO30	ED17/S-76	35W	T6
EMS05	EMO30	ED17/S-68	50W	T6
EMS07	EMO30	ED17/S-62	70W	T5
EMS10	EMO30	ED17/S-54	100W	T5
EMS15	EMO30	ED17/S-55	150W	T4
EBF13	EMO20	PL13	13W	T6
EBF26	EMO20	PL13	26W	T6
ESX( )120	EMO30	120V AC	0.17 A	T6
ESX( )240	EMO30	240V AC	0.12 A	T6
ESX( )1274	EMO30	12 TO 74 V DC	1.25 TI 0.2 A	T6

EM/EB/EQ HAZARDOUS LOCATION DATA–CLASS II, III, DIVISIONS 1 & 2 ① ②

FIXTURE SERIES	LAMP TYPE/SIZE MAX.	LAMP WATTS	RATED AMBIENT °C	SUPPLY WIRE SUITABLE FOR °C MIN.	CLASS II, DIV. 1 & 2 MAXIMUM SURFACE TEMPERATURE °C				UL/CSA GROUPS	CLASS III DIV. 1 & 2 UL/CSA SUITABILITY	UL MARINE LISTED	U.L. PAINT SPRAY SUITABILITY	UL/CSA TYPE 3 (RAIN-TIGHT)	UL/CSA TYPE 4 (HOSE-DOWN) ③
					UL/CSA WITHOUT REFLECTOR		UL/CSA WITH REFLECTOR							
					TEMP. I.D.	ACTUAL TEMP. °C	TEMP. I.D.	ACTUAL TEMP. °C						
EMI15	INC A-19	60	40	75	T3C	132	T3C	132	E,F,G	YES	YES	NO	YES	YES
			55	75	T3A				E,F	NO	YES	NO	YES	YES
			65	75	T3A				E,F	NO				
EMI15	INC A-19	75	40	75	T3A	163	T3A	162	E,F	NO	YES	NO	YES	YES
			55	90	T3A		T3A		E,F	NO	YES	NO	YES	YES
			65	90	T3A		T3A		E,F	NO	YES	NO	YES	YES
EMI15	INC A-19	100	40	75	T3A	163	T3A	162	E,F	NO	YES	NO	YES	YES
			55	90	T3A		T3A		E,F	NO	YES	NO	YES	YES
			65	90	T3A		T3		E,F	NO	YES	NO	YES	YES
EMI15	INC A-21	100	40	75	T3A	172	T3A	172	E,F	NO	YES	NO	YES	YES
			55	90	T3				E,F	NO	YES	NO	YES	YES
			65	90	T3				E,F	NO	YES	NO	YES	YES
EMI15	INC A-21	150	40	75	N/A	192	T3	192	E,F	NO	YES	NO	YES	YES
			55		N/A									
			65		N/A									
EMI20	INC A-23	100	40	90	T3A	166	T3A	166	E,F	NO	YES	NO	YES	YES
			55	90	T3				E,F	NO	YES	NO	YES	YES
			65		N/A									
EMI20	INC A-23	150	40	90	T3	196	T3A	178	E,F	NO	YES	NO	YES	YES
			55	90	T3				E,F	NO	YES	NO	YES	YES
			65		N/A									
EMI20	INC PS-25	150	40	90	N/A	N/A	N/A	N/A	NO	NO	YES	NO	YES	YES
			55		N/A									
			65		N/A									
EMI20	INC A-23	200	40	90	N/A	N/A	N/A	N/A	NO	NO	YES	NO	YES	YES
			55		N/A									
			65		N/A									
EMI20	INC PS-25	200	40	90	N/A	N/A	N/A	N/A	NO	NO	YES	NO	YES	YES
			55		N/A									
			65		N/A									
EMI20	INC PS-25	300	40	90	N/A	N/A	N/A	N/A	NO	NO	YES	NO	YES	YES
			55		N/A									
			65		N/A									
EMI30	INC PS-25	200	40	110	N/A	N/A	N/A	N/A	NO	NO	YES	NO	YES	YES
			55		N/A									
			65		N/A									
EMI30	INC PS-25	300	40	110	N/A	N/A	N/A	N/A	NO	NO	YES	NO	YES	YES
			55		N/A									
			65		N/A									
EMI30	INC PS-30	200	40	110	N/A	N/A	N/A	N/A	NO	NO	YES	NO	YES	YES
			55		N/A									
			65		N/A									
EMI30	INC PS-30	300	40	110	N/A	N/A	N/A	N/A	NO	NO	YES	NO	YES	YES
			55		N/A									
			65		N/A									
EBF13	1 13W Bi-Pin	13	40	75	T6	69	T6	66	E,F,G	YES	NO	YES	YES	YES
			55	90	T6		T6		E,F,G	YES	NO	YES	YES	YES
			65	90	T5		T5		E,F,G	YES	NO	YES	YES	YES
EBF26	2 13W Bi-Pin	26	40	75	T6	69	T6	66	E,F,G	YES	NO	YES	YES	YES
			55	90	T6		T6		E,F,G	YES	NO	YES	YES	YES
			65	90	T5		T5		E,F,G	YES	NO	YES	YES	YES
EQF26	1 26W Quad-Pin	26	40	75	T4	135	T4	135	E,F,G	YES	NO	YES	YES	YES
EQF32	1 32W Quad-Pin	32	40	75	T4	135	T4	135	E,F,G	YES	NO	YES	YES	YES
EQF42	1 42W Quad-Pin	42	40	75	T4	135	T4	135	E,F,G	YES	NO	YES	YES	YES
EQF52	2 26W Quad-Pin	52	40	75	T4	135	T4	135	E,F,G	YES	NO	YES	YES	YES
EQF64	2 32W Quad-Pin	64	40	75	T4	135	T4	135	E,F,G	YES	NO	YES	YES	YES
EQF84	2 42W Quad-Pin	84	40	75	T4	135	T4	135	E,F,G	YES	NO	YES	YES	YES
EMS35	HPS S-70	35	40	75	T4A	116	T4A	116	E,F,G	YES	YES	YES	YES	YES
			55		N/A									
			65		N/A									
EMS05	HPS S-68	50	40	75	T4A	116	T4A	116	E,F,G	YES	YES	YES	YES	YES
			55	75	T4				E,F,G					
			65	90	T3C				E,F,G					
EMS07	HPS S-62	70	40	75	T4A	116	T4A	116	E,F,G	YES	YES	YES	YES	YES
			55	90	T4				E,F,G	YES	YES	YES	YES	YES
			65	90	T3C				E,F,G	YES	YES	YES	YES	YES
EMS100	HPS S-54	100	40	75	T3B	161	T3B	161	E,F,G	YES	YES	NO	YES	YES
			55		N/A									
			65		N/A									
EMS150	HPS S-55	150	40	75	T3A	180	T3B	180	E,F	NO	YES	NO	YES	YES
			55	90	T3		T3A		E,F	NO	YES	NO	YES	YES
			65		N/A									
EMH05	MH M-110	50	40	75	T4	121	T4	121	E,F,G	YES	YES	YES	YES	YES
			55	90	T3C		T3A		E,F	NO	YES	YES	YES	YES
			65	110	T3B		T3A		E,F,G	NO	YES	YES	YES	YES
EMH07	MH M-98	70	40	75	T4	121	T4	121	E,F,G	YES	YES	YES	YES	YES
			55	90	T3C		T3C		E,F,G	YES	YES	YES	YES	YES
			65	110	T3B		T3C		E,F,G	YES	YES	YES	YES	YES
EMH100	MH M-90	100	40	75	T3C	153	T3C	153	E,F,G	YES	YES	NO	YES	YES
			55	90	T3A				NO	YES	YES	NO	YES	YES
			65		N/A									

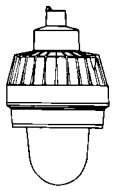
① *Do not install where marked operating temperature exceeds ignition temperature of hazardous atmosphere.*
② *Fixtures rated for simultaneous presence as shown in Class II table (unless marked with N/A).*
③ *For UL-Marine and UL/CSA Type 4 listing add suffix "**ML**" to "**EMI**" Series fixture catalog number; standard on "**EMS**" and "**EMH**" series. Not available on "**EBF**", or "**EQF**" series.*

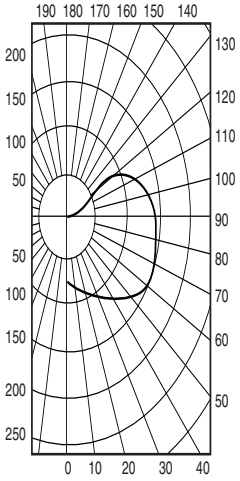
L

EMI15 INCANDESCENT
With Globe Only
60 – 100 Watt Medium Base

CANDLEPOWER – 100 WATT
A-19 lamp 1740 lumens

For 60 watt multiply by .494
For 75 watt multiply by .678





ANGLE	CP	ANGLE	CP
.0	72.	95.0	143.
5.0	74.	105.0	130.
15.0	86.	115.0	65.
25.0	100.	125.0	9.
35.0	109.	135.0	0.
45.0	123.	145.0	0.
55.0	148.	155.0	0.
65.0	160.	165.0	0.
75.0	155.	175.0	0.
85.0	149.	180.0	0.
90.0	146.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50			30			10			0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance																	
0	.79	.79	.79	.79	.74	.74	.74	.74	.66	.66	.66	.59	.59	.59	.52	.52	.52	.49
1	.68	.63	.58	.54	.63	.59	.55	.51	.52	.49	.46	.45	.43	.40	.40	.38	.36	.33
2	.60	.52	.46	.40	.56	.49	.43	.38	.43	.38	.34	.37	.33	.30	.32	.29	.26	.23
3	.53	.44	.37	.31	.49	.41	.35	.30	.36	.31	.26	.31	.27	.23	.27	.23	.20	.18
4	.48	.38	.31	.25	.45	.36	.29	.24	.31	.26	.21	.27	.23	.19	.23	.20	.16	.14
5	.44	.33	.26	.21	.40	.31	.25	.20	.27	.22	.17	.24	.19	.15	.20	.16	.13	.11
6	.40	.29	.22	.17	.37	.27	.21	.16	.24	.18	.14	.21	.16	.13	.18	.14	.11	.09
7	.36	.26	.19	.14	.34	.24	.18	.13	.21	.16	.12	.18	.14	.10	.16	.12	.09	.07
8	.34	.23	.17	.12	.31	.22	.16	.12	.19	.14	.10	.17	.12	.09	.14	.10	.08	.06
9	.31	.21	.15	.10	.29	.20	.14	.10	.17	.12	.09	.15	.11	.08	.13	.09	.06	.05
10	.29	.19	.13	.09	.27	.18	.12	.09	.16	.11	.08	.14	.09	.07	.12	.08	.06	.04

Spacing Criterion -- SC = 2.4

Illumination on Horizontal Surface

	FOOTCANDLE CHART (Initial) 100 WATT INCANDESCENT Horizontal Distance From Source in Feet									
Mounting Height in Feet	0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
8'	1.12	1.02	.55	.39	.23	.22	.16	.12	.07	.04
10'	.72	.71	.43	.35	.29	.22	.18	.14	.08	.05
12'	.50	.51	.36	.30	.25	.21	.17	.14	.09	.05
14'	.36	.39	.29	.27	.22	.18	.15	.14	.09	.06
16'	.28	.30	.25	.21	.19	.16	.14	.12	.09	.06
18'	.22	.23	.21	.19	.16	.14	.13	.12	.09	.06

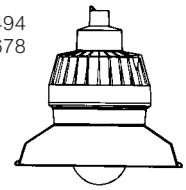
$$FC = \frac{(\text{Candlepower}) (\cos \emptyset)}{\text{DISTANCE}^2}$$

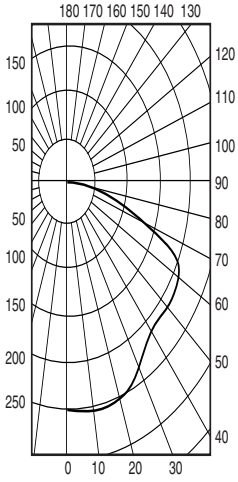
Test No. LTL-00676

EMI15 INCANDESCENT
With Globe and Standard Dome Reflector
60 – 100 Watt Medium Base

CANDLEPOWER – 100 WATT
A-19 lamp 1740 lumens

For 60 watt multiply by .494
For 75 watt multiply by .678





ANGLE	CP	ANGLE	CP
.0	261.	95.0	0.
5.0	260.	105.0	0.
15.0	254.	115.0	0.
25.0	252.	125.0	0.
35.0	236.	135.0	0.
45.0	220.	145.0	0.
55.0	221.	155.0	0.
65.0	203.	165.0	0.
75.0	72.	175.0	0.
85.0	10.	180.0	0.
90.0	2.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50			30			10			0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance																	
0	.70	.70	.70	.70	.68	.68	.68	.68	.65	.65	.65	.62	.62	.62	.60	.60	.60	.58
1	.64	.61	.58	.56	.62	.59	.57	.55	.57	.55	.53	.55	.53	.52	.53	.51	.50	.49
2	.58	.53	.49	.45	.56	.52	.48	.45	.50	.46	.44	.48	.45	.43	.46	.44	.42	.41
3	.52	.46	.41	.37	.51	.45	.40	.37	.43	.39	.36	.42	.38	.35	.40	.37	.35	.33
4	.48	.40	.35	.31	.46	.40	.35	.31	.38	.34	.30	.37	.33	.30	.35	.32	.29	.28
5	.43	.35	.30	.26	.42	.35	.29	.26	.33	.29	.25	.32	.28	.25	.31	.28	.25	.23
6	.39	.31	.26	.22	.38	.31	.25	.22	.30	.25	.21	.29	.24	.21	.28	.24	.21	.20
7	.36	.28	.22	.18	.35	.27	.22	.18	.26	.22	.18	.25	.21	.18	.24	.21	.18	.17
8	.33	.25	.20	.16	.32	.24	.19	.16	.24	.19	.16	.23	.19	.16	.22	.18	.16	.14
9	.31	.22	.17	.14	.30	.22	.17	.14	.21	.17	.14	.21	.17	.14	.20	.16	.14	.12
10	.29	.20	.15	.12	.28	.20	.15	.12	.19	.15	.12	.19	.15	.12	.18	.15	.12	.11

Spacing Criterion -- SC = 1.4

Illumination on Horizontal Surface

	FOOTCANDLE CHART (Initial) 100 WATT INCANDESCENT Horizontal Distance From Source in Feet									
Mounting Height in Feet	0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
8'	4.07	2.28	.83	.58	.40	.28	.21	.13	.04	.02
10'	2.61	1.80	.77	.57	.43	.32	.24	.18	.08	.03
12'	1.81	1.38	.71	.54	.42	.33	.26	.20	.11	.05
14'	1.33	1.07	.64	.50	.39	.32	.26	.21	.12	.07
16'	1.01	.86	.57	.46	.37	.30	.25	.21	.13	.08
18'	.80	.70	.50	.42	.35	.29	.24	.20	.13	.09

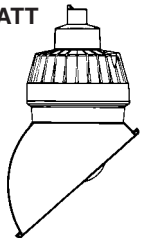
$$FC = \frac{(\text{Candlepower}) (\cos \emptyset)}{\text{DISTANCE}^2}$$

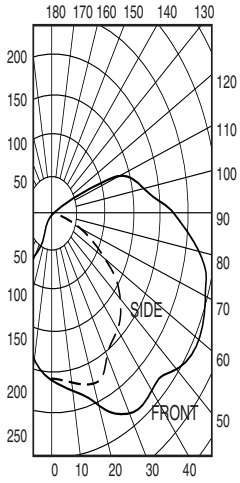
Test No. LTL-00677

EMI15 INCANDESCENT
With Globe and Angle Reflector
60 – 100 Watt Medium Base

CANDLEPOWER – 100 WATT
A-19 lamp 1740 lumens

For 60 watt multiply by .494
For 75 watt multiply by .678





0° (FRONT) ANGLE	CP	90° (SIDE) ANGLE	CP
.0	209.	.0	209.
5.0	216.	5.0	213.
15.0	241.	15.0	222.
25.0	281.	25.0	227.
35.0	291.	35.0	206.
45.0	292.	45.0	190.
55.0	304.	55.0	149.
65.0	314.	65.0	55.
75.0	296.	75.0	25.
85.0	264.	85.0	6.
90.0	238.	90.0	2.
95.0	185.	95.0	0.
105.0	63.	105.0	0.
115.0	28.	115.0	0.
125.0	7.	125.0	0.
135.0	0.	135.0	0.
145.0	0.	145.0	0.
155.0	0.	155.0	0.
165.0	0.	165.0	0.
175.0	0.	175.0	0.
180.0	0.	180.0	0.

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50			30			10			0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance																	
0	.63	.63	.63	.63	.61	.61	.61	.61	.57	.57	.57	.54	.54	.54	.51	.51	.51	.50
1	.56	.52	.49	.47	.54	.51	.48	.46	.48	.46	.44	.45	.43	.42	.42	.41	.40	.38
2	.50	.45	.41	.37	.48	.44	.40	.36	.41	.38	.35	.39	.36	.34	.36	.34	.32	.31
3	.45	.39	.34	.30	.44	.38	.33	.30	.36	.32	.29	.34	.30	.28	.32	.29	.27	.25
4	.41	.34	.29	.26	.40	.34	.29	.25	.32	.28	.24	.30	.27	.24	.28	.25	.23	.22
5	.38	.31	.25	.22	.36	.30	.25	.21	.28	.24	.21	.27	.23	.20	.25	.22	.20	.18
6	.35	.27	.22	.19	.33	.26	.22	.18	.25	.21	.18	.24	.20	.17	.23	.19	.17	.16
7	.32	.24	.19	.16	.31	.24	.19	.16	.22	.18	.15	.21	.18	.15	.20	.17	.15	.13
8	.30	.22	.17	.14	.29	.21	.17	.14	.20	.16	.13	.19	.16	.13	.19	.15	.13	.12
9	.27	.20	.15	.12	.26	.19	.15	.12	.19	.15	.12	.18	.14	.12	.17	.14	.11	.10
10	.26	.18	.14	.11	.25	.18	.14	.11	.17	.13	.11	.16	.13	.10	.16	.12	.10	.09

0-DEG / 90-DEG
Spacing Criterion -- SC = 2.0 / 1.5

Illumination on Horizontal Surface

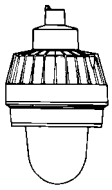
		FOOTCANDLE CHART (Initial) 100 WATT INCANDESCENT Horizontal Distance From Source in Feet									
Mounting Height in Feet		0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
0°	8'	3.26	2.74	1.13	.81	.59	.43	.32	.24	.13	.08
	10'	2.09	2.01	1.03	.78	.59	.45	.35	.27	.15	.09
	12'	1.45	1.46	.91	.71	.56	.45	.36	.29	.17	.10
	14'	1.06	1.09	.80	.64	.52	.43	.35	.29	.18	.12
	16'	.81	.80	.68	.58	.48	.40	.33	.28	.18	.12
	18'	.64	.66	.58	.51	.44	.37	.31	.27	.18	.12
90°	8'	3.26	2.09	.64	.37	.19	.10	.05	.03	.02	.01
	10'	2.09	1.62	.67	.45	.28	.19	.11	.07	.02	.01
	12'	1.45	1.23	.62	.44	.33	.24	.17	.09	.03	.02
	14'	1.06	.96	.57	.44	.34	.25	.19	.14	.06	.02
	16'	.81	.76	.52	.41	.33	.26	.20	.16	.08	.04
	18'	.64	.61	.45	.36	.30	.25	.21	.16	.09	.04

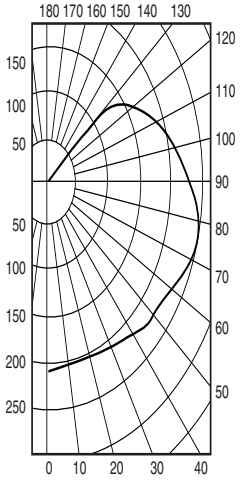
$$FC = \frac{(\text{Candlepower}) (\cos \emptyset)}{\text{DISTANCE}^2}$$

Test No. LTL-00678

EMI15 INCANDESCENT
With Globe Only
100 – 150 Watt Medium Base

CANDLEPOWER – 150 WATT
A-21 lamp 2880 lumens
For 100 watt multiply by .587





ANGLE	CP	ANGLE	CP
.0	214.	95.0	235.
5.0	215.	105.0	212.
15.0	214.	115.0	171.
25.0	213.	125.0	100.
35.0	218.	135.0	27.
45.0	230.	145.0	1.
55.0	242.	155.0	0.
65.0	249.	165.0	0.
75.0	251.	175.0	0.
85.0	246.	180.0	0.
90.0	242.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance														
0	.87	.87	.87	.87	.82	.82	.82	.82	.72	.72	.72	.64	.64	.64	.56	.56	.56	.52
1	.75	.70	.65	.61	.70	.66	.61	.58	.57	.54	.51	.50	.47	.45	.43	.41	.39	.35
2	.67	.59	.52	.46	.62	.55	.49	.44	.48	.43	.39	.41	.37	.34	.35	.32	.29	.26
3	.60	.50	.43	.37	.56	.47	.40	.35	.41	.35	.31	.35	.31	.27	.30	.26	.23	.20
4	.55	.44	.36	.30	.51	.41	.34	.29	.36	.30	.25	.31	.26	.22	.26	.22	.19	.16
5	.50	.39	.31	.25	.46	.36	.29	.24	.31	.26	.21	.27	.22	.18	.23	.19	.16	.13
6	.45	.34	.26	.21	.42	.32	.25	.20	.28	.22	.18	.24	.19	.15	.20	.16	.13	.11
7	.42	.30	.23	.18	.38	.28	.22	.17	.25	.19	.15	.21	.17	.13	.18	.14	.11	.09
8	.38	.27	.20	.15	.36	.26	.19	.15	.22	.17	.13	.19	.15	.11	.16	.13	.10	.08
9	.36	.25	.18	.13	.33	.23	.17	.13	.20	.15	.11	.17	.13	.10	.15	.11	.08	.07
10	.33	.22	.16	.12	.31	.21	.15	.11	.18	.13	.10	.16	.12	.08	.14	.10	.07	.06

Spacing Criterion -- SC = 1.6

Illumination on Horizontal Surface

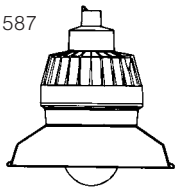
		FOOTCANDLE CHART (Initial) 150 WATT INCANDESCENT Horizontal Distance From Source in Feet									
		0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
Mounting Height in Feet	8'	3.34	2.05	.90	.65	.47	.34	.26	.20	.11	.07
	10'	2.14	1.65	.81	.62	.47	.36	.28	.22	.13	.08
	12'	1.48	1.17	.70	.56	.45	.36	.29	.23	.14	.09
	14'	1.09	.91	.60	.50	.41	.34	.28	.23	.15	.10
	16'	.83	.73	.51	.44	.37	.32	.27	.23	.15	.10
	18'	.66	.59	.44	.38	.33	.29	.25	.22	.15	.10

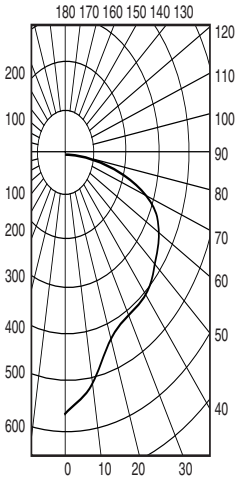
$FC = \frac{(Candlepower)(COS\ Ø)}{DISTANCE^2}$

Test No. LTL-00679

EMI15 INCANDESCENT
With Globe and Standard Dome Reflector
100 – 150 Watt Medium Base

CANDLEPOWER – 150 WATT
A-21 lamp 2880 lumens
For 100 watt multiply by .587





ANGLE	CP	ANGLE	CP
.0	571.	95.0	0.
5.0	559.	105.0	0.
15.0	505.	115.0	0.
25.0	455.	125.0	0.
35.0	431.	135.0	0.
45.0	405.	145.0	0.
55.0	372.	155.0	0.
65.0	327.	165.0	0.
75.0	206.	175.0	0.
85.0	35.	180.0	0.
90.0	4.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance														
0	.79	.79	.79	.79	.77	.77	.77	.77	.74	.74	.74	.70	.70	.70	.67	.67	.67	.66
1	.72	.68	.65	.62	.70	.67	.64	.61	.64	.62	.59	.61	.59	.58	.59	.57	.56	.54
2	.65	.59	.54	.50	.63	.58	.53	.49	.55	.51	.48	.53	.50	.47	.51	.48	.46	.45
3	.58	.51	.45	.41	.57	.50	.45	.40	.48	.43	.40	.46	.42	.39	.44	.41	.38	.37
4	.53	.45	.39	.34	.52	.44	.38	.34	.42	.37	.34	.41	.37	.33	.39	.36	.33	.31
5	.49	.40	.33	.29	.47	.39	.33	.29	.37	.32	.28	.36	.32	.28	.35	.31	.28	.26
6	.45	.35	.29	.24	.43	.35	.29	.24	.33	.28	.24	.32	.27	.24	.31	.27	.24	.22
7	.41	.31	.25	.21	.40	.31	.25	.21	.30	.24	.21	.29	.24	.20	.28	.23	.20	.19
8	.38	.28	.22	.18	.37	.28	.22	.18	.27	.22	.18	.26	.21	.18	.25	.21	.18	.16
9	.35	.26	.20	.16	.34	.25	.20	.16	.24	.19	.16	.24	.19	.16	.23	.19	.16	.14
10	.32	.23	.18	.14	.32	.23	.18	.14	.22	.17	.14	.22	.17	.14	.21	.17	.14	.13

Spacing Criterion -- SC = 1.2

Illumination on Horizontal Surface

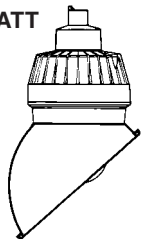
		FOOTCANDLE CHART (Initial) 150 WATT INCANDESCENT Horizontal Distance From Source in Feet									
		0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
Mounting Height in Feet	8'	8.92	4.17	1.47	.98	.67	.48	.33	.23	.11	.06
	10'	5.71	3.17	1.43	1.02	.72	.51	.40	.30	.14	.08
	12'	3.96	2.57	1.32	.99	.75	.57	.44	.33	.19	.10
	14'	2.91	2.05	1.18	.93	.73	.57	.46	.36	.21	.13
	16'	2.23	1.68	1.04	.86	.69	.56	.45	.37	.22	.14
	18'	1.76	1.39	.91	.76	.65	.54	.44	.36	.23	.15

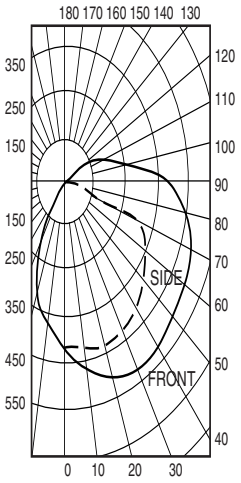
$FC = \frac{(Candlepower)(COS\ Ø)}{DISTANCE^2}$

Test No. LTL-00680

EMI15 INCANDESCENT
With Globe and Angle Reflector
100 – 150 Watt Medium Base

CANDLEPOWER – 150 WATT
A-21 lamp 2880 lumens
For 100 watt multiply by .587





0° (FRONT) ANGLE	CP	90° (SIDE) ANGLE	CP
.0	435.	.0	435.
5.0	451.	5.0	437.
15.0	486.	15.0	428.
25.0	504.	25.0	416.
35.0	520.	35.0	399.
45.0	525.	45.0	372.
55.0	518.	55.0	291.
65.0	502.	65.0	157.
75.0	479.	75.0	52.
85.0	438.	85.0	10.
90.0	401.	90.0	0.
95.0	348.	95.0	0.
105.0	204.	105.0	0.
115.0	72.	115.0	0.
125.0	14.	125.0	0.
135.0	0.	135.0	0.
145.0	0.	145.0	0.
155.0	0.	155.0	0.
165.0	0.	165.0	0.
175.0	0.	175.0	0.
180.0	0.	180.0	0.

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance														
0	.70	.70	.70	.70	.68	.68	.68	.68	.64	.64	.64	.60	.60	.60	.57	.57	.57	.55
1	.63	.59	.56	.53	.60	.57	.54	.52	.54	.51	.49	.50	.48	.47	.47	.46	.44	.43
2	.56	.51	.46	.42	.54	.49	.45	.41	.46	.43	.40	.43	.41	.38	.41	.38	.36	.35
3	.51	.44	.39	.35	.49	.43	.38	.34	.40	.36	.33	.38	.35	.32	.36	.33	.30	.29
4	.47	.39	.34	.30	.45	.38	.33	.29	.36	.32	.28	.34	.30	.27	.32	.29	.26	.25
5	.43	.35	.29	.25	.41	.34	.29	.25	.32	.28	.24	.30	.26	.23	.29	.25	.23	.21
6	.40	.31	.26	.22	.38	.30	.25	.21	.29	.24	.21	.27	.23	.20	.26	.22	.20	.18
7	.36	.28	.23	.19	.35	.27	.22	.18	.26	.21	.18	.24	.20	.17	.23	.20	.17	.16
8	.34	.25	.20	.16	.33	.25	.20	.16	.23	.19	.16	.22	.18	.15	.21	.18	.15	.14
9	.31	.23	.18	.14	.30	.22	.18	.14	.21	.17	.14	.20	.16	.14	.19	.16	.13	.12
10	.29	.21	.16	.13	.28	.20	.16	.13	.20	.15	.12	.19	.15	.12	.18	.14	.12	.11

0-DEG / 90-DEG
Spacing Criterion -- SC = 1.8 / 1.4

Illumination on Horizontal Surface

		FOOTCANDLE CHART (Initial) 150 WATT INCANDESCENT Horizontal Distance From Source in Feet									
		0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
Mounting Height in Feet	0° 8'	6.79	4.90	1.99	1.38	.97	.70	.53	.40	.22	.13
	10'	4.35	3.61	1.86	1.37	1.02	.77	.58	.45	.25	.15
	12'	3.02	2.73	1.64	1.29	1.00	.77	.61	.48	.28	.18
	14'	2.21	2.11	1.43	1.17	.95	.76	.62	.50	.30	.19
	16'	1.69	1.66	1.23	1.04	.87	.73	.60	.50	.32	.21
	18'	1.34	1.34	1.06	.92	.79	.67	.57	.48	.28	.21
	8'	6.79	3.86	1.26	.78	.43	.28	.16	.09	.04	.01
	10'	4.35	2.98	1.32	.87	.57	.39	.26	.16	.06	.03
	12'	3.02	2.29	1.21	.91	.64	.46	.34	.21	.08	.04
	14'	2.22	1.80	1.10	.86	.67	.51	.41	.28	.13	.06
	16'	1.70	1.45	.96	.80	.64	.51	.36	.32	.16	.09
	90° 18'	1.34	1.18	.84	.70	.60	.50	.41	.29	.18	.09

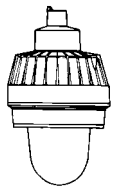
$FC = \frac{(Candlepower)(COS\ Ø)}{DISTANCE^2}$

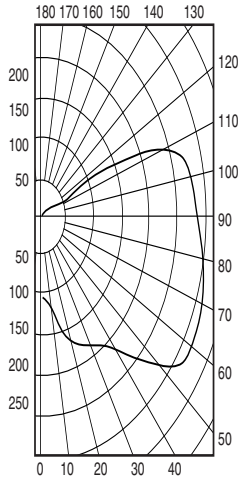
Test No. LTL-00681

L

EMI20 INCANDESCENT
With Globe Only
150 – 200 Watt Medium Base

CANDLEPOWER – 200 WATT
A-23 lamp 4000 lumens
For 150 watt multiply by .695





ANGLE	CP	ANGLE	CP
.0	127.	95.0	322.
5.0	132.	105.0	241.
15.0	177.	115.0	87.
25.0	209.	125.0	11.
35.0	235.	135.0	1.
45.0	296.	145.0	0.
55.0	370.	155.0	0.
65.0	369.	165.0	0.
75.0	351.	175.0	0.
85.0	339.	180.0	0.
90.0	332.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50			30			10			0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance																	
0	.76	.76	.76	.76	.72	.72	.72	.72	.65	.65	.65	.58	.58	.58	.52	.52	.52	.49
1	.65	.60	.55	.51	.61	.57	.53	.49	.50	.47	.44	.45	.42	.40	.39	.37	.35	.33
2	.57	.50	.43	.38	.53	.47	.41	.36	.41	.37	.33	.36	.33	.29	.32	.29	.26	.23
3	.51	.42	.35	.29	.47	.39	.33	.28	.35	.30	.25	.30	.26	.23	.26	.23	.20	.17
4	.46	.36	.29	.24	.43	.34	.28	.23	.30	.25	.20	.26	.22	.18	.23	.19	.16	.14
5	.41	.31	.24	.19	.39	.30	.23	.18	.26	.21	.16	.23	.18	.15	.20	.16	.13	.11
6	.38	.27	.21	.16	.35	.26	.20	.15	.23	.17	.13	.20	.15	.12	.17	.13	.10	.08
7	.34	.24	.18	.13	.32	.23	.17	.12	.20	.15	.11	.18	.13	.10	.15	.11	.08	.07
8	.32	.22	.15	.11	.30	.20	.15	.10	.18	.13	.09	.16	.11	.08	.14	.10	.07	.05
9	.29	.19	.13	.09	.27	.18	.13	.09	.16	.11	.08	.14	.10	.07	.12	.09	.06	.04
10	.27	.18	.12	.08	.25	.17	.11	.08	.15	.10	.07	.13	.09	.06	.11	.08	.05	.04

Spacing Criterion -- SC = 3.0

Illumination on Horizontal Surface

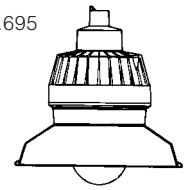
Mounting Height in Feet	FOOTCANDLE CHART (Initial) 200 WATT INCANDESCENT Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
8'	1.98	2.16	1.30	.99	.71	.52	.39	.28	.16	.09
10'	1.27	1.50	1.05	.87	.73	.55	.42	.33	.19	.11
12'	.88	1.09	.83	.73	.64	.52	.44	.35	.21	.13
14'	.64	.82	.65	.59	.53	.46	.41	.36	.22	.14
16'	.49	.62	.54	.47	.44	.41	.40	.32	.23	.15
18'	.39	.49	.46	.40	.37	.34	.32	.29	.23	.16

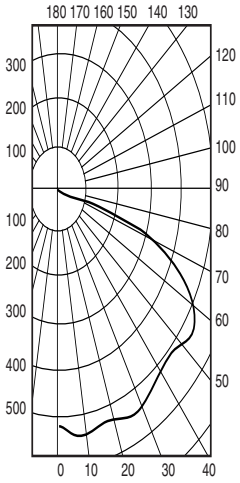
$$FC = \frac{(\text{Candlepower}) (\cos \emptyset)}{\text{DISTANCE}^2}$$

Test No. LTL-00670

EMI20 INCANDESCENT
With Globe and Standard Dome Reflector
150 – 200 Watt Medium Base

CANDLEPOWER – 200 WATT
A-23 lamp 4000 lumens
For 150 watt multiply by .695





ANGLE	CP	ANGLE	CP
.0	517.	95.0	0.
5.0	529.	105.0	0.
15.0	534.	115.0	0.
25.0	556.	125.0	0.
35.0	519.	135.0	0.
45.0	503.	145.0	0.
55.0	531.	155.0	0.
65.0	451.	165.0	0.
75.0	108.	175.0	0.
85.0	20.	180.0	0.
90.0	1.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50			30			10			0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance																	
0	.66	.66	.66	.66	.65	.65	.65	.65	.62	.62	.62	.59	.59	.59	.57	.57	.57	.56
1	.61	.58	.56	.54	.59	.57	.55	.53	.55	.53	.51	.52	.51	.50	.50	.49	.48	.47
2	.55	.51	.47	.44	.54	.50	.46	.43	.48	.45	.42	.46	.44	.41	.44	.42	.40	.39
3	.50	.44	.40	.36	.49	.43	.39	.36	.42	.38	.35	.40	.37	.34	.39	.36	.34	.33
4	.46	.39	.34	.30	.44	.38	.33	.30	.37	.33	.29	.35	.32	.29	.34	.31	.29	.27
5	.41	.34	.29	.25	.40	.33	.28	.25	.32	.28	.24	.31	.27	.24	.30	.27	.24	.23
6	.38	.30	.25	.21	.37	.29	.24	.21	.28	.24	.21	.27	.23	.20	.26	.23	.20	.19
7	.34	.26	.21	.17	.33	.26	.21	.17	.25	.20	.17	.24	.20	.17	.23	.20	.17	.16
8	.32	.24	.19	.15	.31	.23	.18	.15	.22	.18	.15	.22	.18	.15	.21	.17	.15	.14
9	.29	.21	.16	.13	.28	.21	.16	.13	.20	.16	.13	.20	.16	.13	.19	.15	.13	.12
10	.27	.19	.15	.11	.26	.19	.14	.11	.18	.14	.11	.18	.14	.11	.17	.14	.11	.10

Spacing Criterion -- SC = 1.5

Illumination on Horizontal Surface

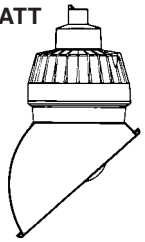
Mounting Height in Feet	FOOTCANDLE CHART (Initial) 200 WATT INCANDESCENT Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
8'	8.08	5.06	1.97	1.42	.94	.61	.47	.28	.09	.03
10'	5.17	3.98	1.78	1.36	1.04	.77	.56	.42	.18	.09
12'	3.59	3.00	1.61	1.24	.99	.78	.63	.46	.25	.12
14'	2.64	2.32	1.43	1.14	.91	.74	.62	.51	.29	.17
16'	2.02	1.83	1.26	1.04	.85	.69	.59	.49	.32	.20
18'	1.60	1.47	1.11	.94	.78	.66	.55	.47	.33	.21

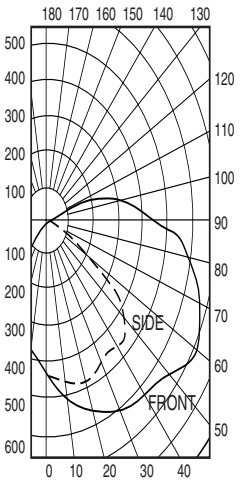
$$FC = \frac{(\text{Candlepower}) (\cos \emptyset)}{\text{DISTANCE}^2}$$

Test No. LTL-00671

EMI20 INCANDESCENT
With Globe and Angle Reflector
150 – 200 Watt Medium Base

CANDLEPOWER – 200 WATT
A-23 lamp 4000 lumens
For 150 watt multiply by .695





0° (FRONT) ANGLE	CP	90° (SIDE) ANGLE	CP
.0	448.	.0	448.
5.0	473.	5.0	457.
15.0	544.	15.0	486.
25.0	590.	25.0	497.
35.0	613.	35.0	460.
45.0	641.	45.0	462.
55.0	716.	55.0	353.
65.0	700.	65.0	129.
75.0	643.	75.0	59.
85.0	563.	85.0	14.
90.0	460.	90.0	5.
95.0	316.	95.0	1.
105.0	120.	105.0	0.
115.0	58.	115.0	0.
125.0	14.	125.0	0.
135.0	0.	135.0	0.
145.0	0.	145.0	0.
155.0	0.	155.0	0.
165.0	0.	165.0	0.
175.0	0.	175.0	0.
180.0	0.	180.0	0.

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50			30			10			0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance																	
0	.60	.60	.60	.60	.58	.58	.58	.58	.55	.55	.55	.52	.52	.52	.49	.49	.49	.48
1	.53	.50	.48	.45	.51	.49	.46	.44	.46	.44	.42	.43	.42	.40	.41	.40	.39	.37
2	.48	.43	.39	.36	.46	.42	.38	.35	.40	.36	.34	.37	.35	.33	.35	.33	.31	.30
3	.43	.37	.33	.29	.42	.36	.32	.29	.34	.31	.28	.33	.29	.27	.31	.28	.26	.25
4	.40	.33	.28	.25	.38	.32	.28	.24	.31	.27	.24	.29	.26	.23	.27	.25	.22	.21
5	.36	.29	.24	.21	.35	.28	.24	.20	.27	.23	.20	.26	.22	.19	.24	.21	.19	.18
6	.33	.26	.21	.18	.32	.25	.21	.17	.24	.20	.17	.23	.19	.17	.22	.19	.16	.15
7	.30	.23	.18	.15	.29	.23	.18	.15	.21	.17	.15	.20	.17	.14	.20	.16	.14	.13
8	.28	.21	.16	.13	.27	.20	.16	.13	.19	.16	.13	.19	.15	.13	.18	.15	.12	.11
9	.26	.19	.15	.12	.25	.18	.14	.11	.18	.14	.11	.17	.13	.11	.16	.13	.11	.10
10	.24	.17	.13	.10	.23	.17	.13	.10	.16	.12	.10	.15	.12	.10	.15	.12	.10	.09

0-DEG / 90-DEG
Spacing Criterion -- SC = 2.0 / 1.6

Illumination on Horizontal Surface

Mounting Height in Feet	FOOTCANDLE CHART (Initial) 200 WATT INCANDESCENT Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
0° 8'	7.00	5.77	2.58	1.91	1.35	.98	.73	.55	.29	.17
10'	4.48	4.22	2.27	1.78	1.41	1.06	.81	.63	.34	.21
12'	3.11	3.04	1.97	1.57	1.30	1.05	.85	.65	.39	.23
14'	2.28	1.98	1.69	1.40	1.16	.97	.82	.69	.42	.27
16'	1.75	1.88	1.44	1.23	1.04	.89	.74	.65	.44	.29
18'	1.38	1.50	1.24	1.08	.94	.81	.70	.61	.44	.30
8'	7.00	4.50	1.55	.94	.46	.24	.14	.09	.04	.02
10'	4.48	3.56	1.63	1.07	.69	.46	.27	.15	.06	.03
12'	3.11	2.69	1.45	1.13	.78	.56	.42	.23	.07	.04
14'	2.28	2.09	1.26	1.03	.83	.63	.44	.34	.14	.05
16'	1.75	1.67	1.12	.92	.77	.64	.49	.39	.19	.10
90° 18'	1.38	1.26	.99	.83	.70	.59	.50	.40	.22	.10

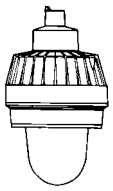
$$FC = \frac{(\text{Candlepower}) (\cos \emptyset)}{\text{DISTANCE}^2}$$

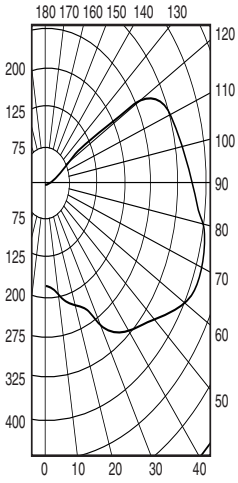
Test No. LTL-00672

EMI20 INCANDESCENT
With Globe Only Reflector
150, 200 and 300 Watt Medium Base

CANDLEPOWER – 300 WATT
PS-25 lamp 6360 lumens

For 150 watt multiply by .421
For 200 watt multiply by .506





ANGLE	CP	ANGLE	CP
.0	165.	95.0	379.
5.0	169.	105.0	348.
15.0	206.	115.0	238.
25.0	257.	125.0	66.
35.0	298.	135.0	6.
45.0	332.	145.0	0.
55.0	380.	155.0	0.
65.0	409.	165.0	0.
75.0	405.	175.0	0.
85.0	396.	180.0	0.
90.0	388.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance														
0	.58	.58	.58	.58	.55	.55	.55	.55	.49	.49	.49	.43	.43	.43	.38	.38	.38	.35
1	.50	.46	.43	.40	.47	.44	.41	.38	.38	.36	.34	.33	.31	.29	.28	.27	.26	.23
2	.44	.39	.34	.30	.41	.36	.32	.28	.31	.28	.25	.27	.24	.22	.23	.21	.19	.17
3	.40	.33	.28	.23	.37	.31	.26	.22	.27	.23	.19	.23	.20	.17	.19	.17	.15	.13
4	.36	.28	.23	.19	.33	.27	.22	.18	.23	.19	.16	.20	.16	.14	.17	.14	.12	.10
5	.32	.25	.19	.16	.30	.23	.18	.15	.20	.16	.13	.17	.14	.11	.15	.12	.10	.08
6	.30	.22	.17	.13	.27	.20	.16	.12	.18	.14	.11	.15	.12	.09	.13	.10	.08	.06
7	.27	.19	.14	.11	.25	.18	.13	.10	.16	.12	.09	.13	.10	.08	.11	.08	.06	.05
8	.25	.17	.12	.09	.23	.16	.12	.09	.14	.10	.08	.12	.09	.06	.10	.07	.05	.04
9	.23	.16	.11	.08	.21	.15	.10	.07	.13	.09	.06	.11	.08	.06	.09	.07	.05	.03
10	.21	.14	.10	.07	.20	.13	.09	.06	.11	.08	.06	.10	.07	.05	.08	.06	.04	.03

Spacing Criterion -- SC = 2.6

Illumination on Horizontal Surface

		FOOTCANDLE CHART (Initial) 300 WATT INCANDESCENT Horizontal Distance From Source in Feet									
		0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
Mounting Height in Feet	8'	2.58	2.24	1.36	1.01	.75	.56	.43	.33	.18	.11
	10'	1.65	1.84	1.17	.93	.75	.57	.45	.36	.21	.13
	12'	1.15	1.32	.99	.82	.68	.56	.45	.37	.23	.14
	14'	.84	.98	.82	.70	.60	.50	.43	.37	.24	.16
	16'	.64	.73	.68	.60	.52	.46	.40	.34	.24	.16
	18'	.51	.57	.57	.52	.46	.41	.36	.32	.23	.17

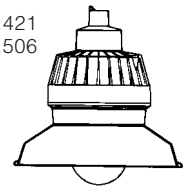
$$FC = \frac{(\text{Candlepower})\ (\cos \varnothing)}{\text{DISTANCE}^2}$$

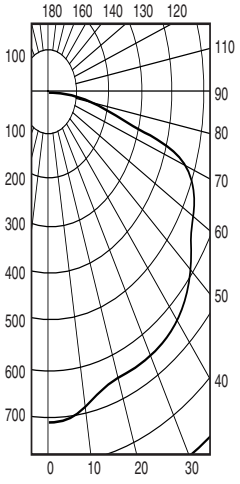
Test No. LTL-00673

EMI20 INCANDESCENT
With Globe and Standard Dome Reflector
150, 200 and 300 Watt Medium Base

CANDLEPOWER – 300 WATT
PS-25 lamp 6360 lumens

For 150 watt multiply by .421
For 200 watt multiply by .506





ANGLE	CP	ANGLE	CP
.0	725.	95.0	0.
5.0	722.	105.0	0.
15.0	675.	115.0	0.
25.0	657.	125.0	0.
35.0	646.	135.0	0.
45.0	605.	145.0	0.
55.0	580.	155.0	0.
65.0	542.	165.0	0.
75.0	255.	175.0	0.
85.0	26.	180.0	0.
90.0	2.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance														
0	.52	.52	.52	.52	.51	.51	.51	.51	.49	.49	.49	.47	.47	.47	.45	.45	.45	.44
1	.48	.45	.44	.42	.46	.44	.43	.41	.43	.41	.40	.41	.40	.39	.39	.38	.37	.37
2	.43	.39	.36	.34	.42	.38	.36	.33	.37	.35	.32	.35	.33	.32	.34	.32	.31	.30
3	.39	.34	.30	.27	.38	.33	.30	.27	.32	.29	.27	.31	.28	.26	.30	.27	.26	.25
4	.35	.30	.26	.23	.34	.29	.26	.23	.28	.25	.22	.27	.24	.22	.26	.24	.22	.21
5	.32	.26	.22	.19	.31	.26	.22	.19	.25	.21	.19	.24	.21	.18	.23	.20	.18	.17
6	.29	.23	.19	.16	.28	.23	.19	.16	.22	.18	.16	.21	.18	.16	.20	.18	.15	.14
7	.27	.20	.16	.13	.26	.20	.16	.13	.19	.16	.13	.19	.16	.13	.18	.15	.13	.12
8	.25	.18	.14	.12	.24	.18	.14	.12	.18	.14	.12	.17	.14	.12	.16	.14	.11	.11
9	.23	.17	.13	.10	.22	.16	.13	.10	.16	.12	.10	.15	.12	.10	.15	.12	.10	.09
10	.21	.15	.11	.09	.21	.15	.11	.09	.14	.11	.09	.14	.11	.09	.14	.11	.09	.08

Spacing Criterion -- SC = 1.4

Illumination on Horizontal Surface

		FOOTCANDLE CHART (Initial) 300 WATT INCANDESCENT Horizontal Distance From Source in Feet									
		0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
Mounting Height in Feet	8'	11.32	6.23	2.16	1.55	1.07	.78	.57	.36	.15	.07
	10'	7.25	4.70	2.14	1.49	1.14	.85	.64	.49	.23	.13
	12'	5.03	3.60	1.97	1.48	1.09	.88	.69	.53	.31	.16
	14'	3.70	2.83	1.78	1.40	1.09	.83	.66	.56	.33	.21
	16'	2.83	2.26	1.55	1.29	1.04	.84	.65	.54	.35	.23
	18'	2.24	1.86	1.34	1.15	.97	.81	.66	.53	.36	.24

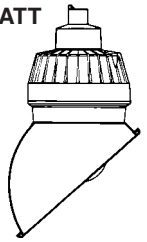
$$FC = \frac{(\text{Candlepower})\ (\cos \varnothing)}{\text{DISTANCE}^2}$$

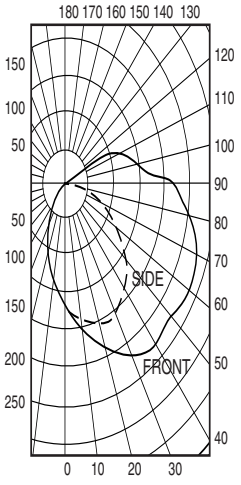
Test No. LTL-00674

EMI20 INCANDESCENT
With Globe and Angle Reflector
150, 200 and 300 Watt Medium Base

CANDLEPOWER – 300 WATT
PS-25 lamp 6360 lumens

For 150 watt multiply by .421
For 200 watt multiply by .506





0° (FRONT) ANGLE	CP	90° (SIDE) ANGLE	CP
.0	536.	.0	536.
5.0	558.	5.0	544.
15.0	633.	15.0	572.
25.0	750.	25.0	602.
35.0	795.	35.0	585.
45.0	797.	45.0	541.
55.0	808.	55.0	432.
65.0	813.	65.0	208.
75.0	778.	75.0	73.
85.0	696.	85.0	22.
90.0	625.	90.0	10.
95.0	501.	95.0	2.
105.0	195.	105.0	0.
115.0	68.	115.0	0.
125.0	15.	125.0	0.
135.0	0.	135.0	0.
145.0	0.	145.0	0.
155.0	0.	155.0	0.
165.0	0.	165.0	0.
175.0	0.	175.0	0.
180.0	0.	180.0	0.

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance														
0	.47	.47	.47	.47	.45	.45	.45	.45	.43	.43	.43	.40	.40	.40	.38	.38	.38	.37
1	.41	.39	.37	.35	.40	.38	.36	.34	.36	.34	.33	.34	.32	.31	.32	.31	.30	.29
2	.37	.33	.30	.28	.36	.32	.30	.27	.31	.28	.26	.29	.27	.25	.27	.26	.24	.23
3	.34	.29	.25	.23	.32	.28	.25	.22	.27	.24	.21	.25	.23	.21	.24	.22	.20	.19
4	.31	.26	.22	.19	.30	.25	.21	.19	.24	.21	.18	.22	.20	.18	.21	.19	.17	.16
5	.28	.23	.19	.16	.27	.22	.19	.16	.21	.18	.15	.20	.17	.15	.19	.16	.15	.14
6	.26	.20	.16	.14	.25	.20	.16	.14	.19	.16	.13	.18	.15	.13	.17	.14	.13	.12
7	.24	.18	.14	.12	.23	.18	.14	.12	.17	.14	.11	.16	.13	.11	.15	.13	.11	.10
8	.22	.16	.13	.10	.21	.16	.13	.10	.15	.12	.10	.14	.12	.10	.14	.11	.09	.09
9	.20	.15	.11	.09	.20	.14	.11	.09	.14	.11	.09	.13	.10	.08	.12	.10	.08	.07
10	.19	.13	.10	.08	.18	.13	.10	.08	.13	.10	.08	.12	.09	.07	.11	.09	.07	.07

0-DEG / 90-DEG
Spacing Criterion -- SC = 2.1 / 1.6

Illumination on Horizontal Surface

		FOOTCANDLE CHART (Initial) 300 WATT INCANDESCENT Horizontal Distance From Source in Feet									
		0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
Mounting Height in Feet	0° 8'	8.38	7.44	3.05	2.15	1.55	1.13	.85	.64	.35	.21
	10'	5.36	5.37	2.82	2.10	1.59	1.20	.93	.73	.41	.25
	12'	3.72	3.90	2.51	1.96	1.54	1.21	.96	.77	.46	.29
	14'	2.73	2.94	2.19	1.78	1.44	1.17	.95	.78	.48	.31
	16'	2.09	2.27	1.86	1.59	1.33	1.10	.92	.76	.50	.33
	18'	1.65	1.75	1.59	1.40	1.21	1.03	.87	.74	.50	.34
	8'	8.38	5.63	1.86	1.15	.61	.29	.22	.13	.05	.02
	10'	5.36	4.31	1.91	1.28	.85	.54	.37	.19	.09	.04
	12'	3.72	3.24	1.77	1.33	.93	.62	.51	.30	.12	.06
	14'	2.73	2.50	1.61	1.26	.98	.74	.55	.42	.19	.08
	16'	2.09	1.96	1.41	1.17	.94	.75	.58	.46	.25	.13
90°	18'	1.65	1.58	1.22	1.05	.87	.72	.59	.47	.27	.13

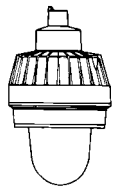
$$FC = \frac{(\text{Candlepower})\ (\cos \varnothing)}{\text{DISTANCE}^2}$$

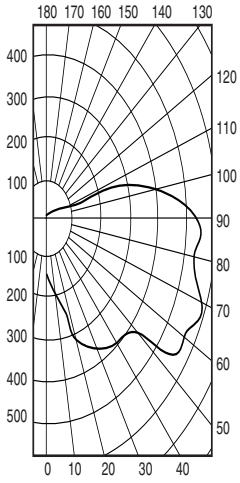
Test No. LTL-00675

L

EMI30 INCANDESCENT
With Globe Only
200 – 300 Watt Medium Base

CANDLEPOWER – 300 WATT
PS-25 lamp 6360 lumens
For 200 watt multiply by .597





ANGLE	CP	ANGLE	CP
.0	139.	95.0	485.
5.0	184.	100.0	389.
10.0	213.	105.0	234.
15.0	268.	110.0	80.
20.0	364.	115.0	15.
25.0	371.	120.0	11.
30.0	381.	125.0	7.
35.0	410.	130.0	3.
40.0	402.	135.0	1.
45.0	434.	140.0	0.
50.0	488.	145.0	0.
55.0	586.	150.0	0.
60.0	573.	155.0	0.
65.0	604.	160.0	0.
70.0	585.	165.0	0.
75.0	567.	170.0	0.
80.0	566.	175.0	0.
85.0	549.	180.0	0.
90.0	515.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50			30			10			0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance																	
0	.72	.72	.72	.72	.68	.68	.68	.68	.63	.63	.63	.57	.57	.57	.52	.52	.52	.50
1	.61	.57	.52	.49	.58	.54	.50	.47	.49	.46	.43	.44	.42	.39	.40	.38	.36	.33
2	.54	.46	.40	.35	.51	.44	.39	.34	.40	.35	.31	.36	.32	.29	.32	.29	.26	.24
3	.48	.39	.33	.28	.45	.37	.31	.26	.34	.29	.24	.30	.26	.22	.27	.23	.20	.18
4	.43	.34	.27	.22	.41	.32	.26	.21	.29	.24	.19	.26	.21	.18	.23	.19	.16	.14
5	.39	.29	.22	.17	.36	.28	.21	.17	.25	.19	.15	.22	.18	.14	.20	.16	.13	.11
6	.35	.25	.19	.14	.33	.24	.18	.14	.22	.16	.13	.19	.15	.11	.17	.13	.10	.09
7	.32	.23	.16	.12	.30	.21	.16	.11	.19	.14	.10	.17	.13	.09	.15	.11	.08	.07
8	.30	.20	.14	.10	.28	.19	.13	.10	.17	.12	.09	.15	.11	.08	.14	.10	.07	.06
9	.27	.18	.12	.08	.26	.17	.12	.08	.15	.11	.07	.14	.10	.07	.12	.08	.06	.04
10	.25	.16	.11	.07	.24	.16	.10	.07	.14	.09	.06	.13	.08	.06	.11	.08	.05	.04

Spacing Criterion -- SC = 3.5

Illumination on Horizontal Surface

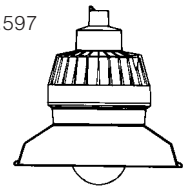
Mounting Height in Feet	FOOTCANDLE CHART (Initial) 300 WATT INCANDESCENT Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
8'	2.17	3.67	1.86	1.56	1.09	.84	.63	.47	.26	.15
10'	1.39	2.65	1.53	1.28	1.15	.85	.66	.54	.30	.19
12'	.96	1.97	1.26	1.06	.93	.80	.69	.54	.34	.21
14'	.71	1.55	1.13	.90	.78	.69	.66	.56	.34	.23
16'	.54	1.01	.92	.82	.67	.60	.54	.46	.35	.23
18'	.43	.74	.79	.67	.62	.52	.47	.43	.36	.24

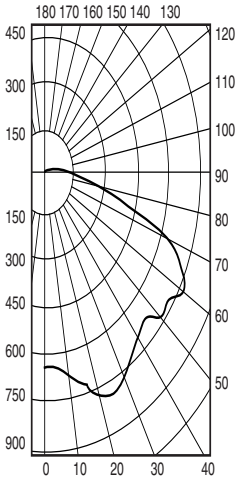
$$FC = \frac{(\text{Candlepower}) (\cos \emptyset)}{\text{DISTANCE}^2}$$

Test No. BALL-6769.1

EMI30 INCANDESCENT
With Globe and Standard Dome Reflector
200 – 300 Watt Medium Base

CANDLEPOWER – 300 WATT
PS-25 lamp 6360 lumens
For 200 watt multiply by .597





ANGLE	CP	ANGLE	CP
.0	649.	95.0	1.
5.0	647.	100.0	0.
10.0	684.	105.0	0.
15.0	747.	110.0	0.
20.0	825.	115.0	0.
25.0	842.	120.0	0.
30.0	768.	125.0	0.
35.0	754.	130.0	0.
40.0	738.	135.0	0.
45.0	693.	140.0	0.
50.0	705.	145.0	0.
55.0	749.	150.0	0.
60.0	774.	155.0	0.
65.0	735.	160.0	0.
70.0	458.	165.0	0.
75.0	132.	170.0	1.
80.0	82.	175.0	0.
85.0	32.	180.0	1.
90.0	3.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50			30			10			0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance																	
0	.61	.61	.61	.61	.59	.59	.59	.59	.57	.57	.57	.54	.54	.54	.52	.52	.52	.51
1	.56	.53	.51	.49	.54	.52	.50	.49	.50	.49	.47	.48	.47	.46	.46	.45	.44	.43
2	.51	.46	.43	.40	.49	.46	.42	.40	.44	.41	.39	.42	.40	.38	.40	.39	.37	.36
3	.46	.41	.36	.33	.45	.40	.36	.33	.38	.35	.32	.37	.34	.31	.35	.33	.31	.30
4	.42	.35	.31	.27	.40	.35	.30	.27	.33	.30	.27	.32	.29	.26	.31	.28	.26	.25
5	.37	.30	.25	.22	.36	.30	.25	.22	.29	.25	.21	.28	.24	.21	.27	.23	.21	.20
6	.34	.27	.22	.18	.33	.26	.22	.18	.25	.21	.18	.24	.21	.18	.23	.20	.18	.17
7	.31	.24	.19	.15	.30	.23	.19	.15	.22	.18	.15	.22	.18	.15	.21	.18	.15	.14
8	.28	.21	.16	.13	.28	.21	.16	.13	.20	.16	.13	.19	.16	.13	.19	.15	.13	.12
9	.26	.19	.14	.11	.25	.18	.14	.11	.18	.14	.11	.17	.13	.11	.17	.13	.11	.10
10	.24	.17	.13	.10	.23	.17	.12	.10	.16	.12	.10	.16	.12	.09	.15	.12	.09	.08

Spacing Criterion -- SC = 1.7

Illumination on Horizontal Surface

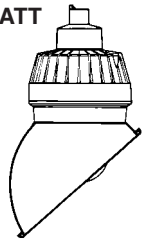
Mounting Height in Feet	FOOTCANDLE CHART (Initial) 300 WATT INCANDESCENT Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
8'	10.14	7.26	2.68	2.00	1.48	1.06	.77	.42	.16	.03
10'	6.49	6.02	2.45	1.85	1.47	1.13	.89	.67	.27	.14
12'	4.51	4.57	2.32	1.70	1.35	1.03	.89	.73	.41	.18
14'	3.31	3.51	2.07	1.65	1.25	1.02	.86	.72	.46	.28
16'	2.53	2.63	1.81	1.51	1.23	.96	.80	.67	.47	.32
18'	2.00	2.06	1.58	1.36	1.14	.95	.76	.64	.46	.32

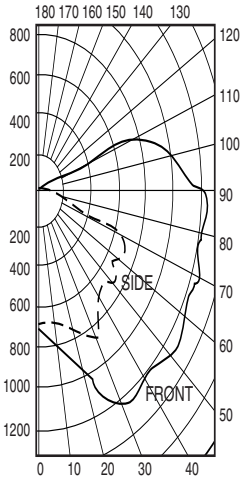
$$FC = \frac{(\text{Candlepower}) (\cos \emptyset)}{\text{DISTANCE}^2}$$

Test No. BALL-6770.1

EMI30 INCANDESCENT
With Globe and Angle Reflector
200 – 300 Watt Medium Base

CANDLEPOWER – 300 WATT
PS-25 lamp 6360 lumens
For 200 watt multiply by .597





0° (FRONT) ANGLE	CP	90° (SIDE) ANGLE	CP
.0	563.	.0	563.
5.0	714.	5.0	499.
15.0	888.	15.0	608.
25.0	927.	25.0	582.
35.0	853.	35.0	558.
45.0	875.	45.0	538.
55.0	950.	55.0	592.
65.0	998.	65.0	150.
75.0	890.	75.0	68.
85.0	807.	85.0	15.
90.0	561.	90.0	0.
95.0	179.	95.0	0.
105.0	96.	105.0	0.
115.0	33.	115.0	0.
125.0	0.	125.0	0.
135.0	0.	135.0	0.
145.0	0.	145.0	0.
155.0	0.	155.0	0.
165.0	0.	165.0	0.
175.0	0.	175.0	0.
180.0	0.	180.0	0.

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50			30			10			0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance																	
0	.52	.52	.52	.52	.51	.51	.51	.51	.48	.48	.48	.45	.45	.45	.42	.42	.42	.41
1	.46	.43	.41	.39	.45	.42	.40	.38	.40	.38	.36	.37	.36	.34	.35	.34	.33	.32
2	.41	.37	.33	.30	.40	.36	.32	.29	.33	.31	.28	.31	.29	.27	.30	.28	.26	.25
3	.37	.32	.28	.24	.36	.31	.27	.24	.29	.26	.23	.27	.25	.22	.26	.23	.21	.20
4	.34	.28	.23	.20	.32	.27	.23	.20	.25	.22	.19	.24	.21	.19	.23	.20	.18	.17
5	.31	.24	.20	.16	.29	.24	.19	.16	.22	.19	.16	.21	.18	.15	.20	.17	.15	.14
6	.28	.22	.17	.14	.27	.21	.17	.14	.20	.16	.13	.19	.15	.13	.18	.15	.13	.12
7	.26	.19	.15	.12	.25	.19	.15	.12	.18	.14	.12	.17	.14	.11	.16	.13	.11	.10
8	.24	.17	.13	.10	.23	.17	.13	.10	.16	.12	.10	.15	.12	.10	.14	.11	.09	.08
9	.22	.16	.12	.09	.21	.15	.11	.09	.14	.11	.09	.14	.11	.08	.13	.10	.08	.07
10	.20	.14	.10	.08	.20	.14	.10	.08	.13	.10	.08	.12	.09	.07	.12	.09	.07	.06

0-DEG / 90-DEG
Spacing Criterion -- SC =2.14 / 1.5

Illumination on Horizontal Surface

Mounting Height in Feet	FOOTCANDLE CHART (Initial) 300 WATT INCANDESCENT Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
0° 8'	8.80	8.18	3.43	2.53	1.87	1.39	1.04	.79	.43	.24
10'	5.63	6.63	3.09	2.37	1.86	1.42	1.12	.89	.50	.31
12'	3.91	5.01	2.77	2.15	1.73	1.41	1.13	.93	.56	.35
14'	2.87	3.90	2.34	1.96	1.58	1.44	1.08	.91	.58	.38
16'	2.20	3.03	2.04	1.71	1.46	1.21	1.03	.86	.58	.40
18'	1.74	2.45	1.77	1.52	1.30	1.13	.95	.83	.58	.41
8'	8.80	5.18	2.17	1.58	.59	.25	.16	.09	.04	.02
10'	5.63	4.16	1.90	1.49	1.16	.80	.36	.16	.04	.03
12'	3.91	3.30	1.73	1.32	1.09	.88	.70	.29	.08	.03
14'	2.87	2.56	1.53	1.23	.97	.82	.68	.57	.18	.06
16'	2.20	2.06	1.29	1.12	.91	.74	.64	.54	.36	.13
90° 18'	1.74	1.68	1.11	.99	.84	.71	.59	.52	.36	.13

$$FC = \frac{(\text{Candlepower}) (\cos \emptyset)}{\text{DISTANCE}^2}$$

Test No. BALL-6771.1

EBF13/EQF SERIES FLUORESCENT

With Globe Only
One 13 Watt Bi-Pin Base
or one 26/32/42 Quad-Pin

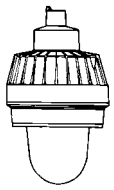
CANDLEPOWER – (1) 13 WATT

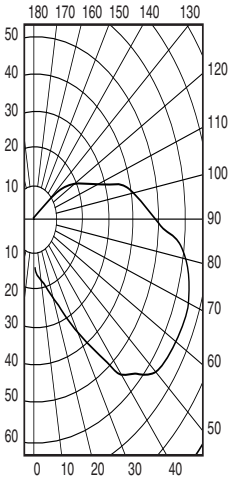
PL lamp 900 lumens

For 26 watt quad-pin multiply by 2.0

For 32 watt quad-pin multiply by 2.66

For 42 watt quad-pin multiply by 3.55





ANGLE	CP	ANGLE	CP
.0	13.	95.0	48.
5.0	14.	105.0	37.
15.0	21.	115.0	24.
25.0	31.	125.0	13.
35.0	48.	135.0	2.
45.0	60.	145.0	0.
55.0	66.	155.0	0.
65.0	66.	165.0	0.
75.0	63.	175.0	0.
85.0	57.	180.0	0.
90.0	52.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance													
0	.60	.60	.60	.57	.57	.57	.57	.51	.51	.51	.46	.46	.46	.39
1	.52	.48	.44	.49	.45	.42	.39	.40	.38	.35	.36	.34	.32	.31	.30	.28	.26
2	.45	.40	.35	.31	.43	.37	.33	.29	.33	.29	.26	.29	.26	.24	.25	.23	.21	.19
3	.40	.33	.28	.24	.38	.31	.26	.22	.28	.24	.20	.24	.21	.18	.21	.18	.16	.14
4	.37	.29	.23	.19	.34	.27	.22	.18	.24	.20	.16	.21	.17	.14	.18	.15	.13	.11
5	.33	.25	.19	.15	.31	.23	.18	.14	.21	.16	.13	.18	.14	.11	.16	.12	.10	.08
6	.30	.22	.16	.12	.28	.20	.15	.12	.18	.14	.10	.16	.12	.09	.13	.10	.08	.06
7	.27	.19	.14	.10	.25	.18	.13	.10	.16	.12	.08	.14	.10	.07	.12	.09	.06	.05
8	.25	.17	.12	.08	.23	.16	.11	.08	.14	.10	.07	.12	.09	.06	.11	.08	.05	.04
9	.23	.15	.10	.07	.22	.14	.10	.07	.13	.09	.06	.11	.08	.05	.09	.06	.04	.03
10	.21	.14	.09	.06	.20	.13	.09	.06	.11	.08	.05	.10	.07	.04	.08	.06	.04	.02

Spacing Criterion -- SC = 3.8

Illumination on Horizontal Surface

Mounting Height in Feet	FOOTCANDLE CHART (Initial) (1) 13 WATT FLUORESCENT Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
8'	.20	.40	.24	.18	.12	.09	.07	.05	.03	.02
10'	.13	.22	.21	.16	.13	.10	.07	.06	.03	.02
12'	.09	.15	.17	.15	.12	.10	.07	.06	.04	.02
14'	.07	.11	.13	.12	.11	.09	.07	.06	.04	.02
16'	.05	.08	.10	.10	.09	.08	.07	.06	.04	.03
18'	.04	.06	.08	.07	.07	.07	.06	.06	.04	.03

$$FC = \frac{(Candlepower)\ (COS\ \emptyset)}{DISTANCE^2}$$

Test No. LTL 00667

EBF13/EQF SERIES FLUORESCENT

With Globe and Standard Dome Reflector
One 13 Watt Bi-Pin Base
or one 26/32/42 Quad-Pin

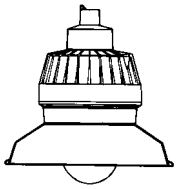
CANDLEPOWER – (1) 13 WATT

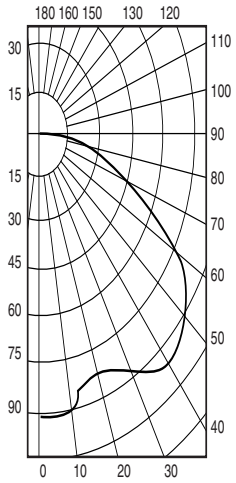
PL lamp 900 lumens

For 26 watt quad-pin multiply by 2.0

For 32 watt quad-pin multiply by 2.66

For 42 watt quad-pin multiply by 3.55





ANGLE	CP	ANGLE	CP
.0	92.	95.0	0.
5.0	93.	105.0	0.
15.0	86.	115.0	0.
25.0	86.	125.0	0.
35.0	95.	135.0	0.
45.0	97.	145.0	0.
55.0	88.	155.0	0.
65.0	64.	165.0	0.
75.0	35.	175.0	0.
85.0	7.	180.0	0.
90.0	1.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance													
0	.52	.52	.52	.51	.51	.51	.51	.49	.49	.49	.47	.47	.47	.45	.45	.45	.44
1	.48	.45	.43	.42	.46	.44	.43	.41	.42	.41	.40	.41	.39	.38	.39	.38	.37	.36
2	.43	.39	.36	.33	.42	.38	.36	.33	.37	.34	.32	.35	.33	.32	.34	.32	.31	.30
3	.39	.34	.30	.27	.38	.33	.30	.27	.32	.29	.26	.31	.28	.26	.30	.27	.26	.25
4	.35	.30	.26	.23	.34	.29	.26	.23	.28	.25	.22	.27	.24	.22	.26	.24	.22	.21
5	.32	.26	.22	.19	.31	.26	.22	.19	.25	.21	.19	.24	.21	.18	.23	.20	.18	.17
6	.29	.23	.19	.16	.28	.23	.19	.16	.22	.18	.16	.21	.18	.15	.20	.18	.15	.14
7	.27	.20	.16	.13	.26	.20	.16	.13	.19	.16	.13	.19	.15	.13	.18	.15	.13	.12
8	.25	.18	.14	.11	.24	.18	.14	.11	.17	.14	.11	.17	.13	.11	.16	.13	.11	.10
9	.23	.16	.12	.10	.22	.16	.12	.10	.15	.12	.10	.15	.12	.10	.14	.12	.09	.09
10	.21	.15	.11	.08	.20	.14	.11	.08	.14	.11	.08	.13	.10	.08	.13	.10	.08	.07

Spacing Criterion -- SC = 1.6

Illumination on Horizontal Surface

Mounting Height in Feet	FOOTCANDLE CHART (Initial) (1) 13 WATT FLUORESCENT Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
8'	1.44	.88	.35	.22	.14	.10	.07	.05	.02	.00
10'	.92	.61	.34	.24	.17	.12	.07	.06	.03	.01
12'	.64	.47	.30	.24	.18	.14	.10	.07	.04	.02
14'	.47	.37	.26	.21	.17	.14	.11	.08	.04	.02
16'	.36	.29	.22	.19	.16	.13	.11	.09	.05	.03
18'	.28	.24	.18	.16	.14	.12	.10	.09	.05	.03

$$FC = \frac{(Candlepower)\ (COS\ \emptyset)}{DISTANCE^2}$$

Test No. LTL 00668

EBF13/EQF SERIES FLUORESCENT

With Globe and Angle Reflector
One 13 Watt Bi-Pin Base
or one 26/32/42 Quad-Pin

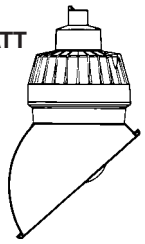
CANDLEPOWER – (1) 13 WATT

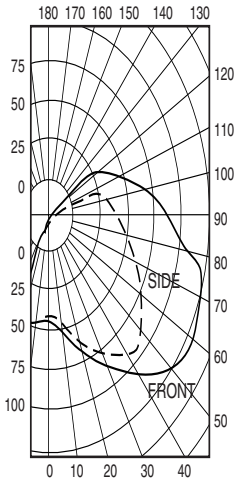
PL lamp 900 lumens

For 26 watt quad-pin multiply by 2.0

For 32 watt quad-pin multiply by 2.66

For 42 watt quad-pin multiply by 3.55





0° (FRONT) ANGLE	CP	90° (SIDE) ANGLE	CP
.0	36.	.0	36.
5.0	27.	5.0	37.
15.0	35.	15.0	46.
25.0	53.	25.0	58.
35.0	81.	35.0	70.
45.0	106.	45.0	81.
55.0	121.	55.0	81.
65.0	126.	65.0	68.
75.0	123.	75.0	60.
85.0	113.	85.0	52.
90.0	106.	90.0	46.
95.0	97.	95.0	41.
105.0	77.	105.0	30.
115.0	54.	115.0	19.
125.0	32.	125.0	8.
135.0	12.	135.0	0.
145.0	1.	145.0	0.
155.0	0.	155.0	0.
165.0	0.	165.0	0.
175.0	0.	175.0	0.
180.0	0.	180.0	0.

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance													
0	.50	.50	.50	.48	.48	.48	.48	.44	.44	.44	.40	.40	.40	.36	.36	.36	.35
1	.44	.41	.38	.36	.41	.39	.36	.34	.35	.33	.31	.32	.30	.29	.28	.27	.26	.24
2	.39	.34	.30	.27	.37	.32	.29	.26	.29	.26	.24	.26	.24	.22	.23	.22	.20	.18
3	.35	.29	.25	.21	.33	.28	.24	.20	.25	.22	.19	.22	.20	.17	.20	.18	.16	.14
4	.31	.25	.21	.17	.30	.24	.20	.17	.22	.18	.15	.19	.17	.14	.17	.15	.13	.12
5	.28	.22	.18	.14	.27	.21	.17	.14	.19	.15	.13	.17	.14	.12	.15	.13	.11	.09
6	.26	.19	.15	.12	.24	.18	.14	.11	.17	.13	.11	.15	.12	.10	.13	.11	.09	.08
7	.24	.17	.13	.10	.22	.16	.12	.10	.15	.11	.09	.13	.10	.08	.12	.09	.07	.06
8	.22	.15	.11	.08	.21	.15	.11	.08	.13	.10	.08	.12	.09	.07	.11	.08	.06	.05
9	.20	.14	.10	.07	.19	.13	.10	.07	.12	.09	.06	.11	.08	.06	.10	.07	.05	.04
10	.19	.13	.09	.06	.18	.12	.08	.06	.11	.08	.06	.10	.07	.05	.09	.06	.05	.04

0-DEG / 90-DEG
Spacing Criterion -- SC = 3.2 / 2.7

Illumination on Horizontal Surface

Mounting Height in Feet	FOOTCANDLE CHART (Initial) (1) 13 WATT FLUORESCENT Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
0° 8'	.56	.69	.43	.32	.24	.17	.13	.10	.05	.03
10'	.36	.38	.37	.30	.24	.18	.14	.11	.06	.04
12'	.25	.26	.29	.26	.22	.18	.14	.12	.07	.04
14'	.18	.19	.22	.21	.19	.16	.14	.12	.07	.05
16'	.14	.13	.17	.16	.15	.15	.13	.11	.07	.05
18'	.11	.10	.14	.13	.13	.12	.11	.10	.07	.04
8'	.56	.63	.31	.22	.14	.10	.07	.05	.03	.02
10'	.36	.41	.29	.21	.16	.12	.08	.06	.03	.02
12'	.25	.29	.24	.20	.15	.12	.10	.07	.04	.02
14'	.18	.22	.19	.17	.15	.12	.09	.08	.04	.03
16'	.14	.17	.16	.14	.12	.11	.09	.08	.05	.03
90° 18'	.11	.13	.13	.12	.11	.10	.09	.07	.05	.03

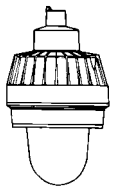
$$FC = \frac{(Candlepower)\ (COS\ \emptyset)}{DISTANCE^2}$$

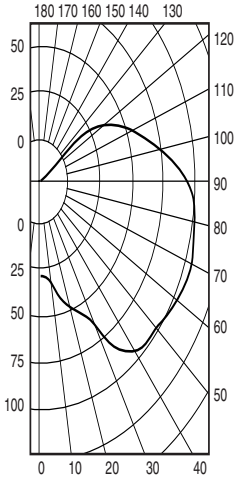
Test No. LTL 00669

L

EBF26 FLUORESCENT
With Globe Only
Two 13 Watt Bi-Pin Base

CANDLEPOWER – (2) 13 WATT
PL lamps
900 lumens per lamp





ANGLE	CP	ANGLE	CP
.0	28.	95.0	82.
5.0	29.	105.0	63.
15.0	40.	115.0	44.
25.0	58.	125.0	24.
35.0	82.	135.0	7.
45.0	100.	145.0	1.
55.0	110.	155.0	0.
65.0	111.	165.0	0.
75.0	106.	175.0	0.
85.0	96.	180.0	0.
90.0	90.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance														
0	.52	.52	.52	.52	.49	.49	.49	.49	.44	.44	.44	.39	.39	.39	.35	.35	.35	.33
1	.44	.41	.38	.36	.42	.39	.36	.34	.34	.32	.30	.30	.29	.27	.27	.25	.24	.22
2	.39	.34	.30	.26	.37	.32	.28	.25	.28	.25	.23	.25	.22	.20	.22	.20	.18	.16
3	.35	.29	.24	.20	.32	.27	.23	.19	.24	.20	.17	.21	.18	.15	.18	.16	.14	.12
4	.31	.25	.20	.16	.29	.23	.19	.16	.21	.17	.14	.18	.15	.13	.16	.13	.11	.09
5	.28	.22	.17	.13	.26	.20	.16	.13	.18	.14	.11	.16	.12	.10	.13	.11	.09	.07
6	.26	.19	.14	.11	.24	.18	.13	.10	.16	.12	.09	.14	.10	.08	.12	.09	.07	.06
7	.23	.17	.12	.09	.22	.16	.11	.08	.14	.10	.07	.12	.09	.07	.10	.08	.06	.04
8	.22	.15	.10	.07	.20	.14	.10	.07	.12	.09	.06	.11	.08	.05	.09	.07	.05	.04
9	.20	.13	.09	.06	.19	.12	.09	.06	.11	.08	.05	.10	.07	.05	.08	.06	.04	.03
10	.18	.12	.08	.05	.17	.11	.08	.05	.10	.07	.04	.09	.06	.04	.07	.05	.03	.02

Spacing Criterion -- SC = 3.5

Illumination on Horizontal Surface

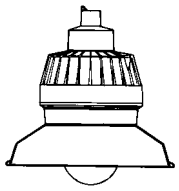
Mounting Height in Feet	FOOTCANDLE CHART (Initial) (2) 13 WATT FLUORESCENT Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
8'	.44	.71	.40	.29	.21	.15	.12	.09	.05	.03
10'	.28	.41	.35	.27	.22	.16	.13	.10	.06	.03
12'	.19	.28	.29	.24	.20	.16	.13	.10	.06	.04
14'	.14	.21	.22	.20	.18	.15	.13	.10	.06	.04
16'	.11	.15	.17	.16	.15	.14	.12	.10	.07	.04
18'	.09	.11	.14	.13	.13	.12	.11	.09	.07	.05

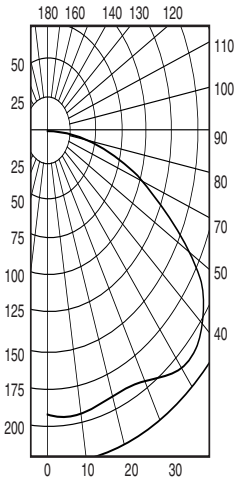
$$FC = \frac{(Candlepower)\ (COS\ Ø)}{DISTANCE^2}$$

Test No. LTL 00682

EBF26 FLUORESCENT
With Globe and Standard Dome Reflector
Two 13 Watt Bi-Pin Base

CANDLEPOWER – (2) 13 WATT
PL lamps
900 lumens per lamp





ANGLE	CP	ANGLE	CP
.0	189.	95.0	0.
5.0	193.	105.0	0.
15.0	191.	115.0	0.
25.0	190.	125.0	0.
35.0	204.	135.0	0.
45.0	205.	145.0	0.
55.0	188.	155.0	0.
65.0	136.	165.0	0.
75.0	74.	175.0	0.
85.0	15.	180.0	0.
90.0	1.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance														
0	.56	.56	.56	.56	.55	.55	.55	.55	.52	.52	.52	.50	.50	.50	.48	.48	.48	.47
1	.51	.49	.46	.45	.50	.47	.46	.44	.45	.44	.42	.44	.42	.41	.42	.41	.40	.39
2	.46	.42	.39	.36	.45	.41	.38	.36	.39	.37	.35	.38	.36	.34	.36	.35	.33	.32
3	.42	.36	.32	.39	.40	.36	.32	.29	.34	.31	.28	.33	.30	.28	.32	.29	.27	.26
4	.38	.32	.28	.35	.37	.31	.27	.24	.30	.27	.24	.29	.26	.24	.28	.25	.23	.22
5	.35	.28	.24	.20	.33	.28	.23	.20	.27	.23	.20	.26	.22	.20	.25	.22	.20	.19
6	.31	.25	.20	.17	.30	.24	.20	.17	.23	.20	.17	.23	.19	.17	.22	.19	.17	.16
7	.29	.22	.17	.14	.28	.21	.17	.14	.21	.17	.14	.20	.17	.14	.19	.16	.14	.13
8	.26	.20	.15	.12	.26	.19	.15	.12	.19	.15	.12	.18	.15	.12	.17	.14	.12	.11
9	.24	.17	.13	.11	.24	.17	.13	.11	.17	.13	.10	.16	.13	.10	.16	.13	.10	.09
10	.22	.16	.12	.09	.22	.16	.12	.09	.15	.11	.09	.15	.11	.09	.14	.11	.09	.08

Spacing Criterion -- SC = 1.6

Illumination on Horizontal Surface

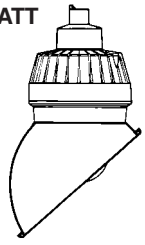
Mounting Height in Feet	FOOTCANDLE CHART (Initial) (2) 13 WATT FLUORESCENT Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
8'	2.95	1.85	.75	.50	.31	.21	.14	.09	.04	.02
10'	1.89	1.36	.72	.52	.37	.28	.18	.13	.06	.03
12'	1.31	1.04	.64	.50	.38	.29	.22	.15	.08	.04
14'	.96	.81	.56	.45	.37	.29	.23	.18	.10	.05
16'	.73	.65	.46	.41	.34	.28	.23	.19	.12	.06
18'	.58	.53	.41	.34	.31	.26	.22	.18	.11	.07

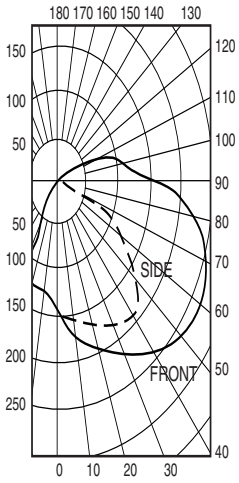
$$FC = \frac{(Candlepower)\ (COS\ Ø)}{DISTANCE^2}$$

Test No. LTL 00683

EBF26 FLUORESCENT
With Globe and Angle Reflector
Two 13 Watt Bi-Pin Base

CANDLEPOWER – (2) 13 WATT
PL lamps
900 lumens per lamp





0° (FRONT) ANGLE	CP	90° (SIDE) ANGLE	CP
.0	155.	.0	155.
5.0	166.	5.0	155.
15.0	190.	15.0	160.
25.0	211.	25.0	171.
35.0	242.	35.0	188.
45.0	264.	45.0	174.
55.0	274.	55.0	130.
65.0	269.	65.0	78.
75.0	238.	75.0	35.
85.0	189.	85.0	10.
90.0	161.	90.0	4.
95.0	132.	95.0	1.
105.0	75.	105.0	0.
115.0	27.	115.0	0.
125.0	4.	125.0	0.
135.0	0.	135.0	0.
145.0	0.	145.0	0.
155.0	0.	155.0	0.
165.0	0.	165.0	0.
175.0	0.	175.0	0.
180.0	0.	180.0	0.

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance														
0	.49	.49	.49	.49	.48	.48	.48	.48	.45	.45	.45	.42	.42	.42	.40	.40	.40	.39
1	.44	.41	.39	.37	.42	.40	.38	.36	.38	.36	.35	.36	.34	.33	.33	.32	.31	.30
2	.40	.36	.32	.30	.38	.35	.32	.29	.32	.30	.28	.31	.29	.27	.29	.27	.26	.25
3	.36	.31	.27	.24	.34	.30	.27	.24	.28	.25	.23	.27	.24	.22	.25	.23	.21	.20
4	.33	.27	.23	.20	.31	.27	.23	.20	.25	.22	.19	.24	.21	.19	.22	.20	.18	.17
5	.30	.24	.20	.17	.29	.23	.20	.17	.22	.19	.16	.21	.18	.16	.20	.17	.15	.14
6	.27	.21	.17	.15	.26	.21	.17	.14	.20	.16	.14	.19	.16	.14	.18	.15	.13	.12
7	.25	.19	.15	.12	.24	.19	.15	.12	.18	.14	.12	.17	.14	.12	.16	.13	.11	.10
8	.23	.17	.13	.11	.22	.17	.13	.11	.16	.13	.10	.15	.12	.10	.14	.12	.10	.09
9	.21	.15	.12	.09	.21	.15	.12	.09	.14	.11	.09	.14	.11	.09	.13	.10	.09	.08
10	.20	.14	.10	.08	.19	.14	.10	.08	.13	.10	.08	.12	.10	.08	.12	.09	.07	.07

0-DEG / 90-DEG
Spacing Criterion -- SC = 2.3 / 1.8

Illumination on Horizontal Surface

Mounting Height in Feet	FOOTCANDLE CHART (Inital) 100 WATT H.P.S FOOTCANDLE CHART (Initial) (2) 13 WATT FLUORESCENT 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
0° 8'	2.42	3.53	1.02	.73	.52	.38	.28	.21	.11	.06
10'	1.55	1.51	.93	.70	.54	.41	.28	.24	.13	.08
12'	1.08	1.11	.80	.65	.51	.41	.32	.26	.15	.09
14'	.79	.85	.66	.56	.48	.39	.32	.26	.16	.10
16'	.60	.66	.55	.48	.42	.36	.30	.26	.17	.11
18'	.48	.30	.46	.34	.37	.33	.29	.25	.17	.11
8'	2.42	1.73	.58	.35	.20	.13	.08	.05	.02	.00
10'	1.55	1.22	.61	.40	.25	.18	.12	.05	.03	.02
12'	1.08	.91	.57	.43	.29	.21	.15	.10	.04	.02
14'	.79	.70	.52	.40	.31	.23	.17	.12	.06	.03
16'	.60	.55	.43	.38	.30	.24	.18	.14	.07	.04
90° 18'	.48	.44	.37	.32	.29	.23	.19	.15	.08	.04

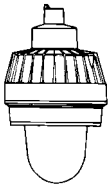
$$FC = \frac{(Candlepower)\ (COS\ Ø)}{DISTANCE^2}$$

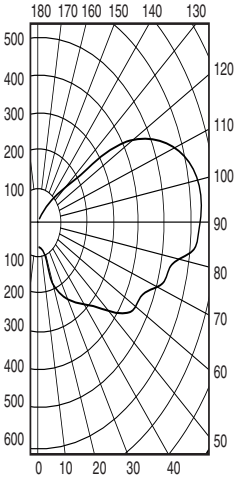
Test No. LTL 00684

EMS HIGH PRESSURE SODIUM
With Globe Only
35 – 100 Watt Medium Base

CANDLEPOWER – 70 WATT
B-17 clear lamp 6300 lumens

For 35 watt multiply by .357
For 50 watt multiply by .635
For 100 watt multiply by 1.508





ANGLE	CP	ANGLE	CP
.0	80.	95.0	651.
5.0	84.	100.0	635.
10.0	108.	105.0	624.
15.0	148.	110.0	581.
20.0	202.	115.0	505.
25.0	262.	120.0	250.
30.0	298.	125.0	23.
35.0	321.	130.0	8.
40.0	352.	135.0	3.
45.0	397.	140.0	3.
50.0	444.	145.0	1.
55.0	467.	150.0	0.
60.0	471.	155.0	0.
65.0	540.	160.0	0.
70.0	562.	165.0	0.
75.0	603.	170.0	0.
80.0	618.	175.0	0.
85.0	633.	180.0	0.
90.0	644.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance														
0	.85	.85	.85	.85	.79	.79	.79	.79	.69	.69	.69	.60	.60	.60	.51	.51	.51	.47
1	.72	.67	.62	.57	.67	.62	.58	.54	.53	.50	.46	.45	.42	.40	.37	.35	.33	.29
2	.64	.55	.48	.42	.58	.51	.45	.39	.43	.38	.34	.36	.32	.29	.30	.26	.24	.20
3	.57	.47	.39	.33	.52	.43	.36	.31	.37	.31	.26	.30	.26	.22	.25	.21	.18	.15
4	.51	.41	.33	.27	.47	.37	.30	.25	.32	.26	.21	.26	.21	.18	.21	.17	.14	.11
5	.46	.35	.27	.21	.42	.32	.25	.20	.27	.21	.17	.22	.18	.14	.18	.14	.11	.08
6	.42	.31	.23	.18	.39	.28	.21	.16	.24	.18	.14	.20	.15	.11	.16	.12	.09	.07
7	.39	.27	.20	.15	.36	.25	.19	.14	.21	.16	.12	.18	.13	.09	.14	.10	.07	.05
8	.36	.25	.18	.13	.33	.23	.16	.12	.19	.14	.10	.16	.11	.08	.13	.09	.06	.04
9	.33	.22	.15	.11	.30	.20	.14	.10	.17	.12	.08	.14	.10	.07	.11	.08	.05	.03
10	.31	.20	.14	.10	.28	.19	.13	.09	.16	.11	.07	.13	.09	.06	.10	.07	.04	.03

Spacing Criterion -- SC = 4.3

Illumination on Horizontal Surface

Mounting Height in Feet	FOOTCANDLE CHART (Initial) 70 WATT H.P.S. Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
8'	1.25	2.94	1.69	1.24	.90	.73	.56	.43	.25	.16
10'	.80	1.87	1.40	1.16	.92	.70	.54	.47	.28	.18
12'	.55	1.21	1.11	.97	.85	.69	.55	.44	.30	.19
14'	.41	.86	.88	.77	.71	.62	.54	.45	.28	.21
16'	.31	.57	.74	.64	.59	.55	.48	.42	.29	.19
18'	.25	.41	.61	.55	.50	.45	.43	.39	.29	.20

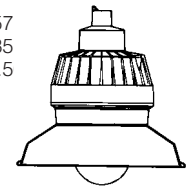
$$FC = \frac{(\text{Candlepower})\ (\cos \varnothing)}{\text{DISTANCE}^2}$$

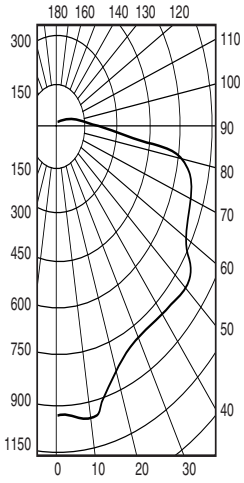
Test No. BALL 6686.0

EMS HIGH PRESSURE SODIUM
With Globe and Standard Dome Reflector
35 – 100 Watt Medium Base

CANDLEPOWER – 70 WATT
B-17 clear lamp 6300 lumens

For 35 watt multiply by .357
For 50 watt multiply by .635
For 100 watt multiply by 1.5





ANGLE	CP	ANGLE	CP
.0	960.	95.0	1.
5.0	933.	100.0	0.
10.0	957.	105.0	0.
15.0	902.	110.0	0.
20.0	856.	115.0	0.
25.0	808.	120.0	0.
30.0	805.	125.0	0.
35.0	789.	130.0	0.
40.0	786.	135.0	0.
45.0	812.	140.0	0.
50.0	804.	145.0	0.
55.0	766.	150.0	0.
60.0	722.	155.0	0.
65.0	740.	160.0	0.
70.0	724.	165.0	0.
75.0	689.	170.0	0.
80.0	170.	175.0	0.
85.0	31.	180.0	0.
90.0	3.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance														
0	.76	.76	.76	.76	.74	.74	.74	.74	.71	.71	.71	.68	.68	.68	.65	.65	.65	.64
1	.69	.65	.62	.60	.67	.64	.61	.59	.61	.59	.57	.59	.57	.55	.56	.55	.53	.52
2	.61	.55	.50	.46	.59	.54	.49	.45	.52	.48	.44	.49	.46	.43	.47	.45	.42	.41
3	.55	.47	.41	.37	.53	.46	.41	.36	.44	.40	.36	.42	.38	.35	.41	.37	.34	.33
4	.50	.41	.35	.30	.48	.40	.34	.30	.39	.33	.29	.37	.33	.29	.36	.32	.28	.27
5	.45	.36	.29	.24	.43	.35	.29	.24	.33	.28	.24	.32	.27	.24	.31	.27	.23	.22
6	.41	.31	.25	.20	.40	.31	.25	.20	.30	.24	.20	.28	.24	.20	.27	.23	.20	.18
7	.38	.28	.22	.17	.36	.27	.22	.17	.26	.21	.17	.25	.21	.17	.24	.20	.17	.15
8	.34	.25	.19	.15	.33	.24	.19	.15	.24	.18	.15	.23	.18	.14	.22	.18	.14	.13
9	.32	.22	.16	.13	.31	.22	.16	.13	.21	.16	.12	.20	.16	.12	.20	.15	.12	.11
10	.29	.20	.15	.11	.29	.20	.15	.11	.19	.14	.11	.18	.14	.11	.18	.14	.11	.10

Spacing Criterion -- SC = 1.3

Illumination on Horizontal Surface

Mounting Height in Feet	FOOTCANDLE CHART (Initial) 70 WATT H.P.S. Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
8'	15.00	7.63	3.06	2.04	1.38	1.02	.77	.58	.31	.18
10'	9.60	5.78	2.87	2.11	1.50	1.11	.83	.65	.38	.23
12'	6.67	4.54	2.47	1.99	1.54	1.18	.91	.68	.42	.26
14'	4.89	3.65	2.17	1.75	1.46	1.18	.92	.74	.43	.28
16'	3.75	2.97	2.14	1.58	1.31	1.12	.92	.76	.45	.29
18'	2.96	2.49	1.66	1.41	1.19	1.01	.89	.75	.47	.30

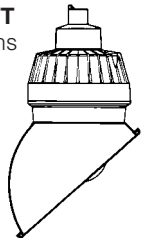
$$FC = \frac{(\text{Candlepower})\ (\cos \varnothing)}{\text{DISTANCE}^2}$$

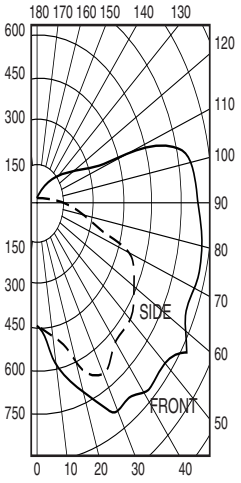
Test No. BALL 6687.0

EMS HIGH PRESSURE SODIUM
With Globe and Angle Reflector
35 – 100 Watt Medium Base

CANDLEPOWER – 70 WATT
B-17 clear lamp 6300 lumens

For 35 watt multiply by .357
For 50 watt multiply by .635
For 100 watt multiply by 1.508





0° (FRONT) ANGLE	CP	90° (SIDE) ANGLE	CP
.0	469.	.0	469.
5.0	520.	5.0	479.
15.0	655.	15.0	543.
25.0	846.	25.0	736.
35.0	937.	35.0	713.
45.0	974.	45.0	677.
55.0	1011.	55.0	614.
65.0	993.	65.0	578.
75.0	994.	75.0	84.
85.0	955.	85.0	21.
90.0	915.	90.0	0.
95.0	786.	95.0	0.
105.0	120.	105.0	0.
115.0	39.	115.0	0.
125.0	0.	125.0	0.
135.0	0.	135.0	0.
145.0	0.	145.0	0.
155.0	0.	155.0	0.
165.0	0.	165.0	0.
175.0	0.	175.0	0.
180.0	0.	180.0	0.

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance														
0	.66	.66	.66	.66	.64	.64	.64	.64	.59	.59	.59	.55	.55	.55	.51	.51	.51	.50
1	.58	.54	.51	.48	.55	.52	.49	.46	.48	.46	.43	.44	.42	.40	.41	.39	.38	.36
2	.52	.46	.41	.36	.49	.44	.39	.35	.40	.37	.33	.37	.34	.31	.34	.32	.30	.28
3	.47	.39	.34	.29	.44	.38	.33	.29	.35	.31	.27	.32	.29	.26	.30	.27	.24	.22
4	.42	.34	.29	.24	.40	.33	.28	.24	.31	.26	.22	.28	.24	.21	.26	.23	.20	.19
5	.38	.30	.24	.20	.36	.29	.23	.19	.27	.22	.18	.25	.21	.18	.23	.19	.17	.15
6	.35	.27	.21	.17	.33	.26	.20	.16	.24	.19	.16	.22	.18	.15	.20	.17	.14	.13
7	.32	.24	.18	.14	.31	.23	.18	.14	.21	.17	.13	.20	.16	.13	.18	.15	.12	.11
8	.30	.21	.16	.12	.28	.20	.16	.12	.19	.15	.12	.18	.14	.11	.16	.13	.10	.09
9	.27	.19	.14	.11	.26	.18	.14	.10	.17	.13	.10	.16	.12	.09	.15	.11	.09	.08
10	.25	.17	.12	.09	.24	.17	.12	.09	.16	.11	.09	.14	.11	.08	.13	.10	.08	.07

0-DEG / 90-DEG
Spacing Criterion -- SC = 2.53 / 1.87

Illumination on Horizontal Surface

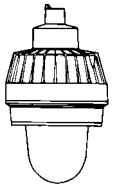
Mounting Height in Feet	FOOTCANDLE CHART (Initial) 70 WATT H.P.S. Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
0° 8'	7.33	9.07	3.67	2.69	1.89	1.39	1.04	.79	.44	.26
10'	4.69	6.05	3.44	2.53	1.98	1.50	1.13	.89	.51	.31
12'	3.26	4.11	3.04	2.39	1.85	1.46	1.20	.94	.56	.35
14'	2.39	3.11	2.57	2.16	1.76	1.40	1.15	.97	.59	.38
16'	1.83	2.31	2.27	1.87	1.61	1.34	1.10	.92	.65	.40
18'	1.45	1.81	1.97	1.69	1.43	1.25	1.03	.89	.62	.42
8'	7.33	6.88	2.45	1.64	1.12	.81	.60	.34	.15	.02
10'	4.69	5.27	2.39	1.69	1.20	.90	.67	.52	.17	.12
12'	3.26	3.59	2.06	1.66	1.23	.93	.73	.55	.32	.13
14'	2.39	2.72	1.96	1.46	1.22	.95	.75	.59	.35	.22
16'	1.83	1.91	1.74	1.43	1.09	.93	.74	.61	.37	.24
90° 18'	1.45	1.50	1.52	1.30	1.06	.84	.74	.59	.38	.25

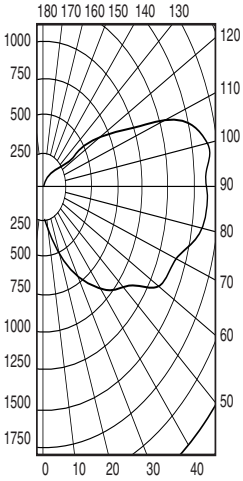
$$FC = \frac{(\text{Candlepower})\ (\cos \varnothing)}{\text{DISTANCE}^2}$$

Test No. BALL 6688.0

EMS HIGH PRESSURE SODIUM
With Globe Only Reflector
150 Watt Medium Base

CANDLEPOWER – 150 WATT
B-17 clear lamp
16000 lumens





ANGLE	CP	ANGLE	CP
.0	195.	95.0	1576.
5.0	212.	100.0	1596.
10.0	267.	105.0	1514.
15.0	362.	110.0	1386.
20.0	480.	115.0	1150.
25.0	611.	120.0	685.
30.0	701.	125.0	245.
35.0	763.	130.0	25.
40.0	864.	135.0	10.
45.0	960.	140.0	3.
50.0	1048.	145.0	2.
55.0	1117.	150.0	0.
60.0	1264.	155.0	0.
65.0	1304.	160.0	0.
70.0	1374.	165.0	0.
75.0	1505.	170.0	0.
80.0	1555.	175.0	0.
85.0	1568.	180.0	0.
90.0	1546.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance														
0	.82	.82	.82	.82	.76	.76	.76	.76	.66	.66	.66	.57	.57	.57	.49	.49	.49	.45
1	.70	.64	.60	.55	.65	.60	.56	.52	.51	.48	.45	.43	.41	.38	.36	.34	.32	.28
2	.61	.53	.46	.40	.56	.49	.43	.38	.42	.37	.32	.35	.31	.27	.28	.25	.22	.19
3	.55	.45	.38	.32	.50	.42	.35	.29	.35	.30	.25	.29	.25	.21	.24	.20	.17	.14
4	.49	.39	.31	.25	.45	.36	.29	.24	.30	.25	.20	.25	.21	.17	.20	.17	.14	.11
5	.45	.34	.26	.20	.41	.31	.24	.19	.26	.20	.16	.22	.17	.13	.17	.13	.10	.08
6	.41	.30	.22	.17	.37	.27	.21	.16	.23	.17	.13	.19	.14	.11	.15	.11	.08	.06
7	.37	.26	.19	.14	.34	.24	.18	.13	.21	.15	.11	.17	.12	.09	.13	.10	.07	.05
8	.34	.24	.17	.12	.32	.22	.16	.11	.18	.13	.09	.15	.11	.08	.12	.08	.06	.04
9	.32	.21	.15	.10	.29	.20	.14	.10	.17	.12	.08	.14	.09	.06	.11	.07	.05	.03
10	.30	.19	.13	.09	.27	.18	.12	.08	.15	.10	.07	.12	.08	.05	.10	.06	.04	.02

Spacing Criterion -- SC = 4.3

Illumination on Horizontal Surface

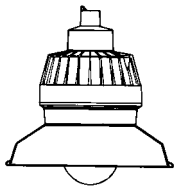
Mounting Height in Feet	FOOTCANDLE CHART (Initial) 150 WATT H.P.S. Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
8'	3.05	7.35	3.99	2.98	2.41	1.78	1.36	1.09	.62	.40
10'	1.95	4.37	3.39	2.75	2.19	1.71	1.45	1.14	.67	.43
12'	1.35	2.76	2.72	2.36	2.01	1.65	1.32	1.19	.73	.48
14'	.99	2.04	2.10	1.93	1.73	1.50	1.25	1.07	.75	.50
16'	.76	1.31	1.70	1.53	1.44	1.32	1.18	1.00	.70	.51
18'	.60	1.00	1.44	1.27	1.19	1.11	1.05	.95	.69	.53

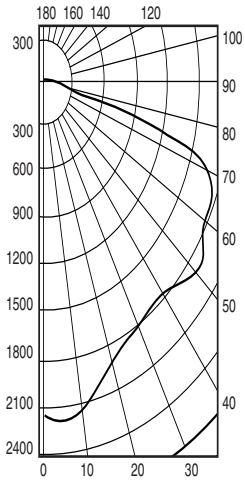
$FC = \frac{(\text{Candlepower}) (\cos \emptyset)}{\text{DISTANCE}^2}$

Test No. BALL 6683.0

EMS HIGH PRESSURE SODIUM
With Globe and Standard Dome Reflector
150 Watt Medium Base

CANDLEPOWER – 150 WATT
B-17 clear lamp
16000 lumens





ANGLE	CP	ANGLE	CP
.0	2289.	95.0	3.
5.0	2296.	100.0	0.
10.0	2282.	105.0	0.
15.0	2117.	110.0	0.
20.0	1981.	115.0	0.
25.0	1921.	120.0	0.
30.0	1911.	125.0	0.
35.0	1888.	130.0	0.
40.0	1898.	135.0	0.
45.0	1940.	140.0	0.
50.0	1959.	145.0	0.
55.0	1898.	150.0	0.
60.0	1869.	155.0	0.
65.0	1851.	160.0	0.
70.0	1763.	165.0	0.
75.0	1469.	170.0	0.
80.0	601.	175.0	0.
85.0	93.	180.0	0.
90.0	7.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance														
0	.71	.71	.71	.71	.70	.70	.70	.70	.67	.67	.67	.64	.64	.64	.61	.61	.61	.60
1	.65	.61	.59	.56	.63	.60	.57	.55	.57	.55	.53	.55	.53	.52	.53	.52	.50	.49
2	.58	.52	.47	.43	.56	.51	.47	.43	.49	.45	.42	.47	.44	.41	.45	.42	.40	.39
3	.52	.45	.39	.35	.50	.44	.39	.34	.42	.37	.34	.40	.36	.33	.39	.35	.33	.31
4	.47	.39	.33	.28	.45	.38	.32	.28	.36	.32	.28	.35	.31	.27	.34	.30	.27	.26
5	.42	.34	.27	.23	.41	.33	.27	.23	.31	.26	.23	.30	.26	.22	.29	.25	.22	.21
6	.38	.30	.24	.19	.37	.29	.23	.19	.28	.23	.19	.27	.22	.19	.26	.22	.19	.17
7	.35	.26	.20	.16	.34	.26	.20	.16	.25	.20	.16	.24	.19	.16	.23	.19	.16	.15
8	.32	.23	.18	.14	.31	.23	.18	.14	.22	.17	.14	.21	.17	.14	.21	.17	.14	.12
9	.30	.21	.15	.12	.29	.20	.15	.12	.20	.15	.12	.19	.15	.12	.18	.14	.11	.10
10	.28	.19	.14	.10	.27	.19	.14	.10	.18	.13	.10	.17	.13	.10	.17	.13	.10	.09

Spacing Criterion -- SC = 1.3

Illumination on Horizontal Surface

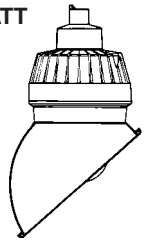
Mounting Height in Feet	FOOTCANDLE CHART (Initial) 150 WATT H.P.S. Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
8'	35.76	18.03	7.46	5.06	3.57	2.57	1.94	1.42	.75	.39
10'	22.89	13.74	6.86	5.14	3.73	2.82	2.14	1.66	.91	.56
12'	15.89	10.75	5.97	4.76	3.75	2.87	2.25	1.77	1.04	.63
14'	11.68	8.44	5.19	4.24	3.50	2.85	2.33	1.83	1.11	.71
16'	8.94	7.10	4.54	3.78	3.16	2.68	2.24	1.86	1.16	.76
18'	7.06	5.84	3.94	3.36	2.88	2.44	2.12	1.81	1.17	.78

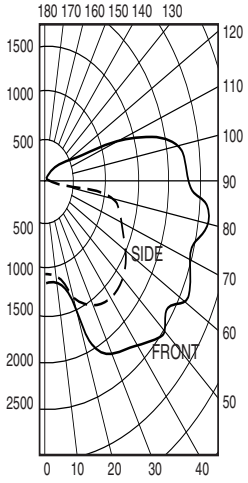
$FC = \frac{(\text{Candlepower}) (\cos \emptyset)}{\text{DISTANCE}^2}$

Test No. BALL 6684.0

EMS HIGH PRESSURE SODIUM
With Globe and Angle Reflector
150 Watt Medium Base

CANDLEPOWER – 150 WATT
B-17 clear lamp
16000 lumens





0° (FRONT) ANGLE	CP	90° (SIDE) ANGLE	CP
.0	1163.	.0	1163.
5.0	1259.	5.0	1170.
15.0	1590.	15.0	1315.
25.0	2122.	25.0	1676.
35.0	2308.	35.0	1635.
45.0	2478.	45.0	1523.
55.0	2481.	55.0	1469.
65.0	2506.	65.0	1341.
75.0	2540.	75.0	256.
85.0	2431.	85.0	32.
90.0	2307.	90.0	0.
95.0	1868.	95.0	0.
105.0	584.	105.0	0.
115.0	104.	115.0	0.
125.0	3.	125.0	0.
135.0	2.	135.0	0.
145.0	0.	145.0	0.
155.0	0.	155.0	0.
165.0	0.	165.0	0.
175.0	0.	175.0	0.
180.0	0.	180.0	0.

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance														
0	.64	.64	.64	.64	.62	.62	.62	.62	.57	.57	.57	.53	.53	.53	.50	.50	.50	.48
1	.56	.52	.49	.46	.54	.50	.47	.44	.46	.44	.42	.43	.41	.39	.40	.38	.36	.35
2	.50	.44	.39	.35	.47	.42	.38	.34	.39	.35	.32	.36	.33	.30	.33	.31	.28	.27
3	.45	.38	.33	.28	.43	.37	.32	.28	.34	.29	.26	.31	.28	.25	.29	.26	.23	.21
4	.41	.33	.28	.23	.39	.32	.27	.23	.29	.25	.22	.27	.23	.20	.25	.22	.19	.18
5	.37	.29	.23	.19	.35	.28	.23	.19	.26	.21	.18	.24	.20	.17	.22	.19	.16	.14
6	.34	.26	.20	.16	.32	.25	.20	.16	.23	.18	.15	.21	.17	.14	.20	.16	.14	.12
7	.31	.23	.18	.14	.30	.22	.17	.14	.20	.16	.13	.19	.15	.12	.18	.14	.12	.10
8	.29	.21	.15	.12	.27	.20	.15	.12	.18	.14	.11	.17	.13	.10	.16	.12	.10	.09
9	.26	.18	.13	.10	.25	.18	.13	.10	.16	.12	.09	.15	.12	.09	.14	.11	.08	.07
10	.25	.17	.12	.09	.23	.16	.12	.09	.15	.11	.08	.14	.10	.08	.13	.10	.07	.06

0-DEG / 90-DEG
Spacing Criterion -- SC = 2.53 / 1.87

Illumination on Horizontal Surface

Mounting Height in Feet		FOOTCANDLE CHART (Initial) 150 WATT H.P.S. Horizontal Distance From Source in Feet 0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
0°	8'	18.17	21.86	9.74	6.62	4.80	3.50	2.62	1.96	1.08	.68
	10'	11.63	15.18	8.76	6.71	4.87	3.70	2.88	2.24	1.26	.78
	12'	8.08	10.34	7.24	6.08	4.90	3.74	2.94	2.38	1.41	.88
	14'	5.93	7.82	6.34	5.13	4.47	3.71	3.00	2.39	1.50	.97
	16'	4.54	5.63	5.46	4.62	3.85	3.42	2.89	2.43	1.52	1.02
	18'	3.59	4.39	4.72	4.08	3.49	2.96	2.70	2.35	1.53	1.06
90°	8'	18.17	16.06	5.59	3.92	2.78	1.91	1.40	.74	.31	.07
	10'	11.63	11.99	5.38	3.85	2.88	2.18	1.67	1.22	.47	.26
	12'	8.08	8.62	4.76	3.74	2.81	2.20	1.74	1.38	.75	.33
	14'	5.93	6.63	4.49	3.37	2.75	2.15	1.73	1.41	.86	.52
	16'	4.54	4.63	4.02	3.27	2.51	2.10	1.67	1.40	.90	.59
	18'	3.59	3.63	3.50	2.93	2.44	1.95	1.66	1.37	.90	.61

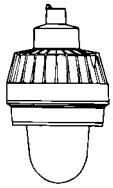
$FC = \frac{(\text{Candlepower}) (\cos \emptyset)}{\text{DISTANCE}^2}$

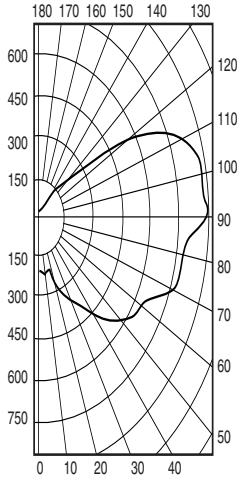
Test No. BALL 6685.0

EMH (MH)
With Globe Only
50 – 100 Watt Medium Base

CANDLEPOWER – 100 WATT MH
B-17 clear lamp 8500 lumens

For 70 watt M.H. multiply by .647
For 50 watt M.H. multiply by .447





ANGLE	CP	ANGLE	CP
.0	173.	95.0	847.
5.0	206.	100.0	846.
10.0	188.	105.0	832.
15.0	225.	110.0	750.
20.0	290.	115.0	641.
25.0	361.	120.0	440.
30.0	403.	125.0	88.
35.0	452.	130.0	14.
40.0	492.	135.0	5.
45.0	552.	140.0	2.
55.0	610.	145.0	1.
50.0	618.	150.0	0.
65.0	658.	155.0	0.
60.0	731.	160.0	0.
75.0	796.	165.0	0.
70.0	776.	170.0	0.
80.0	787.	175.0	0.
85.0	863.	180.0	0.
90.0	874.		

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance													
0	.84	.84	.84	.79	.79	.79	.79	.69	.69	.69	.60	.60	.60	.51	.51	.51	.47
1	.72	.67	.62	.67	.62	.58	.53	.53	.50	.46	.45	.42	.40	.38	.35	.33	.30
2	.63	.55	.48	.58	.51	.45	.39	.43	.38	.34	.36	.32	.29	.30	.27	.24	.20
3	.57	.47	.39	.52	.43	.36	.31	.37	.31	.27	.31	.26	.22	.25	.21	.18	.15
4	.51	.41	.33	.47	.38	.30	.25	.32	.26	.21	.26	.22	.18	.21	.18	.15	.12
5	.46	.35	.27	.42	.32	.25	.20	.27	.22	.17	.23	.18	.14	.18	.14	.11	.09
6	.42	.31	.23	.39	.29	.22	.17	.24	.18	.14	.20	.15	.12	.16	.12	.09	.07
7	.39	.28	.20	.36	.25	.19	.14	.21	.16	.12	.18	.13	.10	.14	.11	.08	.05
8	.36	.25	.18	.33	.23	.16	.12	.19	.14	.10	.16	.11	.08	.13	.09	.06	.04
9	.33	.22	.16	.11	.30	.21	.14	.10	.17	.12	.09	.14	.10	.07	.11	.08	.05	.03
10	.31	.20	.14	.10	.28	.19	.13	.09	.16	.11	.07	.13	.09	.06	.10	.07	.04	.03

Spacing Criterion -- SC = 3.4

Illumination on Horizontal Surface

	FOOTCANDLE CHART (Initial) 100 WATT METAL HALIDE Horizontal Distance From Source in Feet									
Mounting Height in Feet	0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
8'	2.70	3.93	2.32	1.65	1.25	1.00	.76	.59	.35	.21
10'	1.73	2.58	1.95	1.60	1.21	.93	.75	.64	.38	.25
12'	1.20	1.66	1.55	1.35	1.17	.92	.73	.62	.41	.26
14'	.88	1.23	1.24	1.10	.99	.87	.72	.59	.39	.28
16'	.67	.80	.98	.90	.82	.76	.68	.58	.38	.27
18'	.53	.62	.83	.73	.70	.63	.60	.55	.38	.27

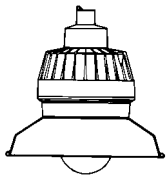
$FC = \frac{(\text{Candlepower})\ (\cos \varnothing)}{\text{DISTANCE}^2}$

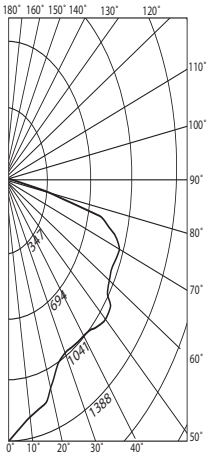
Test No. BAL 6689.0

EMH (MH)
With Globe and Standard Dome
Reflector 50 – 100 Watt Medium Base

CANDLEPOWER – 100 WATT MH
B-17 clear lamp 8500 lumens

For 70 watt M.H. multiply by .647
For 50 watt M.H. multiply by .447





ANGLE	CP	ANGLE	CP
0	1388.	95.0	2.
5.0	1323.	100.0	1.
10.0	1257.	105.0	0.
15.0	1225.	110.0	0.
20.0	1102.	115.0	0.
25.0	1032.	120.0	0.
30.0	1033.	125.0	0.
35.0	1037.	130.0	0.
40.0	1048.	135.0	0.
45.0	1075.	140.0	0.
50.0	1073.	145.0	0.
55.0	1006.	150.0	0.
60.0	982.	155.0	0.
65.0	999.	160.0	0.
70.0	992.	165.0	0.
75.0	792.	170.0	0.
80.0	210.	175.0	0.
85.0	48.	180.0	0.
90.0	7.		

Efficiency 60.6%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.72 .72 .72 .72	.70 .70 .70 .70	.67 .67 .67	.64 .64 .64	.62 .62 .62	.61
1	.65 .61 .58 .55	.63 .60 .57 .54	.57 .55 .53	.55 .53 .51	.52 .51 .49	.48
2	.58 .52 .47 .43	.56 .50 .46 .42	.48 .44 .41	.46 .43 .40	.44 .41 .39	.38
3	.52 .44 .38 .34	.50 .43 .38 .33	.41 .37 .33	.39 .36 .32	.38 .34 .32	.30
4	.47 .38 .32 .28	.45 .37 .32 .27	.36 .31 .27	.34 .30 .27	.33 .29 .26	.25
5	.42 .34 .28 .23	.41 .33 .27 .23	.32 .27 .23	.30 .26 .22	.29 .25 .22	.21
6	.39 .30 .24 .20	.38 .29 .24 .20	.28 .23 .19	.27 .23 .19	.26 .22 .19	.18
7	.36 .27 .21 .17	.35 .26 .21 .17	.25 .20 .17	.25 .20 .17	.24 .20 .17	.15
8	.33 .24 .19 .15	.32 .24 .19 .15	.23 .18 .15	.22 .18 .15	.22 .18 .15	.13
9	.31 .22 .17 .13	.30 .22 .17 .13	.21 .17 .13	.21 .16 .13	.20 .16 .13	.12
10	.29 .21 .15 .12	.28 .20 .15 .12	.20 .15 .12	.19 .15 .12	.18 .15 .12	.11

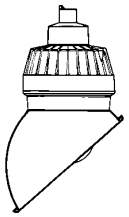
SPACING TO MOUNTING HEIGHT RATIO - 1.12

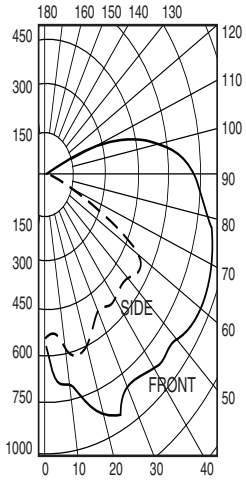
Test No. BAL 6702

EMH (MH)
With Globe and Angle Reflector
50 – 100 Watt Medium Base

CANDLEPOWER – 100 WATT MH
B-17 clear lamp 8500 lumens

For 70 watt M.H. multiply by .647
For 50 watt M.H. multiply by .447





0° (FRONT) ANGLE	CP	90° (SIDE) ANGLE	CP
.0	741.	.0	741.
5.0	775.	5.0	692.
15.0	928.	15.0	744.
25.0	1099.	25.0	895.
35.0	1249.	35.0	776.
45.0	1239.	45.0	776.
55.0	1305.	55.0	764.
65.0	1258.	65.0	454.
75.0	1218.	75.0	70.
85.0	1262.	85.0	2.
90.0	1119.	90.0	0.
95.0	938.	95.0	0.
105.0	163.	105.0	0.
115.0	54.	115.0	0.
125.0	0.	125.0	0.
135.0	0.	135.0	0.
145.0	0.	145.0	0.
155.0	0.	155.0	0.
165.0	0.	165.0	0.
175.0	0.	175.0	0.
180.0	0.	180.0	0.

Coefficients of Utilization -- Zonal Cavity Method

% Effective Ceiling Cavity Reflectance 1cc	80			70			50		30		10		0
% Wall Reflectance 1w	70	50	30	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio RCR	20% Effective Floor Cavity Reflectance													
0	.61	.61	.61	.59	.59	.59	.59	.55	.55	.55	.51	.51	.51	.48	.48	.48	.46
1	.54	.50	.47	.44	.51	.48	.46	.43	.45	.42	.40	.41	.40	.38	.38	.37	.35	.34
2	.48	.42	.38	.34	.46	.41	.37	.33	.38	.34	.31	.35	.32	.29	.32	.30	.28	.26
3	.43	.37	.32	.27	.41	.35	.31	.27	.33	.29	.25	.30	.27	.24	.28	.25	.23	.21
4	.39	.32	.27	.23	.37	.31	.26	.22	.29	.24	.21	.26	.23	.20	.24	.21	.19	.17
5	.36	.28	.23	.19	.34	.27	.22	.18	.25	.21	.17	.23	.19	.16	.21	.18	.16	.14
6	.33	.25	.20	.16	.31	.24	.19	.15	.22	.18	.15	.21	.17	.14	.19	.16	.13	.12
7	.30	.22	.17	.14	.28	.21	.17	.13	.20	.16	.13	.18	.15	.12	.17	.14	.11	.10
8	.28	.20	.15	.12	.26	.19	.15	.11	.18	.14	.11	.17	.13	.10	.15	.12	.10	.09
9	.25	.18	.13	.10	.24	.17	.13	.10	.16	.12	.09	.15	.11	.09	.14	.11	.08	.07
10	.24	.16	.12	.09	.23	.16	.11	.08	.15	.11	.08	.14	.10	.08	.13	.10	.07	.06

0-DEG / 90-DEG
Spacing Criterion -- SC = 2.25 / 1.58

Illumination on Horizontal Surface

		FOOTCANDLE CHART (Initial) 100 WATT METAL HALIDE Horizontal Distance From Source in Feet									
Mounting Height in Feet		0'	5'	10'	12'	14'	16'	18'	20'	25'	30'
0°	8'	11.58	11.82	4.86	3.48	2.39	1.75	1.32	1.01	.55	.32
	10'	7.41	7.86	4.38	3.35	2.56	1.93	1.43	1.12	.64	.40
	12'	5.14	5.61	3.81	3.04	2.44	1.95	1.55	1.18	.71	.45
	14'	3.78	4.31	3.43	2.70	2.23	1.85	1.52	1.26	.74	.48
	16'	2.89	3.21	2.96	2.50	2.02	1.71	1.45	1.22	.80	.51
	18'	2.29	2.56	2.55	2.22	1.88	1.56	1.35	1.17	.80	.52
	8'	11.58	7.52	2.73	2.04	1.32	.62	.47	.16	.04	.02
	10'	7.41	6.40	2.74	1.88	1.50	1.12	.79	.40	.11	.04
	12'	5.14	4.54	2.38	1.90	1.37	1.13	.90	.65	.25	.07
	14'	3.78	3.47	2.13	1.69	1.40	1.03	.86	.73	.41	.17
	16'	2.89	2.57	1.88	1.55	1.26	1.07	.84	.68	.46	.28
90°	18'	2.29	2.05	1.62	1.40	1.17	.97	.85	.67	.47	.29

$FC = \frac{(\text{Candlepower})\ (\cos \varnothing)}{\text{DISTANCE}^2}$

Test No. BALL 6703.0

Class I, Div. 1 & 2 Groups C,D
Class I, Zone 1 & 2, Groups IIB,IIA
Class I, Zone 1, AEx d IIB
Class II, Div. 1 & 2, Groups E,F,G
Class III, Div. 1 & 2
Suitable for wet locations
Marine
NEMA 3, 4, 4X
Factory Sealed

Listed - File E10514 and E91793

Certified - File LR11713

FEATURES-SPECIFICATIONS

HOSTILE*LITE*®

HOSTILE*LITE*® EZ fixtures are now available with Pulse Start Metal Halide ballasts. Pulse Start systems provide higher and better maintained light output with longer life compared standard metal halide systems. Pulse start and standard Metal Halide lamps and ballasts are not interchangeable.

Applications

HOSTILE*LITE*® EZ Series mogul base fixtures are designed for installations where moisture, dirt, dust, corrosion and vibration may be present, or NEMA 3 and 4x areas where wind, water, snow or high ambients can be expected. They can be used in locations made hazardous due to the presence of flammable or explosive gases, vapors and combustible dusts as defined by the NEC.

Typical applications include classified areas such as paint manufacturing plants, ammunition facilities, oil and gas producing and refining plants, off-shore and dockside installations, tank farms, pipeline pumping stations and marine loading and fuel transfer terminals.

Features

- Three light sources—High Pressure Sodium (50-400W), Metal Halide (70-400W) and Pulse Start Metal Halide (175-400W)
- HOSTILE*LITE*® EZ fixtures are now available with Pulse Start Metal Halide ballasts
- Mounting choice—Pendant, ceiling, 25˚ stanchion or 90˚ wall mount, all with "wireless" design that allows fast, easy fixture installation or removal for maintenance. See pages L196-197 for trunnion mounted fixtures
- Factory sealed—No external seal needed. Simply wire mounting cap and thread on fixture to install
- Corrosion resistant—Copper-free aluminum die cast construction. Baked powder epoxy finish, electrostatically applied. Exposed hardware is 316 grade stainless steel
- Accessories—Available with or without guard, standard dome or angle reflector
- Options—EZ Series fixtures can be specified with instant restart for HPS lamps, auxiliary quartz circuit, ballast protector, and fuse kits. (See page L160 for details)

Compliances

- UL-844 Electric Lighting Fixtures for use in Hazardous Locations
- UL Marine Type Electric Lighting Fixtures
- UL-1598 Standard for HID Lighting Fixtures
- CSA C22.2 no. 137-M1981 Electric Luminaires for use in Hazardous Locations
- CSA C22.2 no. 94-1976 Special purpose enclosure
- NEMA 3, 4, 4x, 7CD, 9EFG

Catalog Number Logic

EZ 0 00 0 00 0 - 00 (CEN*)

Series Constant

Lamp Type
S—High Pressure Sodium
H—Metal Halide
P—Pulse Start Metal Halide

Lamp Wattage
05—50 Watt HPS
07—70 Watt HPS/MH
10—100 Watt HPS/MH
15—150 Watt HPS/MHP
17—175 Watt MH/MHP②
20—200 Watt HPS/MHP
25—250 Watt HPS/MH/MHP②
32—320 Watt MHP
35—350 Watt MHP
40—400 Watt HPS/MH/MHP②

Voltage Ⓥ
0—Quadri-Volt, 60 Hz. (120, 208, 240, 277)
5—480 Volts, 60 Hz.
6—TriTap Canada (120, 277, 347), 60 Hz.
7—220V, 60Hz
8—220/240 Volt, 50 Hz.
9—Special (Specify)

Options
Q—Auxiliary Quartz Standby
R—Instant Restrike (150W HPS Max)
BP—Ballast Protector
PS—Paint Spray (50, 70, 100W HPS, 100W MV, 70, 100, MH)
EB—Eyebolts①
SU103—Assembled w/Lamp

Guard
G—Omit G if guard is not required

Mounting Type
A2—3/4" Pendant
A3—1" Pendant
X2—3/4" Ceiling
X3—1" Ceiling
B2—3/4" Bracket
B3—1" Bracket
D4—1-1/4"/1-1/2" Stanchion

**CEN (CENELEC) Approved option available on some models. See page L164 for more information.*
① Two eyebolts plus 12" of connecting chain included. ② 175,250 and 400W MH EXPORT ONLY (EISA LAW).
Ⓥ Consult factory for available lamp and voltage combinations.

HUBBELL
KILLARK®

Class I, Div. 1 & 2 Groups C,D
Class I, Zone 1 & 2, Groups IIB,IIA
Class I, Zone 1, AEx d IIB
Class II, Div. 1 & 2, Groups E,F,G
Class III, Div. 1 & 2
Suitable for wet locations
Marine
NEMA 3, 4, 4X
Factory Sealed

Listed - File E10514 and E91793 (Marine)

Certified - File LR11713

FEATURES-SPECIFICATIONS


Pendant


Ceiling


Wall


Stanchion

EZ 50-400 WATT, HIGH PRESSURE SODIUM ①④						
WATTS	ANSI LAMP	VOLTAGE @ 60Hz	CATALOG NUMBER			
			PENDANT 3/4"②	CEILING 3/4"②	WALL 3/4"②	STANCHION 1-1/4"③
50	S-68	120, 208, 240, 277	EZS050A2G	EZS050X2G	EZS050B2G	EZS050D4G
		120, 277, 347	—	—	—	—
		480	—	—	—	—
70	S-62	120, 208, 240, 277	EZS070A2G	EZS070X2G	EZS070B2G	EZS070D4G
		120, 277, 347	EZS076A2G	EZS076X2G	EZS076B2G	EZS076D4G
		480	EZS075A2G	EZS075X2G	EZS075B2G	EZS075D4G
100	S-54	120, 208, 240, 277	EZS100A2G	EZS100X2G	EZS100B2G	EZS100D4G
		120, 277, 347	EZS106A2G	EZS106X2G	EZS106B2G	EZS106D4G
		480	EZS105A2G	EZS105X2G	EZS105B2G	EZS105D4G
150	S-55	120, 208, 240, 277	EZS150A2G	EZS150X2G	EZS150B2G	EZS150D4G
		120, 277, 347	EZS156A2G	EZS156X2G	EZS156B2G	EZS156D4G
		480	EZS155A2G	EZS155X2G	EZS155B2G	EZS155D4G
250	S-50	120, 208, 240, 277	EZS250A2G	EZS250X2G	EZS250B2G	EZS250D4G
		120, 277, 347	EZS256A2G	EZS256X2G	EZS256B2G	EZS256D4G
		480	EZS255A2G	EZS255X2G	EZS255B2G	EZS255D4G
400	S-51	120, 208, 240, 277	EZS400A2G	EZS400X2G	EZS400B2G	EZS400D4G
		120, 277, 347	EZS406A2G	EZS406X2G	EZS406B2G	EZS406D4G
		480	EZS405A2G	EZS405X2G	EZS405B2G	EZS405D4G

① See Hazardous Location Application Data on pages L164-165 for specific suitabilities.
*② For 1 inch pendant, ceiling and wall hubs, substitute "**3**" for "**2**" in catalog number; example: **EZS070A3G**.*
③ Stanchion conduit hub size supplied is 1-1/2" with 1-1/2" to 1-1/4" reducer for 1-1/4" mounting. (Refer to catalog logic).
*④ Luminaire catalog numbers include guards. To order luminaire without guard, omit last letter "**G**" from catalog number.*
NOTE: Reflectors must be ordered separately (see page L161).
All luminaires are designed for mounting with lamp in base up position.

HUBBELL
KILLARK®

Class I, Div. 1 & 2 Groups C,D
Class I, Zone 1 & 2, Groups IIB,IIA
Class I, Zone 1, AEx d IIB
Class II, Div. 1 & 2, Groups E,F,G
Class III, Div. 1 & 2
Suitable for wet locations
Marine
NEMA 3, 4, 4X
Factory Sealed

Listed - File E10514 and E91793 (Marine)

Certified - File LR11713

ORDERING INFORMATION


Pendant


Ceiling


Wall


Stanchion

EZ 70-400 WATT, METAL HALIDE ① ④ ⑥

WATTS	ANSI LAMP	VOLTAGE @ 60Hz	CATALOG NUMBER			
			PENDANT 3/4"②	CEILING 3/4"②	WALL 3/4"②	STANCHION 1-1/4"③
70	M-98	120, 208, 240, 277	EZH070A2G	EZH070X2G	EZH070B2G	EZH070D4G
		120, 277,347	EZH076A2G	EZH076X2G	EZH076B2G	EZH076D4G
		480	EZH075A2G	EZH075X2G	EZH075B2G	EZH075D4G
100	M-90	120, 208, 240, 277	EZH100A2G	EZH100X2G	EZH100B2G	EZH100D4G
		120, 277,347	EZH106A2G	EZH106X2G	EZH106B2G	EZH106D4G
		480	EZH105A2G	EZH105X2G	EZH105B2G	EZH105D4G
175	M-57⑤	120, 208, 240, 277	EZH170A2G	EZH170X2G	EZH170B2G	EZH170D4G
		120, 277,347	EZH176A2G	EZH176X2G	EZH176B2G	EZH176D4G
		480	EZH175A2G	EZH175X2G	EZH175B2G	EZH175D4G
250	M-58	120, 208, 240, 277	EZH250A2G	EZH250X2G	EZH250B2G	EZH250D4G
		120, 277,347	EZH256A2G	EZH256X2G	EZH256B2G	EZH256D4G
		480	EZH255A2G	EZH255X2G	EZH255B2G	EZH255D4G
400	M-59	120, 208, 240, 277	EZH400A2G	EZH400X2G	EZH400B2G	EZH400D4G
		120, 277,347	EZH406A2G	EZH406X2G	EZH406B2G	EZH406D4G
		480	EZH405A2G	EZH405X2G	EZH405B2G	EZH405D4G

① See Hazardous Location Application Data on pages L164-165 for specific suitabilities.
② For 1 inch pendant, ceiling and wall hubs, substitute "3" for "2" in catalog number; example: EZH070A3G.
③ Stanchion conduit hub size supplied is 1-1/2" with 1-1/2" to 1-1/4" reducer for 1-1/4" mounting. (Refer to catalog logic).
④ Luminaire catalog numbers include guards. To order luminaire without guard, omit last letter "G" from catalog number.
⑤ Will also operate 150W M107 Metal Halide Lamps.
⑥ 175, 250, 400W MH EXPORT ONLY (EISA LAW).
NOTE: Reflectors must be ordered separately (see page L161).
All luminaires are designed for mounting with lamp in base up position.

Class I, Div. 1 & 2 Groups C,D
Class I, Zone 1 & 2, Groups IIB,IIA
Class I, Zone 1, AEx d IIB
Class II, Div. 1 & 2, Groups E,F,G
Class III, Div. 1 & 2
Suitable for wet locations
Marine
NEMA 3, 4, 4X
Factory Sealed

Listed - File E10514 and E91793 (Marine)

Certified - File LR11713

ORDERING INFORMATION


Pendant


Ceiling


Wall


Stanchion

EZ 175-400 WATT, PULSE START METAL HALIDE ① ④

WATTS	ANSI LAMP	VOLTAGE @ 60Hz	CATALOG NUMBER			
			PENDANT 3/4"②	CEILING 3/4"②	WALL 3/4"②	STANCHION 1-1/4"③
150	M-102 M-142	120, 208, 240, 277	EZP150A2G	EZP150X2G	EZP150B2G	EZP150D4G
		120,277,347	EZP156A2G	EZP156X2G	EZP156B2G	EZP156D4G
		480	EZP155A2G	EZP155X2G	EZP155B2G	EZP155D4G
175	M-137	120, 208, 240, 277	EZP170A2G	EZP170X2G	EZP170B2G	EZP170D4G
		120,277,347	EZP176A2G	EZP176X2G	EZP176B2G	EZP176D4G
		480	EZP175A2G	EZP175X2G	EZP175B2G	EZP175D4G
250	M-138	120, 208, 240, 277	EZP250A2G	EZP250X2G	EZP250B2G	EZP250D4G
		120,277,347	EZP256A2G	EZP256X2G	EZP256B2G	EZP256D4G
		480	EZP255A2G	EZP255X2G	EZP255B2G	EZP255D4G
320	M-132	120, 208, 240, 277	EZP320A2G	EZP320X2G	EZP320B2G	EZP320D4G
		120,277,347	EZP326A2G	EZP326X2G	EZP326B2G	EZP326D4G
		480	EZP325A2G	EZP325X2G	EZP325B2G	EZP325D4G
350	M-131	120, 208, 240, 277	EZP350A2G	EZP350X2G	EZP350B2G	EZP350D4G
		120,277,347	EZP356A2G	EZP356X2G	EZP356B2G	EZP356D4G
		480	EZP355A2G	EZP355X2G	EZP355B2G	EZP355D4G
400	M-135	120, 208, 240, 277	EZP400A2G	EZP400X2G	EZP400B2G	EZP400D4G
		120,277,347	EZP406A2G	EZP406X2G	EZP406B2G	EZP406D4G
		480	EZP405A2G	EZP405X2G	EZP405B2G	EZP405D4G

L

① See Hazardous Location Application Data on pages L164-165 for specific suitabilities.
② For 1 inch pendant, ceiling and wall hubs, substitute "3" for "2" in catalog number; example: EZP170A3G.
③ Stanchion conduit hub size supplied is 1-1/2" with 1-1/2" to 1-1/4" reducer for 1-1/4" mounting. (Refer to catalog logic).
④ Luminaire catalog numbers include guards. To order luminaire without guard, omit last letter "G" from catalog number.
NOTE: Reflectors must be ordered separately (see page L161).
All luminaires are designed for mounting with lamp in base up position.

Mounting Boxes

Pendant

Ceiling

EAC①

Wall Bracket

25° Stanchion

MOUNTING BOXES				
HUB SIZE	CATALOG NUMBER			
	PENDANT	CEILING	BRACKET	STANCHION
3/4"	EZA2	EZX2**	EZB2	—
1"	EZA3	EZX3	EZB3	—
1-1/4"/1-1/2"	—	—	—	EZD4*

** Supplied as 1-1/2" NPT with 1-1/2" x 1-1/4" reducer*
*** 25 cu. in. below EZTB tangs.*

HIC-BEIGE
replacement wiring plug for EZBx Wall Bracket

Replacement Globe & Support Assemblies

REPLACEMENT GLOBE & GLOBE SUPPORT ASSEMBLY			
SERIES	LAMP TYPE	WATTAGE	CATALOG NUMBER
EZS	HPS	50-150	EZGS1
EZH	MH	70-250	
EZP	MHP	150, 175, 250	
EZS	HPS	250, 400	EZGS2
EZH	MH	400	
EZP	MHP	320-400	

EZCUP

Close up plug for EZ mounting boxes. Used for maintenance when fixture is removed for service.

EZ Options

Instant Restart Option

Factory installed special ignitor provides hot lamp instant restart of HPS lamps after power interruption of up to 1 minute. Available for 50, 70, 100 and 150 watt HPS lamps only. Add suffix "R" to fixture catalog number (50/60 Hz).

Quartz Emergency Lamp

Factory installed special auxiliary quartz relay and D.C. bayonet base socket installed to accept 100 watt, 120 volt quartz (100Q/DC) lamps only. Lamps not supplied. Refer to Hazardous Location Application Data chart to verify suitability. Add suffix "Q" to fixture catalog number.

Ballast Protection Cutout

Optional factory installed special ballast protector replaces the standard HPS ignitor and applies starting pulse to the lamp for 10 to 15 seconds each time voltage is supplied to the ballast. If the lamp has not ignited by the end of the time period, the starter will cease pulsing. Used to eliminate the continuous high voltage pulsing of the ignitor when end of life, lamp cycling, or missing lamp conditions exist. Available for 70, 100, 150, 250 and 400 watt HPS fixtures. Add suffix "BP" to fixture catalog number.

Notes:
BP & R cannot be used together.
Q & R cannot be used together.

FACTORY SEALED
Class I, DIV. 1 BCD
Class II, DIV. 1&2 EFG
CLASS III
NEMA 3, 4X IP66
*40°C ambient T3 Rated

PHOTO CELL FIELD KITS WITH HKB-GL BOX AND COVER	
CATALOG NUMBER	VOLTS
VMHKPC1	120VAC
VMHKPC2	208-277VAC
VMHKPC3	347VAC

EZG1

VMAG40S

GUARDS				
CATALOG NUMBER	SERIES	LAMP TYPE	WATTAGE	DESCRIPTION
EZG1	EZS EZH EZP	HPS MH MHP	50-150 70-250 150, 175, 250	Painted cast aluminum
VMAG40S	EZH EZP	MH MHP	400 320-400	Cadmium plated steel

VMAGBC

Bottom Closure for VMAG25S or VMAG40S①

①For VMAG40S with bottom closure order part number VMAG40SBC.

VMPSD-40

EZTB

VMPA-40

HRD-400 (pictured)
HRD-400ALZ

EZCB

EZMO

REFLECTORS	
CATALOG NUMBER	DESCRIPTION
VMPSD40	Standard dome. fiberglass reinforced polyester
VMPA40	30°Angle fiberglass reinforced polyester
HRD400	Deep dome. Aluminum with white finish②
HRD400ALZ	Deep dome with specular anaodized finish②

②For clearance, wall mount models require standoff of 1/2" if not bottom feed; 1-1/2" if bottom feed.

REPLACEMENT CONNECTION BLOCKS AND LAMP SOCKET	
CATALOG NUMBER	DESCRIPTION
EZTB	Female (goes in splice box)
EZCB	Male (goes in top of fixture body)
EZMO	Replacement lamp socket with gasket

L

BALLAST HOUSING WITH GLOBE SUPPORT ASSEMBLY

Housing Globe & Globe Support Assemblies

NOTE: See pages L98-99 for ballast data & fuse kit information.

FEATURES-SPECIFICATIONS

HPS HOUSING GLOBE & GLOBE SUPPORT ASSEMBLIES①

WATTS	ANSI LAMP TYPE	VOLTAGE	CATALOG NUMBER
50	S-68/HPS	120, 208, 240, 277/60Hz	EZS050
		220, 240V/50Hz	EZS058
70	S-62/HPS	120, 208, 240, 277/60Hz	EZS070
		480 60Hz	EZS075
		120, 277, 347/60Hz	EZS076
		220, 240V/50Hz	EZS078
100	S-54/HPS	120, 208, 240, 277/60Hz	EZS100
		480 60Hz	EZS105
		120, 277, 347/60Hz	EZS106
		220, 240V/50Hz	EZS108
150	S-55/HPS	120, 208, 240, 277/60Hz	EZS150
		480 60Hz	EZS155
		120, 277, 347/60Hz	EZS156
		220, 240V/50Hz	EZS158
250	S-50/HPS	120, 208, 240, 277/60Hz	EZS250
		480 60Hz	EZS255
		120, 277, 347/60Hz	EZS256
		220, 240V/50Hz	EZS258
400	S-51/HPS	120, 208, 240, 277/60Hz	EZS400
		480 60Hz	EZS405
		120, 277, 347/60Hz	EZS406
		220, 240V/50Hz	EZS408

① *HPS and MH assemblies may be ordered with the CEN (CENELEC) suffix; see page L164 for more information.*

METAL HALIDE HOUSING GLOBE & GLOBE SUPPORT ASSEMBLIES①

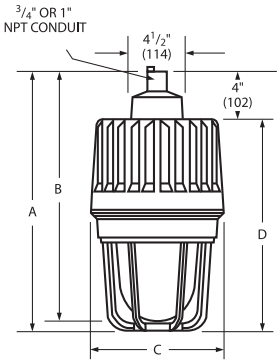
WATTS	ANSI LAMP TYPE	VOLTAGE	CATALOG NUMBER
70	M-98/MH	120, 208, 240, 277/60Hz	EZH070
		120, 277, 347V/60Hz	EZH076
		480 60Hz	EZH075
		220/240V/50Hz	EZH078
100	M-90/MH	120, 208, 240, 277/60Hz	EZH100
		120, 347V/60Hz	EZH106
		120, 220, 240V/50Hz	EZH108
		480 60Hz	EZH105
175	M-57/MH	120, 208, 240, 277/60Hz	EZH170
		480 60Hz	EZH175
		120, 277, 347V/60Hz	EZH176
		220, 240V/50Hz	EZH178
250	M-58/MH	120, 208, 240, 277/60Hz	EZH250
		480 60Hz	EZH255
		120, 277, 347V/60Hz	EZH256
		220, 240V/50Hz	EZH258
400	M-59/MH	120, 208, 240, 277/60Hz	EZH400
		480 60Hz	EZH405
		120, 277, 347V/60Hz	EZH406
		220, 240V/50Hz	EZH408

PULSE START HOUSING GLOBE & GLOBE SUPPORT ASSEMBLIES

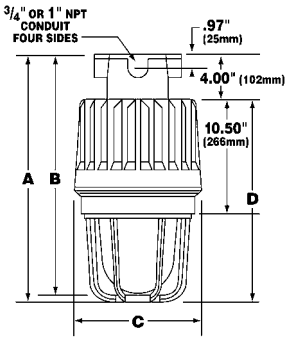
WATTS	ANSI LAMP TYPE	VOLTAGE	CATALOG NUMBER
175②	M137/MHP	120, 208, 240, 277/60Hz	EZP170
		480	EZP175
		120, 277, 347V/60Hz	EZP176
		220, 240V/50 Hz	EZP178
250	M138/MHP	120, 208, 240, 277/60Hz	EZP250
		480	EZP255
		120, 277, 347V/60Hz	EZP256
		220, 240V/50Hz	EZP258
320	M132/MHP	120, 208, 240, 277/60Hz	EZP320
		480	EZP325
		120, 277, 347V/60Hz	EZP326
		220, 240V/50Hz	EZP328
350	M131/MHP	120, 208, 240, 277/60Hz	EZP350
		480	EZP355
		120, 277, 347V/60Hz	EZP356
		220, 240V/50Hz	EZP358
400	M135/MHP	120, 208, 240, 277/60Hz	EZP400
		480	EZP405
		120, 277, 347V/60Hz	EZP406
		220, 240V/50Hz	EZP408

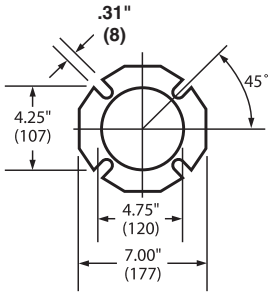
②For 150 Watt, change "7" to "5" in catalog number. Example EZP150.

Pendant

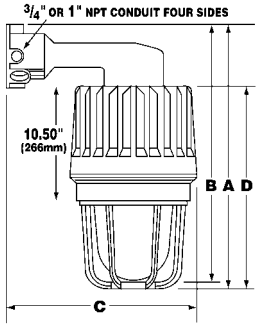


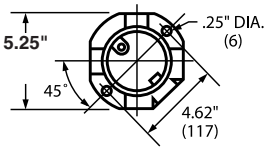
Ceiling

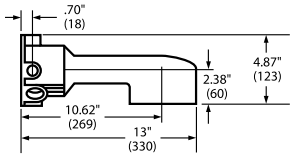




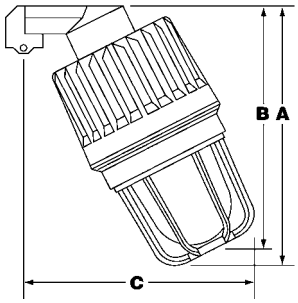
Wall Bracket

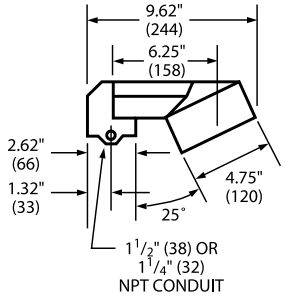






25° Stanchion



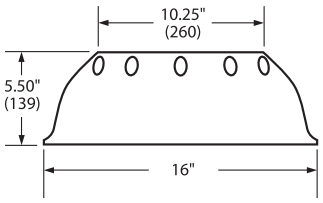


MOUNTING DIMENSIONS															
	PENDANT				CEILING				BRACKET				STANCHION		
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C
50-250W*	22" (558)	21-1/4" (539)	11-1/4" (285)	18" (457)	22" (558)	21-1/4" (539)	11-1/4" (285)	18" (457)	22-7/8" (580)	22-1/8" (561)	16-3/4" (425)	18" (457)	24-7/8" (631)	24" (609)	19-13/16" (503)
250-400W**	26-1/4" (666)	24-1/4" (615)	11-1/4" (285)	22-1/4" (565)	26-1/4" (666)	24-1/4" (615)	11-1/4" (285)	22-1/4" (565)	26-7/8" (682)	24-7/8" (631)	16-3/4" (425)	22-1/4" (565)	28-1/2" (724)	26-11/16" (678)	21-1/2" (546)

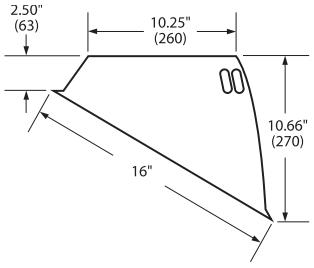
** 50, 70, 100, and 150W HPS; 70, 100, 175 and 250W MH; 150, 175, 250W MHP.*
*** 250 and 400W HPS, 400W MH; 320, 350, 400W MHP.*

Reflector Dimensions

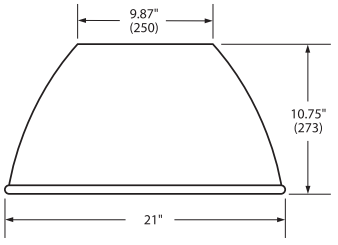
Standard Dome



Angle



Deep Dome



L

EZ HAZARDOUS LOCATION DATA—CLASS I, DIVISIONS 1 & 2①②④

LAMP			RATED AMBIENT °C	SUPPLY WIRE SUITABLE FOR °C MIN.	CLASS I, DIVISIONS 1 & 2 MAXIMUM SURFACE TEMPERATURE UL/CSA		
SERIES	TYPE	WATTS			TEMP. I.D. W/O QTZ.	TEMP. I.D. W/QTZ.③	UL/CSA GROUPS
EZS	HPS	50	40	85	T5	T4	C,D
			55	85	T5	N/A	C,D
			65	85	T4A	N/A	C,D
		70	40	85	T5	T4	C,D
			55	85	T5	N/A	C,D
			65	85	T4A	N/A	C,D
		100	40	85	T5	T4	C,D
			55	85	T5	N/A	C,D
			65	85	T4A	N/A	C,D
		150	40	85	T4A	T4	C,D
			55	85	T4A	N/A	C,D
			65	85	T4	N/A	C,D
		250	40	85	T3C	T3C	C,D
			55	85	T3C	N/A	C,D
		400	40	85	T3C	T3C	C,D
EZH	MH	70	40	85	T4A	N/A	C,D
			55	85	T4A	N/A	C,D
			65	85	T4A	N/A	C,D
		100	40	85	T4A	N/A	C,D
			55	85	T4A	N/A	C,D
			65	85	T4A	N/A	C,D
		175	40	85	T4	T3C	C,D
			55	85	T4	N/A	C,D
		250	40	85	T3C	T3C	C,D
			55	85	T3C	N/A	C,D
		400	40	85	T3A	T3A	C,D
EZP	MHP	150 or 175	40	85	T4	T3C	C,D
			55	85	T4	N/A	C,D
		250	40	85	T3C	T3C	C,D
			55	25	T3C	N/A	C,D
		320	40	85	T3A	T3A	C,D
		350	40	85	T3A	T3A	C,D
		400	40	85	T3A	T3A	C,D

Notes for Class I, II, III Application Data Tables.

①Instant restrike limited to 55°C ambient maximum.

②Temperature code ID marked with an asterisk on Class II table are listed for simultaneous use in Class I, Groups C, D, and Class II, Groups E, F, G or Groups E, F.

③Fixtures marked "N/A" not suitable for Class II applications when supplied with auxiliary quartz.

④See Class II table for fixtures suitable for locations having deposits of readily combustible paint residue (paint spray booths).

Do not install where marked operating temperature exceeds ignition temperature of hazardous atmosphere.

See page L165 for Class II, III tables.

HOSTILELITE®

CEN Option

Applications

Killark EZ series fixtures are available with a European "Certificate of Conformity" from PTB (Physikalisch-Technische Bundesanstalt), the approval agency based in Germany. Fixtures with this rating will be useful for Original Equipment Manufacturers and others who build and ship apparatus into European markets.

This approval is granted by PTB with the use of a special ground lug and label. Fixtures carrying an EEx d IIB approval are automatically granted an IP54 (ingress protection) rating. See Temperature Code chart below for PTB certified ratings. Killark EZ fixtures with the PTB rating and labels still carry all UL & CSA ratings.

Fixture housing/globe/globe support assemblies (e.g. EMS050 CEN) may be ordered with the CEN suffix. Complete fixture numbers, with the CEN suffix, will be shipped with the mounting boxes, guards and accessories as component parts. Reflectors and other accessory parts, as listed on pages L144-145, may be used. Killark fixtures are NPT tapped and plugged with at least one conduit hole open.

Compliances

- EN 50014:1992
- EN 50018:1994

EEx d IIB T6 (or T5-T2)
PTB No. Ex-98.E.1076

MAXIMUM AMBIENT TEMPERATURE RANGE -20°C TO 40°C

TYPE OF LUMINAIRE	TYPE OF ENCLOSURE	FORM OF THE LAMP	MAXIMUM WATTAGE	TEMPERATURE CLASS
EZH50	EZO25	ED28/M-110	50W	T4
EZH70	EZO25	ED28/M-98	70W	T4
EZH10	EZO25	ED28/M-90	100W	T4
EZH15	EZO25	ED28/M-102	150W	T4
EZH17	EZO25	ED28/M-57	175W	T4
EZH25	EZO25	ED28/M-58	250W	T3
EZH40	EZO40	ED37/M-59	400W	T3
EZS50	EZO25	ED23-1/2/S-68	50W	T4
EZS70	EZO25	ED23-1/2/S-62	70W	T4
EZS10	EZO25	ED23-1/2/S-54	100W	T4
EZS15	EZO25	ED23-1/2/S-55	150W	T4
EZS25	EZO40	ED18/S-50	250W	T3
EZS40	EZO40	ED18/S-51	400W	T3

EZ HAZARDOUS LOCATION DATA①–CLASS II & III, DIVISIONS 1 & 2①②

LAMP			RATED AMBIENT °C	SUPPLY WIRE SUITABLE FOR C°	CLASS II, DIV. 1 & 2, MAX. SURFACE TEMP. UL/CSA SUITABILITY				CLASS III, DIV. 1 & 2 UL/CSA SUITABILITY		UL-595 MARINE	U.L. PAINT SPRAY SUITABILITY④	UL/CSA TYPE 3 (RAINTIGHT)	UL/CSA TYPE 4 (HOSEDOWN)
					TEMP. I.D. W/O QTZ.	TEMP. I.D. WITH QTZ③	GROUPS							
LAMP							W/O QTZ.	WITH QTZ③	W/O QTZ.	WITH QTZ.③				
EZS	HPS	50	40	85	T3C*	T3B*	E,F	E,F,G	YES	YES	YES	YES	YES	YES
			55	85	T3C*	N/A	E,F,G	N/A	YES	NO	YES	NO	YES	YES
			85	T3B*	N/A	E,F,G		N/A	YES	NO	YES	NO	YES	YES
EZS	HPS	70	85	T3C*	T3B*	E,F,G		E,F,G	YES	NO	YES	YES	YES	YES
			55	85	T3C*	N/A	E,F,G	N/A	YES	NO	YES	NO	YES	YES
			65	85	T3B*	N/A	E,F,G	N/A	YES	YES	YES	NO	YES	YES
EZS	HPS	100	40	85	T3C*	T3B*	E,F,G	E,F,G	YES	NO	YES	YES	YES	YES
			55	85	T3C*	N/A	E,F,G	N/A	YES	NO	YES	NO	YES	YES
			65	85	T3B	N/A	E,F,G	N/A	YES	YES	YES	NO	YES	YES
EZS	HPS	150	40	85	T3C*	T3B*	E,F,G	E,F,G	YES	YES	YES	NO	YES	YES
			55	85	T3C*	N/A	E,F,	N/A	YES	YES	YES	NO	YES	YES
			65	85	T3B*	N/A	E,F,G	N/A	YES	YES	YES	NO	YES	YES
EZS	HPS	250	40	85	T3	T3	E,F	E,F	NO	NO	YES	NO	YES	YES
EZS	HPS	400	40	85	N/A	N/A	N/A	N/A	NO	NO	YES	NO	YES	YES
EZH	MH	70	40	85	T4A	N/A	E,F,	N/A	YES	NO	YES	YES	YES	YES
			55	85	T4	N/A	E,F,G	N/A	YES	NO	YES	NO	YES	YES
			65	85	T3C	N/A	E,F,	N/A	YES	NO	YES	NO	YES	YES
EZH	MH	100	40	85	T4A	N/A	E,F,G	N/A	YES	NO	YES	YES	YES	YES
			55	85	T4	N/A	E,F,G	N/A	YES	NO	YES	NO	YES	YES
			65	85	T3C	N/A	E,F,G	N/A	YES	NO	YES	NO	YES	YES
EZH	MH	175	40	85	T3C*	T3A*	E,F,G	N/A	YES	NO	YES	NO	YES	YES
			55	85	T3C*	N/A	E,F,G	N/A	YES	NO	YES	NO	YES	YES
EZH	MH	250	40	85	N/A	N/A	N/A	N/A	NO	NO	YES	NO	YES	YES
EZH	MH	400	40	85	N/A	N/A	N/A	N/A	NO	NO	YES	NO	YES	YES
EZP	MHP	150 or	40	85	T3C*	T3A*	E,F,G	EF	YES	NO	YES	NO	YES	YES
		175	55	85	T3C*	N/A	E,F,G	N/A	YES	NO	YES	NO	YES	YES
EZP	MHP	250	40	85	N/A	N/A	N/A	N/A	NO	NO	YES	NO	YES	YES
EZP	MHP	320, 350	40	85	N/A	N/A	N/A	N/A	NO	NO	YES	NO	YES	YES
EZP	MHP	400	40	85	N/A	N/A	N/A	N/A	NO	NO	YES	NO	YES	YES

Notes for Class I, II, III Application Data Tables.
①Instant restrike limited to 55°C ambient maximum.
**②Temperature code ID marked with an asterisk on Class II table are listed for simultaneous use in Class I, Groups C, D, and Class II, Groups E, F, G or Groups E, F.*
③Fixtures marked "NO" or "N/A" are not suitable for Class II or II applications when supplied with auxiliary quartz.
④Suitability for locations having deposits of readily combustible paint residue (paint spray booths).
Do not install where marked operating temperature exceeds ignition temperature of hazardous atmosphere.

See page L164 for Class I data.

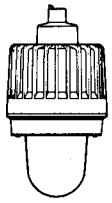
TABLE N.E.C. 500-5 (d)

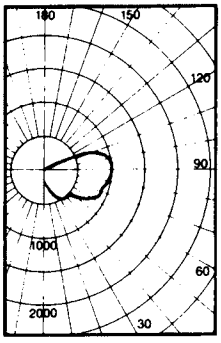
I.D. NUMBER	DEGREES C	DEGREES F
T1	450	842
T2	300	572
T2A	280	536
T2B	260	500
T2C	230	446
T2D	215	419
T3	200	392
T3A	180	356
T3B	165	329
T3C	160	320
T4	135	275
T4A	120	248
T5	100	212
T6	85	185

HIGH PRESSURE SODIUM
With Globe Only
50 – 150 Watt Mogul Base

CANDLEPOWER – 100 WATT
E-23½ clear lamp
9500 lumens

For 50 watt multiply by .42
For 70 watt multiply by .67
For 150 watt multiply by 1.68





ANGLE	CP	ANGLE	CP
0	184.	90.0	1012.
5.0	197.	95.0	1012.
10.0	236.	100.0	983.
15.0	319.	105.0	921.
20.0	395.	110.0	732.
25.0	451.	115.0	406.
30.0	499.	120.0	106.
35.0	523.	125.0	14.
40.0	526.	130.0	3.
45.0	527.	135.0	1.
50.0	623.	140.0	0.
55.0	732.	145.0	0.
60.0	838.	150.0	0.
65.0	908.	155.0	0.
70.0	928.	160.0	0.
75.0	948.	165.0	0.
80.0	968.	170.0	0.
85.0	1004.	175.0	0.
		180.0	0.

Efficiency 75.7%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80			70			50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance														
0	.84	.84	.84	.84	.79	.79	.79	.79	.70	.70	.70	.61	.61	.61	.50
1	.71	.66	.61	.56	.66	.61	.57	.52	.53	.49	.46	.46	.43	.40	.39
2	.63	.54	.47	.41	.58	.50	.44	.38	.43	.38	.34	.37	.33	.29	.31
3	.56	.46	.38	.32	.51	.42	.35	.30	.36	.30	.26	.30	.26	.22	.25
4	.50	.40	.32	.26	.46	.37	.30	.24	.31	.25	.21	.26	.22	.18	.22
5	.46	.34	.27	.21	.42	.32	.25	.19	.27	.21	.17	.23	.18	.14	.19
6	.42	.30	.23	.17	.38	.28	.21	.16	.24	.18	.14	.20	.15	.12	.17
7	.38	.27	.19	.14	.35	.25	.18	.13	.21	.15	.11	.18	.13	.09	.15
8	.35	.24	.17	.12	.32	.22	.16	.11	.19	.14	.10	.16	.11	.08	.13
9	.33	.22	.15	.10	.30	.20	.14	.10	.17	.12	.08	.15	.10	.07	.12
10	.30	.20	.13	.09	.28	.18	.12	.08	.16	.11	.07	.13	.09	.06	.11

SPACING TO MOUNTING HEIGHT RATIO — S/MH = 3.7
SPACING CRITERION — SC = 3.6

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 100 WATT H.P.S.
HORIZONTAL DISTANCE FROM SOURCE IN FEET

MOUNTING HEIGHT IN FEET	0′	5′	10′	15′	20′	25′	30′	35′	40′	45′
10′	1.84	3.23	1.86	1.25	.81	.48	.29	.20	.14	.10
12′	1.28	2.46	1.66	1.05	.79	.51	.33	.22	.16	.11
14′	.94	1.68	1.44	1.01	.70	.50	.35	.24	.17	.13
16′	.72	1.34	1.19	.80	.59	.51	.34	.25	.19	.14
18′	.57	.88	1.03	.74	.58	.45	.35	.27	.19	.15
20′	.46	.73	.81	.67	.47	.38	.31	.26	.20	.15
25′	.29	.35	.51	.50	.40	.30	.26	.23	.20	.15
30′	.20	.25	.38	.40	.34	.27	.21	.19	.18	.14

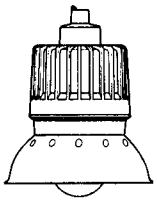
$FC = \frac{(\text{Candlepower})(\cos\theta)}{\text{DISTANCE}^2}$

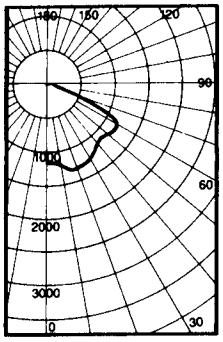
Test No. LSI-9182

HIGH PRESSURE SODIUM
With Globe and Standard Dome Reflector
50 – 150 Watt Mogul Base

CANDLEPOWER – 100 WATT
E-23½ clear lamp
9500 lumens

For 50 watt multiply by .42
For 70 watt multiply by .67
For 150 watt multiply by 1.68





ANGLE	CP	ANGLE	CP
0	1199.	90.0	13.
5.0	1214.	95.0	48.
10.0	1268.	100.0	96.
15.0	1345.	105.0	84.
20.0	1363.	110.0	29.
25.0	1354.	115.0	1.
30.0	1320.	120.0	0.
35.0	1268.	125.0	0.
40.0	1201.	130.0	0.
45.0	1151.	135.0	0.
50.0	1198.	140.0	0.
55.0	1227.	145.0	0.
60.0	1243.	150.0	0.
65.0	949.	155.0	0.
70.0	466.	160.0	0.
75.0	243.	165.0	0.
80.0	136.	170.0	0.
85.0	51.	175.0	0.
		180.0	0.

Efficiency 55.9%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80			70			50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance														
0	.66	.66	.66	.66	.64	.64	.64	.64	.61	.61	.61	.58	.58	.58	.54
1	.61	.58	.56	.54	.59	.57	.55	.53	.54	.52	.51	.52	.50	.49	.49
2	.55	.51	.47	.44	.54	.50	.46	.43	.47	.45	.42	.46	.43	.41	.44
3	.50	.44	.40	.36	.49	.43	.39	.36	.42	.38	.35	.40	.37	.34	.38
4	.46	.39	.34	.31	.45	.38	.34	.30	.37	.33	.30	.35	.32	.29	.34
5	.42	.34	.29	.26	.40	.34	.29	.25	.32	.28	.25	.31	.27	.24	.30
6	.38	.30	.25	.22	.37	.30	.25	.21	.29	.24	.21	.27	.24	.21	.26
7	.35	.27	.22	.18	.34	.26	.21	.18	.25	.21	.18	.24	.20	.17	.23
8	.32	.24	.19	.16	.31	.24	.19	.16	.23	.18	.15	.22	.18	.15	.21
9	.30	.22	.17	.14	.29	.21	.17	.14	.21	.16	.13	.20	.16	.13	.19
10	.27	.20	.15	.12	.27	.19	.15	.12	.19	.15	.12	.18	.14	.12	.17

SPACING TO MOUNTING HEIGHT RATIO — S/MH = 1.6
SPACING CRITERION — SC = 1.6

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 100 WATT H.P.S.
HORIZONTAL DISTANCE FROM SOURCE IN FEET

MOUNTING HEIGHT IN FEET	0′	5′	10′	15′	20′	25′	30′	35′	40′	45′
10′	12.00	9.69	4.07	2.09	.85	.24	.15	.05	.03	.01
12′	8.33	7.40	3.78	2.03	1.18	.53	.17	.11	.04	.03
14′	6.12	5.81	3.49	1.87	1.18	.74	.37	.12	.09	.03
16′	4.68	4.57	3.14	1.75	1.14	.76	.51	.27	.09	.07
18′	3.70	3.71	2.72	1.68	1.11	.76	.52	.28	.20	.07
20′	3.00	3.07	2.42	1.54	1.02	.73	.52	.38	.21	.16
25′	1.92	1.91	1.75	1.33	.92	.65	.50	.39	.30	.23
30′	1.33	1.35	1.29	1.08	.81	.61	.45	.37	.29	.23

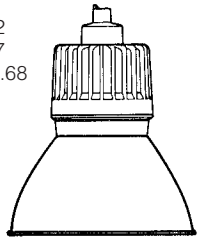
$FC = \frac{(\text{Candlepower})(\cos\theta)}{\text{DISTANCE}^2}$

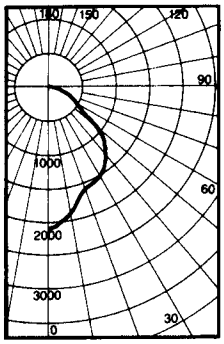
Test No. LSI-9228

HIGH PRESSURE SODIUM
With Globe and Deep Dome HRD-400 Reflector
50 – 150 Watt Mogul Base

CANDLEPOWER – 100 WATT
E-23½ clear lamp
9500 lumens

For 50 watt multiply by .42
For 70 watt multiply by .67
For 150 watt multiply by 1.68





ANGLE	CP
0	2177.
5.0	2114.
10.0	1974.
15.0	1801.
20.0	1658.
25.0	1619.
30.0	1593.
35.0	1499.
40.0	1348.
45.0	1221.
50.0	937.
55.0	601.
60.0	453.
65.0	343.
70.0	246.
75.0	157.
80.0	83.
85.0	24.
90.0	0.

Efficiency 46.8%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80			70			50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance														
0	.56	.56	.56	.56	.54	.54	.54	.54	.52	.52	.52	.50	.50	.50	.48
1	.52	.50	.49	.47	.51	.49	.48	.46	.47	.46	.45	.45	.44	.44	.44
2	.48	.45	.43	.40	.47	.44	.42	.40	.43	.41	.39	.41	.40	.38	.40
3	.45	.41	.37	.35	.44	.40	.37	.35	.39	.36	.34	.37	.35	.33	.36
4	.42	.37	.33	.31	.41	.36	.33	.31	.35	.32	.30	.34	.32	.30	.33
5	.39	.33	.30	.27	.38	.33	.29	.27	.32	.29	.27	.31	.28	.26	.30
6	.36	.30	.26	.24	.35	.30	.26	.24	.29	.26	.24	.28	.25	.23	.27
7	.33	.27	.24	.21	.32	.27	.23	.21	.26	.23	.21	.25	.23	.20	.25
8	.31	.25	.21	.19	.30	.24	.21	.18	.24	.21	.18	.23	.20	.18	.23
9	.28	.23	.19	.16	.28	.22	.19	.16	.22	.19	.16	.21	.18	.16	.21
10	.26	.21	.17	.15	.26	.20	.17	.15	.20	.17	.15	.19	.16	.14	.19

SPACING TO MOUNTING HEIGHT RATIO — S/MH = 1.1
SPACING CRITERION — SC = 1.1

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 100 WATT H.P.S.
HORIZONTAL DISTANCE FROM SOURCE IN FEET

MOUNTING HEIGHT IN FEET	0′	5′	10′	15′	20′	25′	30′	35′	40′	45′
10′	21.77	11.51	4.32	1.03	.31	.13	.06	.03	.02	.01
12′	15.12	8.93	4.24	1.59	.43	.19	.09	.04	.03	.02
14′	11.11	7.07	4.12	1.80	.58	.27	.13	.08	.05	.03
16′	8.50	5.81	3.70	1.85	.89	.32	.16	.10	.05	.04
18′	6.72	4.97	3.28	1.89	.87	.37	.19	.12	.07	.04
20′	5.44	4.11	2.90	1.83	1.08	.57	.26	.14	.09	.06
25′	3.48	2.86	2.09	1.61	1.03	.69	.39	.19	.11	.08
30′	2.42	2.11	1.62	1.28	.96	.68	.48	.29	.18	.11

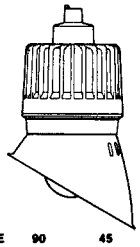
$FC = \frac{(\text{Candlepower})(\cos\theta)}{\text{DISTANCE}^2}$

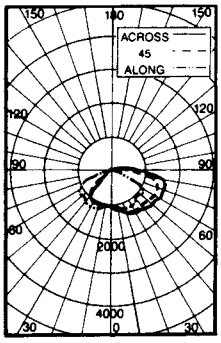
Test No. LSI-9230

HIGH PRESSURE SODIUM
With Globe and Angle Reflector
50 – 150 Watt Mogul Base

CANDLEPOWER – 100 WATT
E-23½ clear lamp
9500 lumens

For 50 watt multiply by .42
For 70 watt multiply by .67
For 150 watt multiply by 1.68





ANGLE	90	45	0
0	1089.	1089.	1089.
5.0	1089.	1128.	1148.
15.0	1207.	1285.	1281.
25.0	1268.	1392.	1421.
35.0	1252.	1484.	1500.
45.0	1104.	1439.	1562.
55.0	1166.	1511.	1638.
65.0	516.	1530.	1722.
75.0	176.	1415.	1649.
85.0	19.	578.	1135.
90.0	0.	310	803.
95.0	0.	196.	435.
105.0	0.	51.	146.
115.0	0.	0.	30.
125.0	0.	0.	0.
135.0	0.	0.	0.
145.0	0.	0.	0.
155.0	0.	0.	0.
165.0	0.	0.	0.
175.0	0.	0.	0.
180.0	0.	0.	0.

Efficiency 57.4%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80			70			50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance														
0	68	68	68	68	66	66	66	66	62	62	62	59	59	59	56	56	56	56
1	60	57	54	51	58	56	53	50	52	50	48	50	48	46	47	46	44	43
2	54	49	45	41	53	48	44	40	45	42	39	43	40	37	41	38	36	35
3	49	42	37	33	47	41	36	33	39	35	32	37	34	31	35	32	30	28
4	45	38	32	28	43	37	32	28	35	30	27	33	29	26	31	28	26	24
5	41	33	28	23	40	32	27	23	31	26	23	29	25	22	28	25	22	20
6	38	29	24	20	36	29	24	20	27	23	19	26	22	19	25	21	19	17
7	34	26	21	17	33	26	20	17	24	20	17	23	19	16	22	19	16	15
8	32	24	18	15	31	23	18	15	22	18	14	21	17	14	20	17	14	13
9	29	21	16	13	28	21	16	13	20	16	13	19	15	12	18	15	12	11
10	27	19	14	11	26	19	14	11	18	14	11	17	13	11	17	13	11	10

SPACING TO MOUNTING HEIGHT RATIO — S/MH = 2.0
SPACING CRITERION (Along) — SC = 1.6
SPACING CRITERION (Across) — SC = 2.0

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 100 WATT H.P.S.
HORIZONTAL DISTANCE FROM SOURCE (Front) IN FEET

MOUNTING HEIGHT IN FEET	0'	5'	10'	15'	20'	25'	30'
10'	10.89	10.17	5.52	2.80	1.54	.96	.53
12'	7.56	7.76	4.83	2.78	1.54	.97	.60
14'	5.56	5.62	4.12	2.53	1.58	1.03	.66
16'	4.25	4.35	3.52	2.37	1.56	1.00	.71
18'	3.36	3.54	3.05	2.15	1.52	1.01	.73
20'	2.72	2.92	2.54	1.92	1.38	1.00	.70
25'	1.74	1.80	1.75	1.49	1.17	.88	.69

FOOTCANDLE CHART (Initial) 100 WATT H.P.S.
HORIZONTAL DISTANCE FROM SOURCE (Side) IN FEET

	0'	5'	10'	15'	20'	25'	30'
10'	10.89	9.07	3.90	1.99	.46	.14	.09
12'	7.56	6.77	3.69	1.95	.93	.29	.10
14'	5.56	5.28	3.44	1.79	1.12	.58	.20
16'	4.25	4.10	3.06	1.67	1.10	.71	.40
18'	3.36	3.33	2.65	1.64	1.07	.72	.41
20'	2.72	2.76	2.27	1.50	.98	.70	.50
25'	1.74	1.70	1.59	1.30	.89	.63	.48

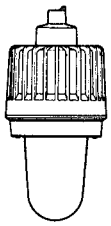
$$FC = \frac{(Candlepower)\ (COS\ \emptyset)}{DISTANCE^2}$$

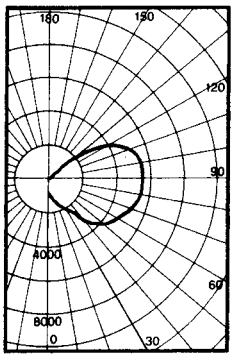
Test No. LSI-9229

HIGH PRESSURE SODIUM
With Globe Only
250 – 400 Watt Mogul Base

CANDLEPOWER – 400 WATT
E-18 clear lamp
50000 lumens

For 250 watt multiply by .60





ANGLE	CP	ANGLE	CP
0	853.	90.0	5345.
5.0	855.	95.0	5305.
10.0	1089.	100.0	5222.
15.0	1458.	105.0	5065.
20.0	1754.	110.0	4801.
25.0	1907.	115.0	4382.
30.0	2041.	120.0	3744.
35.0	2261.	125.0	2869.
40.0	2967.	130.0	1868.
45.0	3500.	135.0	965.
50.0	3934.	140.0	357.
55.0	4323.	145.0	82.
60.0	4602.	150.0	8.
65.0	4807.	155.0	0.
70.0	5023.	160.0	0.
75.0	5187.	165.0	0.
80.0	5288.	170.0	0.
85.0	5333.	175.0	0.
		180.0	0.

Efficiency 88.6%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80			70			50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance														
0	97	97	97	97	90	90	90	90	78	78	78	66	66	66	56	56	56	51
1	83	76	71	66	76	71	66	61	60	56	52	50	47	44	41	38	36	32
2	73	63	55	49	67	58	51	45	49	43	38	40	36	32	32	29	26	22
3	65	54	45	38	59	49	41	35	41	35	30	33	29	24	26	23	19	15
4	59	46	37	31	54	43	35	28	36	29	24	29	24	20	23	19	15	12
5	53	40	31	25	48	37	29	23	31	24	19	25	20	16	20	15	12	09
6	48	35	27	21	44	32	25	19	27	21	16	22	17	13	17	13	10	07
7	44	31	23	17	40	29	21	16	24	17	13	19	14	10	15	11	08	05
8	41	28	20	14	37	26	18	13	21	15	11	18	12	09	14	10	06	04
9	38	25	18	12	34	23	16	11	19	13	09	16	11	07	12	08	05	03
10	35	23	15	11	32	21	14	10	18	12	08	14	10	06	11	07	04	03

SPACING TO MOUNTING HEIGHT RATIO — S/MH = 4.0
SPACING CRITERION — SC = 3.8

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 400 WATT H.P.S.
HORIZONTAL DISTANCE FROM SOURCE IN FEET

MOUNTING HEIGHT IN FEET	0'	5'	10'	15'	20'	25'	30'	35'	40'	45'
10'	8.53	13.65	12.37	7.38	4.30	2.57	1.59	1.08	.74	.53
12'	5.92	10.42	9.34	6.66	4.35	2.71	1.79	1.19	.85	.61
14'	4.35	7.47	6.22	5.67	4.16	2.74	1.85	1.31	.92	.69
16'	3.33	4.95	4.86	5.31	3.75	2.65	1.87	1.35	1.01	.74
18'	2.63	4.03	4.21	4.15	3.64	2.66	1.93	1.42	1.03	.79
20'	2.13	3.33	3.41	2.89	3.09	2.40	1.85	1.41	1.08	.81
25'	1.37	1.64	2.25	2.06	2.26	1.98	1.65	1.36	1.10	.84
30'	.95	1.16	1.66	1.52	1.45	1.49	1.37	1.21	1.04	.82

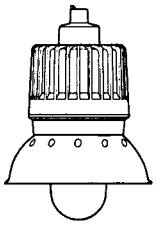
$$FC = \frac{(Candlepower)\ (COS\ \emptyset)}{DISTANCE^2}$$

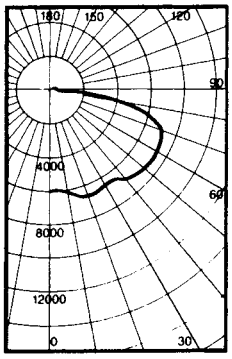
Test No. LSI-9055

HIGH PRESSURE SODIUM
With Globe and Standard Dome Reflector
250 – 400 Watt Mogul Base

CANDLEPOWER – 400 WATT
E-18 clear lamp
50000 lumens

For 250 watt multiply by .60





ANGLE	CP	ANGLE	CP
0	5968.	90.0	427.
5.0	5968.	95.0	241.
10.0	6174.	100.0	165.
15.0	6468.	105.0	192.
20.0	6624.	110.0	250.
25.0	6582.	115.0	282.
30.0	6484.	120.0	268.
35.0	6438.	125.0	206.
40.0	6859.	130.0	113.
45.0	7119.	135.0	32.
50.0	7281.	140.0	0.
55.0	7374.	145.0	0.
60.0	7306.	150.0	0.
65.0	7169.	155.0	0.
70.0	6805.	160.0	0.
75.0	5414.	165.0	0.
80.0	3750.	170.0	0.
85.0	1936.	175.0	0.
		180.0	0.

Efficiency 75.1%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80			70			50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance														
0	89	89	89	89	87	87	87	87	82	82	82	78	78	78	75	75	75	73
1	79	74	70	67	77	73	69	65	69	66	63	65	63	60	62	60	58	56
2	70	63	57	51	68	61	55	50	58	53	49	55	51	47	52	49	46	44
3	63	53	46	40	60	52	45	40	49	43	39	47	42	38	44	40	37	35
4	57	46	39	33	55	45	38	33	43	37	32	41	36	31	39	34	31	29
5	51	40	33	27	49	39	32	27	37	31	26	36	30	26	34	29	25	23
6	47	35	28	22	45	35	27	22	33	27	22	31	26	21	30	25	21	19
7	43	31	24	19	41	30	23	18	29	23	18	28	22	18	27	21	17	16
8	39	28	21	16	38	27	21	16	26	20	16	25	19	15	24	19	15	13
9	36	25	18	14	35	25	18	14	24	18	13	23	17	13	22	17	13	11
10	34	23	16	12	33	22	16	12	21	15	11	20	15	11	20	15	11	10

SPACING TO MOUNTING HEIGHT RATIO — S/MH = 1.7
SPACING CRITERION — SC = 1.7

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 400 WATT H.P.S.
HORIZONTAL DISTANCE FROM SOURCE IN FEET

MOUNTING HEIGHT IN FEET	0'	5'	10'	15'	20'	25'	30'	35'	40'	45'
10'	59.68	47.10	25.17	12.59	6.41	3.49	2.15	1.12	.77	.38
12'	41.44	35.95	21.60	12.33	6.91	4.03	2.42	1.61	.89	.64
14'	30.45	28.23	17.70	11.54	7.10	4.35	2.77	1.78	1.25	.72
16'	23.31	21.97	15.45	10.80	6.93	4.51	2.97	2.01	1.36	1.00
18'	18.42	17.86	13.37	9.60	6.73	4.54	3.07	2.12	1.53	1.08
20'	14.92	14.76	11.77	8.24	6.29	4.44	3.15	2.23	1.60	1.20
25'	9.54	9.31	8.48	6.54	5.23	4.03	3.06	2.32	1.74	1.34
30'	6.63	6.58	6.28	5.23	4.12	3.46	2.80	2.23	1.77	1.40

$$FC = \frac{(Candlepower)\ (COS\ \emptyset)}{DISTANCE^2}$$

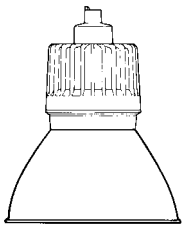
Test No. LSI-9056

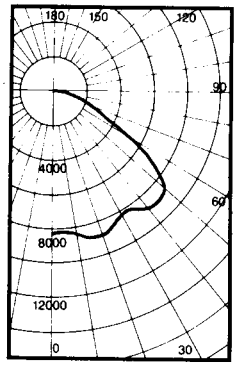
HIGH PRESSURE SODIUM

With Globe and Deep Dome HRD-400 Reflector
250 and 400 Watt Mogul Base

CANDLEPOWER – 400 WATT

E-18 clear lamp
50000 lumens
For 250 watt multiply by .60





0	8203.
5.0	8137.
10.0	8355.
15.0	8730.
20.0	8725.
25.0	8420.
30.0	8140.
35.0	8129.
40.0	8634.
45.0	8683.
50.0	8413.
55.0	6574.
60.0	4258.
65.0	2556.
70.0	1794.
75.0	1132.
80.0	606.
85.0	169.
90.0	0.

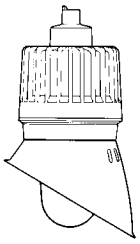
Efficiency 58.1%

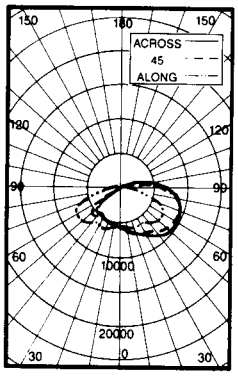
HIGH PRESSURE SODIUM

With Globe and Angle Reflector
250 – 400 Watt Mogul Base

CANDLEPOWER – 400 WATT

E-18 clear lamp
50000 lumens
For 250 watt multiply by .60





ANGLE	90	45	0
0	5430.	5430.	5430.
5.0	5382.	5623.	5722.
10.0	5925.	6556.	6720.
15.0	6075.	7155.	7346.
25.0	5916.	7462.	8007.
35.0	6837.	8514.	9222.
45.0	7123.	9049.	9457.
55.0	6492.	9031.	9185.
65.0	3578.	8606.	8796.
75.0	594.	6928.	7789.
85.0	194.	5522.	7177.
90.0	118.	3995.	5749.
95.0	25.	1074.	2663.
105.0	4.	97.	549.
115.0	0.	0.	27.
125.0	0.	0.	0.
135.0	0.	0.	0.
145.0	0.	0.	0.
155.0	0.	0.	0.
165.0	0.	0.	0.
175.0	0.	0.	0.
180.0	0.	0.	0.

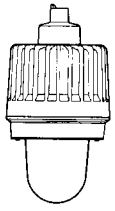
Efficiency 71.7%

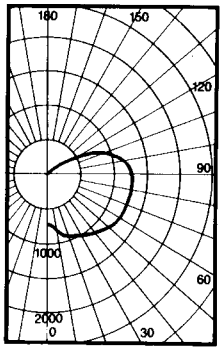
METAL HALIDE,
PULSE START METAL HALIDE

With Globe and Standard Dome Reflector
70 – 250 Watt Mogul Base

CANDLEPOWER – 175 WATT MH

E-28 coated MH (14000 lumens)
For CP of 70W MH multiply by .40
For CP of 100W MH multiply by .56
For CP of 150W MH multiply by .96
For CP of 250W MH multiply by 1.46
For CP of 175W MHP multiply by 1.14
For CP of 250W MHP multiply by 1.69





ANGLE	CP	ANGLE	CP
0	755.	90.0	1275.
5.0	786.	95.0	1246.
10.0	853.	100.0	1169.
15.0	933.	105.0	1046.
20.0	983.	110.0	892.
25.0	1008.	115.0	714.
30.0	1036.	120.0	504.
35.0	1075.	125.0	307.
40.0	1126.	130.0	143.
45.0	1167.	135.0	34.
50.0	1199.	140.0	2.
55.0	1228.	145.0	0.
60.0	1258.	150.0	0.
65.0	1279.	155.0	0.
70.0	1291.	160.0	0.
75.0	1299.	165.0	0.
80.0	1293.	170.0	0.
85.0	1282.	175.0	0.
		180.0	0.

Efficiency 78.5%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.69 .69 .69 .69	.68 .68 .68 .68	.65 .65 .65	.62 .62 .62	.59 .59 .59	.58
1	.64 .62 .59 .57	.62 .60 .58 .56	.58 .56 .55	.56 .54 .53	.54 .52 .51	.50
2	.59 .55 .51 .48	.58 .54 .50 .48	.52 .49 .47	.50 .48 .46	.48 .46 .45	.43
3	.54 .48 .44 .41	.53 .48 .44 .40	.46 .43 .40	.44 .42 .39	.43 .41 .38	.37
4	.50 .43 .39 .35	.49 .43 .38 .35	.41 .37 .34	.40 .37 .34	.39 .36 .33	.32
5	.46 .39 .34 .30	.44 .38 .33 .30	.37 .33 .30	.36 .32 .29	.35 .31 .29	.28
6	.42 .34 .29 .26	.41 .34 .29 .25	.33 .28 .25	.32 .28 .25	.31 .27 .25	.24
7	.38 .30 .25 .22	.37 .30 .25 .22	.29 .24 .21	.28 .24 .21	.27 .24 .21	.20
8	.35 .27 .22 .19	.34 .27 .22 .19	.26 .22 .19	.25 .21 .18	.25 .21 .18	.17
9	.32 .24 .20 .16	.31 .24 .19 .16	.23 .19 .16	.23 .19 .16	.22 .18 .16	.15
10	.30 .22 .17 .14	.29 .22 .17 .14	.21 .17 .14	.20 .17 .14	.20 .16 .14	.13

SPACING TO MOUNTING HEIGHT RATIO — S/MH = 1.6
SPACING CRITERION — SC = 1.6

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.84 .84 .84 .84	.81 .81 .81 .81	.76 .76 .76	.72 .72 .72	.67 .67 .67	.65
1	.74 .69 .65 .62	.71 .67 .63 .60	.63 .60 .57	.59 .56 .54	.55 .53 .51	.49
2	.66 .59 .53 .48	.64 .57 .51 .47	.53 .49 .45	.50 .46 .43	.47 .44 .41	.39
3	.59 .50 .44 .38	.57 .49 .43 .37	.46 .40 .36	.43 .38 .34	.40 .36 .33	.31
4	.54 .44 .37 .32	.52 .43 .36 .31	.40 .34 .30	.38 .33 .29	.35 .31 .28	.26
5	.49 .39 .32 .26	.47 .38 .31 .26	.35 .29 .25	.33 .28 .24	.31 .27 .23	.21
6	.45 .34 .27 .22	.43 .33 .26 .22	.31 .25 .21	.29 .24 .20	.27 .23 .19	.18
7	.41 .30 .23 .19	.39 .29 .23 .18	.27 .22 .17	.26 .21 .17	.24 .20 .16	.15
8	.38 .27 .20 .16	.36 .26 .20 .15	.25 .19 .15	.23 .18 .14	.22 .17 .14	.12
9	.35 .24 .18 .13	.33 .24 .18 .13	.22 .17 .13	.21 .16 .12	.20 .15 .12	.11
10	.32 .22 .16 .12	.31 .21 .16 .12	.20 .15 .11	.19 .14 .11	.18 .14 .10	.09

SPACING TO MOUNTING HEIGHT RATIO — S/MH = 2.3
SPACING CRITERION (Along) — SC = 1.8
SPACING CRITERION (Across) — SC = 2.3

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.88 .88 .88 .88	.83 .83 .83 .83	.73 .73 .73	.65 .65 .65	.57 .57 .57	.54
1	.76 .70 .65 .61	.71 .66 .61 .57	.58 .54 .51	.50 .48 .45	.44 .41 .39	.36
2	.67 .59 .52 .46	.62 .55 .49 .43	.48 .43 .39	.42 .38 .34	.36 .33 .30	.26
3	.60 .50 .42 .36	.56 .47 .40 .34	.41 .35 .30	.35 .31 .27	.30 .26 .23	.20
4	.54 .44 .36 .30	.51 .41 .34 .28	.36 .30 .25	.31 .26 .22	.26 .22 .19	.16
5	.49 .38 .30 .24	.46 .36 .28 .23	.31 .25 .21	.27 .22 .18	.23 .19 .16	.13
6	.45 .34 .26 .20	.42 .31 .24 .19	.27 .22 .17	.24 .19 .15	.20 .16 .13	.11
7	.41 .30 .22 .17	.38 .28 .21 .16	.24 .18 .14	.21 .16 .12	.18 .14 .11	.09
8	.38 .27 .20 .15	.35 .25 .18 .14	.22 .16 .12	.19 .14 .11	.16 .12 .09	.07
9	.35 .24 .17 .13	.33 .23 .16 .12	.20 .14 .11	.17 .13 .09	.15 .11 .08	.06
10	.33 .22 .15 .11	.31 .21 .15 .10	.18 .13 .09	.16 .11 .08	.14 .10 .07	.05

SPACING TO MOUNTING HEIGHT RATIO — S/MH = 2.1
SPACING CRITERION — SC = 2.1

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 400 WATT H.P.S.
HORIZONTAL DISTANCE FROM SOURCE IN FEET

MOUNTING HEIGHT IN FEET	0′	5′	10′	15′	20′	25′	30′	35′	40′	45′
10′	82.03	60.25	30.70	11.22	2.83	1.10	.57	.24	.16	.09
12′	56.97	45.99	27.18	14.24	4.03	1.44	.77	.43	.24	.14
14′	41.85	37.18	22.35	13.93	6.33	2.53	.99	.56	.33	.19
16′	32.04	29.90	19.19	13.20	8.01	3.32	1.29	.72	.43	.26
18′	25.32	24.10	16.78	12.08	7.94	4.05	1.79	.93	.55	.34
20′	20.51	19.93	14.79	10.68	7.68	5.13	2.61	1.30	.57	.43
25′	13.13	12.60	11.00	8.13	6.56	4.91	3.53	2.07	1.01	.78
30′	9.11	8.91	8.35	6.57	5.20	4.35	3.41	2.58	1.86	1.25

FC = (Candlepower) (COS θ) / DISTANCE²

Test No. LSI-9058

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 400 WATT H.P.S.
HORIZONTAL DISTANCE FROM SOURCE (Front) IN FEET

MOUNTING HEIGHT IN FEET	0′	5′	10′	15′	20′	25′	30′
10′	54.30	52.56	32.61	15.14	8.22	4.64	2.87
12′	37.71	40.12	27.61	15.99	8.88	5.17	3.22
14′	27.70	30.40	22.01	14.95	9.10	5.59	3.54
16′	21.21	22.83	18.07	13.99	9.00	5.79	3.82
18′	16.76	18.55	15.64	12.27	8.73	5.82	3.94
20′	13.58	15.34	13.14	10.25	8.15	5.76	4.04
25′	8.69	9.38	9.14	7.65	6.68	5.22	3.97

FOOTCANDLE CHART (Initial) 400 WATT H.P.S.
HORIZONTAL DISTANCE FROM SOURCE (Side) IN FEET

	0′	5′	10′	15′	20′	25′	30′
10′	54.30	43.47	24.17	12.16	5.81	2.89	1.66
12′	37.71	33.18	20.40	11.91	6.57	3.65	1.87
14′	27.70	25.98	16.25	11.08	6.85	4.20	2.50
16′	21.21	20.13	14.30	10.37	6.70	4.36	2.87
18′	16.76	16.36	12.38	9.05	6.50	4.39	2.95
20′	13.58	13.53	10.87	7.57	6.04	4.29	3.04
25′	8.69	8.47	7.81	6.06	4.94	3.87	2.95

FC = (Candlepower) (COS θ) / DISTANCE²

Test No. LSI-9057

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 175 WATT M.H.
HORIZONTAL DISTANCE FROM SOURCE IN FEET

MOUNTING HEIGHT IN FEET	0′	5′	10′	15′	20′	25′	30′	35′	40′	45′
10′	7.55	7.21	4.13	2.10	1.14	.66	.41	.27	.19	.13
12′	5.24	5.51	3.54	2.03	1.19	.72	.46	.31	.21	.15
14′	3.85	4.19	2.96	1.89	1.18	.75	.49	.34	.24	.17
16′	2.95	3.34	2.47	1.77	1.14	.75	.51	.36	.26	.19
18′	2.33	2.58	2.14	1.58	1.11	.76	.53	.38	.27	.20
20′	1.89	2.13	1.80	1.38	1.03	.73	.52	.38	.29	.21
25′	1.21	1.29	1.26	1.05	.86	.66	.50	.39	.30	.23
30′	.84	.91	.93	.80	.69	.57	.46	.37	.30	.23

FC = (Candlepower) (COS θ) / DISTANCE²

Test No. LSI-9183

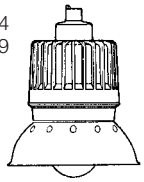
METAL HALIDE, PULSE START METAL HALIDE

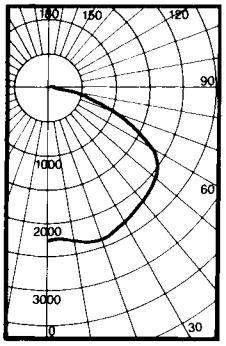
With Globe and Standard Dome Reflector
70 – 250 Watt Mogul Base

CANDLEPOWER – 175 WATT MH

E-28 coated MH (14000 lumens)

For CP of 70W MH multiply by .40
For CP of 100W MH multiply by .56
For CP of 150W MH multiply by .96
For CP of 250W MH multiply by 1.46
For CP of 175W MHP multiply by 1.14
For CP of 250W MHP multiply by 1.69





ANGLE	CP	ANGLE	CP
0	2324.	90.0	30.
5.0	2353.	95.0	37.
10.0	2417.	100.0	56.
15.0	2464.	105.0	69.
20.0	2477.	110.0	64.
25.0	2440.	115.0	41.
30.0	2374.	120.0	19.
35.0	2311.	125.0	4.
40.0	2248.	130.0	0.
45.0	2184.	135.0	0.
50.0	2114.	140.0	0.
55.0	1988.	145.0	0.
60.0	1711.	150.0	0.
65.0	1299.	155.0	0.
70.0	851.	160.0	0.
75.0	493.	165.0	0.
80.0	234.	170.0	0.
85.0	94.	175.0	0.
		180.0	0.

Efficiency 64.6%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80			70			50			30			10			0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance																	
0	.77	.77	.77	.77	.75	.75	.75	.75	.71	.71	.71	.68	.68	.68	.65	.65	.65	.64
1	.70	.68	.65	.63	.69	.66	.64	.61	.63	.61	.59	.60	.59	.57	.58	.57	.55	.54
2	.64	.59	.55	.52	.63	.58	.54	.51	.55	.52	.50	.53	.51	.48	.51	.49	.47	.46
3	.59	.52	.47	.43	.57	.51	.46	.42	.49	.45	.42	.47	.44	.41	.45	.42	.40	.38
4	.54	.46	.41	.36	.52	.45	.40	.36	.43	.39	.35	.42	.38	.35	.40	.37	.34	.33
5	.49	.41	.35	.31	.48	.40	.34	.31	.38	.34	.30	.37	.33	.30	.36	.32	.29	.28
6	.45	.36	.30	.26	.43	.35	.30	.26	.34	.29	.26	.33	.29	.25	.32	.28	.25	.24
7	.41	.32	.26	.22	.40	.31	.26	.22	.30	.25	.22	.29	.25	.21	.28	.24	.21	.20
8	.38	.29	.23	.19	.37	.28	.23	.19	.27	.22	.19	.26	.22	.19	.26	.22	.19	.17
9	.35	.26	.20	.17	.34	.26	.20	.17	.25	.20	.17	.24	.19	.16	.23	.19	.16	.15
10	.32	.24	.18	.15	.31	.23	.18	.15	.22	.18	.14	.22	.17	.14	.21	.17	.14	.13

SPACING TO MOUNTING HEIGHT RATIO — S/MH = 1.5
SPACING CRITERION — SC = 1.5

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 175 WATT M.H.
HORIZONTAL DISTANCE FROM SOURCE IN FEET

MOUNTING HEIGHT IN FEET	0'	5'	10'	15'	20'	25'	30'	35'	40'	45'
10'	23.24	17.46	7.72	3.39	1.16	.44	.27	.10	.07	.02
12'	16.14	13.33	7.08	3.58	1.62	.73	.30	.20	.08	.06
14'	11.86	10.56	6.35	3.54	1.91	1.02	.50	.22	.16	.07
16'	9.08	8.37	5.65	3.31	2.01	1.22	.70	.37	.17	.13
18'	7.17	6.80	4.90	3.15	1.95	1.22	.72	.38	.28	.14
20'	5.81	5.62	4.37	2.96	1.93	1.29	.85	.52	.29	.22
25'	3.72	3.65	3.17	2.40	1.71	1.24	.89	.63	.41	.31
30'	2.58	2.58	2.35	1.94	1.48	1.13	.86	.65	.48	.38

$FC = \frac{\text{(Candlepower) (COS } \theta)}{\text{DISTANCE}^2}$

Test No. LSI-9231

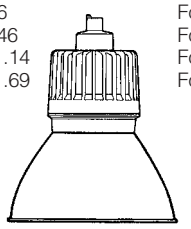
METAL HALIDE, PULSE START METAL HALIDE

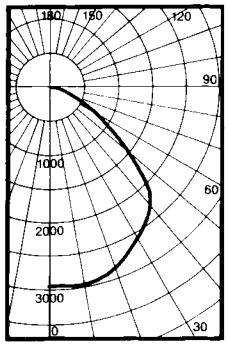
With Globe and Deep Dome HRD-400 Reflector
70 – 250 Watt Mogul Base

CANDLEPOWER – 175 WATT MH

E-28 coated MH (14000 lumens)

For CP of 70W MH multiply by .40
For CP of 100W MH multiply by .56
For CP of 150W MH multiply by .96
For CP of 250W MH multiply by 1.46
For CP of 175W MHP multiply by 1.14
For CP of 250W MHP multiply by 1.69





ANGLE	CP
0	3034.
5.0	3041.
10.0	3050.
15.0	3005.
20.0	2897.
25.0	2769.
30.0	2636.
35.0	2486.
40.0	2343.
45.0	2034.
50.0	1489.
55.0	1006.
60.0	682.
65.0	502.
70.0	366.
75.0	233.
80.0	125.
85.0	31.
90.0	0.

Efficiency 51.9%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80			70			50			30			10			0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance																	
0	.62	.62	.62	.62	.60	.60	.60	.60	.58	.58	.58	.55	.55	.55	.53	.53	.53	XX
1	.58	.56	.54	.52	.56	.55	.53	.52	.52	.51	.50	.50	.49	.48	.49	.48	.47	XX
2	.54	.50	.48	.45	.52	.49	.47	.45	.48	.45	.44	.46	.44	.43	.45	.43	.42	XX
3	.50	.45	.42	.39	.49	.44	.41	.39	.43	.40	.38	.42	.39	.37	.40	.39	.38	XX
4	.46	.41	.37	.34	.45	.40	.37	.34	.39	.36	.34	.38	.35	.33	.37	.35	.33	XX
5	.43	.37	.33	.30	.42	.37	.33	.30	.36	.32	.30	.35	.32	.30	.34	.31	.29	XX
6	.40	.34	.30	.27	.39	.33	.29	.27	.32	.29	.26	.31	.28	.26	.31	.28	.26	XX
7	.37	.30	.26	.24	.36	.30	.26	.23	.29	.26	.23	.28	.25	.23	.28	.25	.23	XX
8	.34	.28	.24	.21	.33	.27	.23	.21	.27	.23	.21	.26	.23	.20	.25	.22	.20	XX
9	.32	.25	.21	.18	.31	.25	.21	.18	.24	.21	.18	.24	.20	.18	.23	.20	.18	XX
10	.29	.23	.19	.16	.29	.23	.19	.16	.22	.19	.16	.22	.18	.16	.21	.18	.16	XX

SPACING TO MOUNTING HEIGHT RATIO — S/MH = 1.3
SPACING CRITERION — SC = 1.3

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 175 WATT M.H.
HORIZONTAL DISTANCE FROM SOURCE IN FEET

MOUNTING HEIGHT IN FEET	0'	5'	10'	15'	20'	25'	30'	35'	40'	45'
10'	30.34	19.81	7.19	1.72	.52	.22	.09	.05	.03	.02
12'	21.07	15.12	7.38	2.52	.65	.28	.15	.09	.05	.03
14'	15.48	12.35	6.83	2.88	.97	.41	.19	.11	.07	.04
16'	11.85	10.05	6.12	3.38	1.42	.50	.24	.14	.09	.05
18'	9.36	8.30	5.44	3.28	1.64	.62	.29	.17	.11	.07
20'	7.59	6.86	4.83	3.09	1.80	.91	.43	.21	.13	.08
25'	4.85	4.60	3.63	2.66	1.79	1.15	.63	.32	.20	.13
30'	3.37	3.25	2.81	2.20	1.59	1.18	.80	.46	.29	.19

$FC = \frac{\text{(Candlepower) (COS } \theta)}{\text{DISTANCE}^2}$

Test No. LSI-9233

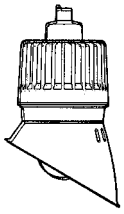
METAL HALIDE, PULSE START METAL HALIDE

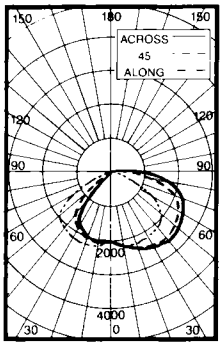
With Globe and Angle Reflector
70 – 250 Watt Mogul Base

CANDLEPOWER – 175 WATT MH

E-28 coated MH (14000 lumens)

For CP of 70W MH multiply by .40
For CP of 100W MH multiply by .56
For CP of 150W MH multiply by .96
For CP of 250W MH multiply by 1.46
For CP of 175W MHP multiply by 1.14
For CP of 250W MHP multiply by 1.69





ANGLE	90	45	0
0	2119.	2119.	2119.
5.0	2161.	2211.	2184.
15.0	2295.	2386.	2402.
25.0	2261.	2522.	2565.
35.0	2208.	2610.	2678.
45.0	2116.	2545.	2711.
55.0	1717.	2405.	2590.
65.0	915.	2211.	2412.
75.0	300.	1675.	2077.
85.0	32.	873.	1452.
90.0	0.	636.	1146.
95.0	0.	432.	845.
105.0	0.	72.	263.
115.0	4.	0.	49.
125.0	0.	0.	0.
135.0	2.	0.	0.
145.0	0.	0.	0.
155.0	0.	0.	0.
165.0	3.	0.	0.
175.0	4.	0.	0.
180.0	0.	0.	0.

Efficiency 63.6%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80			70			50			30			10			0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance																	
0	.75	.75	.75	.75	.73	.73	.73	.73	.69	.69	.69	.66	.66	.66	.62	.62	.62	.61
1	.68	.64	.61	.58	.66	.63	.60	.57	.59	.57	.55	.56	.54	.53	.54	.52	.51	.46
2	.61	.56	.51	.47	.60	.54	.50	.47	.52	.48	.45	.49	.46	.44	.47	.44	.42	.41
3	.56	.49	.43	.39	.54	.48	.43	.39	.45	.41	.38	.43	.40	.37	.41	.38	.36	.34
4	.51	.43	.38	.33	.50	.42	.37	.33	.40	.36	.32	.39	.35	.32	.37	.34	.31	.29
5	.47	.39	.33	.28	.45	.38	.32	.28	.36	.31	.28	.34	.30	.27	.33	.29	.26	.25
6	.43	.34	.29	.24	.42	.34	.28	.24	.32	.27	.24	.31	.27	.23	.30	.26	.23	.24
7	.39	.31	.25	.21	.38	.30	.25	.21	.29	.24	.20	.27	.23	.20	.26	.23	.20	.18
8	.37	.28	.22	.18	.35	.27	.22	.18	.26	.21	.18	.25	.21	.17	.24	.20	.17	.16
9	.34	.25	.20	.16	.33	.25	.19	.16	.23	.19	.16	.23	.18	.15	.22	.18	.15	.14
10	.31	.23	.17	.14	.30	.22	.17	.14	.21	.17	.14	.21	.16	.13	.20	.16	.13	.12

SPACING TO MOUNTING HEIGHT RATIO — S/MH = 1.9
SPACING CRITERION (Along) — SC = 1.6
SPACING CRITERION (Across) — SC = 1.9

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 175 WATT M.H.
HORIZONTAL DISTANCE FROM SOURCE (Front) IN FEET

MOUNTING HEIGHT IN FEET	0'	5'	10'	15'	20'	25'	30'
10'	21.19	18.35	9.59	4.42	2.16	1.18	.73
12'	14.72	14.01	8.54	4.50	2.36	1.36	.82
14'	10.81	10.54	7.36	4.39	2.49	1.49	.93
16'	8.28	8.16	6.31	4.11	2.53	1.59	1.02
18'	6.54	6.63	5.46	3.80	2.45	1.60	1.06
20'	5.30	5.48	4.59	3.43	2.40	1.62	1.11
25'	3.39	3.53	3.17	2.67	2.07	1.53	1.11

FOOTCANDLE CHART (Initial) 175 WATT M.H.
HORIZONTAL DISTANCE FROM SOURCE (Side) IN FEET

	0'	5'	10'	15'	20'	25'	30'
10'	21.19	16.18	7.48	2.93	.82	.28	.18
12'	14.72	12.35	6.81	3.33	1.28	.52	.20
14'	10.81	9.84	6.07	3.43	1.65	.80	.35
16'	8.28	7.80	5.37	3.21	1.88	1.05	.55
18'	6.54	6.34	4.65	3.03	1.82	1.06	.57
20'	5.30	5.24	4.05	2.83	1.67	1.20	.73
25'	3.39	3.38	2.96	2.27	1.65	1.20	.83

$FC = \frac{\text{(Candlepower) (COS } \theta)}{\text{DISTANCE}^2}$

Test No. LSI-9232

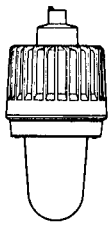
METAL HALIDE, PULSE START METAL HALIDE

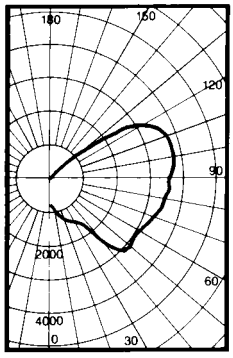
With Globe Only
320 - 400 Watt Mogul Base

CANDLEPOWER – 400 WATT MH

E-37 coated MH
36000 lumens

For CP of MHP320 multiply by .87
For CP of MHP350 multiply by 1.05
For CP of MHP400 multiply by 1.22





ANGLE	CP	ANGLE	CP
0	812.	90.0	3511.
5.0	872.	95.0	3591.
10.0	1029.	100.0	3634.
15.0	1187.	105.0	3626.
20.0	1295.	110.0	3551.
25.0	1376.	115.0	3397.
30.0	1471.	120.0	3063.
35.0	1778.	125.0	2392.
40.0	2519.	130.0	1443.
45.0	3028.	135.0	592.
50.0	3051.	140.0	136.
55.0	3016.	145.0	8.
60.0	3076.	150.0	0.
65.0	3180.	155.0	0.
70.0	3299.	160.0	0.
75.0	3389.	165.0	0.
80.0	3419.	170.0	0.
85.0	3452.	175.0	0.
		180.0	0.

Efficiency 87.3%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80			70			50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance														
0	95	95	95	95	88	88	88	88	76	76	76	65	65	65	54	54	54	49
1	82	76	70	66	75	70	65	61	59	55	52	49	46	44	40	38	36	31
2	72	63	56	49	66	58	51	46	49	43	39	40	36	32	32	29	26	22
3	64	54	45	39	59	49	42	36	41	35	30	34	29	25	27	23	20	16
4	58	47	38	31	53	43	35	29	36	29	25	29	24	20	23	19	16	13
5	53	40	32	26	48	37	29	24	31	25	20	25	20	16	20	16	13	10
6	48	36	27	21	44	33	25	19	27	21	16	22	17	13	17	13	10	07
7	44	31	23	18	40	29	21	16	24	18	13	19	14	11	15	11	08	06
8	40	28	20	15	37	26	19	14	21	16	11	18	13	09	14	10	07	05
9	37	25	18	13	34	23	16	12	19	14	10	16	11	08	12	08	06	04
10	35	23	16	11	32	21	14	10	18	12	08	14	10	06	11	07	05	03

SPACING TO MOUNTING HEIGHT RATIO — S/MH = 3.4
SPACING CRITERION — SC = 3.3

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 400 WATT M.H.
HORIZONTAL DISTANCE FROM SOURCE IN FEET

MOUNTING HEIGHT IN FEET	0′	5′	10′	15′	20′	25′	30′	35′	40′	45′
10′	8.12	9.85	10.71	5.15	2.84	1.69	1.04	.70	.48	.35
12′	5.64	7.52	7.93	5.17	2.91	1.79	1.17	78	.56	.40
14′	4.14	5.52	4.89	4.91	2.90	1.83	1.23	86	.61	.45
16′	3.17	4.03	3.50	4.59	2.91	1.85	1.25	89	66	.49
18′	2.51	3.28	3.03	3.53	2.82	1.86	1.29	94	68	.52
20′	2.03	2.71	2.46	2.28	2.68	1.86	1.29	94	.71	.53
25′	1.30	1.55	1.66	1.48	1.92	1.71	1.28	95	73	.56
30′	90	1.10	1.23	1.19	1.14	1.27	1.19	93	72	.57

FC = (Candlepower) (COS Ø) / DISTANCE²

Test No. LSI-9051

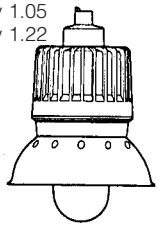
METAL HALIDE, PULSE START METAL HALIDE

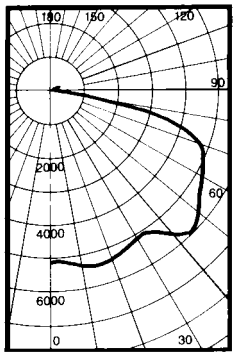
With Globe and Standard Dome Reflector
320 - 400 Watt Mogul Base

CANDLEPOWER – 400 WATT MH

E-37 coated MH
36000 lumens

For CP of MHP320 multiply by .87
For CP of MHP350 multiply by 1.05
For CP of MHP400 multiply by 1.22





ANGLE	CP	ANGLE	CP
0	5056.	90.0	121.
5.0	5108.	95.0	90.
10.0	5242.	100.0	83.
15.0	5305.	105.0	118.
20.0	5263.	110.0	203.
25.0	5173.	115.0	280.
30.0	5051.	120.0	258.
35.0	5085.	125.0	145.
40.0	5577.	130.0	36.
45.0	5819.	135.0	0.
50.0	5578.	140.0	0.
55.0	5270.	145.0	0.
60.0	5043.	150.0	0.
65.0	4836.	155.0	0.
70.0	4477.	160.0	0.
75.0	3216.	165.0	0.
80.0	1382.	170.0	0.
85.0	444.	175.0	0.
		180.0	0.

Efficiency 72.5%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80			70			50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance														
0	86	86	86	86	84	84	84	84	80	80	80	76	76	76	72	72	72	71
1	78	74	70	67	75	72	69	66	68	66	63	65	63	61	62	61	59	57
2	70	63	58	53	68	61	56	52	58	54	51	56	52	49	53	50	48	46
3	62	54	47	42	60	53	47	42	50	45	41	48	44	40	46	42	39	37
4	57	47	40	35	55	46	40	35	44	38	34	42	37	33	40	36	33	31
5	52	41	34	29	50	40	34	29	38	33	28	37	32	28	35	31	27	25
6	47	36	29	24	45	35	29	24	34	28	24	32	27	23	31	26	23	21
7	43	32	25	20	41	31	25	20	30	24	20	29	23	19	28	23	19	17
8	39	29	22	17	38	28	22	17	27	21	17	26	21	17	25	20	16	15
9	36	26	19	15	35	25	19	15	24	19	15	23	18	14	22	18	14	13
10	34	23	17	13	33	23	17	13	22	16	13	21	16	12	20	16	12	11

SPACING TO MOUNTING HEIGHT RATIO — S/MH = 1.7
SPACING CRITERION — SC = 1.7

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 400 WATT M.H.
HORIZONTAL DISTANCE FROM SOURCE IN FEET

MOUNTING HEIGHT IN FEET	0′	5′	10′	15′	20′	25′	30′	35′	40′	45′
10′	50.56	37.02	20.57	9.00	4.33	2.29	1.42	.67	.46	.14
12′	35.11	28.26	17.56	9.44	4.77	2.72	1.59	1.06	.53	.38
14′	25.80	22.43	13.98	9.43	5.07	3.00	1.87	1.17	.82	.43
16′	19.75	18.02	12.03	8.83	5.31	3.23	2.05	1.36	.90	.66
18′	15.61	14.65	10.41	7.80	5.15	3.25	2.12	1.43	1.03	.71
20′	12.64	12.11	9.25	6.51	5.14	3.40	2.25	1.54	1.08	.81
25′	8.09	7.91	6.74	5.10	4.25	3.29	2.34	1.66	1.20	.92
30′	5.62	5.59	4.99	4.11	3.26	2.81	2.29	1.71	1.27	1.00

FC = (Candlepower) (COS Ø) / DISTANCE²

Test No. LSI-9052

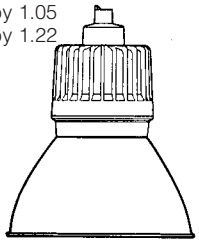
METAL HALIDE, PULSE START METAL HALIDE

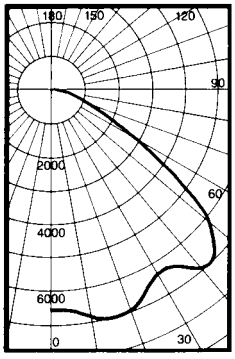
With Globe and Deep Dome Reflector
320 - 400 Watt Mogul Base

CANDLEPOWER – 400 WATT MH

E-37 coated MH
36000 lumens

For CP of MHP320 multiply by .87
For CP of MHP350 multiply by 1.05
For CP of MHP400 multiply by 1.22





ANGLE	CP
0	6505.
5.0	6587.
10.0	6777.
15.0	6930.
20.0	6884.
25.0	6636.
30.0	6269.
35.0	6329.
40.0	6870.
45.0	6682.
50.0	5778.
55.0	3859.
60.0	2305.
65.0	1704.
70.0	1190.
75.0	743.
80.0	397.
85.0	100.
90.0	0.

Efficiency 58.2%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE 1cc	80			70			50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance														
0	69	69	69	69	68	68	68	68	65	65	65	62	62	62	59	59	59	58
1	64	62	60	58	63	61	59	57	58	57	55	56	55	54	54	53	52	51
2	59	56	52	49	58	54	51	49	52	50	48	51	48	47	49	47	46	44
3	55	49	45	42	53	49	45	42	47	44	41	45	43	40	44	42	40	38
4	51	44	40	36	49	44	40	36	42	39	36	41	38	35	40	37	35	34
5	47	40	35	31	45	39	35	31	38	34	31	37	33	31	36	33	30	29
6	43	36	31	27	42	35	30	27	34	30	27	33	29	27	32	29	26	25
7	39	32	27	23	38	31	27	23	30	26	23	29	26	23	29	25	23	22
8	36	28	24	20	35	28	23	20	27	23	20	27	23	20	26	22	20	19
9	33	26	21	18	32	25	21	18	24	20	17	24	20	17	23	20	17	16
10	31	23	18	15	30	23	18	15	22	18	15	22	18	15	21	18	15	14

SPACING TO MOUNTING HEIGHT RATIO — S/MH = 1.6
SPACING CRITERION — SC = 1.6

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial) 400 WATT M.H.
HORIZONTAL DISTANCE FROM SOURCE IN FEET

MOUNTING HEIGHT IN FEET	0′	5′	10′	15′	20′	25′	30′	35′	40′	45′
10′	65.05	47.48	23.62	6.59	1.79	.74	30	.15	.11	.06
12′	45.17	37.08	21.63	9.78	2.18	.96	.51	.28	.16	.09
14′	33.19	29.33	17.40	10.16	3.71	1.37	.66	.38	.22	.13
16′	25.41	23.57	14.77	10.42	5.50	1.78	.81	.48	.29	.18
18′	20.08	19.13	12.93	9.61	5.79	2.38	.97	.59	.36	.23
20′	16.26	15.82	11.53	8.48	5.91	3.52	1.65	.70	.45	.29
25′	10.41	10.22	8.69	6.32	5.23	3.78	2.43	1.21	.69	.42
30′	7.23	7.23	6.58	5.13	4.05	3.46	2.63	1.77	1.18	.73

FC = (Candlepower) (COS Ø) / DISTANCE²

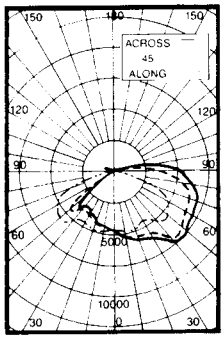
Test No. LSI-9054

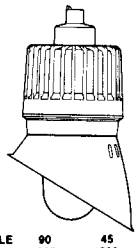
HUBBELL®
KILLARK®

METAL HALIDE,
PULSE START METAL HALIDE
With Globe and Angle Reflector
320 - 400 Watt Mogul Base

CANDLEPOWER – 400 WATT MH
E-37 coated MH
36000 lumens

For CP of MHP320 multiply by .87
For CP of MHP350 multiply by 1.05
For CP of MHP400 multiply by 1.22





ANGLE	90	45	0
0	4595.	4595.	4595.
5.0	4618.	4919.	4939.
15.0	4793.	5333.	5517.
25.0	4570.	5472.	5935.
35.0	4605.	5945.	6540.
45.0	5494.	7013.	7441.
55.0	5056.	6497.	7083.
65.0	4155.	6198.	6846.
75.0	1238.	5725.	6557.
85.0	227.	4475.	5586.
90.0	85.	3287.	5204.
95.0	48.	2003.	4052.
105.0	8.	337.	1296.
115.0	0.	24.	163.
125.0	0.	0.	0.
135.0	0.	0.	0.
145.0	0.	0.	0.
155.0	0.	0.	0.
165.0	0.	0.	0.
175.0	0.	0.	0.
180.0	0.	0.	0.

Efficiency 70.2%

COEFFICIENTS OF UTILIZATION — ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTANCE pcc	80			70			50		30		10		0
% WALL REFLECTANCE pw	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance														
0	82	82	82	82	80	80	80	80	75	75	75	71	71	71	67	67	67	65
1	73	69	65	62	71	67	63	60	63	60	57	59	57	55	56	54	52	50
2	66	59	54	49	63	57	52	48	54	50	46	51	47	44	48	45	42	40
3	59	51	44	39	57	49	43	39	47	41	37	44	40	36	41	38	35	33
4	54	45	38	33	52	44	37	32	41	36	31	39	34	30	37	33	29	28
5	49	39	33	27	47	38	32	27	36	31	26	34	29	26	32	28	25	23
6	45	35	28	23	43	34	27	23	32	26	22	30	25	22	29	24	21	19
7	41	31	24	20	40	30	24	19	28	23	19	27	22	18	25	21	18	16
8	38	28	21	17	36	27	21	17	25	20	16	24	19	16	23	19	15	14
9	35	25	19	14	34	24	18	14	23	18	14	22	17	13	21	16	13	12
10	32	22	16	12	31	22	16	12	21	16	12	20	15	12	19	14	11	10

SPACING TO MOUNTING HEIGHT RATIO — S/MH = 2.2
SPACING CRITERION (Along) — SC = 1.7
SPACING CRITERION (Across) — SC = 2.2

ILLUMINATION ON HORIZONTAL SURFACE

FOOTCANDLE CHART (Initial)
400 WATT M.H.
HORIZONTAL DISTANCE FROM SOURCE (Front) IN FEET

MOUNTING HEIGHT IN FEET	0'	5'	10'	15'	20'	25'	30'
10'	45.95	42.47	26.31	12.09	6.12	3.47	2.14
12'	31.91	32.42	23.08	12.36	6.57	3.85	2.41
14'	23.44	24.40	17.98	12.06	6.82	4.14	2.64
16'	17.95	18.74	14.62	11.29	6.96	4.33	2.80
18'	14.18	15.23	12.66	10.26	6.75	4.36	2.92
20'	11.49	12.59	10.62	8.37	6.56	4.45	3.02
25'	7.35	8.01	7.33	6.19	5.58	4.21	3.07

FOOTCANDLE CHART (Initial)
400 WATT M.H.
HORIZONTAL DISTANCE FROM SOURCE (Side) IN FEET

MOUNTING HEIGHT IN FEET	0'	5'	10'	15'	20'	25'	30'
10'	45.95	32.70	19.42	8.63	3.72	1.42	.87
12'	31.91	24.96	16.07	9.13	4.51	2.34	.98
14'	23.44	20.07	12.66	8.90	4.87	2.84	1.60
16'	17.95	16.28	10.74	8.33	5.14	3.09	1.94
18'	14.18	13.23	9.29	7.14	4.98	3.11	2.01
20'	11.49	10.94	8.18	5.89	4.86	3.29	2.16
25'	7.35	7.12	6.03	4.55	3.89	3.11	2.26

$FC = \frac{(Candlepower)(COS\ \theta)}{DISTANCE^2}$

Test No. LSI-9053

CERTILITE® DESIGN
LIGHTING DESIGN SOFTWARE

POWERFUL
Luminaire Layout and Calculation Software

Software is used to determine number of fixtures required and their proper layout for various tasks and applications.

Contact you local Killark sales representative for availability.

L

HUBBELL®
KILLARK®

Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC,IIB,IIA
Class II, Div. 1 & 2, Groups E,F,G⑤
Class III, Div. 1 & 2
Suitable for wet locations
NEMA 3, 4

Listed - File E12976

Certified - File LR11713

FEATURES-SPECIFICATIONS

LINEARLITE® *
* marca registrada MEXICO

Applications

LINEAR*LITE* DBF fluorescent fixtures are designed for general and task lighting of areas where flammable gases or vapors or combustible dusts may exist due to abnormal conditions resulting in the creation of a Class I, Division 2 or Class II or III, Div. 1 or 2, hazardous location as defined in the NEC. Also for lighting non-hazardous wet locations indoors and outdoors.

Features

- Sheet steel 20 ga. housing with continuous weld prevents foreign matter from entering enclosure
- Lens frame assembly has silicon rubber gasketing and heat tempered glass lens
- Electrostatically applied polyester finish

DBF FLUORESCENT FIXTURES

CATALOG NUMBER	CONDUIT SIZE③	NUMBER OF LAMPS	LINE VOLTAGE	DESCRIPTION
DBF32302	3/4"	2	120-277V 50/60 Hz	32W T8 electronic ballast 265 MA 0°F start
DBF4012④			120V 60 Hz	40W rapid start electronic F40T12 medium bi-pin 430MA
DBF4042			277V 60 Hz	
DBF6012④			120V 60 Hz	60W rapid start high output F48T12/HO recessed
DBF6042			277V 60 Hz	double contact 800MA
DBF32303	3/4"	3	120-277V 50/60 Hz	32W T8 electronic ballast 265 MA 0°F start
DBF4013			120V 60 Hz	40W rapid start electronic F40T12 medium bi-pin 430MA
DBF4043			277V 60 Hz	
DBF6013			120V 60 Hz	60W rapid start high output F48T12/HO recessed
DBF6043			277V 60 Hz	double contact 800MA

- *Standard ballast starting temperature for 40 watt is 50°F.*
- *Ballasts are Class P Type with internal, automatic, thermally-activated protective device.*
- *Optional external ballast fusing availability by adding suffix **FB**.*
- *For other voltages consult factory.*
- *60 watt high output ballasts are standard -20°F start.*
- *Fixtures are supplied without lamps. To order with lamps installed add suffix **WL**.*

① *UL/CSA Class I, Div. 2*
③ *Hubs can be relocated in field to fixture end for feed-thru wiring.*
④ *Change 1 to 8 for 230V 50 Hz.*
⑤ *CSA Class II, Div. I*

SEE PAGE L208 FOR DBFE EMERGENCY MODELS

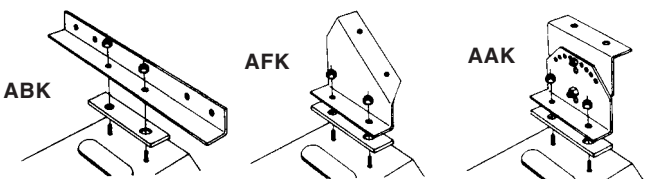
MOUNTING HARDWARE②

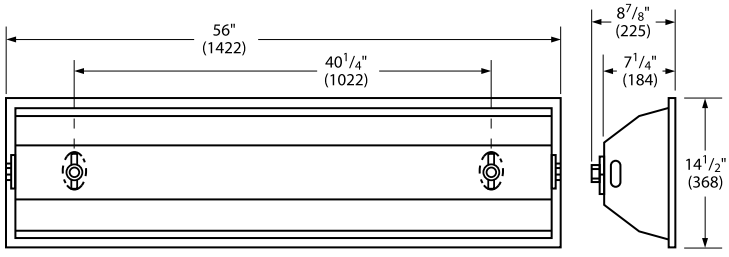
CATALOG NUMBER	DESCRIPTION
ABK	Angle bar chain bracket
AFK	45° fixed angle bracket
AAK	45° adjustable angle bracket
DBF-HUB	Replacement hub
DBF-DL	Door & Lens

②*Must be ordered separately. Brackets sold as sets.*

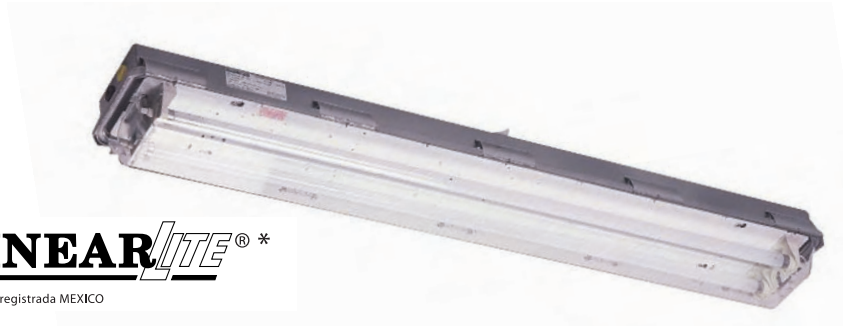
DBF HAZARDOUS LOCATION APPLICATION DATA①⑤

NUMBER OF LAMPS	LAMP WATTS	RATED AMBIENT °C	SUPPLY WIRE SUITABLE FOR °C MIN.	CLASS I, DIV. 2, GROUPS A, B, C, D MAX. LAMP TEMP.°C UL/CSA TEMP/I.D.	CLASS II, DIV. 1 & 2, GROUPS E, F, G MAX. SURFACE TEMP. °CSUITABILITY UL/CSA TEMP/I.D.	CLASS III DIV. 1 & 2 UL/CSA	NEMA TYPE 3 (RAINTIGHT)	NEMA TYPE 4 (HOSEDOWN)
2	32/40	40	90	T6 (85°C/185°F)	T6 (85°C/185°F)	YES	YES	YES
3	32/40	40	90	T5 (100°C/212°F)	T6 (85°C/185°F)	YES	YES	YES
2	60	40	90	T4A (120°C/248°F)	T6 (85°C/185°F)	YES	YES	YES
3	60	40	90	T4 (138°C/275°F)	T6 (85°C/185°F)	YES	YES	YES





HUBBELL®
KILLARK®



LINEARLITE® *
* marca registrada MEXICO

Class I, Div. 2, Groups A,B,C,D
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Group E,F,G
AEx nAII, Ex nAII
Wet Locations
NEMA 4X, IP66

Certified - File LR11713

ABS Type Approval

Applications

LINEAR*LITE*® rugged 316 stainless fluorescent fixtures are suitable for wet, harsh, corrosive and hazardous locations. The LZ2S Series can be used in Class I, Division 2 and Zone 2 hazardous vapors and in Class II combustible dust areas typically found in refineries, chemical plants, waste water & sewage treatment facilities, as well as in tunnels, food processing and coastal areas.

ABS (American Bureau of Shipping) type approval for use on decks, vessels, platforms, barges, ships and boats. Also suitable for docks and marinas.

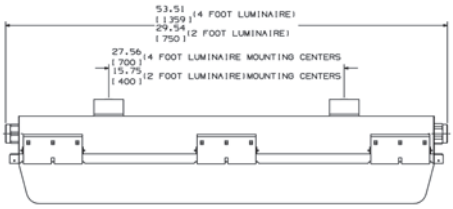
Features

- NEMA 4X & IP66 rated stainless enclosure with Lexan® impact resistant polycarbonate lens.
- Two 3/4" NPT stainless hubs - one at each end (includes aluminum 3/4" close-up plug and two 3/4" x 1/2" reducers for maximum user flexibility).
- Two 1/4" - 20 stainless bushings furnished in top of fixture for threaded rod.

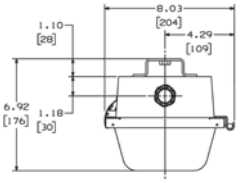
Lexan® is a registered trademark of General Electric

Additional Data

L209 - Emergency models
L175 - Ballast data
L176 - Mounting accessories/ Replacement parts
L176 - L177 - Photometrics



See LZ2N Logic for Options



LZ2S STAINLESS			
NUMBER OF LAMPS/WATTS	**VOLTAGE AC 60 Hz**	**DESCRIPTION**	**LZ2S**
BIAXIAL LAMP TYPE FIXTURES			
1-40W	120-277V	2' 1-Lamp Biaxial Electronic 50/60 Hz, 0°F Start 4-Pin	**LZ2S40130**
1-55W	120-277V	2' 1-Lamp Biaxial Electronic 50/60 Hz, 0°F Start 4-Pin	**LZ2S55130**
2-40W	120-277V	2' 2-Lamp Biaxial Electronic 50/60 Hz, 0°F Start 4-Pin	**LZ2S40230**
4-40W	120-277V	4' 4-Lamp Biaxial Electronic 50/60 Hz, 0°F Start 4-Pin	**LZ2S40430**
DOUBLE-ENDED LAMP TYPE FIXTURES			
2-17W	120-277V	2' 2-Lamp T-8 Electronic 50/60 Hz, 0°F Start Medium Bi-Pin	**LZ2S17230**
3-17W	120-277V	2' 3-Lamp T-8 Electronic 50/60 Hz, 0°F Start Medium Bi-Pin	**LZ2S17330**
2-28W	120-277V 50-60 Hz	4' 2-Lamp T-5 Electronic 0°F Start Miniature Bi-Pin	**LZ2S28230**
3-28W	120-277V 50-60 Hz	4' 3-Lamp T-5 Electronic 0°F Start Miniature Bi-Pin	**LZ2S28330**
2-32W②	120-277V 347V	4' 2-Lamp T-8 Electronic 50/60 Hz 0°F Start Medium Bi-Pin	**LZ2S32230②** **LZ2S32215**
3-32W	120-277V 347V	4' 3-Lamp T-8 Electronic 50/60 Hz 0°F Start Medium Bi-Pin	**LZ2S32330** **LZ2S32315**
2-40W	120V 277V 230V 50 Hz①	4' 2-Lamp T-12 Electronic Medium Bi-Pin Start 50°F 40W/60°F 34W	**LZ2S40201** **LZ2S40204** **LZ2S40208**
2-44W	120V 277V	4' 2-Lamp T-8 Electronic -20°F Start High Output Recessed Double Contact	**LZ2S44230**
2-54W 3-54W	120-277V	4' 2-Lamp T5 Electronic 50/60 Hz, -20°F Start Miniature Bi-Pin	**LZ2S54230** **LZ2S54330**
2-60W	120-277V	4' 2-Lamp T-12 Electronic -20°F Start High Output Recessed Double Contact	**LZ2S60230**

①50 Hz ballast is magnetic.
②Add suffix 55C for 2X 32W 120V-277V # L32S32230-55C.

L

LZ2S, LZ2SE HAZARDOUS LOCATION APPLICATION DATA										
NUMBER OF LAMPS/WATTS	**RATED AMBIENT °C**	**SUITABLE FOR °C SUPPLY WIRE**	**CLASS I, DIV. 2 MAX. SURFACE TEMP.**			**CLASS II, DIV. 1 & 2 MAX. SURFACE TEMP.**			**CLASS III DIV. 1 & 2 SUITABILITY**
			TEMP.	**T-CODE**	**GROUPS**	**TEMP.**	**T-CODE**	**GROUPS**	
1 X 40W BIAXIAL	40°	75	160°C	T3C	A, B, C, D	100°C	T5	E, F, G	Yes
1 X 55W BIAXIAL	40°	60	160°C	T3C	A, B, C, D	100°C	T5	E, F, G	Yes
2 X 40W BIAXIAL	40°	75	160°C	T3C	A, B, C, D	100°C	T5	E, F, G	Yes
4 X 40W BIAXIAL	40°	75	160°C	T3C	A, B, C, D	100°C	T5	E, F, G	Yes
2 X 17W	40°	60	85°C	T5	A, B, C, D	100°C	T5	E, F, G	Yes
3 X 17W	40°	60	85°C	T5	A, B, C, D	100°C	T5	E, F, G	Yes
2 X 28W	40°	60	120°C	T4A	A, B, C, D	100°C	T5	E, F, G	Yes
3 X 28W	40°	60	120°C	T4A	A, B, C, D	100°C	T5	E, F, G	Yes
2 X 32W	40°	60	85°C	T6	A, B, C, D	100°C	T5	E, F, G	Yes
2 X 32W	55°③	90	100°C	T5	A, B, C, D	N/A	N/A	N/A	Yes
3 X 32W	40°	60	85°C	T6	A, B, C, D	100°C	T5	E, F, G	Yes
2 X 40W	40°	60	120°C	T4A	A, B, C, D	100°C	T5	E, F, G	Yes
2 X 44W	40°	60	120°C	T4A	A, B, C, D	100°C	T5	E, F, G	Yes
2 X 54W	40°	75	160°C	T3C	A, B, C, D	100°C	T5	E, F, G	Yes
3 X 54W	35°④	75	180°C	T3A	A, B, C, D	N/A	N/A	N/A	Yes
2 X 60W	40°	75	135°C	T4	A, B, C, D	100°C	T5	E, F, G	Yes

③ L32SE, 40°C max. battery models.
④ T-code measured at 40°C.

4' Nominal Style

2' Nominal Style

Quick release diffuser clamp and hinged cover requires no special tools.

LZ2N/LZ2S luminaires contain no exposed glass and carry Class II, "G" ratings required for many food proccessing areas.

Class I, Div. 2 Groups A,B,C,D
Class I, Zones 2, Groups IIC,IIB,IIA
Class II, Div. 1 & 2, Groups F,G
AEx nAII, Ex nAII
Wet Locations
NEMA 4X, IP66

Certified - File LR11713

ABS Type Approval
NSF Food Handling

FEATURES-SPECIFICATIONS

LINEARLITE® *
* marca registrada MEXICO

Applications

LINEAR*LITE*® rugged Non-Metallic fluorescent fixtures are suitable for wet, harsh and hazardous locations. Use where enclosed and gasketed fixtures are required to withstand exposure to moisture, dust and corrosives. The LZ2N Series can also be used in Class I, Division 2 and Zone 2 hazarous vapors and in Class II areas where combustible dusts may exist. Typical areas used are in refineries, chemical plants, waste water & sewage treatment facilities, as well as in tunnels, food processing and coastal areas.

ABS (American Bureau of Shipping) type approval for use on decks, vessels, platforms, barges, ships and boats. Also suitable for docks and marinas.

NSF (National Sanitation Foundation) approved for "Food Handling" areas, typically requiring non-glass lighting.

Features

- Housing-one piece fiberglass reinforced polyester, NEMA 4X & IP66 rated.
- Lexan® Clear Lens, impact resistant polycarbonate
- Two 3/4" NTP aluminum hubs - one at each end (includes one 3/4" close-up plug and two 3/4" x 1/2" reducers for maximum user flexibility)
- Two 1/4"-20 aluminum bushings furnished in top of fixture for threaded rod
- 2' and 4' luminaries
- Lamp types-
  Linear 17, 28, 32, 40, 44, 54, 60W
  Long compact 40, 55W (single ended)
- Electronic ballast standard
- World voltage (most models) 120 thru 277V, 50/60 Hz

Lexan® is a registered trademark of General Electric

Catalog Number Logic

LZ2N - (E0-) - 00 - 0 - 00 - F②

Constant for LZ2N Series

①**Emergency (Battery backed)**
E1—40W BIAXIAL, 44W, 60W
E2—32W, 40W

Lamp Wattage
17
28
32
40-Linear & BIAXIAL
44
54
55
60

1 lamp
2 lamps
3 lamps
4 lamps

Voltage
30—120-277V 50/60 Hz
40, 55 - BIAXIAL
17, 28, 32, 44, 54W
01—120V 60 Hz
40W, 60W
04—277V 60 Hz
40W, 60W
08—230V 50 Hz
40W
15—347V 60 Hz
32W

F—single fuse②
FF—double fuse②
QD—Quick Disconnect
55C③

① See page L209 for complete catalog grid listing.
② Fuses not for marine or Canadian use.
③ 55°C ambient suitability 2 or 3 lamp 32W C1D2 120V-277V only.

LZ2N, LZ2NE HAZARDOUS LOCATION APPLICATION DATA

NUMBER OF LAMPS/WATTS	RATED AMBIENT °C	SUITABLE FOR °C SUPPLY WIRE	CLASS I, DIV. 2 MAX. SURFACE TEMP.			CLASS II, DIV. 1 & 2 MAX. SURFACE TEMP.			CLASS III DIV. 1 & 2 SUITABILITY	NEMA 4X IP66
			TEMP.	T-CODE	GROUPS	TEMP.	T-CODE	GROUPS		
2 X 17W	40°	60	85°C	T5	A, B, C, D	100°C	T5	F, G	Yes	Yes
3 X 17W	40°	60	85°C	T5	A, B, C, D	100°C	T5	F, G	Yes	Yes
1 X 40W BIAXIAL	40°	60	100°C	T5	A, B, C, D	100°C	T5	F, G	Yes	Yes
1 X 55W BIAXIAL	40°	60	160°C	T3C	A, B, C, D	100°C	T5	F, G	Yes	Yes
2 X 40W BIAXIAL	40°	60	100°C	T5	A, B, C, D	100°C	T5	F, G	Yes	Yes
4 X 40W BIAXIAL	40°	60	120°C	T4A	A, B, C, D	100°C	T5	F, G	Yes	Yes
2 X 28W	40°	60	120°C	T4A	A, B, C, D	100°C	T5	F, G	Yes	Yes
3 X 28W	40°	60	120°C	T4A	A, B, C, D	100°C	T5	F, G	Yes	Yes
2 X 32W	40°	75	85°C	T6	A, B, C, D	100°C	T5	F, G	Yes	Yes
2 X 32W	55°①	90	100°C	T5	A, B, C, D	N/A	N/A	N/A	Yes	Yes
3 X 32W	40°	75	85°C	T6	A, B, C, D	100°C	T5	F, G	Yes	Yes
3 X 32W	55°①	90	100°C	T5	A, B, C, D	N/A	N/A	N/A	Yes	Yes
2 X 40W	40°	60	120°C	T4A	A, B, C, D	100°C	T5	F, G	Yes	Yes
2 X 44W	40°	60	100°C	T5	A, B, C, D	100°C	T5	F, G	Yes	Yes
2 X 54W T5	40°	75	160°C	T3C	A, B, C, D	100°C	T5	F, G	Yes	Yes
3 X 54W T5	40°	75	180°C	T3A	A, B, C, D	120°C	T4A	F, G	Yes	Yes
2 X 60W	40°	75	135°C	T4	A, B, C, D	100°C	T5	F, G	Yes	Yes

① LZ2NE, 40°C max. battery models.

HUBBELL®
KILLARK®

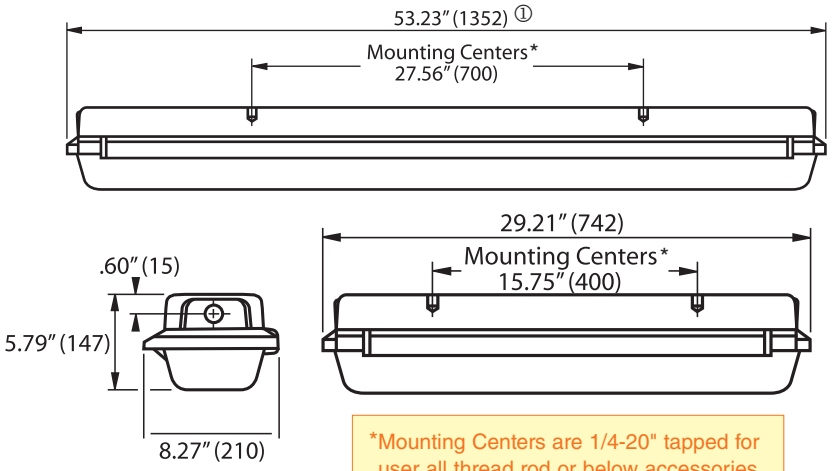
LZ2N NON-METALLIC			
NUMBER OF LAMPS/WATTS	VOLTAGE AC 60 Hz	DESCRIPTION	LZ2N
BIAXIAL LAMP TYPE FIXTURES			
1-40W	120-277V	2' 1-Lamp Biaxial Electronic 50/60 Hz 0°F Start 4-Pin	**LZ2N40130**
1-55W	120-277V	2' 1-Lamp Biaxial Electronic 50/60 Hz 0°F Start 4-Pin	**LZ2N55130**
2-40W	120-277V	2' 2-Lamp Biaxial Electronic 50/60 Hz 0°F Start 4-Pin	**LZ2N40230**
4-40W	120-277V	4' 4-Lamp Biaxial Electronic 50/60 Hz 0°F Start 4-Pin	**LZ2N40430**
DOUBLE-ENDED LAMP TYPE FIXTURES			
2-17W	120-277V	2' 2-Lamp T8 Electronic 50/60 Hz 0°F Start Medium Bi-Pin	**LZ2N17230**
3-17W	120-277V	2' 3-Lamp T8 Electronic 50/60 Hz 0°F Start Medium Bi-Pin	**LZ2N17330**
2-28W	120-277V	4' 2-Lamp T-5 Electronic 50/60 Hz 0°F Start Miniature Bi-Pin	**LZ2N28230**
3-28W	120-277V	4' 3-Lamp T-5 Electronic 50/60 Hz 0°F Start Miniature Bi-Pin	**LZ2N28330**
2-32W	120-277V 347V	4' 2-Lamp T-8 Electronic 50/60 Hz 0°F Start Medium Bi-Pin	**LZ2N32230**④ **LZ2N32215**
3-32W	120-277V 347V	4' 3-Lamp T-8 Electronic 50/60 Hz 0°F Start Medium Bi-Pin	**LZ2N32330**④ **LZ2N32315**
2-40W	120V 277V 230V 50 Hz②	4' 2-Lamp T-12 Electronic, Medium Bi-Pin Start 50°F 40W/60°F 34W	**LZ2N40201** **LZ2N40204** **LZ2N40208**
2-44W	120-277V	4' 2-Lamp T-8 Electronic -20°F Start High Output 50/60 Hz Recessed Double Contact	**LZ2N44230**
2-54W	120-277V	4' 2-Lamp T-5 Electronic 50/60 Hz -20°F Start Miniature Bi-Pin	**LZ2N54230**
3-54W	120-277V	4' 2-Lamp T-5 Electronic 50/60 Hz -20°F Start Miniature Bi-Pin	**LZ2N54330**
2-60W	120-277V	4' 2-Lamp T-12 Electronic -20°F Start High Output 50/60 Hz Recessed Double Contact	**LZ2N60230**

See page L209 for LZ2NE Non-metallic and LZ2SE 316 Stainless Emergency Models

LZ2NAND LZ2S BALLAST DATA①					
NUMBER OF LAMPS/WATTS	VOLTAGE	LINE CURRENT AMPS		INPUT WATTS	STARTING TEMPERATURE
1 X 40W BIAXIAL	120-277V	.35 (120V)	.15 (277V)	39	0°F (-18°C)
1 X 55W BIAXIAL	120-277V	.49 (120V)	.22 (277V)	58	0°F (-18°C)
2 X 40W BIAXIAL	120-277V	.60 (120V)	.28 (277V)	78	0°F (-18°C)
4 X 40W BIAXIAL	120-277V	1.32 (120V)	.56 (277V)	156	0°F (-18°C)
2 X 17W	120-277V	.32 (120V)	.14 (277V)	38	0°F (-18°C)
3 X 17W	120-277V	.39 (120V)	.17 (277V)	48	0°F (-18°C)
2 X 28W	120-277V	.55 (120V)	.23 (277V)	66	0°F (-18°C)
3 X 28W	120-277V	.83 (120V)	.35 (277V)	99	0°F (-18°C)
2 X 32W	120-277V	.54 (120V)	.24 (277V)	65	0°F (-18°C)
3 X 32W	120-277V	.71 (120V)	.31 (277V)	85	0°F (-18°C)
2 X 40W	120-277V	.62 (120V)	.24 (277V)	71	50°F (10°C)③
2 X 44W	120-277V	.84 (120V)	.36 (277V)	99	-20°F (-29°C)
2 X 54W	120-277V	1.00 (120V)	.43 (277V)	120	-20°F (-29°C)
3 X 54W	120-277V	1.52 (120V)	.66 (277V)	182	-20°F (-29°C)
2 X 60W	120-277V	1.13 (120V)	.48 (277V)	125	-20°F (-29°C)

① *Includes normal powered LZ2NE and LZ2SE models, lamps not included.*
② *Magnetic ballast.*
③ *50°C 34T12; 60°F 40T12.*
④ *See LOGIC for 55°C ambient suitability.*

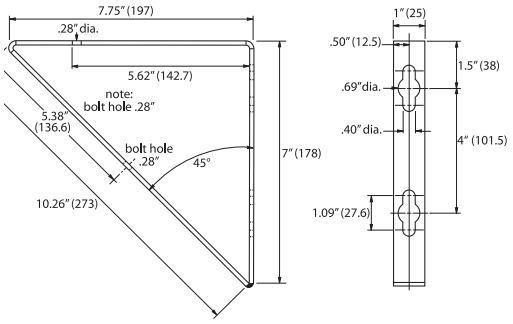
DIMENSIONS LZ2N, LZ2NE SERIES

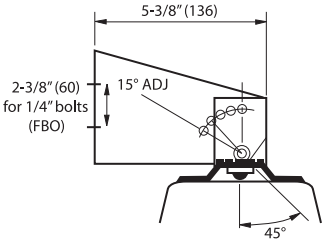


*Mounting Centers are 1/4-20" tapped for user all thread rod or below accessories.

Mounting Accessories
For All LZ2N, LZ2S Series

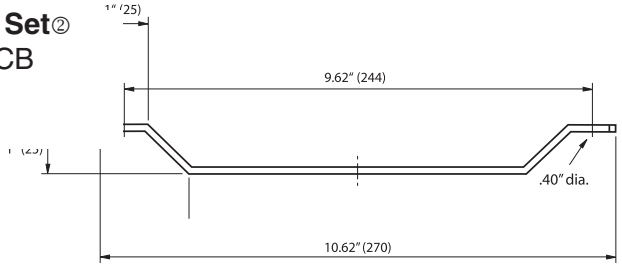
Wall Bracket Set②
Part Number LZWB
Stainless Steel
(natural finish)

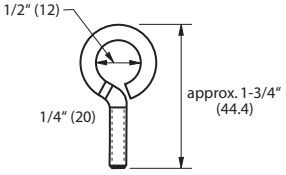




Adjustable Wall Bracket Set②
Part Number LZAB
Stainless Steel bracket with ceramic coated pivot bolt

Ceiling Bracket Set②
Part Number LZCB
Stainless Steel
(natural finish)





Eyebolt Set
Part Number LZEB
Stainless Steel bolt with lockwasher & nut
(natural finish)

Replacement Parts:	
LZ2N4LENS	4' Lens only LZ2N/LZ2S
LZ2N2LENS	2' Lens only LZ2N/LZ2S
LZ2N4BAR	4' Locking Bar only LZ2N
LZ2N2BAR	2' Locking Bar only LZ2N
LZ2S-LATCH	Latch and Spring

Suspension Chains (2 required)
Part Number HFX-SC
36" length plated steel chain with snap link ends
For use with LZEB

① *Dimensions in ( ) are millimeters.*
② *Product accessories have hardware for attachment to fixture; hardware to attach to wall/ceiling F.B.O.*
NOTE: Eyebolts are 316 Series, brackets are 300 Series Stainless Steel.

FLUORESCENT FIXTURE- LZ2N(S)40230
2' – 2 40 Watt Biaxial
Lamp Type F40/2G11/835/RS
Lumens 3150 each

Total Bare Lamp Lumens 6300

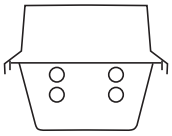
All data provided is for F40/2G11/835/RS lamps

For LZ2N40130 1-lamp models multiply x .50

For LZ2N55130 1-lamp models multiply x .76

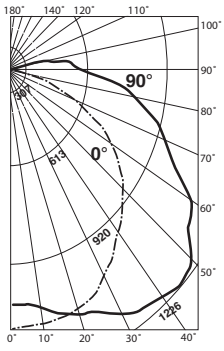
For LZ2N17230 multiply x .44

For LZ2N17330 multiply x .66



ZONAL LUMENS

ZONE	LUMENS
0-30	826
0-40	1447
0-60	2977
0-90	4638



VERT. ANGLE	0	22.5	45	67.5	90	ZONAL LUMENS
0.0	948.	948.	948.	948.	948.	
5.0	948.	951.	959.	958.	954.	91.20
10.0	937.	950.	977.	989.	989.	
15.0	917.	944.	989.	1017.	1023.	277.80
20.0	889.	931.	1000.	1041.	1051.	
25.0	855.	912.	1003.	1065.	1079.	456.80
30.0	809.	886.	1004.	1103.	1143.	
35.0	757.	852.	1006.	1137.	1176.	622.10
40.0	698.	809.	1012.	1149.	1198.	
45.0	635.	760.	1000.	1155.	1226.	744.40
50.0	559.	711.	981.	1175.	1206.	
55.0	478.	667.	967.	1094.	1118.	791.00
60.0	395.	617.	896.	1002.	1069.	
65.0	307.	552.	784.	928.	930.	715.20
70.0	224.	481.	707.	804.	834.	
75.0	147.	383.	597.	712.	765.	568.30
80.0	88.	308.	520.	632.	670.	
85.0	50.	236.	402.	472.	515.	379.80
90.0	19.	134.	244.	315.	341.	

Efficiency 78.5%

COEFFICIENTS OF UTILIZATION – ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTAN 1cc	80	70	50	30	10	0
% WALL REFLECTANCE 1w	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance					
0	.92 .92 .92 .92	.90 .90 .90 .90	.84 .84 .84	.80 .80 .80	.76 .76 .76	.74
1	.81 .76 .72 .68	.79 .74 .70 .66	.70 .66 .63	.66 .63 .61	.62 .60 .58	.56
2	.73 .65 .58 .53	.70 .63 .57 .52	.59 .54 .50	.56 .52 .48	.53 .49 .46	.44
3	.65 .56 .48 .42	.63 .54 .47 .42	.51 .45 .40	.48 .43 .39	.45 .41 .37	.35
4	.59 .49 .41 .35	.57 .47 .40 .34	.45 .38 .33	.42 .37 .32	.40 .35 .31	.29
5	.54 .43 .35 .29	.52 .42 .34 .29	.39 .33 .28	.37 .32 .27	.35 .30 .26	.24
6	.50 .38 .30 .25	.48 .37 .30 .25	.35 .29 .24	.33 .28 .23	.32 .27 .23	.21
7	.46 .34 .27 .22	.44 .33 .26 .21	.32 .25 .21	.30 .25 .20	.29 .24 .20	.18
8	.43 .31 .24 .19	.41 .30 .24 .19	.29 .23 .18	.27 .22 .18	.26 .21 .17	.16
9	.40 .28 .21 .17	.38 .28 .21 .17	.26 .20 .16	.25 .20 .16	.24 .19 .16	.14
10	.37 .26 .19 .15	.36 .25 .19 .15	.24 .19 .15	.23 .18 .14	.22 .17 .14	.12

SPACING TO MOUNTING HEIGHT RATIO - 1.28 0-180°
SPACING TO MOUNTING HEIGHT RATIO - 1.88 90-270°

Test No. BAL12356

HUBBELL
KILLARK

FLUORESCENT FIXTURE- LZ2N(S)40430

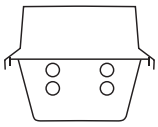
4' – 4 40 Watt BIAXIAL Lumens 3150 each
Lamp Type F40/2G11/835/RS

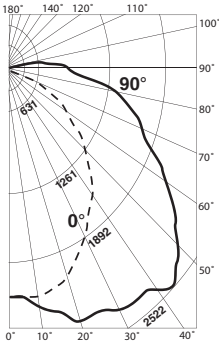
Total Bare Lamp Lumens 12600

All data provided is for F40/2G11/835/RS lamps

ZONAL LUMENS

ZONE	LUMENS
0-30	1649
0-40	2863
0-60	5876
0-90	8993





VERT. ANGLE	0	22.5	45	67.5	90	ZONAL LUMENS
0.0	1852.	1852.	1852.	1852.	1852.	
5.0	1852.	1852.	1860.	1870.	1876.	177.7
10.0	1876.	1889.	1932.	1971.	1987.	
15.0	1840.	1873.	1957.	2032.	2061.	553.6
20.0	1808.	1874.	2022.	2143.	2196.	
25.0	1693.	1790.	1978.	2145.	2193.	909.1
30.0	1588.	1730.	1991.	2172.	2269.	
35.0	1475.	1650.	1943.	2229.	2340.	1213.9
40.0	1350.	1571.	1959.	2256.	2345.	
45.0	1267.	1564.	2083.	2385.	2522.	1534.8
50.0	1073.	1394.	1895.	2288.	2380.	
55.0	912.	1280.	1854.	2176.	2247.	1545.2
60.0	730.	1149.	1673.	1938.	2013.	
65.0	571.	1038.	1541.	1785.	1833.	1381.1
70.0	400.	885.	1342.	1549.	1558.	
75.0	250.	698.	1075.	1321.	1433.	1040.9
80.0	132.	533.	968.	1208.	1262.	
85.0	56.	397.	726.	921.	983.	699.6
90.0	28.	212.	464.	619.	665.	

Efficiency 76%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTAN 1cc	80			70			50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance														
0	.89	.89	.89	.89	.87	.87	.87	.87	.82	.82	.82	.77	.77	.77	.73	.73	.73	.71
1	.79	.74	.70	.66	.76	.72	.68	.65	.68	.65	.62	.64	.61	.59	.61	.58	.57	.54
2	.71	.63	.57	.52	.68	.61	.56	.51	.58	.53	.49	.54	.50	.47	.51	.48	.45	.43
3	.64	.54	.47	.41	.61	.53	.46	.41	.50	.44	.39	.47	.42	.38	.44	.40	.37	.35
4	.58	.47	.40	.34	.56	.46	.39	.34	.44	.37	.33	.41	.36	.32	.39	.34	.31	.29
5	.53	.42	.34	.29	.51	.41	.34	.28	.39	.32	.28	.36	.31	.27	.35	.30	.26	.24
6	.48	.37	.30	.25	.47	.36	.29	.24	.34	.28	.24	.33	.27	.23	.31	.26	.22	.21
7	.45	.34	.26	.21	.43	.33	.26	.21	.31	.25	.21	.30	.24	.20	.28	.23	.20	.18
8	.41	.30	.23	.19	.40	.30	.23	.19	.28	.22	.18	.27	.22	.18	.26	.21	.17	.16
9	.39	.28	.21	.17	.37	.27	.21	.16	.26	.20	.16	.25	.19	.16	.24	.19	.15	.14
10	.36	.25	.19	.15	.35	.25	.19	.15	.24	.18	.14	.23	.18	.14	.22	.17	.14	.12

SPACING TO MOUNTING HEIGHT RATIO - 1.28 0-180°
SPACING TO MOUNTING HEIGHT RATIO - 1.94 90-270°

Test No. BAL 12357

FLUORESCENT FIXTURE- LZ2N(S)32230

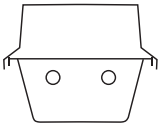
4' – 2 32W F32WT8/835/RS LAMPS
2950 Lumens Each

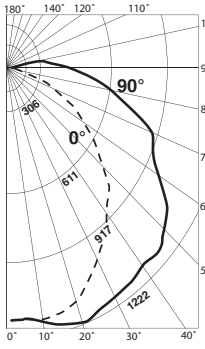
Total Bare Lamp Lumens 5900

For 28 Watt T5 Multiply By .98
For 34/40 Watt T12 Multiply By 1.07
For 44 Watt T8 Multiply By 1.36
For 54 Watt T5 Multiply By 1.69
For 60 Watt T12 Multiply By 1.46

ZONAL LUMENS

ZONE	LUMENS
0-30	957
0-40	1608
0-60	3077
0-90	4521





VERT. ANGLE	0	22.5	45	67.5	90	ZONAL LUMENS
0.0	1145.	1145.	1145.	1145.	1145.	
5.0	1143.	1143.	1141.	1143.	1144.	109.1
10.0	1154.	1154.	1163.	1176.	1182.	
15.0	1141.	1143.	1169.	1192.	1204.	331.4
20.0	1104.	1116.	1162.	1206.	1222.	
25.0	1035.	1057.	1122.	1175.	1190.	516.8
30.0	971.	1008.	1096.	1146.	1182.	
35.0	900.	949.	1035.	1134.	1166.	651.9
40.0	812.	881.	1005.	1100.	1138.	
45.0	755.	849.	1003.	1109.	1150.	757.7
50.0	636.	739.	909.	1037.	1097.	
55.0	538.	650.	845.	994.	1033.	734.4
60.0	432.	573.	771.	878.	928.	
65.0	333.	488.	686.	792.	846.	634.2
70.0	230.	397.	595.	771.	817.	
75.0	140.	302.	544.	638.	683.	501.3
80.0	71.	233.	437.	523.	557.	
85.0	32.	170.	303.	397.	434.	300.9
90.0	11.	88.	205.	294.	330.	

Efficiency 80.9%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTAN 1cc	80			70			50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance														
0	.95	.95	.95	.95	.93	.93	.93	.93	.88	.88	.88	.83	.83	.83	.79	.79	.79	.77
1	.85	.80	.76	.72	.82	.78	.74	.70	.73	.70	.67	.69	.67	.64	.66	.64	.62	.60
2	.76	.68	.62	.57	.73	.66	.61	.56	.63	.58	.54	.59	.55	.52	.56	.53	.50	.48
3	.69	.59	.52	.46	.66	.58	.51	.45	.54	.49	.44	.52	.47	.42	.49	.45	.41	.39
4	.63	.52	.44	.38	.60	.51	.43	.38	.48	.42	.37	.45	.40	.36	.43	.39	.35	.33
5	.57	.46	.38	.32	.55	.45	.37	.32	.43	.36	.31	.40	.35	.30	.39	.34	.30	.28
6	.53	.41	.33	.28	.51	.40	.33	.28	.38	.32	.27	.36	.31	.26	.35	.30	.26	.24
7	.49	.37	.30	.24	.47	.36	.29	.24	.35	.28	.24	.33	.27	.23	.32	.27	.23	.21
8	.45	.34	.27	.22	.44	.33	.26	.21	.32	.25	.21	.30	.25	.21	.29	.24	.20	.18
9	.42	.31	.24	.19	.41	.30	.24	.19	.29	.23	.19	.28	.22	.18	.27	.22	.18	.16
10	.40	.28	.22	.17	.38	.28	.21	.17	.27	.21	.17	.26	.20	.17	.25	.20	.16	.15

SPACING TO MOUNTING HEIGHT RATIO - 1.26 0-180°
SPACING TO MOUNTING HEIGHT RATIO - 1.56 90-270°

Test No. BAL 12358

FLUORESCENT FIXTURE- LZ2N(S)32330

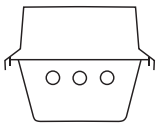
4' – 3 32W F32WT8/835/RS LAMPS
2950 Lumens Each

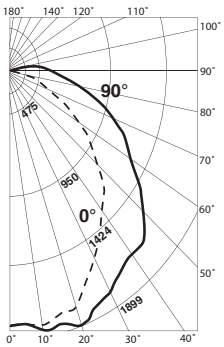
Total Bare Lamp Lumens 8850

For 28 Watt T5 Multiply By .98
For 54 Watt T5 HO Multiply By 1.69

ZONAL LUMENS

ZONE	LUMENS
0-30	1482
0-40	2470
0-60	4651
0-90	6562





VERT. ANGLE	0	22.5	45	67.5	90	ZONAL LUMENS
0.0	1786.	1786.	1786.	1786.	1786.	
5.0	1774.	1774.	1778.	1781.	1781.	169.6
10.0	1800.	183.	1819.	1834.	1840.	
15.0	1751.	1761.	1794.	1822.	1834.	508.1
20.0	1745.	1771.	1827.	1879.	1899.	
25.0	1609.	1644.	1724.	1790.	1814.	794.9
30.0	1517.	1571.	1679.	1748.	1784.	
35.0	1391.	1458.	1590.	1684.	1714.	986.9
40.0	1272.	1364.	1520.	1632.	1674.	
45.0	1194.	1315.	1507.	1643.	1687.	1143.4
50.0	1010.	1150.	1353.	1491.	1551.	
55.0	856.	1014.	1248.	1402.	1420.	1077.2
60.0	685.	857.	1124.	1215.	1245.	
65.0	534.	741.	978.	1092.	1121.	902.9
70.0	372.	610.	830.	956.	990.	
75.0	229.	452.	671.	779.	824.	642.3
80.0	116.	340.	531.	617.	650.	
85.0	53.	213.	356.	453.	489.	352.6
90.0	16.	108.	245.	342.	378.	

Efficiency 77.5%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTAN 1cc	80			70			50		30		10		0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance														
0	.91	.91	.91	.91	.89	.89	.89	.89	.84	.84	.84	.80	.80	.80	.76	.76	.76	.74
1	.82	.78	.74	.70	.79	.75	.72	.69	.71	.68	.66	.68	.65	.63	.64	.62	.61	.59
2	.74	.67	.61	.56	.71	.65	.59	.55	.61	.57	.53	.58	.55	.51	.55	.52	.50	.48
3	.67	.58	.51	.45	.64	.56	.50	.45	.53	.48	.44	.51	.46	.42	.48	.44	.41	.39
4	.61	.51	.44	.38	.59	.50	.43	.37	.47	.41	.37	.45	.40	.36	.43	.38	.35	.33
5	.56	.45	.38	.32	.54	.44	.37	.32	.42	.36	.31	.40	.35	.31	.38	.34	.30	.28
6	.51	.40	.33	.28	.50	.40	.33	.28	.38	.32	.27	.36	.31	.27	.35	.30	.26	.24
7	.47	.37	.29	.24	.46	.36	.29	.24	.34	.28	.24	.33	.27	.23	.31	.27	.23	.21
8	.44	.33	.26	.22	.43	.33	.26	.21	.31	.25	.21	.30	.25	.21	.29	.24	.20	.19
9	.41	.30	.24	.19	.40	.30	.23	.19	.29	.23	.19	.28	.22	.19	.27	.22	.18	.17
10	.39	.28	.22	.17	.37	.27	.21	.17	.26	.21	.17	.25	.20	.17	.25	.20	.17	.15

SPACING TO MOUNTING HEIGHT RATIO - 1.26 0-180°
SPACING TO MOUNTING HEIGHT RATIO - 1.48 90-270°

Test No. BAL 12359

4' Nominal Style

2' Nominal Style

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III, Div. 1 & 2
NEMA 3, 4X, 7(C,D) 9(E,F,G)
Suitable for wet locations
Suitable for paint spray booths

Listed - File E12976 and E89665 (Marine)

Certified - File LR11713

FEATURES-SPECIFICATIONS

Applications

Biaxial single ended lamp type HFX-T fixtures provide greater efficiency and lumen output than standard models. Designed for installations where moisture, dirt, dust, corrosion and vibration may be present, or NEMA 3 and 4X areas where wind, water and snow can be expected. They can also be used in locations made hazardous due to the presence of flammable or explosive gases, vapors and combustible ducts as defined by the NEC.

Typical applications include classified areas such as inside paint spray booths, paint manufacturing plants, ammunition facilities, oil and gas producing and refining plants, off-shore and dockside installations, tank farms, pipeline pumping stations and marine loading and fuel transfer terminals.

Features

- UL Listed and labeled for use inside paint spray booths and rooms
- 2' nominal compact models facilitate use in areas too small for nominal 4' models, or where the light must be confined
- Standard ballast is 120-277V at 50/60 Hz①
- 0°F starting temperature
- Construction is strong lightweight corrosion resistant copper-free aluminum alloy, less than 4/10 of 1%
- All external hardware is corrosion resistant 316 stainless steel
- UL Listed externally fused ballast option; protects fixture on line side of ballast, prevents ballast burnout
- Suitable for use in both indoor and outdoor wet locations
- Relamping easily accomplished by removing screw in cap and socket
- Factory sealed construction
- Extruded aluminum reflectors are easily removable for cleaning. White baked enamel finish

Compliances

- UL-1570, Standard for Fluorescent Lighting Fixtures
- UL Marine Type Lighting Fixtures
- UL-844, Standard for Lighting Fixtures for Hazardous Locations
- CSA C22.2 137-M1981
- Meets requirements of NFPA 70-1987 Article 516 and NFPA standard 33

Catalog Number Logic

HFX - 00 T - 00 - 0 - F

Constant for HFX Series

Lamp Wattage
40—40 Watt BIAXIAL Type
55—55 Watt BIAXIAL Type

F1 Fuse 120V
F2 Fuse 277V

2 lamps (2' Nominal)
4 lamps (4' Nominal)

Voltage
30—120-277V 50/60 Hz.

HFX-T BIAXIAL TYPE LIGHT FIXTURES①②

CATALOG NUMBER	CONDUIT SIZE	LINE VOLTAGE	DESCRIPTION	PROFILE
HFX-40T-302	3/4"	120V-277V 50/60 Hz	2' 2 Lamp 40W BIAXIAL T5	Two Glass Tubes 2' or 4' Nominal
HFX-55T-302			2' 2 Lamp 55W BIAXIAL T5	
HFX-40T-304			4' 4 Lamp 40W BIAXIAL T5	
HFX-55T-304			4' 4 Lamp 55W BIAXIAL T5	

① *See page L182 for ballast current information.*

② *Consult HFX page L183 for dimensions and accessories. Photometrics on following page.*

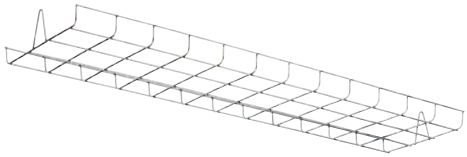
SEE PAGE L210 FOR HFXE EMERGENCY MODELS

HFX-T, HFXE-T HAZARDOUS LOCATION APPLICATION DATA

DESCRIPTION	RATED AMBIENT °C	SUITABLE FOR °C SUPPLY WIRE	CLASS I, DIV. 1 & 2 MAX. SURFACE TEMP.			CLASS II, DIV. 1 & 2 MAX. SURFACE TEMP.			CLASS III DIV. 1 & 2 SUITABILITY	UL MARINE	PAINT SPRAY SUITABLE	NEMA 3 & 4X
			TEMP.	T-CODE	GROUPS	TEMP.	T-CODE	GROUPS				
HFX-T 40W 2 LAMP	40	60	85°C	T6	C, D	120°C	T4A	E, F, G	Yes	Yes	Yes	Yes
HFX-T 55W 2 LAMP	40	60	85°C	T6	C, D	120°C	T4A	E, F, G	Yes	Yes	Yes	Yes
HFX-T 40W 4 LAMP	40	60	85°C	T6	C, D	120°C	T4A	E, F, G	Yes	Yes	Yes	Yes
HFX-T 55W 4 LAMP	40	60	85°C	T6	C, D	120°C	T4A	E, F, G	Yes	Yes	Yes	Yes

4' Nominal Style

2' Nominal Style



WIRE GUARD①	
CATALOG NUMBER	DESCRIPTION
2HFX-G2	302 HFX-T Models
2HFX-G4	304 HFX-T Models

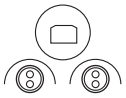
①316 Stainless Steel

Consult page L183 for dimensions and accessories.

SEE PAGE L210
FOR HFXE
EMERGENCY MODELS

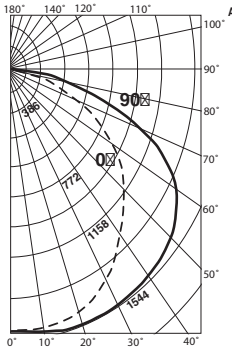
FLUORESCENT FIXTURE-HFX-40T-302

Lamp Type F40/2G11/835/RS
2' – 2 40 Watt Biaxial 3150 Lumens each.
Total Bare Lamp Lumens 6300
For 55W Biaxial multiply by 1.52.



ZONAL LUMENS

ZONE	LUMENS
0-30	1246
0-40	2102
0-60	3989
0-90	5237



VERT. ANGLE	0	22.5	45	67.5	90	ZONAL LUMENS
0	1530.	1530.	1530.	1530.	1530.	
5.0	1533.	1524.	1520.	1533.	1531.	145.8
10.0	1515.	1509.	1515.	1527.	1536.	
15.0	1484.	1486.	1508.	1531.	1544.	428.0
20.0	1435.	1453.	1492.	1526.	1543.	
25.0	1379.	1410.	1464.	1511.	1540.	676.4
30.0	1310.	1355.	1427.	1485.	1530.	
35.0	1227.	1286.	1377.	1448.	1490.	858.9
40.0	1132.	1209.	1313.	1403.	1440.	
45.0	1026.	1123.	1242.	1354.	1389.	953.7
50.0	913.	1024.	1168.	1287.	1326.	
55.0	783.	902.	1083.	1205.	1236.	941.8
60.0	649.	781.	982.	1094.	1090.	
65.0	507.	667.	862.	875.	857.	765.8
70.0	346.	543.	641.	601.	600.	
75.0	197.	396.	408.	425.	428.	407.7
80.0	72.	218.	224.	242.	240.	
85.0	14.	74.	56.	52.	51.	58.8
90.0	1.	10.	6.	7.	8.	

Efficiency 83.2%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

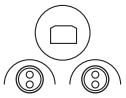
% EFFECTIVE CEILING CAVITY REFLECTAN 1cc	80				70				50			30			10			0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance																	
0	.99	.99	.99	.99	.97	.97	.97	.97	.92	.92	.92	.88	.88	.88	.85	.85	.85	.83
1	.90	.86	.82	.79	.88	.84	.81	.78	.80	.78	.75	.77	.75	.73	.74	.72	.71	.69
2	.81	.74	.68	.63	.79	.73	.67	.63	.70	.65	.61	.67	.63	.60	.64	.61	.58	.56
3	.74	.65	.58	.52	.72	.63	.57	.51	.61	.55	.50	.58	.54	.50	.56	.52	.49	.47
4	.67	.57	.49	.43	.65	.56	.49	.43	.54	.47	.42	.52	.46	.42	.50	.45	.41	.39
5	.62	.50	.43	.37	.60	.50	.42	.37	.48	.41	.36	.46	.40	.36	.44	.39	.35	.34
6	.57	.45	.37	.32	.55	.44	.37	.32	.43	.36	.31	.41	.36	.31	.40	.35	.31	.29
7	.52	.41	.33	.28	.51	.40	.33	.28	.39	.32	.28	.38	.32	.27	.36	.31	.27	.25
8	.49	.37	.30	.25	.47	.36	.30	.25	.35	.29	.24	.34	.29	.24	.33	.28	.24	.23
9	.45	.34	.27	.22	.44	.33	.27	.22	.32	.26	.22	.32	.26	.22	.31	.25	.22	.20
10	.43	.31	.24	.20	.41	.31	.24	.20	.30	.24	.20	.29	.24	.20	.28	.23	.20	.18

SPACING TO MOUNTING HEIGHT RATIO - 1.28 0-180°
SPACING TO MOUNTING HEIGHT RATIO - 1.50 90-270°

Test No. BAL12360

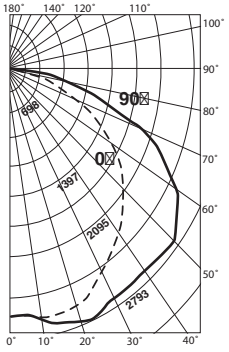
FLUORESCENT FIXTURE-HFX-40T-304

Lamp Type F40/2G11/835/RS
4' – 4 40 Watt Biaxial 3150 Lumens each.
Total Bare Lamp Lumens 12600
For 55W Biaxial multiply by 1.52.



ZONAL LUMENS

ZONE	LUMENS
0-30	2197
0-40	3685
0-60	7050
0-90	9559



VERT. ANGLE	0	22.5	45	67.5	90	ZONAL LUMENS
0.0	2625	2625	2625	2625	2625	
5.0	2606	2607	2611	2617	2620	249.3
10.0	2661	2669	2692	2716	2726	
15.0	2621	2641	2693	2738	2756	762.6
20.0	2559	2597	2692	2766	2793	
25.0	2393	2450	2564	2653	2685	1181.0
30.0	2254	2335	2477	2590	2635	
35.0	2102	2207	2381	2528	2587	1485.7
40.0	1959	2094	2306	2502	2571	
45.0	1778	1951	2236	2473	2544	1707.9
50.0	1609	1793	2106	2325	2387	
55.0	1404	1612	1966	2169	2234	1697.1
60.0	1140	1369	1701	1890	1942	
65.0	928	1202	1542	1680	1698	1423.7
70.0	676	984	1268	1290	1277	
75.0	425	735	871	860	889	825.8
80.0	204	473	548	623	643	
85.0	58	202	256	248	251	234.9
90.0	15	36	44	53	60	

Efficiency 76%

COEFFICIENTS OF UTILIZATION –ZONAL CAVITY METHOD

% EFFECTIVE CEILING CAVITY REFLECTAN 1cc	80				70				50			30			10			0
% WALL REFLECTANCE 1w	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
ROOM CAVITY RATIO RCR	20% Effective Floor Cavity Reflectance																	
0	.90	.90	.90	.90	.88	.88	.88	.88	.84	.84	.84	.81	.81	.81	.77	.77	.77	.76
1	.82	.78	.74	.71	.80	.76	.73	.70	.73	.70	.68	.70	.68	.65	.67	.65	.63	.62
2	.74	.67	.61	.57	.72	.66	.60	.56	.63	.58	.55	.60	.56	.53	.58	.55	.52	.50
3	.67	.58	.52	.46	.65	.57	.51	.46	.55	.49	.45	.52	.48	.44	.50	.47	.43	.42
4	.61	.51	.44	.39	.59	.50	.43	.38	.48	.42	.38	.46	.41	.37	.45	.40	.37	.35
5	.56	.45	.38	.33	.54	.44	.38	.33	.43	.37	.32	.41	.36	.32	.40	.35	.31	.30
6	.51	.41	.33	.28	.50	.40	.33	.28	.38	.32	.28	.37	.32	.28	.36	.31	.27	.26
7	.47	.37	.30	.25	.46	.36	.29	.25	.35	.29	.24	.34	.28	.24	.33	.28	.24	.22
8	.44	.33	.27	.22	.43	.33	.26	.22	.32	.26	.22	.31	.25	.22	.30	.25	.21	.20
9	.41	.30	.24	.20	.40	.30	.24	.20	.29	.23	.19	.28	.23	.19	.27	.23	.19	.18
10	.38	.28	.22	.18	.37	.28	.22	.18	.27	.21	.17	.26	.21	.17	.25	.21	.17	.16

SPACING TO MOUNTING HEIGHT RATIO - 1.28 0-180°
SPACING TO MOUNTING HEIGHT RATIO - 1.52 90-270°

Test No. BAL12361

Class I, Div. 1 & 2 Groups C,D
Class I, Zones 1 & 2, Groups IIB,IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III, Div. 1 & 2
NEMA 3, 4X, 7(C,D) 9(E,F,G)
Suitable for wet locations
Suitable for paint spray booths

Listed - File E12976 and E89665 (Marine)

Certified - File LR11713

FEATURES-SPECIFICATIONS

Applications

HFX Series fluorescent fixtures are designed for installations where moisture, dirt, dust, corrosion and vibration may be present, or NEMA 3 and 4X areas where wind, water and snow can be expected. They can also be used in locations made hazardous due to the presence of flammable or explosive gases, vapors and combustible ducts as defined by the NEC.

Typical applications include classified areas such as inside paint spray booths, paint manufacturing plants, ammunition facilities, oil and gas producing and refining plants, off-shore and dockside installations, tank farms, pipeline pumping stations and marine loading and fuel transfer terminals.

Features

- UL Listed and labeled for use inside paint spray booths and rooms
- Construction is strong lightweight corrosion resistant copper-free aluminum alloy, less than 4/10 of 1%
- Class P ballast(s) with internal automatic thermally activated protective device
- All external hardware is corrosion resistant 316 stainless steel to provide maintenance free long life
- UL factory sealed construction (no external seals required). Saves installation time and cost
- Electronic energy efficient ballasts are standard on 430 MA fixtures and meet the requirements of many states
- Extruded aluminum reflectors are easily removable for cleaning. White baked enamel finish
- Optional 316 stainless steel wire guard for added protection
- Threaded O-Ring gasketed covers provide easy access to lamp chambers, ballast and wiring compartment
- UL Listed externally fused ballast option; protects fixture on line side of ballast, prevents ballast burnout
- Suitable for use in both indoor and outdoor wet locations
- Relamping from either end permits easy access, speed and flexibility in relamping
- Spring loaded sockets on both lamp ends provide positive electrical contact and improved vibration resistance

Compliances

- UL-1570, Standard for Fluorescent Lighting Fixtures
- UL Marine Type Lighting Fixtures
- UL-844, Standard for Lighting Fixtures for Hazardous Locations
- CSA C22.2 137-M1981
- Meets requirements of NFPA 70-1987 Article 516 and NFPA standard 33

Catalog Number Logic

HFX - 000 - 00 - 00

Constant for HFX Series

Lamp Current
265—265 MA, 32W T8 (0°F Starting, Electronic)
430—430 MA, 40W RS (50°F Starting Electronic)②
800—800 MA, 60W RS HO (-20°F Starting)
1500—1500 MA, 110W RS VHO (-20°F Starting)

Voltage
1—120V, 60 Hz.
4—277, 60 Hz.
7—220V, 60 Hz. 430 MA
8—220/240V, 50 Hz., 430 MA (2 and 4 lamp models only)
30—120-277V 50/60 Hz 265 MA only.

Number of Lamps
2—2 lamps
3—3 lamps
4—4 lamps

Options
FB—Individually in-line fused ballast (not Marine or CSA)
WL—With lamps supplied

SEE PAGE L210 FOR HFXE EMERGENCY MODELS

HFX, HFXE HAZARDOUS LOCATION APPLICATION DATA①

FIXTURE SERIES	LAMP WATTS	RATED AMBIENT °C	SUITABLE FOR °C SUPPLY WIRE	CLASS I, DIV. 1 & 2 MAX. SURFACE TEMP.			CLASS II, DIV. 1 & 2 MAX. SURFACE TEMP.			CLASS III DIV. 1 & 2 SUITABILITY	UL MARINE	PAINT SPRAY SUITABLE	NEMA 3 & 4
				TEMP.	T-CODE	GROUPS	TEMP.	T-CODE	GROUPS				
HFX	32	40	90	100°C	T5	C, D	120°C	T4A	E, F, G	Yes	Yes	Yes	Yes
HFX	40	40	90	100°C	T5	C, D	120°C	T4A	E, F, G	Yes	Yes	Yes	Yes
HFX	60	40	90	100°C	T5	C, D	120°C	T4A	E, F, G	Yes	Yes	Yes	Yes
HFX	110	40	90	100°C	T5	C, D	120°C	T4A	E, F, G	Yes	Yes	Yes	Yes

① *Ratings apply to all 2, 3, and 4 lamp models.*
② *430 MA ballasts 60°F start with 34 watt lamps.*

HUBBELL®
KILLARK®

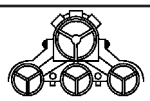
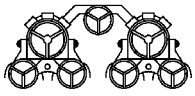
Class I, Div. 1 & 2 Groups C,D
Class I, Zones 1 & 2, Groups IIB,IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III, Div. 1 & 2
NEMA 3, 4X, 7(C,D) 9(E,F,G)
Suitable for wet locations
Suitable for paint spray booths

Listed - File E12976 and E89665 (Marine)

Certified - File LR11713

FEATURES-SPECIFICATIONS

HFX FLUORESCENT LIGHT FIXTURES

CATALOG NUMBER①②	CONDUIT SIZE	LINE VOLTAGE @60 HERTZ	DESCRIPTION	NUMBER OF LAMPS
HFX-265-302	3/4"	120V-277V 50/60 Hz	32W T8 electronic ballast 265MA	 **Two Glass Tubes 4' Nominal**
HFX-430-12		120V	40W rapid start electronic F40T12	
HFX-430-42		277V	medium Bi-Pin 430MA	
HFX-800-12		120V	60W rapid start high output F48T12/HO	
HFX-800-42		277V	recessed double contact 800MA	
HFX-1500-12		120V	110W rapid start VHO F48T12/VHO	
HFX-1500-42		277V	recessed double contact 1500MA	
HFX-265-303	3/4"	120V-277V 50/60 Hz	32W T8 electronic ballast 265MA	 **Three Glass Tubes 4' Nominal**
HFX-430-13		120V	40W rapid start electronic F40T12	
HFX-430-43		277V	medium Bi-Pin 430MA	
HFX-800-13		120V	60W rapid start high output F48T12/HO	
HFX-800-43		277V	recessed double contact 800MA	
HFX-1500-13		120V	110w rapid start VHO F48T12/VHO	
HFX-1500-43		277V	recessed double contact 1500MA	
HFX-265-304	3/4"	120V-277V 50/60 Hz	32W T8 electronic ballast 265MA	 **Four Glass Tubes ③ 4' Nominal**
HFX-430-14		120V	40W rapid start electronic F40T12	
HFX-430-44		277V	medium Bi-Pin 430MA	
HFX-800-14		120V	60W rapid start high output F48T12/HO	
HFX-800-44		277V	recessed double contact 800MA	
HFX-1500-14		120V	110W rapid start VHO F48T12/VHO	
HFX-1500-44		277V	recessed double contact 1500MA	

① *Standard ballasts starting temperatures:*
32 Watt (265MA) Electronic 0°F
40 Watt (430MA) Electronic 50°F, 60°F with 34 Watt lamps
60 Watt (800MA) Electronic -20°F
110 Watt (1500MA) Electronic -20°F

Optional cold weather electromagnetic ballast (0°F starting 40 Watt 430MA) add suffix ***CW*** *to catalog number.*

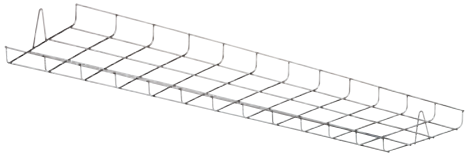
② *Optional UL listed in-line ballast fusing is available by adding suffix* ***FB*** *to catalog number (UL only).*

③ *Safety chain accessory catalog number* ***HFX-SC*** *available, supplied standard with 4 lamp fixtures.*

WIRE GUARD

CATALOG NUMBER	DESCRIPTION
2HFX-G4	2-Lamp 316 grade stainless steel
3HFX-G4	3-Lamp 316 grade stainless steel

4 lamp fixture requires two 2HFX-G4 guards.



SEE PAGE L210
FOR HFXE
EMERGENCY MODELS

Class I, Div. 1 & 2 Groups C,D
Class I, Zones 1 & 2, Groups IIB,IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III, Div. 1 & 2
NEMA 3, 4X, 7(C,D) 9(E,F,G)
Suitable for wet locations
Suitable for paint spray booths

Listed - File E12976 and E89665 (Marine)

Certified - File LR11713

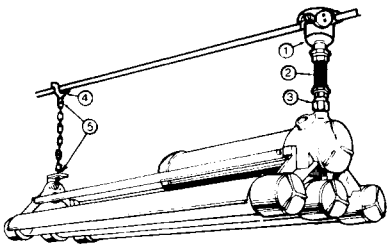
FEATURES-SPECIFICATIONS

HFX BALLAST DATA

CATALOG NUMBER	NO. OF LAMPS	VOLTAGE	LINE CURRENT AMPS	INPUT WATTS	STARTING TEMPERATURE
32 WATT T-8 ELECTRONIC 48" 265MA					
HFX-265-302	2	120-277	.54 (120V) .24 (277V)	71	0°F (-18°C)
HFX-265-303 ①	3	120-277	.71 (120V) .31 (277V)	88	0°F (-18°C)
HFX-265-304	4	120-277	1.10 (120V) .48 (277V)	142	0°F (-18°C)
40 WATT RAPID START ELECTRONIC T-12 MEDIUM BI-PIN 48" 430MA					
HFX-430-12	2	120	.51 ②	60	60°F (16°C)
HFX-430-42	2	277	.22 ②	60	60°F (16°C)
HFX-430-13 ①	3	120	.69 ②	91	60°F (16°C)
HFX-430-43 ①	3	277	.30 ②	91	60°F (16°C)
HFX-430-14	4	120	1.02 ②	120	60°F (16°C)
HFX-430-44	4	277	.44 ②	120	60°F (16°C)
40 WATT BIAXIAL TYPE					
HFX-40T-302	2	120-277 50/60 Hz	.63 (120V) .27 (277V)	76	0°F (-18°C)
HFX-40T-304	4	120-277 50/60 Hz	1.32 (120V) .54 (277V)	156	0°F (-18°C)
55 WATT BIAXIAL TYPE					
HFX-55T-302	2	120-277 50/60 Hz	.94 (120V) .41 (277V)	112	-20°F (-29°C)
HFX-55T-304	4	120-277 50/60 Hz	1.97 (120V) .84 (277V)	232	-20°F (-29°C)
60 WATT RAPID START HIGH OUTPUT T-12 RECESSED DOUBLE CONTACT 48" 800MA					
HFX-800-12	2	120	1.40	135	-20°F (-29°C)
HFX-800-42	2	277	.61	145	-20°F (-29°C)
HFX-800-13	3	120	2.40	260	-20°F (-29°C)
HFX-800-43	3	277	1.03	235	-20°F (-29°C)
HFX-800-14	4	120	2.80	270	-20°F (-29°C)
HFX-800-44	4	277	1.22	290	-20°F (-29°C)
110 WATT RAPID START VERY HIGH OUTPUT T-12 RECESSED DOUBLE CONTACT 48" 1500MA					
HFX-1500-12	2	120	2.10	242	-20°F (-29°C)
HFX-1500-42	2	277	.92	242	-20°F (-29°C)
HFX-1500-13	3	120	3.38	376	-20°F (-29°C)
HFX-1500-43	3	277	1.48	377	-20°F (-29°C)
HFX-1500-14	4	120	4.20	484	-20°F (-29°C)
HFX-1500-44	4	277	1.84	484	-20°F (-29°C)

① 3 lamp 265MA and 430MA fixtures use a single ballast.
② Line current and 60°F start using 34 Watt lamps. Start temperature for 40 Watt lamps is 50°F (10°C). 40 Watt lamps current approximately 24% higher.

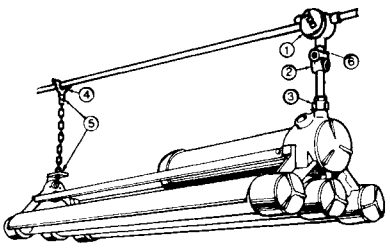
Typical installation using conduit hardware.



Dummy (non-powered) end lowers for relamping clearance, which is required when fixtures are mounted in close proximity. Flexible mounting provides free swing and impact protection.

1. Splice Box/Fixture Hanger (HXB)
2. Flexible Pendant Hanger (EKJ)
3. Union (GUM)
4. Rigid Support Saddle Bracket (KFHS)
5. Support Hook (KEFHM)

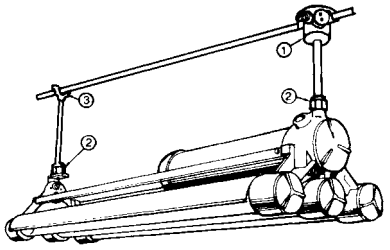
Note: Leave extra links to support fixture in relamping position. Chain furnished by others.



Dummy (non-powered) end lowers for relamping clearance, which is required when fixtures are mounted in close proximity.

1. Splice Box/Fixture Hanger (XFH)
2. Swivel Hanger (KESD)
3. Union (GUM)
4. Rigid Support Saddle Bracket (KFHS)
5. Support Hook (KEFHM)
6. 3/4" Rigid Threaded Nipple

Note: Leave extra links to support fixture in relamping position. Chain furnished by others.



Rigid mounted—for installations where relamping can be accomplished without lowering dummy end.

1. Splice Box/Fixture Hanger (HXB)
2. Union (GUM)
3. Rigid Support Saddle Bracket (KFHS)

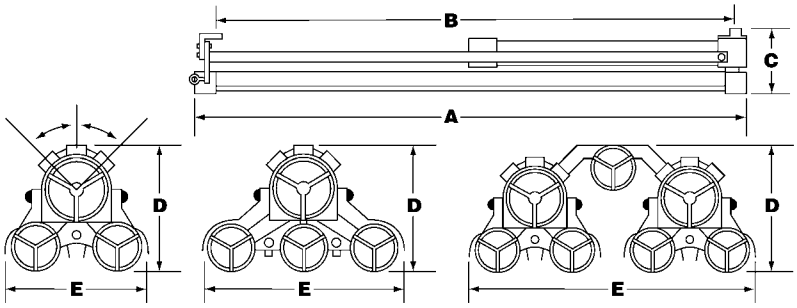
For wall mounting, use securely fastened 3/4" pipe 6" or less in length. Floor flange (furnished by others) recommended for dummy end as well as chain or cable providing vertical strain relief from above fixture. Chain furnished by others.

MOUNTING HARDWARE

CATALOG NUMBER	HUB SIZE	LENGTH	DESCRIPTION
HXB-12	1/2"	—	HXB SERIES Splice Box/ 3/4" Fixture Hanger
HXB-22	3/4"	—	
EKJ-24	3/4"	4	EKJ SERIES Flexible Pendant Hanger
EKJ-26	3/4"	6	
EKJ-28	3/4"	8	
EKJ-210	3/4"	10	
EKJ-212	3/4"	12	
EKJ-215	3/4"	15	
EKJ-218	3/4"	18	
GUM-2	3/4"		GU SERIES Male Union

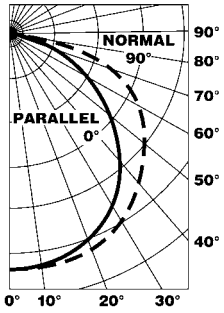
MOUNTING HARDWARE

CATALOG NUMBER	HUB SIZE	DESCRIPTION
XFH-22	3/4"	XFH SERIES Splice box/fixture hanger
KESD-75	3/4"	KESD SERIES Swivel Hanger 15° swivel drop from center and full 360° free swing
KFHS-5075	3/4"	KFHS SERIES Rigid support saddle bracket for fluorescent fixtures (dummy end) Will support 350 lbs. and straddle Max. 1-1/4" conduit
KEFHM-75	3/4"	KEFHM SERIES Safety support hook with 3/4" male end For dummy end of fixture Will support 200 lbs. screw closed 3/8" jaw opening
HFX-SC	—	HFX SERIES Safety chain (36" length plated steel), standard on 4-tube fixture



HFX DIMENSIONS

HFX MODEL		CONDUIT SIZE	DIMENSIONS A	B	C	D	E	NET WEIGHT
Nominal 2'	2 Tubes	3/4-14 NPT	28-15/16" (735)	24-3/8" (619)	9-3/32" (231)	9-3/32" (231)	11" (279)	36.0 Lbs.
Nominal 4'	2 Tubes	3/4-14 NPT	52-13/16" (1367)	48-3/8" (1229)	9-3/32" (231)	9-3/32" (231)	11" (279)	47.7 Lbs.
Nominal 4'	3 Tubes	3/4-14 NPT	52-13/16" (1367)	48-3/8" (1229)	9-3/32" (231)	9-3/32" (231)	15-5/8" (397)	63.0 Lbs.
Nominal 4'	4 Tubes	3/4-14 NPT	52-13/16" (1367)	48-3/8" (1229)	9-3/32" (231)	10-1/8" (257)	23" (584)	99.9 Lbs.



Total Bare Lamp Lumens 6400
All data provided is for F40T12RS/WW lamps 40W rapid start warm white. For Candlepower/Lumen multipliers of other lamps use the following:

32W T8 (2850 lumen lamp) .89

34W T12 (2700 lumen lamp) .84

60W F48T12/WW/HO Warm White High Output 1.35

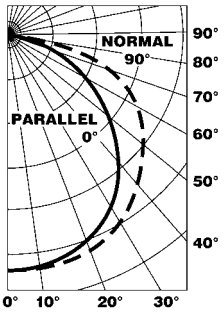
110W F48T12/WW/VHO Warm White Very High Output 1.97

ZONAL LUMENS
ZONE LUMENS

0-30	1076
0-40	1769
0-60	3194
0-90	4189

CANDLEPOWER 2-40/T12 RAPID START

VERTICAL ANGLE	HORIZONTAL ANGLE					ZONAL LUMENS
	0	22.5	45	67.5	90	
0.0	1325.	1325.	1325.	1325.	1325.	—
5.0	1359.	1366.	1366.	1369.	1365.	130
10.0	1313.	1321.	1328.	1338.	1325.	—
15.0	1309.	1315.	1323.	1333.	1333.	375
20.0	1288.	1302.	1318.	1331.	1333.	—
25.0	1196.	1213.	1238.	1252.	1259.	571
30.0	1147.	1169.	1198.	1229.	1236.	—
35.0	1037.	1065.	1104.	1145.	1160.	693
40.0	961.	1000.	1047.	1105.	1126.	—
45.0	819.	857.	921.	990.	1019.	714
50.0	737.	784.	867.	950.	982.	—
55.0	634.	690.	796.	899.	937.	711
60.0	518.	584.	711.	821.	836.	—
65.0	412.	498.	645.	693.	699.	594
70.0	263.	363.	465.	485.	487.	—
75.0	172.	281.	326.	339.	343.	318
80.0	80.	168.	189.	215.	223.	—
85.0	25.	75.	89.	89.	84.	84
90.0	6.	11.	14.	20.	22.	—



Total Bare Lamp Lumens 9600
All data provided is for F40T12RS/WW lamps 40W rapid start warm white. For Candlepower/Lumen multipliers of other lamps use the following:

32W T8 (2850 lumen lamp) .89

34W T12 (2700 lumen lamp) .84

60W F48T12/WW/HO Warm White High Output 1.35

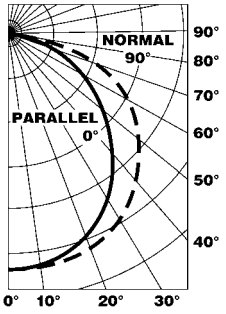
110W F48T12/WW/VHO Warm White Very High Output 1.97

ZONAL LUMENS
ZONE LUMENS

0-30	1583
0-40	2613
0-60	4743
0-90	6194

CANDLEPOWER 3-40/T12 RAPID START

VERTICAL ANGLE	HORIZONTAL ANGLE					ZONAL LUMENS
	0	22.5	45	67.5	90	
0.0	1971.	1971.	1971.	1971.	1971.	—
5.0	1988.	1985.	1987.	1994.	1990.	190
10.0	1946.	1949.	1953.	1960.	1962.	—
15.0	1929.	1934.	1944.	1959.	1963.	552
20.0	1897.	1907.	1926.	1947.	1961.	—
25.0	1773.	1788.	1817.	1850.	1866.	842
30.0	1688.	1713.	1758.	1802.	1819.	—
35.0	1551.	1580.	1640.	1701.	1722.	1030
40.0	1427.	1467.	1545.	1626.	1661.	—
45.0	1232.	1281.	1376.	1487.	1528.	1070
50.0	1101.	1159.	1284.	1417.	1463.	—
55.0	952.	1027.	1188.	1340.	1395.	1061
60.0	780.	871.	1068.	1233.	1254.	—
65.0	620.	735.	961.	1042.	1049.	887
70.0	403.	540.	706.	739.	742.	—
75.0	247.	414.	486.	512.	520.	475
80.0	120.	253.	290.	323.	323.	—
85.0	30.	93.	92.	84.	81.	89
90.0	3.	9.	12.	19.	19.	—



Total Bare Lamp Lumens 12800
All data provided is for F40T12RS/WW lamps 40W rapid start warm white. For Candlepower/Lumen multipliers of other lamps use the following:

32W T8 (2850 lumen lamp) .89

34W T12 (2700 lumen lamp) .84

60W F48T12/WW/HO Warm White High Output 1.35

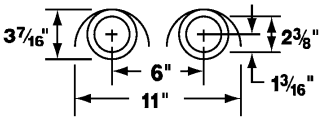
110W F48T12/WW/VHO Warm White Very High Output 1.97

ZONAL LUMENS
ZONE LUMENS

0-30	2152
0-40	3538
0-60	6388
0-90	8379

CANDLEPOWER 4-40/T12 RAPID START

VERTICAL ANGLE	HORIZONTAL ANGLE					ZONAL LUMENS
	0	22.5	45	67.5	90	
0.0	2650.	2650.	2650.	2650.	2650.	—
5.0	2718.	2733.	2733.	2738.	2730.	261
10.0	2627.	2641.	2656.	2677.	2650.	—
15.0	2617.	2630.	2646.	2665.	2665.	750
20.0	2577.	2604.	2635.	2663.	2666.	—
25.0	2393.	2427.	2476.	2504.	2518.	1141
30.0	2294.	2338.	2396.	2458.	2472.	—
35.0	2074.	2131.	2207.	2290.	2321.	1386
40.0	1922.	2000.	2095.	2209.	2252.	—
45.0	1637.	1713.	1843.	1980.	2037.	1427
50.0	1474.	1567.	1734.	1901.	1963.	—
55.0	1269.	1381.	1592.	1798.	1874.	1422
60.0	1035.	1168.	1422.	1643.	1672.	—
65.0	823.	997.	1291.	1386.	1398.	1187
70.0	526.	726.	929.	970.	973.	—
75.0	343.	562.	652.	678.	686.	636
80.0	159.	336.	378.	431.	446.	—
85.0	50.	149.	177.	177.	168.	167
90.0	13.	22.	28.	41.	44.	—

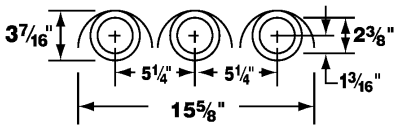


HFX-430-12
Lamp Type F40T12RS/WW
2 – 48" 40 Watt 3200 Lumen
Warm White Lamps

2 LAMP

% EFFECTIVE CEILING CAVITY REFLECTANCE	rcc	20% EFFECTIVE FLOOR CAVITY REFLECTANCE																	
		.80				.70				.50			.30			.10			.00
% WALL REFLECTANCE	rw	.70	.50	.30	.10	.70	.50	.30	.10	.50	.30	.10	.50	.30	.10	.50	.30	.10	.00
ROOM CAVITY RATIOS	0	.78	.78	.78	.78	.76	.76	.76	.76	.73	.73	.73	.70	.70	.70	.67	.67	.67	.65
	1	.71	.68	.66	.63	.70	.67	.64	.62	.64	.62	.60	.62	.60	.58	.59	.58	.57	.55
	2	.65	.60	.56	.52	.63	.59	.55	.51	.56	.53	.50	.54	.51	.49	.52	.50	.48	.46
	3	.60	.53	.48	.43	.58	.52	.47	.43	.50	.46	.42	.48	.45	.42	.46	.43	.41	.39
	4	.54	.47	.41	.37	.53	.46	.41	.36	.44	.40	.36	.43	.39	.35	.41	.38	.35	.34
	5	.50	.41	.35	.31	.48	.40	.35	.31	.39	.34	.30	.38	.33	.30	.36	.33	.30	.28
	6	.45	.37	.31	.26	.44	.36	.30	.26	.35	.30	.26	.34	.29	.26	.33	.29	.26	.24
	7	.42	.33	.27	.23	.41	.32	.27	.23	.31	.26	.23	.30	.26	.22	.29	.25	.22	.21
	8	.38	.29	.24	.20	.37	.29	.33	.20	.28	.23	.20	.27	.23	.19	.26	.22	.19	.18
	9	.35	.26	.21	.17	.34	.26	.21	.21	.17	.25	.20	.17	.24	.20	.17	.24	.20	.17
	10	.33	.24	.19	.15	.32	.24	.18	.15	.23	.18	.15	.22	.18	.15	.22	.18	.15	.14

Spacing Criteria: End = 1.3 Diagonal = 1.3 Cross = 1.4

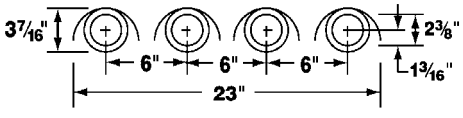


HFX-430-13
Lamp Type F40T12RS/WW
3 – 48" 40 Watt 3200 Lumen
Warm White Lamps

3 LAMP

% EFFECTIVE CEILING CAVITY REFLECTANCE	rcc	20% EFFECTIVE FLOOR CAVITY REFLECTANCE																	
		.80				.70				.50			.30			.10			.00
% WALL REFLECTANCE	rw	.70	.50	.30	.10	.70	.50	.30	.10	.50	.30	.10	.50	.30	.10	.50	.30	.10	.00
ROOM CAVITY RATIOS	0	.77	.77	.77	.77	.75	.75	.75	.75	.72	.72	.72	.69	.69	.69	.66	.66	.66	.65
	1	.71	.68	.65	.63	.69	.66	.64	.62	.63	.61	.60	.61	.59	.58	.59	.57	.56	.55
	2	.64	.59	.55	.51	.63	.58	.54	.51	.56	.52	.49	.54	.51	.48	.52	.49	.47	.46
	3	.59	.52	.47	.43	.57	.51	.46	.43	.49	.45	.42	.47	.44	.41	.46	.43	.40	.39
	4	.54	.46	.41	.36	.52	.45	.40	.36	.44	.39	.36	.42	.38	.35	.41	.37	.35	.33
	5	.49	.41	.35	.30	.47	.40	.34	.30	.38	.34	.30	.37	.33	.30	.36	.32	.29	.28
	6	.45	.36	.30	.26	.44	.36	.30	.26	.34	.29	.26	.33	.29	.26	.32	.28	.25	.24
	7	.41	.32	.27	.23	.40	.32	.26	.23	.31	.26	.22	.30	.25	.22	.29	.25	.22	.21
	8	.38	.29	.23	.19	.37	.28	.23	.19	.28	.23	.19	.27	.22	.19	.26	.22	.19	.18
	9	.35	.26	.20	.17	.34	.26	.20	.17	.25	.20	.17	.24	.20	.17	.23	.19	.16	.15
	10	.32	.24	.18	.15	.32	.23	.18	.15	.23	.18	.15	.22	.18	.15	.21	.17	.14	.13

Spacing Criteria: End = 1.3 Diagonal = 1.3 Cross = 1.4



HFX-430-14
Lamp Type F40T12RS/WW
4 – 48" 40 Watt 3200 Lumen
Warm White Lamps

4 LAMP

% EFFECTIVE CEILING CAVITY REFLECTANCE	rcc	20% EFFECTIVE FLOOR CAVITY REFLECTANCE																	
		.80				.70				.50			.30			.10			.00
% WALL REFLECTANCE	rw	.70	.50	.30	.10	.70	.50	.30	.10	.50	.30	.10	.50	.30	.10	.50	.30	.10	.00
ROOM CAVITY RATIOS	0	.78	.78	.78	.78	.76	.76	.76	.76	.73	.73	.73	.70	.70	.70	.67	.67	.67	.65
	1	.71	.68	.66	.63	.70	.67	.64	.62	.64	.62	.60	.62	.60	.58	.59	.58	.57	.55
	2	.65	.60	.56	.52	.63	.59	.55	.51	.56	.53	.50	.54	.51	.49	.52	.50	.48	.46
	3	.60	.53	.48	.43	.58	.52	.47	.43	.50	.46	.42	.48	.45	.42	.46	.43	.41	.39
	4	.54	.47	.41	.37	.53	.46	.41	.36	.44	.40	.36	.43	.39	.35	.41	.38	.35	.34
	5	.50	.41	.35	.31	.48	.40	.35	.31	.39	.34	.30	.38	.33	.30	.36	.33	.30	.28
	6	.45	.37	.31	.26	.44	.36	.30	.26	.35	.30	.26	.34	.29	.26	.33	.29	.26	.24
	7	.42	.33	.27	.23	.41	.32	.27	.23	.31	.26	.23	.30	.26	.22	.29	.25	.22	.21
	8	.38	.29	.24	.20	.37	.29	.23	.20	.28	.23	.20	.27	.23	.19	..26	.22	.19	.18
	9	.35	.26	.21	.17	.34	.26	.21	.17	.25	.20	.17	.24	.20	.17	.24	.20	.17	.15
	10	.33	.24	.19	.15	.32	.24	.18	.15	.23	.18	.15	.22	.18	.15	.22	.18	.15	.14

Spacing Criteria: End = 1.3 Diagonal = 1.3 Cross = 1.4

L

QL-500K

QL-1505K

Certified

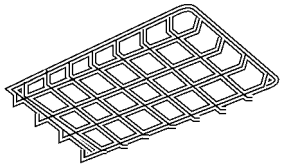
FEATURES-SPECIFICATIONS

Applications
Provides maximum light output with low initial cost. Designed for instant turn-on and high illumination levels where H.I.D. costs are prohibitive. Used to illuminate construction sites, security areas, sports areas, sign lighting and other applications.

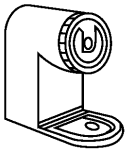
QL Series Features

- Tempered Glass Lens Assembly—Thermal shock-and impact-resistant glass lens mounted in a die cast aluminum door frame
- Cast Aluminum Housing—The cast aluminum body is designed with a specialized heat dissipating fin system for cooler operation
- Versatile Mounting—The standard unit has a 1⁄2 inch swivel knuckle with cast construction for strength and durability
- High Temperature Gasketing—A weathertight seal is provided by a high temperature silicone door gasket
- Exclusive Socket System—This two-piece, high temperature socket allows easy relamping and prevents socket from binding
- Reflector—Linear parabolic reflector system provides maximum light output and control
- High Temperature Gasketing—A weathertight seal is provided by a high temperature silicone gasket attached to the housing. Four lens clips positively seal the lens to the gasket with consistent pressure to assure a weathertight seal
- Versatile Mounting—The standard unit has a 1⁄2 inch swivel knuckle with cast construction for strength and universal aiming

See photometric data for QL Series fixtures on page L187.



Guard



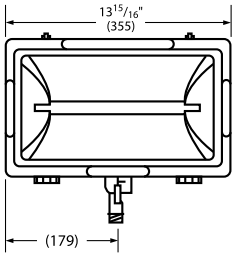
Trunnion Box

QL QUARTZ FLOODLIGHTS				
CATALOG NUMBER	LAMP AND WATTAGE	BEAM SPREAD	WEIGHT	E.P.A. SQ. FT.
QL-500K①	300/500	Wide	4 Lbs. (1.8)	.53
QL-500K-WQ②	300/500	Wide	4 Lbs. (1.8)	.53
QL-1505K③	1000/1500	Wide	6 Lbs. (2.7)	.86
QL-1505K-WQ②③	1000/1500	Wide	6 Lbs. (2.7)	.86

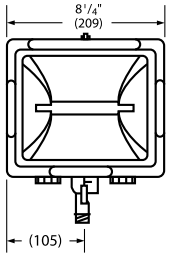
① *Lamps not included.*
② *Lamps supplied-shipped separately. 500W 120V, 1500 240V.*
③ *1500W models must be aimed 10° or more below horizontal.*

ACCESSORIES/REPLACEMENT PARTS		
DESCRIPTION	QL-500K	QL-1505K
Guard	QL-5G	QL-15G
Trunnion Box	QL-TB	
Lens ONLY	0461330B	0461331B
Socket (2 Required)	K800-2166-0108	0732016B
1/2" Knuckle	K20750110214	
Lens Gasket	K265-0481-0307	

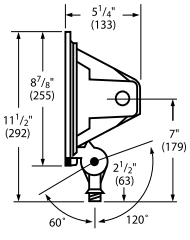
Dimensions



QL-1500 Watt



QL-500 Watt



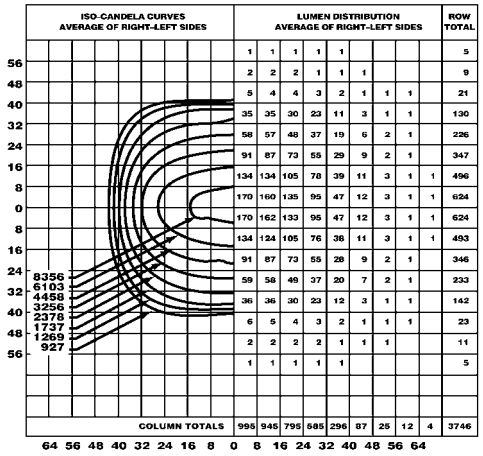
QL-1500 and QL-500 Watt

HUBBELL
KILLARK

QL SERIES

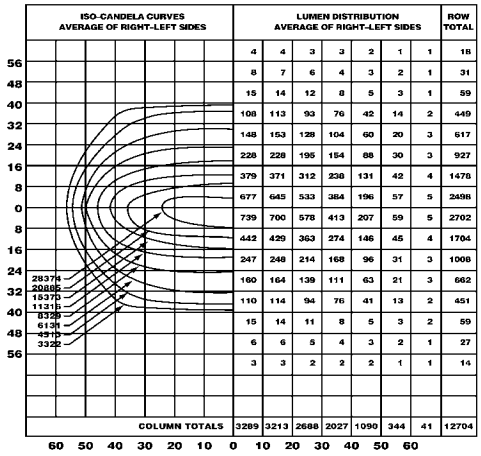
QL-500K

Test No:	HP-00930	**IES/NEMA Type:**	5H X 5V
Source:	Incandescent	**Beam Spread Horiz:**	88°
Lamp:	Q500T3/CL	**Beam Spread Vert:**	82°
Watts:	500	**Beam Efficiency:**	65%
LCL:	—	**Beam Lumens:**	7060
Lumens:	10950	**Max. Beam Candle:**	9265
		Avg. Max. Candle:	8356



QL-1505K

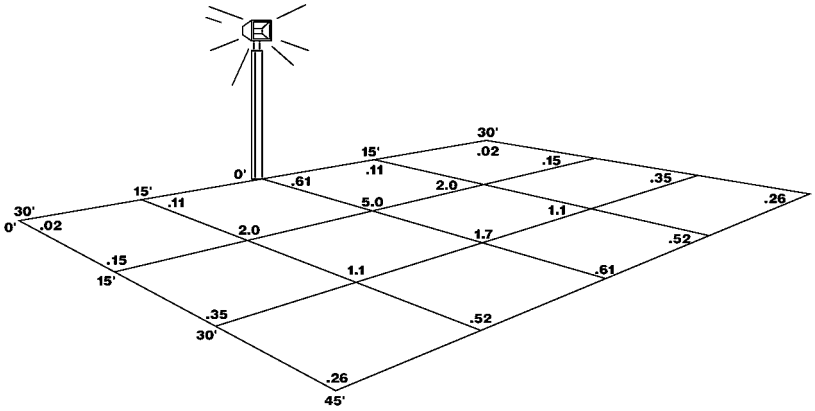
Test No:	HP-00854	**IES/NEMA Type:**	6H X 5V
Source:	Incandescent	**Beam Spread Horiz:**	115°
Lamp:	Q1500T3/CL	**Beam Spread Vert:**	78°
Watts:	1500	**Beam Efficiency:**	68%
LCL:	—	**Beam Lumens:**	24306
Lumens:	35800	**Max. Beam Candle:**	33219
		Avg. Max. Candle:	28374



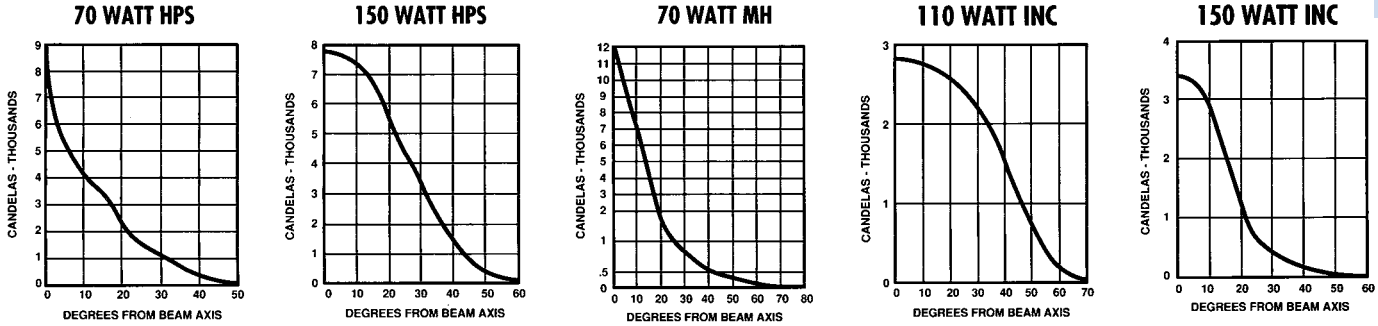
QL SERIES
500 Watt Tungsten Halogen

Footcandle Array Based on:

- 15' Mounting Height
- Aimed at 30° below horizontal
- Not to scale. All values are initial footcandles.
- Data calculated from Test No. HP-02305.



EM/DM SERIES



See page L188 for catalog data.

EMHPO71

Class I, Div. 1 & 2 Groups C,D
Class I, Zones 1 & 2 Groups IIB,IIA
Class II, Div. 1 & 2, Groups F,G
Class III, Div. 1 & 2
NEMA 3, 4X, 7(C,D) 9(F,G)
Suitable for wet locations

Listed - File E89665 and E97760

Certified - File LR11713

FEATURES-SPECIFICATIONS

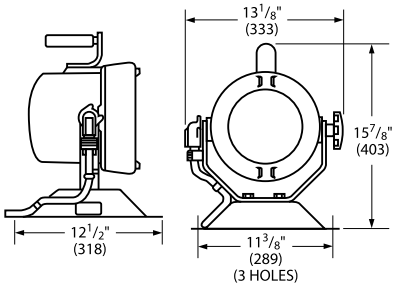
Applications
EM & DM Series portable floodlights provide emergency or maintenance lighting in wet locations or areas made hazardous due to the presence of flammable gases or vapors and combustible dusts as defined by the NEC.

Typical uses are in manufacturing plants, chemical, petrochemical and other industrial process facilities, oil refineries, grain storage sights, aircraft maintenance and refueling areas, tank farms and pipeline pumping stations.

Features
- Factory sealed 100 foot 16/3 SOW cord supplied as standard. See catalog section PR for Acceptor® plugs and receptacles
- Corrosion resistant, rain tight, copper-free cast aluminum housing helps assure safe, reliable operation
- Light weight, strong spun aluminum base provides stability, permits hanging fixture temporarily on wall or lowering it inverted
- Aluminum specular reflector directs light beam for concentrated illumination
- Tempered glass lens resists heat and shock
- Nitrile rubber O-ring gasketing provides an excellent seal for use in wet locations
- Photometric data—see page L187
- Lamps included on all models

Compliances
- UL-844 portable electric lighting units for use in hazardous locations
- UL-1598 standard for incandescent or HID lighting fixtures
- UL Marine type electric lighting fixtures
- CSA-C22.2 nos. 12 & 137
- NEMA 3, 4

Dimensions



EM/DM HPS PORTABLE FLOODLIGHTS			
CATALOG NUMBER	LAMP WATTS	VOLTAGE @60 HERTZ	DESCRIPTION ①
EMSP151	150	120	Class I, Div. 1 & 2, Groups C & D
DMSP101*	100	120	Class I, Div. 1 & 2, Groups C & D; Class II, Div. 1 & 2, Groups F & G; Class III
EM MH			
EMHP071	70	120	Class I, Div. 1 & 2, Groups C & D; Class II, Div. 1 & 2, Group F
EM INCANDESCENT			
EMIP111	110	120	Class I, Div. 1 & 2, Groups C & D; Class II, Div. 1 & 2, Group F

① Refer to hazardous location application data below for specific T codes and temperatures.

② EMIP111 can be used with PAR 38 150 Watt incandescent lamp. See hazardous location application data.

** DMS series units have a limiting device to prevent positioning of the fixture head in an orientation where dust could build up on the lens. Any attempt to defeat its purpose can be dangerous.*

EM INCANDESCENT ①								
SERIES	LAMP TYPE	LAMP WATTS	RATED AMBIENT DEGREES °F/°C	CLASS I, DIV. 1 & 2 MAX. SURFACE TEMP.		CLASS II, DIV. 1 & 2 MAX. SURFACE TEMP.		CLASS III, DIV. 1 & 2 MAX. SURFACE TEMP.
				UL/CSA TEMP. I.D. °F/°C	UL/CSA GROUPS	UL/CSA TEMP. I.D. °F/°C	UL/CSA GROUPS	UL/CSA TEMP. I.D. °F/°C
EMS	HPS	150	77°/25°	T3C (320°/160°)	CD	—	—	—
DMS	HPS	100	104°/40°	T4A (248°/120°)	CD	T3C (320°-160°)	FG	T3C (320°-160°)
EMH	MH	70	104°/40°	T4 (275°/135°)	CD	T3 (392°-200°)	F	—
EMI	INC	110	104°/40°	T3A (356°/180°)	CD	T3 (392°-200°)	F	—
EMI	INC	150	104°/40°	T3A (356°/180°)	CD	—	—	—

① Do not install where marked operating temperature exceeds ignition temperature of Hazardous Atmosphere.

Class I, Div. 2 Groups A,B,C,D⑧
Class I, Zone 2, Groups IIC,IIB,IIA (nR⑦)

Suitable for wet locations

NEMA 4X, IP66

ABS Type Approval

Type approval for shipboard use①

FEATURES-SPECIFICATIONS

Applications

KF series floodlights can be used in industrial installations where flammable gases or vapors may exist due to abnormal conditions resulting in the creation of a Class I, Div. 2 hazardous location as defined by the NEC. Also can be used where general corrosive atmospheric conditions exist such as ocean piers, marinas and costal areas.

Designed for heavy duty applications where long life and maintenance-free service are essential.

Features

- Rugged weathertight housing of copper-free aluminum with corrosion resistant bronze finish
- Wide beam distribution
- Thermal shock, impact-resistant lens
- Continuous silicone gasketing
- All external hardware is corrosion resistant including HubbellGard® ceramic coated screws
- Trunnion mounting-heavy gauge, hot dip galvanized steel mounting with stainless steel hardware
- Photometric data & accessories—see page L191
- 3/4" NPT entry on back lower left

① *Not suitable for submersion or wave impact.*
② *MH175,250,400 are EXPORT ONLY (EISA LAW).*
③ *Consult factory for other available voltage/ lamp combinations.*
④ *1000 Watt fixture aiming angle limited to 45°-135° (no straight up or down) 1000 Watt fixtures are rated and listed for 40° ambient.*
⑤ *Use Phillips C1000S52/ED37 11-1/2" lamp for 1000 HPS.*

CATALOG LOGIC

KF	P	40	0	-76	NR F1 P1 AS
1	2	3	4	5	6

1 **KF - Series Constant** (aluminum flood)

2 **Lamp Type**
S = High Pressure Sodium
H = Metal Halide
P = Pulse Start Metal Halide

3 **Wattage**
07 = 70 Watt (HPS)
10 = 100 Watt (HPS)
15 = 150 Watt (MHP, HPS)
17 = 175 Watt (MH, MHP)②
20 = 200 Watt (MHP)
25 = 250 Watt (MH, MHP, HPS)②
32 = 320 Watt (MHP)
35 = 350 Watt (MHP)
40 = 400 Watt (MH, MHP, HPS)②
100 = 1000 Watt (MH, HPS)④⑤⑥

4 **Voltage***③
0 = Quad - 120, 208, 240, 277V - 60Hz
5 = 480V
6 = Tri - 120, 277, 347V (for Canada only)
7 = 220V 60Hz
8 = 220/240V 50 Hz

5 **- 76 Series Constant** (7 x 6 optic pattern)

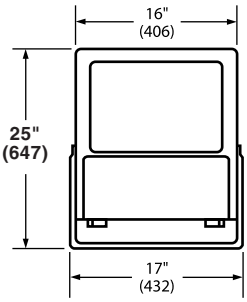
6 **Options**
- NR - Ex nR Restricted Breathing (Ex nR II)
- IR - Instant Restrike 150W HPS**
- BP - 150 - 400 HPS**
- Fuse option 400W max. (not for Marine or CSA)
  F1 single 120V F5 double 480V
  F2 double 208V F6 single 347V
  F3 double 240V F7 double 220V
  F4 single 277V F8 single 230V 50Hz
- Photocell option (400W max.)
  P1 120V P1 208-277V P1 347V
- Terminal Blocks
  TBx x=1-8 x = voltage code
  TBLx Lx=1-8 looping x = voltage code
- Lamps
  AS = Assembled Standard Lamp
  AD = Assembled Dual-Arc-Tube Lamp; 150, 250, 400HPS only

⑥ *Use 11-1/2" BT37 lamp available from GE, Venture or Phillips (MH).*
⑦ *NR suffix Restricted Breathing models provide lower T-codes - Requires sealed entry.*
⑧ *Consult T-code chart for suitability. T-Codes=>306 are suitable for Groups B,C,D only.*

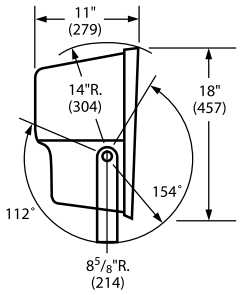
***IR & BP cannot be ordered together.*

NEW!

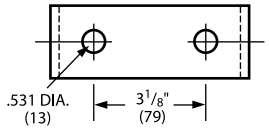
Elevated Ambients to 55°C — Consult T-Code Chart for suitability.



Front



Side



Trunnion Mounting Detail

L

HUBBELL®
KILLARK®


KFS-6


KFCB


KFWB


K4040


4041

ORDERING INFORMATION

MH, PULSE START ORDERING INFORMATION*

CATALOG NUMBER	LAMP AND WATTAGE	VOLTS ④	BEAM SPREAD H° X V°
KFP150-76 **KFP155-76**	150 MHP M-102/142	QUAD 480	7 (145°) X 6 (114°)
KFP170-76 **KFP175-76**	175 MH M-137/152	QUAD 480	7 (1450) x 6 (1140)
KFP200-76 **KFP205-76**	200 MH M-136	QUAD 480	7 (1450) x 6 (1140)
KFP250-76 **KFP255-76**	250 MHP M-138	QUAD 480	7 (1450) x 6 (1140)
KFP320-76 **KFP325-76**	320 MHP M-132	QUAD 480	7 (1460) x 6 (1190)
KFP350-76 **KFP355-76**	350 MHP M-131	QUAD 480	7 (1460) x 6 (1190)
KFP400-76 **KFP405-76**	400 MHP M-135	QUAD 480	7 (1460) x 6 (1190)

HPS, MH, START ORDERING INFORMATION*

CATALOG NUMBER	LAMP AND WATTAGE	VOLTS ④	BEAM SPREAD H° X V°
KFS070-76 **KFS075-76**	70 HPS M-102/142	QUAD 480	7 (144°) X 6 (113°)
KFS100-76 **KFS105-76**	100 HPS M-137/152	QUAD 480	7 (145°) x 6 (114°)
KFS150-76 **KFS155-76**	150 HPS S-55	QUAD 480	7 (144°) x 6 (113°)
KFS250-76 **KFS255-76**	250 HPS S-50	QUAD 480	7 (144°) x 6 (113°)
KFS400-76 **KFS405-76**	400 HPS S-51	QUAD 480	7 (144°) x 6 (113°)
KFS1000-76 **KFS1005-76**	1000 HPS S-52 ④⑤	QUAD 480	7 (130°) x 6 (114°)
EXPORT ONLY **KFH170-76** **KFH175-76**	170 MH M-57	QUAD 480	7 (145°) x 6 (114°)
KFH250-76 **KFH255-76**	250 MH M-58	QUAD 480	7 (145°) x 6 (114°)
KFH400-76 **KFH405-76**	400 MH M-59	QUAD 480	7 (146°) x 6 (119°)
KFH1000-76 **KFH1005-76**	1000 MH M-47 ④⑥	QUAD 480	7 (145°) x 6 (114°)

** Consult T-Code Chart for hazardous location suitability.*
④ Consult factory for other available voltages.
⑤ 1000 watt fixture aiming angle limited to 45°-135° (no straight up or down) 1000 watt fixtures are rated and listed for 40° ambient.
⑥ Use Philips C1000S52/ED37 11-1/2" lamp.

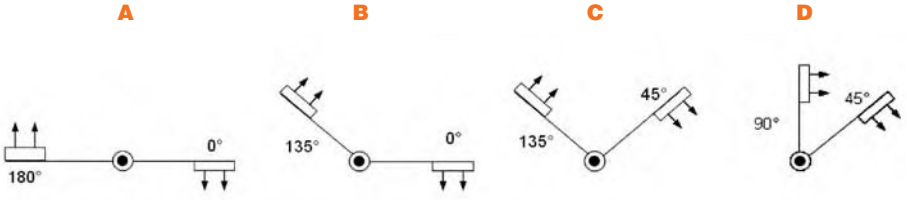
KF MOUNTING ACCESSORIES①

CATALOG NUMBER	DESCRIPTION
KFS-6	Steel slipfitter for 2" pipe (2-3/8" o.d.) tenon. Slips 3.75" over pipe.
KFCB	Heavy duty cast-iron crossarm fitting for horizontal trunnion
KFWB	Heavy duty wall mount and/or pipe clamp fitting Clamps 2" pipe (2-3/8" o.d.) thru 2-1/2" pipe (2-7/8" o.d.)
K4040	Heavy duty steel wall bracket. (Must use with **KFCB** crossarm fitting)
4041	Heavy duty steel wall bracket 2" pipe (2-3/8" o.d.) tenon fitting
KF-Door	Replacement Door & Lens assembly

① Fittings available to adapt trunnion mount floodlights to crossarms, poles and walls. Must be ordered separately.

HAZARDOUS LOCATION APPLICATION DATA						
LUMINAIRE WATTAGE	AMBIENT	C1D2 T-CODE①	C1Z2NR T-CODE②	SUPPLY WIRE C°	AIMING RANGE & DIAGRAM③	
70W HPS	40C 55C 65C	T2B T2B T2B	T4 T4 T4	75 75 90	180° - 0° 180° - 0° 180° - 0°	A A A
100W HPS	40C 55C 65C	T2B T2B T2B	T4 T4 T4	75 75 90	180° - 0° 180° - 0° 180° - 0°	A A A
150W HPS	40C 55C 65C	T2B T2B T2B	T4 T4 T4	75 90 105	180° - 0° 180° - 0° 180° - 0°	A A A
250W HPS	40C 55C 65C	325C 325C 325C	T4 T3 T3	90 105 105	180° - 0° 180° - 0° 135° - 0°	A A B
400W HPS	40C 55C 65C	357C 363C XXX	T3 T3 XXX	90 110 NA	180° - 0° 135° - 0° XXX	A B NA
1000W HPS	40C 55C 65C	T1 XXX XXX	T2 XXX XXX	110 NA NA	135°-45° XXX XXX	C NA NA
175MH	40C 55C 65C	350C 350C 325C	T4 T3 T4	90 105 105	180° - 0° 180° - 0° 135° - 45°	A A C
250W MH	40C 55C 65C	350C 350C 325C	T4 T3 T4	90 105 105	180° - 0° 180° - 0° 135° - 45°	A A C
400W MH	40C 50C 65C	325C 301C XXX	T3 T3 XXX	105 105 NA	135° - 0° 90° - 45° XXX	B D NA
1000W MH	40C 55C 65C	442C XXX XXX	T2 XXX XXX	110 NA NA	135°-45° XXX XXX	C NA NA
150W MHP	40C 55C 65C	325C 325C 325C	T4 T3 T3	90 90 105	180° - 0° 180° - 0° 180° - 0°	A A A
175W MHP	40C 55C 65C	325C 325C 325C	T4 T3 T3	90 90 105	180° - 0° 180° - 0° 180° - 0°	A A A
200W MHP	40C 55C 65C	325C 325C 325C	T4 T3 T3	90 90 105	180° - 0° 180° - 0° 180° - 0°	A A A
250W MHP	40C 55C 65C	350C 350C XXX	T3 T3 XXX	90 105 NA	180° - 0° 180° - 0° XXX	A A NA
320W MHP	40C 55C 65C	366C 366C XXX	T3 T3 XXX	90 105 NA	180° - 0° 180° - 0° XXX	A A NA
350W MHP	40C 55C 65C	350C 350C XXX	T3 T3 XXX	90 110 NA	180° - 0° 135° - 45° XXX	A C XXX
400W MHP	40C 55C 65C	350C 325C XXX	T3 T3 XXX	90 110 NA	180° - 0° 135° - 45° XXX	A C XXX

Aiming Figures Based on Ambient & Lamp③

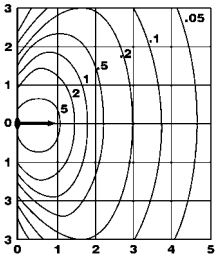


① *Temperatures equal or higher than 306˚C are suitable for Groups B,C,D only.*

② *C1D2 NR Restricted Breathing requires Sealed Entry.*

③ *Aiming angle limited by ambient temperature and lamp type - See Diagrams.*

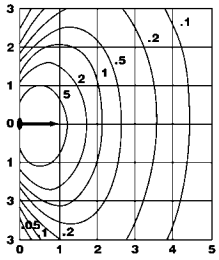
PHOTOMETRIC DATA KF SERIES



KFH-XXX-76

IES Type—7H x 6V (146° x 119°)
Source—Metal Halide (Clear) 34000 Lumens
Wattage—400 (ANSI M59)
For 250W MH multiply by .6
For 1000W MH multiply by 3.1
Mounting Height (Grid Value)—25 feet
Aliming Angle—45°
Test Number–HP-00738

CONVERSION CHART					
MOUNTING HEIGHT (FEET)	20	25	28	30	35
CORRECTION FACTOR	1.56	1.00	.80	.69	.51



KFS-XXX-76

IES Type—7H x 6V (144° x 117°)
Source—High Pressure Sodium (Clear) 50000 Lumens
Wattage—400 (ANSI S51)
For 150W HPS multiply by .32
For 250W HPS multiply by .6
For 1000W HPS multiply by 2.5
Mounting Height (Grid Value)—25 feet
Aliming Angle—45°
Test Number–HP-00740

CONVERSION CHART					
MOUNTING HEIGHT (FEET)	23	25	30	35	40
CORRECTION FACTOR	1.18	1.00	.69	.51	.39

① *In converting to a different mounting height, multiply all footcandle values by the correction factor and convert the grid size to the mounting height selected. Example: to convert 25 foot to 30 foot mounting height, multiply all footcandle values by .69. (Grid now becomes 30 replacing 25). To convert footcandles to Lux, multiply values by 10.76. To convert feet to meters, divide values by 3.281.*

L

MARINE FLOODLIGHTS, 150-400W HID

KFS-6G
Steel Slipfitter
(includes bolts)

K4040G
Steel Wall/Pole Bracket

KFCBG
Cross Arm Fitting

Class I Div. 2, Groups A,B,C,D*
AEx nR/Ex nR**
Class I Zone 2, IIC, IIB, IIA*

UL 1598 HID Marine for Wet Locations
UL 844 Hazardous Locations

CSA C22.2 9.9-9.6 General Requirements
CSA C22.2 137-M1981 Hazardous Locations
CSA Enclosure type IP66/67

ABS Type Approval for Shipboard Use

** Consult temperature data table on next page to determine application suitability.*

FEATURES-SPECIFICATIONS

MARIGARD®

Applications

- Offshore production platforms
- Refineries
- Offshore drilling rigs and barges
- Ocean-going vessels
- Commercial fishing vessels
- Ports, wharfs and jetties
- Waste water and sewage treatment facilities
- Any type of washdown, corrosive, abrasive, or dirty environment

Features and Benefits

- Type 316 Stainless Steel Housing. 16-gauge housing ensures low corrosion and long life, reducing maintenance costs
- Rugged quick-release 316 SS Lens Latches. No hardware seizing on disassembly saves maintenance time and money. Only tool needed is a screwdriver
- 316 SS Safety Lens Door Chains. Enables hands-free safe re-lamping
- 316 SS Mounting Yoke Reliable and safe installation
- Highly efficient photometrics and excellent asymmetrical distribution. Photometrics above 85%. Minimizes the number of required fixtures to deliver desired light levels. Saves in energy costs
- Hot-dipped Galvanized Steel Mounting Accessories. Corrosion resistant in marine and corrosive environments, assuring reliable installation
- 316 SS 3/4" Conduit Hub. Maintains grounding continuity. Watertight seal. Corrosion resistant
- Silicone Gasketed Lens Door Frame. Provides watertight seal, protecting interior from moisture and corrosives

KFSS STAINLESS STEEL FLOOD LIGHTS

CATALOG NUMBER	LAMP TYPE AND CIRCUIT	VOLTAGE①Ⓥ	BEAM SPREAD H° X V°
KFS150SS	150 HPS	120/208/240/277 @60Hz	6 (118) x 6 (118)
KFS156SS	S-55	120/277/347 @60 Hz	
KFS250SS	250 HPS	120/208/240/277 @60Hz	6 (118) x 6 (118)
KFS256SS	S-50	120/277/347 @60 Hz	
KFS400SS	400 HPS	120/208/240/277 @60Hz	6 (118) x 6 (118)
KFS406SS	S-51	120/277/347 @60 Hz	
KFH250SS	250 MH②	120/208/240/277 @60Hz	6 (118) x 6 (118)
KFH256SS	M-58	120/277/347 @60 Hz	
KFP250SS	250 MHP③	120/208/240/277 @60Hz	6 (118) x 6 (118)
KFP256SS	M-138	120/277/347 @60 Hz	
KFH400SS	400 MH②	120/208/240/277 @60Hz	6 (118) x 6 (118)
KFH406SS	M-59	120/277/347 @60 Hz	
KFP400SS	400 MHP③	120/208/240/277 @60Hz	6 (118) x 6 (118)
KFP406SS	M-135	120/277/347 @60 Hz	

① *Voltage: 6th character in the catalog number denotes voltage. See "Catalog Number Logic" for details; e.g. KFS155SS = 480 Volt 60Hz.; KFH408SS=240V 50HZ.*
② *Mercury Vapor Lamps of the same wattage may be used if desired.*
③ *Use a Pulse Start Metal Halide Lamp rated for Horizontal Position.*
Ⓥ *Consult factory for available lamp and voltage combinations.*

KFSS ACCESSORIES

CATALOG NUMBER	DESCRIPTION
KFS-6G	Steel slipfitter for 2" pipe (2-3/8" O.D.) tenon. Hot-dipped galvanized (bolts included)
K4040G	Steel wall/pole bracket. Hot-dipped galvanized (bolts included)
KFCBG	Cross arm fitting for horizontal trunnion. Hot-dipped galvanized (bolts included)

Catalog Number Logic

KF 0 00 0 SS (NR)**

Series Constant

Lamp Type
S—High Pressure Sodium
H—Metal Halide
P—Pulse Start Metal Halide

Lamp Wattage
15—150 Watt, HPS
25—250 Watt, HPS, MH, MHP
40—400 Watt, HPS, MH, MHP

Series Constant

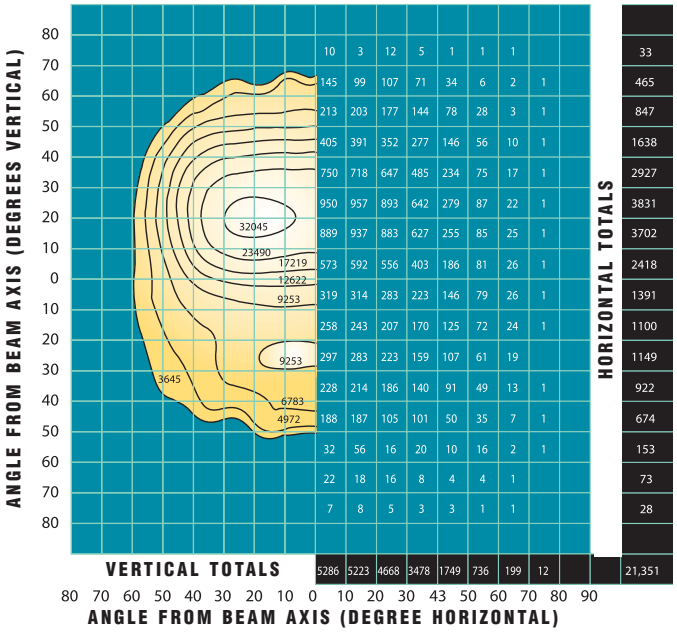
Voltage
0—Quad; 120/208/240/277 60 Hz.
5—480 60 Hz.
6—Tritap 120/277/347 60 Hz. (Canada)
7—220 60 Hz. (S. America), MHP250 & MHP 400 N/A
8—220/240 50 Hz. (Europe & S. America), MHP250 N/A

***Restricted Breathing option-see next page.*

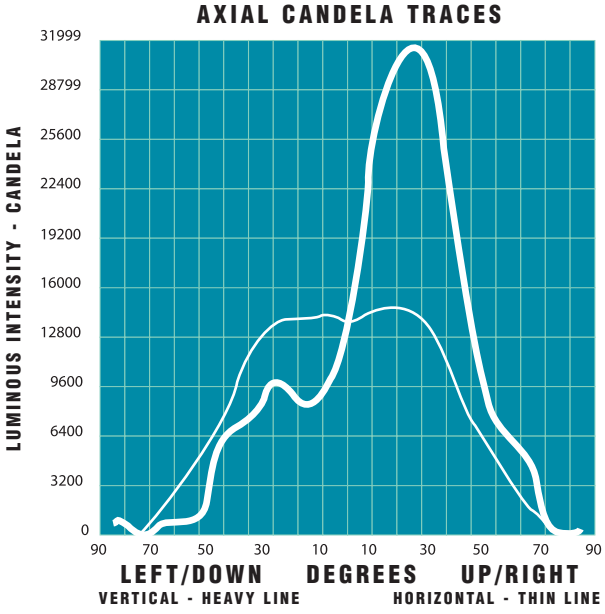
HUBBELL®
KILLARK®

AVERAGE OF RIGHT-LEFT SIDES

ISO CANDELA CURVES LUMEN DISTRIBUTION



AXIAL CANDELA TRACES



MARIGARD®

MARINE FLOODLIGHTS

ANGLE FROM BEAM AXIS (DEGREES HORIZONTAL)

Test Number: HP-07477
Source: HPS
Lamp: ED-18
Lamp Watts: 400
LCL: 5.75"
Lumens: 50,000
IES/NEMA Type: 6H x 6V
Maximum Beam Candlepower: 36,447
Average Maximum Candlepower: 32,045
Total Efficiency: 85.41%

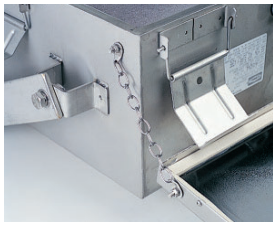
	HORIZONTALLY	VERTICALLY	LUMENS	EFFICIENCY
BEAM	81.8	41.0	22,196	44.39%
FIELD	118.4	118.6	40,591	81.18%

MARIGARD TEMPERATURE CODES

LAMP TYPE	LAMP WATTAGE	RATED AMBIENT C°	CLASS 1 DIV. 2 TEMP. (CODE)	CLASS 1 ZONE 2 TEMP. (CODE)	Ex nR ①	SUPPLY WIRE C°
HPS	150	40	270°C (T2A)	270°C (T2)	T4	90°C
HPS	150	55	285°C (T2)	285°C (T2)	T4	90°C
HPS	150	65	295°C (T2)	295°C (T2)	T3	110°C
HPS	250	40	380°C (T1)	380°C (T1)	T3	90°C
HPS	250	55	395°C (T1)	395°C (T1)	T3	110°C
HPS	400	40	380°C (T1)	380°C (T1)	T3	110°C
MH-MHP-MV	250	40	365°C (T1)	365°C (T1)	T3	110°C
MH-MHP-MV	250	55	380°C (T1)	380°C (T1)	T2	110°C
MH-MHP-MV	400	40	365°C (T1)	365°C (T1)	T3	110°C

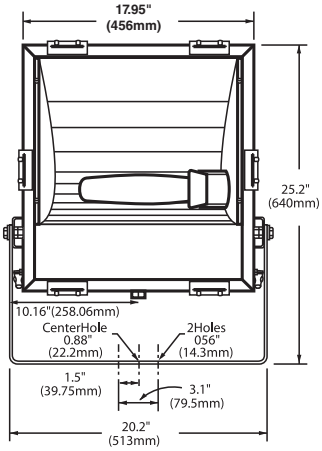
① Ex nR with NR adder. Allows lower T-CODE approvals through the use of sealed cable entrance fittings. See fittings section or select other gland/connector as appropriate for type of cable used.

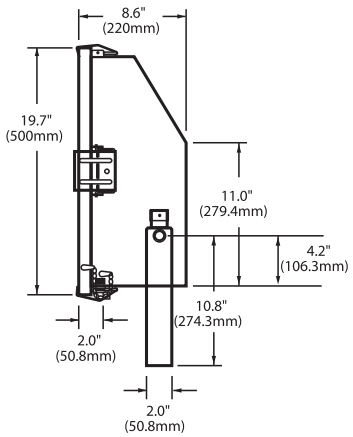
Rugged yet easy-to-open 316 SS Latches require no special tools!



Two 316 SS Lens Chains allow for hands-free maintenance!

Dimensions





HUBBELL®
KILLARK®

Wall Pack Luminaires

Class I, Div. 2, Groups A,B,C,D
Class I, Zone 2, Groups IIC, IIB, IIA
NEMA 4X

Certified

FEATURES-SPECIFICATIONS

CERTILITE®

Applications

KWP Wall Luminaires are ideally suited for applications requiring a pleasing aesthetic appearance or hazardous location suitability in a compact energy saving fixture. Units are of copper-free aluminum construction for cool operation with a bronze electrostatically applied powder-coat finish. Suitable for locations such as perimeter security lighting, parking areas, factories and parking garages.

Features

- Aluminum with Bronze finish 1/2" hub on either side for conduit entry
- Mogul Porcelain Socket
- Reflector is specular aluminum precision formed for optimal performance
- Suitability for 40°C ambient, 90°C supply wire required
- Lens thermal shock and impact resistant prismatic borosilicate glass
- Full front access available for lamp or ballast service by hinging front door
- Two Hubbell Guard® Corrosion resistant hex head fasteners provide water-tight seal for door gasket
- Options include:
  factory installed photo cells, fusing, instant restrike, ballast protector and lamps

Catalog Logic

KWP	P	15	0	P1
1	2	3	4	5

1 **KWP - Series Constant** (Wallpack)

2 **Lamp Type**
S = High Pressure Sodium
H = Metal Halide
P = Metal Halide Pulse

3 **Wattage**
05 = 50 Watt HPS
07 = 70 Watt (HPS, MH)
10 = 100 Watt (HPS, MH)
15 = 150 Watt (HPS, MHP)
17 = 175 Watt (MH, MHP)

4 **Voltage**
0 = 120, 208, 240, 277V @ 60Hz (QUAD)
5 = 480 @60Hz
6 = 120, 277, 347 @ 60Hz (for Canada)
7 = 220 @ 60Hz
8 = 220/240V @ 50Hz

5 **Options**
FUSING - (Not for Canada or Marine applications)

F1 single 120V 60Hz	F5 double 480V 60Hz
F2 double 208V 60Hz	F6 single 347V 60Hz
F3 double 240V 60Hz	F7 double 220V 60Hz
F4 single 277V 60Hz	F8 single 230V 50Hz

Photocells (Factory installed)
P1 120V
P2 208-277V (field connection to correct ballast tap)
P3 347V

Other Options
IR Instant Restrike HPS to 150w - not available with BP
BP Ballast Protector HPS - Not available with IR

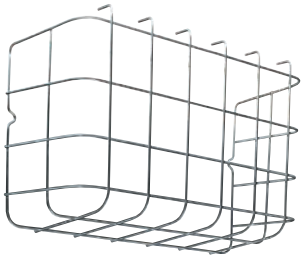
Terminal Blocks	Assembly with Lamps
TBx x=1-8	AS Standard lamp
TBLx x=1-8 looping	AD Dual-Arc-Tube (70-150 HPS)

Compliances

- UL 1598 Standard for Luminaires
- UL 844 Standard for lighting fixtures for hazardous locations
- CSA C22 no. 137-M1981 electric luminaires for use in hazardous locations
- Enclosed and gasketed
- NEMA 3, 4X

Glare Shield

Clear Shield



Wire Guard

ORDERING INFORMATION

HPS, MH, MHP ORDERING INFORMATION*

	CATALOG NUMBER	LAMP TYPE	VOLTAGE①	T-CODE AT 400 C
	KWPS050 KWPS055	50 HPS S-68	QUAD 480	215OC (T2D)
	KWPS070 KWPS075	70 HPS S-62	QUAD 480	215OC (T2D)
	KWPS100 KWPS105	100 HPS S-54	QUAD 480	215OC (T2D)
	KWPS150 KWPS155	150 HPS S-55	QUAD 480	260OC (T2B)
	KWPH070 KWPH075	70 MH M-98	QUAD 480	200OC (T3)
	KWPH100 KWPH105	100 MH M-90	QUAD 480	200OC (T3)
EXPLOSION PROOF	KWPH170 KWPH175	175 MH M-57	QUAD 480	260OC (T2B)
EISA	KWPP150 KWPP155	150 MHP M102/142	QUAD 480	260OC (T2B)
EISA	KWPP170 KWPP175	175 MHP M137/152	QUAD 480	260OC (T2B)

①For other voltages, see logic.

KWP ACCESSORIES

CATALOG NUMBER	DESCRIPTION
PGPS	Clear Shield (Polycarbonate) for Protecting Lens
PGWG	Wire Guard, Cadnium Plated Steel
PVLV	Glare Shield Full Cutoff Visor - Formed Bronze Aluminum Forces light to Walkway
KWPLENS	Replacement Door and Lens

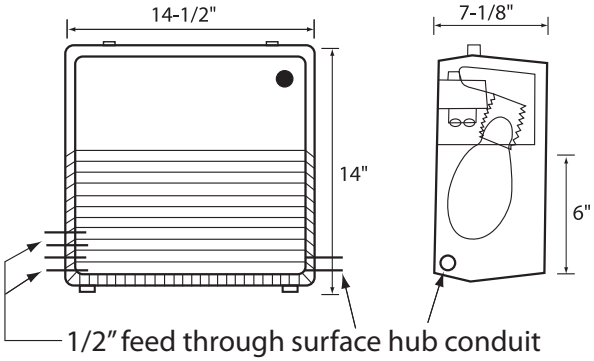


Photo Cell Field Kits for Harsh NEMA 4X and Class I, Div. 2 Locations*

PHOTO CELL FIELD KITS①

CATALOG NUMBER	VOLTS
VMFSPC1	120VAC
VMFSPC2	208-277VAC
VMFSPC3	347VAC

FACTORY SEALED

Order single gang FS back box seperately. Can be used to control several luminaires.

** 40˚C ambient max. T3 to 400W max.*

① Includes factory drilled FSBC cover and gasket.

L

Shown with optional VMPSD40 reflector

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB,IIA
NEMA 3, 4, 4X, 7(C,D)
Factory Sealed

Listed - file E10514

CSA LR11713

FEATURES-SPECIFICATIONS

Applications

HOSTILE*LITE*® EZ series trunnion mount luminaires provide directional lighting in both vertical and horizontal planes when used with floodlight mounting hardware.

Typical applications include refineries, drilling rigs and platforms, loading docks, bulk fuel loading terminals, and pipeline pumping stations.

Features

- Three light sources
  - – High Pressure Sodium (50-400W)
  - – Metal Halide (70-400)
  - – Metal Halide Pulse (175-400)
- Trunnion mounted–Trunnion yoke of 316 grade stainless steel attaches via mounting blocks to fixture ballast housing
- Factory sealed–No external seal needed
- Corrosion resistant–Fixture of copper-free aluminum die cast construction. Baked powder epoxy finish, electro-statically applied. Exposed hardware of 316 grade stainless steel
- Accessories–Guards, reflectors and mounting hardware available. Must be ordered separately, see illustration
- Mounting method–See page L197 for typical installation using mounting accessories

Compliances

- UL-844 Electric Lighting Fixtures for use in Hazardous Locations
- UL-1598 Standard for HID Lighting Fixtures
- CSA C22.2 no. 137-M1981 Electric Luminaires for use in Hazardous Locations
- NEMA 3, 4, 4X, 7CD

EZ HAZARDOUS LOCATION APPLICATION DATA

FIXTURE SERIES	LAMP TYPE	LAMP WATTS	SUITABLE AMBIENT °C	SUPPLY WIRE MIN. °C	CLASS I, DIV. 1 & 2① MAX. SURFACE TEMP.		TYPE 3 (RAINTIGHT)	TYPE 4 (HOSEDOWN)	TYPE 4X (CORROSION RESISTANT)
					TEMP. I.D. (ACTUAL TEMP.)	GROUPS			
EZS	HPS	50	40	85	T4 (135°C)	C,D	YES	YES	YES
EZS	HPS	70	40	85	T4 (135°C)	C,D	YES	YES	YES
EZS	HPS	100	40	85	T4 (135°C)	C,D	YES	YES	YES
EZS	HPS	150	40	85	T4 (135°C)	C,D	YES	YES	YES
EZS	HPS	250	40	85	T3C (160°C)	C,D	YES	YES	YES
EZS	HPS	400	40	85	T3 (200°C)	C,D	YES	YES	YES
EZH	MH	70	40	85	T4A (120°C)	C,D	YES	YES	YES
EZH	MH	100	40	85	T4A (120°C)	C,D	YES	YES	YES
EZH	MH	175②	40	85	T3B (165°C)	C,D	YES	YES	YES
EZH	MH	250②	40	85	T3A (180°C)	C,D	YES	YES	YES
EZH	MH	400②	40	85	T2D (215°C)	C,D	YES	YES	YES
EZP	MHP	175/200	40	85	T3C (160°C)	C,D	YES	YES	YES
EZP	MHP	250/320	40	85	T3 (200°C)	C,D	YES	YES	YES
EZP	MHP	350/400	40	85	T2D (215°C)	C,D	YES	YES	YES

① *T-Code with or without reflector.*
② *EXPORT ONLY (EISA LAW).*

Shown with optional VMPSD40 reflector③

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB,IIA
NEMA 3, 4, 4X, 7(C,D)
Factory Sealed

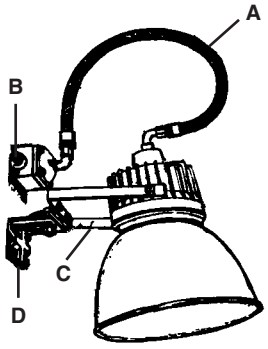
Listed - E10514

LR 11713

FEATURES-SPECIFICATIONS

Installation Method

Typical EZ Series trunnion mounted luminaire using conduit hardware.



A. Flexible coupling. See page L221 for EKJ series
B. Splice box. See page L222 for JL/JAL series
C. Trunnion yoke supplied with EZ-T series floodlight fixture
D. Mounting accessory wall mount (KFWB) shown. See page L190 for this and other fittings available to adapt trunnion mount floodlights to crossarms, poles or walls

④ ④
EZH400A2G-TS

Base Catalog Number (INC/"T")
Guard
Trunnion

S-Standard Dome **Cat. No. VMPSD-40**
D-Deep Dome **Cat. No. HRD-400**
Z-Deep Dome **Cat. No. HRD-400ALZ**

EZ 50–400W HPS FLOODLIGHTS ①②③				
WATTS	ANSI LAMP TYPE	VOLTAGE @60 HERTZ	HUB SIZE	CATALOG NUMBER
50 HPS	S-68	120, 208, 240, 277	3/4"①	EZS050A2-T
70 HPS	S-62	120, 208, 240, 277		EZS070A2T
100 HPS	S-54	120, 208, 240, 277		EZS100A2-T
150 HPS	S-55	120, 208, 240, 277		EZS150A2-T
250 HPS	S-50	120, 208, 240, 277		EZS250A2-T
400 HPS	S-51	120, 208, 240, 277		EZS400A2-T

EZ 70–400W MH FLOODLIGHTS ①②③				
70 MH	M-98	120, 208, 240, 277	3/4"①	EZH070A2-T
100 MH	M-90	120, 208, 240, 277		EZH100A2-T
175 MH⑥	M-57	120, 208, 240, 277		EZH170A2-T
250 MH⑥	M-58	120, 208, 240, 277		EZH250A2-T
400 MH⑥	M-59	120, 208, 240, 277		EZH400A2-T

EZ 175–400W MH PULSE FLOODLIGHTS ①②③				
175 MHP	M-137/M-152	120, 208, 240, 277	3/4"①	EZP170A2-T
200 MHP	M-136	120, 208, 240, 277		EZP200A2-T
250 MHP	M-138/M153	120, 208, 240, 277		EZP250A2-T
320 MHP	M-132/M154	120, 208, 240, 277		EZP320A2-T
350 MHP	M-131	120, 208, 240, 277		EZP350A2-T
400 MHP	M-135/M155	120, 208, 240, 277		EZP400A2-T

① *Luminaire catalog numbers provide for a single 3/4" NPT flexible conduit connection only. For 1" NPT conduit connection, substitute "3" for "2" in catalog number; example: EZS050A3-T.*
② *Consult page L156 for other available voltage.*
③ *Accessories may be ordered with fixture as a single catalog number with the following logic. Components shipped separately.*
④ *Optional Accessory.*
⑤ *See options page L161.*
⑥ *EXPORT ONLY (EISA LAW).*

EZ ACCESSORIES③		
CATALOG NUMBER	DESCRIPTION	
EZG1	HPS 50-150 MH 175-250 MV 100-250	Guard
VMAG40S⑤	HPS 250-400 MH, MV 400	
VMPSD40	Standard dome	Reflector
HRD400	Deep dome white	
HRD400ALZ	Deep dome*	

** Specular anodized finish.*

L

HUBBELL
KILLARK®

NEW!
TWO BATTERY MODELS

CERTILITE® E EMERGENCY

Replaces DEB/VEB/VEQ Series

DE3B/DE4B
Class II, Div. 1 & 2, Groups E,F,G①
Class III
NEMA 3, 4, 4X; IP66

VE4B/VF4B/VE3Q/VE4Q
Class I, Div. 2, Groups A,B,C,D①
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
NEMA 3, 4, 4X; IP66

Class I, Zone 2 AEx nAnR②
Class I, Zone 2 Ex nR②

FEATURES-SPECIFICATIONS

Applications

CERTI*LITE*® VEB and VEQ Emergency Lighting fixtures provide continuous illumination under normal power and switch to emergency battery backup during power outages. Emergency Units ONLY are available that operate only when normal power fails.

Units contain battery unit(s) that provides the OSHA required 90 minutes of illumination for egress.

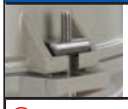
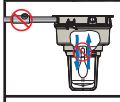
DExx units are designed for general and task lighting in indoor or outdoor wet locations or where combustible dusts may exist and create a hazardous location, as defined by the NEC.

VExx units are designed for general and task lighting in indoors or outdoors where flammable gases or vapors, combustible dusts, or simultaneous presence may exist and create a hazardous location, as defined by the NEC.

Use Push-To-Test station suitable for area of use for testing purposes.

Features

- Bi-Pin Twin D(V)ExB or Quad-Pin triple-tube (VExQ) long-life compact fluorescent lamps **included**
- **World Voltage on Quad-Pin VExQ Series: 120 through 277VAC; 50 through 60 Hz**
- LED charging indicator light visible through lens
- Pre-wired terminal block for easy power connection
- Two lamp models include two independent redundant systems
- Six mounting splice box types - Pendant, Ceiling, Wall bracket, Cone Top, 25° Angle Stanchion, Straight Stanchion.
- Normally shipped as components for fast delivery, or may be ordered factory assembled.
- Options for Fuses and Quick Disconnect

FEATURES	BENEFITS
 Swing-Barrel Nut Patented Tank Mounting System	• Stainless-to-Stainless securement • Takes load off during installation • Uses ordinary tools • Saves time and labor
 Sealed Optic Zone 2 AEx nAR Restricted Breathing (suffix NR)	NO External Seals. Lower T-codes, Suitable for Class I Div. 2 Classified areas per the NEC®. See L54 for more information.
All glass refractors 	Compact (5-1/2" thread size, types I & V) Standard (7-3/4", thread size,types I, III, V) Enhances user selection flexibility
 "EZ" mount adapter	Easier Maintenance, saves labor, move fixture from the ladder to the workbench
 Photo controls -Class I Div. 2 / N4X areas (VExx) tanks only	Available as Field or Factory Installed to save energy when light not required. For AC ballast only.
 Earthquake Tab - Built-in attachment point for safety cables	Safety: Secures fixture to structure in case of conduit failure. "3rd hand" accessories for lamp change out. See L53 for more information.
 VMEP40 "Food Optic" VQ2F	Expanded Offering for Food or Grain Handling Applications to minimize contamination. See L53 for more information.

① *See Hazardous Application Data page L205 for limitations.*
② *NR Restricted breathing (VExx) for lower T-Codes. See page L54.*

Standard Materials

- Ballast tank and splice box – copper-free aluminum alloy with baked powder epoxy/polyester finish, electrostatically applied. External hardware – 316 SS.

Compliances

- UL1598 Standard for luminaires
- UL1598A Marine type luminaire
- UL-844 Standard for lighting fixtures for hazardous locations
- CSA C22.2 no. 137-M1981 electric luminaries for use in hazardous locations
- UL-924 Emergency Lighting
- Enclosed and gasketed
- NEMA 3, 4X IP66
- UL 60079-15 - Electrical apparatus for Explosive Gas Atmospheres with Type of Protection "n" (Restricted Breathing and non-sparking).

Accessories

- VEXA—100B 3–sided Exit sign: (Use w/o guard)
- VEXA—400 4–sided Exit sign: (Use w/o guard)
- VMPSD—40 Dome and VMPA—40 Angle Reflectors (see page L118)
- XCS-OB3-PTT "Push-To-Test" n.c Stantion (order SWB box separately)

Options

- RD - Red paint housing, mount, guard (VMAG17, VMAG25S)
- F, FF - Factory fused; F = Single fuse for 120V, 230V 50 Hz (VExQ); FF = Double fuse for 208V, 220V 60 Hz, 240V

Note: xE3x dimensions are the same as VM3
xE4x dimensions are the same as VM4
See L___ for more information

Photometrics similar to VQ1F Series.
See page L150.

HUBBELL®
KILLARK®

CertiLite® E Catalog Number Logic; 13-84W Battery Backed (Compact Fluorscent) Fixtures

VE4Q **84** **84** **E30** **A** **3** **R1** **G** **(NR⑦)**

DE3B 5-1/2"
DE4B 7-3/4" Emerg. Bi-Pin C2D1
VE3B 5-1/2"
VE4B 7-3/4" Emerg. Bi-Pin C1D2, C2D1
VE3Q 5-1/2"
VE4Q 7-3/4" Emerg. Quad-Pin C1D2, C2D1

AC Lamps Powered
00 - Emergency Only⑩
13 - 1 x 13 Bi-Pin
18 - 1 x 18 Quad-Pin
26 - 1 x 26 Quad-Pin
32 - 1 x 32 Quad-Pin
42 - 1 x 42 Quad-Pin
26 - 2 x 13 Bi-Pin
36 - 2 x 18 Quad-Pin
52 - 2 x 26 Quad-Pin
64 - 2 x 32 Quad-Pin
84 - 2 x 42 Quad-Pin

DC Lamps Powered
(also = # of batteries)⑩
13 - 1 x 13 Bi-Pin
18 - 1 x 18 Quad-Pin
26 - 1 x 26 Quad-Pin
32 - 1 x 32 Quad-Pin
42 - 1 x 42 Quad-Pin
26 - 2 x 13 Bi-Pin
36 - 2 x 18 Quad-Pin
52 - 2 x 26 Quad-Pin
64 - 2 x 32 Quad-Pin
84 - 2 x 42 Quad-Pin

Voltage
1—120V
E30—120-277VAC Quad-Pin Normal & Emergency or Emergency Only
E01—120V Bi-Pin Normal & Emergency
E04—277V Bi-Pin Normal & Emergency
E10—120/277V Bi-Pin Emergency Only

Mounting Type
A—Pendant
X—Ceiling
B—Wall Bracket
C—Cone Top
E—EZ Mount Adapter①
D—Stanchion 25°
S—Stanchion Straight 90°
N—None (mount ordered separately)②

Optic
GL—Globe (VQ1F, VQ2F)
R1—Type I Glass Refractor
R3—Type III Glass Refractor (Tank 4)
R5—Type V Glass Refractor
ER—Enclosed Reflector (Tank 4)
EP—Poylcarbonate Shielded Enclosed Reflector (VQ2F)⑧
S2—Type II 12" Spin-Top Refractor
S8—Type V 8" Spin-Top Refractor (Tank 3)
S5—Type V 12" Spin-Top Refractor
P5—Type V 12" Plastic Spin-Top Refractor (Tank 3)
FG—Silicone③ Coated Globe
TG—Teflon®④ Coated Globe
T1—Teflon®④ Coated Globe Type I Glass Refractor
T3—Teflon®④ Coated Globe Type III Glass Refractor (Tank 4)
T5—Teflon®④ Coated Globe Type V Glass Refractor
T2—Teflon®④ Coated Type II 12" Spin-Top Refractor
T8—Teflon®④ Coated Type V 8" Spin-Top Refractor (Tank 3)
TV—Teflon®④ Coated Type V 12" Spin-Top Refractor

Entry (Mounts available)
2—3/4" NPT (A,B,C,X)
3—1" NPT (A,B,C,X)
4—1 1/4" NPT (D,S)
5—1 1/2" NPT (D,S)
6—3/4" NPT 5-Hub (X)
7—1" NPT 5-Hub (X)
8—M20 4-Hub (X)
9—M20 5-Hub (X)
Z—EZ Mount Adapter①
N—None (mount ordered separately)②

Guard
G—Guard
N—Without Guard

Options
RD—Red Tank/Mount/Guard
NR—Ex nA nR Restricted Breathing⑦
F—Single fuse⑤
FF—Double fuse⑤
TBx—Terminal Blocks
P1—Photo Cell Factory 120V⑥
P2—Photo Cell Factory 208-277V⑥
QD—Quick Disconnect⑨
CP—Component Pack
AS—Assembled fixture
AN—Assembled no lamps

① Completes as "EZ", conduit mounting boxes ordered separately - See L83.
② NN mount ordered separately.
③ Silicone coated globe for additional impact protection.
④ Teflon® is a registered trademark of DuPont, Inc.
⑤ Fusing not for Marine or Canadian installations
⑥ Photo cells for Class I, Div. 2 only. VExx Models
⑦ Restricted Breathing - See L54 for more information.
⑧ Not for use with wall or straight (90°) Stanchion.
⑨ QD = Quick Disconnect. Allows easy tank removal for maintenance. Electrician simply unplugs de-energized tank from supply circuit.
⑩ Bi-Pin & Quad-Pin cannot be mixed. Wattages cannot be mixed e.g. 4232 or 6484.

Tank 3 Pendant
w/ 5-1/2"
Globe & Guard

Tank 4 Ceiling
w/ 7-3/4"
Globe & Guard

Tank 3 Wall
w/ 5-1/2"
Refractor & Guard

Tank 4 Cone
w/ 7-3/4"
Globe & Guard

See Page L198 for Suitabilities①

13 - 84 WATT EMERGENCY FIXTURES - 3/4" PENDANT (CEILING - WALL - CONE) COMPACT FLUORESCENT**

	DESCRIPTION		5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②		
	WATTS/ TYPE	VOLTAGE	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	8" SPIN-TOP TYPE V REFRACTOR & GUARD	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
Class II Div 1, N4X, IP66 ①	13W (1x13) Emer Only	120V or 277 VAC	DE3B0013E10A2GLG	DE3B0013E10A2R5G	DE3B0013E10A2S8G	DE4B0013E10A2GLG	DE4B0013E10A2R5G	DE4B0013E10A2S5G
	26W (2x13) Emer Only		DE3B0026E10A2GLG	DE3B0026E10A2R5G	DE3B0026E10A2S8G	DE4B0026E10A2GLG	DE4B0026E10A2R5G	DE4B0026E10A2S5G
	13W (1x13) Normal	120VAC 60Hz	DE3B1313E01A2GLG	DE3B1313E01A2R5G	DE3B1313E01A2S8G	DE4B1313E01A2GLG	DE4B1313E01A2R5G	DE4B1313E01A2S5G
	13W (1x13) Emergency	277VAC 60Hz	DE3B1313E04A2GLG	DE3B1313E04A2R5G	DE3B1313E04A2S8G	DE4B1313E04A2GLG	DE4B1313E04A2R5G	DE4B1313E04A2S5G
	26W (2x13) Normal	120VAC 60Hz	DE3B2613E01A2GLG	DE3B2613E01A2R5G	DE3B2613E01A2S8G	DE4B2613E01A2GLG	DE4B2613E01A2R5G	DE4B2613E01A2S5G
	13W (1x13) Emergency	277VAC 60Hz	DE3B2613E04A2GLG	DE3B2613E04A2R5G	DE3B2613E04A2S8G	DE4B2613E04A2GLG	DE4B2613E04A2R5G	DE4B2613E04A2S5G
	26W (2x13) Normal	120VAC 60Hz	DE3B2626E01A2GLG	DE3B2626E01A2R5G	DE3B2626E01A2S8G	DE4B2626E01A2GLG	DE4B2626E01A2R5G	DE4B2626E01A2S5G
	26W (2x13) Emergency	277VAC 60Hz	DE3B2626E04A2GLG	DE3B2626E04A2R5G	DE3B2626E04A2S8G	DE4B2626E04A2GLG	DE4B2626E04A2R5G	DE4B2626E04A2S5G
Class I Div 2, Class II Div 1, N4X, IP66 ①	13W (1x13) Emer Only	120V or 277VAC	VE3B0013E10A2GLG	VE3B0013E10A2R5G	VE3B0013E10A2S8G	VE4B0013E10A2GLG	VE4B0013E10A2R5G	VE4B0013E10A2S5G
	26W (2x13) Emer Only		VE3B0026E10A2GLG	VE3B0026E10A2R5G	VE3B0026E10A2S8G	VE4B0026E10A2GLG	VE4B0026E10A2R5G	VE4B0026E10A2S5G
	13W (1x13) Normal	120VAC 60Hz	VE3B1313E01A2GLG	VE3B1313E01A2R5G	VE3B1313E01A2S8G	VE4B1313E01A2GLG	VE4B1313E01A2R5G	VE4B1313E01A2S5G
	13W (1x13) Emergency	277VAC 60Hz	VE3B1313E04A2GLG	VE3B1313E04A2R5G	VE3B1313E04A2S8G	VE4B1313E04A2GLG	VE4B1313E04A2R5G	VE4B1313E04A2S5G
	26W (2x13) Normal	120VAC 60Hz	VE3B2613E01A2GLG	VE3B2613E01A2R5G	VE3B2613E01A2S8G	VE4B2613E01A2GLG	VE4B2613E01A2R5G	VE4B2613E01A2S5G
	13W (1x13) Emergency	277VAC 60Hz	VE3B2613E04A2GLG	VE3B2613E04A2R5G	VE3B2613E04A2S8G	VE4B2613E04A2GLG	VE4B2613E04A2R5G	VE4B2613E04A2S5G
	26W (2x13) Normal	120VAC 60Hz	VE3B2626E01A2GLG	VE3B2626E01A2R5G	VE3B2626E01A2S8G	VE4B2626E01A2GLG	VE4B2626E01A2R5G	VE4B2626E01A2S5G
	26W (2x13) Emergency	277VAC 60Hz	VE3B2626E04A2GLG	VE3B2626E04A2R5G	VE3B2626E04A2S8G	VE4B2626E04A2GLG	VE4B2626E04A2R5G	VE4B2626E04A2S5G
	18W (1x18) Emer Only	120 to 277 50-60Hz	VE3Q0018E30A2GLG	VE3Q0018E30A2R5G	VE3Q0018E30A2S8G	VE4Q0018E30A2GLG	VE4Q0018E30A2R5G	VE4Q0018E30A2S5G
	36W (2x18) Emer Only	120 to 277 50-60Hz	VE3Q0036E30A2GLG	VE3Q0036E30A2R5G	VE3Q0036E30A2S8G	VE4Q0036E30A2GLG	VE4Q0036E30A2R5G	VE4Q0036E30A2S5G
	18W (1x18) Normal/Emer	120 to 277 50-60Hz	VE3Q1818E30A2GLG	VE3Q1818E30A2R5G	VE3Q1818E30A2S8G	VE4Q1818E30A2GLG	VE4Q1818E30A2R5G	VE4Q1818E30A2S5G
	36W (2x18) Normal 18W (1x18) Emergency	120 to 277 50-60Hz	VE3Q3618E30A2GLG	VE3Q3618E30A2R5G	VE3Q3618E30A2S8G	VE4Q3618E30A2GLG	VE4Q3618E30A2R5G	VE4Q3618E30A2S5G
	36W (2x18) Normal/Emer	120 to 277 50-60Hz	VE3Q3636E30A2GLG	VE3Q3636E30A2R5G	VE3Q3636E30A2S8G	VE4Q3636E30A2GLG	VE4Q3636E30A2R5G	VE4Q3636E30A2S5G
	26W (1x26) Emer Only	120 to 277 50-60Hz	VE3Q0026E30A2GLG	VE3Q0026E30A2R5G	VE3Q0026E30A2S8G	VE4Q0026E30A2GLG	VE4Q0026E30A2R5G	VE4Q0026E30A2S5G
	52W (2x26) Emer Only	120 to 277 50-60Hz	VE3Q0052E30A2GLG	VE3Q0052E30A2R5G	VE3Q0052E30A2S8G	VE4Q0052E30A2GLG	VE4Q0052E30A2R5G	VE4Q0052E30A2S5G
	26W (1x26) Normal/Emer	120 to 277 50-60Hz	VE3Q2626E30A2GLG	VE3Q2626E30A2R5G	VE3Q2626E30A2S8G	VE4Q2626E30A2GLG	VE4Q2626E30A2R5G	VE4Q2626E30A2S5G
	52W (2x26) Normal 26W (1x26) Emergency	120 to 277 50-60Hz	VE3Q5226E30A2GLG	VE3Q5226E30A2R5G	VE3Q5226E30A2S8G	VE4Q5226E30A2GLG	VE4Q5226E30A2R5G	VE4Q5226E30A2S5G
	52W (2x26) Normal/Emer	120 to 277 50-60Hz	VE3Q5252E30A2GLG	VE3Q5252E30A2R5G	VE3Q5252E30A2S8G	VE4Q5252E30A2GLG	VE4Q5252E30A2R5G	VE4Q5252E30A2S5G
	32W (1x32) Emer Only	120 to 277 50-60Hz	VE3Q0032E30A2GLG	VE3Q0032E30A2R5G	VE3Q0032E30A2S8G	VE4Q0032E30A2GLG	VE4Q0032E30A2R5G	VE4Q0032E30A2S5G
	64W (2x32) Emer Only	120 to 277 50-60Hz	VE3Q0064E30A2GLG	VE3Q0064E30A2R5G	VE3Q0064E30A2S8G	VE4Q0064E30A2GLG	VE4Q0064E30A2R5G	VE4Q0064E30A2S5G
	32W (1x32) Normal/Emer	120 to 277 50-60Hz	VE3Q3232E30A2GLG	VE3Q3232E30A2R5G	VE3Q3232E30A2S8G	VE4Q3232E30A2GLG	VE4Q3232E30A2R5G	VE4Q3232E30A2S5G
	64W (2x32) Normal 32W (1x32) Emergency	120 to 277 50-60Hz	VE3Q6432E30A2GLG	VE3Q6432E30A2R5G	VE3Q6432E30A2S8G	VE4Q6432E30A2GLG	VE4Q6432E30A2R5G	VE4Q6432E30A2S5G
	64W (2x32) Normal/Emer	120 to 277 50-60Hz	VE3Q6464E30A2GLG	VE3Q6464E30A2R5G	VE3Q6464E30A2S8G	VE4Q6464E30A2GLG	VE4Q6464E30A2R5G	VE4Q6464E30A2S5G
	42W (1x42) Emer Only	120 to 277 50-60Hz	VE3Q0042E30A2GLG	VE3Q0042E30A2R5G	VE3Q0042E30A2S8G	VE4Q0042E30A2GLG	VE4Q0042E30A2R5G	VE4Q0042E30A2S5G
	84W (2x42) Emer Only	120 to 277 50-60Hz	VE3Q0084E30A2GLG	VE3Q0084E30A2R5G	VE3Q0084E30A2S8G	VE4Q0084E30A2GLG	VE4Q0084E30A2R5G	VE4Q0084E30A2S5G
	42W (1x42) Normal/Emer	120 to 277 50-60Hz	VE3Q4242E30A2GLG	VE3Q4242E30A2R5G	VE3Q4242E30A2S8G	VE4Q4242E30A2GLG	VE4Q4242E30A2R5G	VE4Q4242E30A2S5G
	84W (2x42) Normal 42W (1x42) Emergency	120 to 277 50-60Hz	VE3Q8442E30A2GLG	VE3Q8442E30A2R5G	VE3Q8442E30A2S8G	VE4Q8442E30A2GLG	VE4Q8442E30A2R5G	VE4Q8442E30A2S5G
	84W (2x42) Normal/Emer	120 to 277 50-60Hz	VE3Q8484E30A2GLG	VE3Q8484E30A2R5G	VE3Q8484E30A2S8G	VE4Q8484E30A2GLG	VE4Q8484E30A2R5G	VE4Q8484E30A2S5G

① See hazardous location data pages L204 - L205 for application suitability
② xE3x models use 5-1/2" CertiLite®V VM optics accessories; xE4x models use 7-3/4" VM optics accessories.
*** Grid is populated with 3/4" Pendant models with Optic Guards, to omit guard change last G to N e.g. DE3B0013E10A2GLN*
- *3/4" **Ceiling** models change A2 to X2*
- *3/4" **Cone-top** models change A2 to C2*
- *3/4" **Wall Bracket** models change A2 to B2*
- *For 1" change to A3, X3, B3, or C3*

Tank 1 Stanchion 25° w/5-1/2" Globe & Guard

Tank 4 Stanchion Straight w/ 7-3/4" Refractor & Guard

Tank 3 EZ Adapter w/ 5-1/2" Refractor & Guard

See Page L198 for Suitabilities①

13 - 84 WATT EMERGENCY FIXTURES - 25° STANCHION (STRAIGHT STANCHION, EZ ADAPTER) COMPACT FLUORESCENT**

	DESCRIPTION		5-1/2" OPTIC THREAD SIZE ②			7-3/4" OPTIC THREAD SIZE ②		
	WATTS/ TYPE	VOLTAGE	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	8" SPIN-TOP TYPE V REFRACTOR & GUARD	GLOBE & GUARD	TYPE V GLASS REFRACTOR & GUARD	12" SPIN-TOP TYPE V REFRACTOR & GUARD
Class II Div 1, N4X, IP66 ①	13W (1x13) Emer Only	120V or 277VAC	DE3B0013E10D5GLG	DE3B0013E10D5R5G	DE3B0013E10D5S8G	DE4B0013E10D5GLG	DE4B0013E10D5R5G	DE4B0013E10D5S5G
	26W (2x13) Emer Only		DE3B0026E10D5GLG	DE3B0026E10D5R5G	DE3B0026E10D5S8G	DE4B0026E10D5GLG	DE4B0026E10D5R5G	DE4B0026E10D5S5G
	13W (1x13) Normal	120VAC 60Hz	DE3B1313E01D5GLG	DE3B1313E01D5R5G	DE3B1313E01D5S8G	DE4B1313E01D5GLG	DE4B1313E01D5R5G	DE4B1313E01D5S5G
	13W (1x13) Emergency	277VAC 60Hz	DE3B1313E04D5GLG	DE3B1313E04D5R5G	DE3B1313E04D5S8G	DE4B1313E04D5GLG	DE4B1313E04D5R5G	DE4B1313E04D5S5G
	26W (2x13) Normal	120VAC 60Hz	DE3B2613E01D5GLG	DE3B2613E01D5R5G	DE3B2613E01D5S8G	DE4B2613E01D5GLG	DE4B2613E01D5R5G	DE4B2613E01D5S5G
	13W (1x13) Emergency	277VAC 60Hz	DE3B2613E04D5GLG	DE3B2613E04D5R5G	DE3B2613E04D5S8G	DE4B2613E04D5GLG	DE4B2613E04D5R5G	DE4B2613E04D5S5G
	26W (2x13) Normal	120VAC 60Hz	DE3B2626E01D5GLG	DE3B2626E01D5R5G	DE3B2626E01D5S8G	DE4B2626E01D5GLG	DE4B2626E01D5R5G	DE4B2626E01D5S5G
	26W (2x13) Emergency	277VAC 60Hz	DE3B2626E04D5GLG	DE3B2626E04D5R5G	DE3B2626E04D5S8G	DE4B2626E04D5GLG	DE4B2626E04D5R5G	DE4B2626E04D5S5G
Class I Div 2, Class II Div 1, N4X, IP66 ①	13W (1x13) Emer Only	120V or 277VAC	VE3B0013E10D5GLG	VE3B0013E10D5R5G	VE3B0013E10D5S8G	VE4B0013E10D5GLG	VE4B0013E10D5R5G	VE4B0013E10D5S5G
	26W (2x13) Emer Only		VE3B0026E10D5GLG	VE3B0026E10D5R5G	VE3B0026E10D5S8G	VE4B0026E10D5GLG	VE4B0026E10D5R5G	VE4B0026E10D5S5G
	13W (1x13) Normal	120VAC 60Hz	VE3B1313E01D5GLG	VE3B1313E01D5R5G	VE3B1313E01D5S8G	VE4B1313E01D5GLG	VE4B1313E01D5R5G	VE4B1313E01D5S5G
	13W (1x13) Emergency	277VAC 60Hz	VE3B1313E04D5GLG	VE3B1313E04D5R5G	VE3B1313E04D5S8G	VE4B1313E04D5GLG	VE4B1313E04D5R5G	VE4B1313E04D5S5G
	26W (2x13) Normal	120VAC 60Hz	VE3B2613E01D5GLG	VE3B2613E01D5R5G	VE3B2613E01D5S8G	VE4B2613E01D5GLG	VE4B2613E01D5R5G	VE4B2613E01D5S5G
	13W (1x13) Emergency	277VAC 60Hz	VE3B2613E04D5GLG	VE3B2613E04D5R5G	VE3B2613E04D5S8G	VE4B2613E04D5GLG	VE4B2613E04D5R5G	VE4B2613E04D5S5G
	26W (2x13) Normal	120VAC 60Hz	VE3B2626E01D5GLG	VE3B2626E01D5R5G	VE3B2626E01D5S8G	VE4B2626E01D5GLG	VE4B2626E01D5R5G	VE4B2626E01D5S5G
	26W (2x13) Emergency	277VAC 60Hz	VE3B2626E04D5GLG	VE3B2626E04D5R5G	VE3B2626E04D5S8G	VE4B2626E04D5GLG	VE4B2626E04D5R5G	VE4B2626E04D5S5G
	18W (1x18) Emer Only	120 to 277 50-60Hz	VE3Q0018E30D5GLG	VE3Q0018E30D5R5G	VE3Q0018E30D5S8G	VE4Q0018E30D5GLG	VE4Q0018E30D5R5G	VE4Q0018E30D5S5G
	36W (2x18) Emer Only	120 to 277 50-60Hz	VE3Q0036E30D5GLG	VE3Q0036E30D5R5G	VE3Q0036E30D5S8G	VE4Q0036E30D5GLG	VE4Q0036E30D5R5G	VE4Q0036E30D5S5G
	18W (1x18) Normal/Emer	120 to 277 50-60Hz	VE3Q1818E30D5GLG	VE3Q1818E30D5R5G	VE3Q1818E30D5S8G	VE4Q1818E30D5GLG	VE4Q1818E30D5R5G	VE4Q1818E30D5S5G
	36W (2x18) Normal 18W (1x18) Emergency	120 to 277 50-60Hz	VE3Q3618E30D5GLG	VE3Q3618E30D5R5G	VE3Q3618E30D5S8G	VE4Q3618E30D5GLG	VE4Q3618E30D5R5G	VE4Q3618E30D5S5G
	36W (2x18) Normal/Emer	120 to 277 50-60Hz	VE3Q3636E30D5GLG	VE3Q3636E30D5R5G	VE3Q3636E30D5S8G	VE4Q3636E30D5GLG	VE4Q3636E30D5R5G	VE4Q3636E30D5S5G
	26W (1x26) Emer Only	120 to 277 50-60Hz	VE3Q0026E30D5GLG	VE3Q0026E30D5R5G	VE3Q0026E30D5S8G	VE4Q0026E30D5GLG	VE4Q0026E30D5R5G	VE4Q0026E30D5S5G
	52W (2x26) Emer Only	120 to 277 50-60Hz	VE3Q0052E30D5GLG	VE3Q0052E30D5R5G	VE3Q0052E30D5S8G	VE4Q0052E30D5GLG	VE4Q0052E30D5R5G	VE4Q0052E30D5S5G
	26W (1x26) Normal/Emer	120 to 277 50-60Hz	VE3Q2626E30D5GLG	VE3Q2626E30D5R5G	VE3Q2626E30D5S8G	VE4Q2626E30D5GLG	VE4Q2626E30D5R5G	VE4Q2626E30D5S5G
	52W (2x26) Normal 26W (1x26) Emergency	120 to 277 50-60Hz	VE3Q5226E30D5GLG	VE3Q5226E30D5R5G	VE3Q5226E30D5S8G	VE4Q5226E30D5GLG	VE4Q5226E30D5R5G	VE4Q5226E30D5S5G
	52W (2x26) Normal/Emer	120 to 277 50-60Hz	VE3Q5252E30D5GLG	VE3Q5252E30D5R5G	VE3Q5252E30D5S8G	VE4Q5252E30D5GLG	VE4Q5252E30D5R5G	VE4Q5252E30D5S5G
	32W (1x32) Emer Only	120 to 277 50-60Hz	VE3Q0032E30D5GLG	VE3Q0032E30D5R5G	VE3Q0032E30D5S8G	VE4Q0032E30D5GLG	VE4Q0032E30D5R5G	VE4Q0032E30D5S5G
	64W (2x32) Emer Only	120 to 277 50-60Hz	VE3Q0064E30D5GLG	VE3Q0064E30D5R5G	VE3Q0064E30D5S8G	VE4Q0064E30D5GLG	VE4Q0064E30D5R5G	VE4Q0064E30D5S5G
	32W (1x32) Normal/Emer	120 to 277 50-60Hz	VE3Q3232E30D5GLG	VE3Q3232E30D5R5G	VE3Q3232E30D5S8G	VE4Q3232E30D5GLG	VE4Q3232E30D5R5G	VE4Q3232E30D5S5G
	64W (2x32) Normal 32W (1x32) Emergency	120 to 277 50-60Hz	VE3Q6432E30D5GLG	VE3Q6432E30D5R5G	VE3Q6432E30D5S8G	VE4Q6432E30D5GLG	VE4Q6432E30D5R5G	VE4Q6432E30D5S5G
	64W (2x32) Normal/Emer	120 to 277 50-60Hz	VE3Q6464E30D5GLG	VE3Q6464E30D5R5G	VE3Q6464E30D5S8G	VE4Q6464E30D5GLG	VE4Q6464E30D5R5G	VE4Q6464E30D5S5G
	42W (1x42) Emer Only	120 to 277 50-60Hz	VE3Q0042E30D5GLG	VE3Q0042E30D5R5G	VE3Q0042E30D5S8G	VE4Q0042E30D5GLG	VE4Q0042E30D5R5G	VE4Q0042E30D5S5G
	84W (2x42) Emer Only	120 to 277 50-60Hz	VE3Q0084E30D5GLG	VE3Q0084E30D5R5G	VE3Q0084E30D5S8G	VE4Q0084E30D5GLG	VE4Q0084E30D5R5G	VE4Q0084E30D5S5G
	42W (1x42) Normal/Emer	120 to 277 50-60Hz	VE3Q4242E30D5GLG	VE3Q4242E30D5R5G	VE3Q4242E30D5S8G	VE4Q4242E30D5GLG	VE4Q4242E30D5R5G	VE4Q4242E30D5S5G
	84W (2x42) Normal 42W (1x42) Emergency	120 to 277 50-60Hz	VE3Q8442E30D5GLG	VE3Q8442E30D5R5G	VE3Q8442E30D5S8G	VE4Q8442E30D5GLG	VE4Q8442E30D5R5G	VE4Q8442E30D5S5G
	84W (2x42) Normal/Emer	120 to 277 50-60Hz	VE3Q8484E30D5GLG	VE3Q8484E30D5R5G	VE3Q8484E30D5S8G	VE4Q8484E30D5GLG	VE4Q8484E30D5R5G	VE4Q8484E30D5S5G

① *See hazardous location data pages L204 - L205 for application suitability*
② *xE3x models use 5-1/2" CertiLite®V VM optics accessories; xE4x models use 7-3/4" VM optics accessories.*
*** Grid is populated with 1-1/2" 25° Stanchion models with Optic Guards, to omit guard change last G to N e.g. DE3B0013E10A2GLN*
- *1-1/2" **Straight** models change D5 to **S5***
- *1-1/4" **Stanchions** change "5" to "4" e.g. **D4** or **S4***
- *EZ adapter models require EZ Mounts to energize, see L83 for more information*

HUBBELL®
KILLARK®

Tank 3
5-1/2" Optic Thread Size

Tank 4
7-3/4" Optic Thread Size

See Page L198 for Suitabilities①

BALLAST-BATTERY TANKS WITH LAMPS

	DESCRIPTION				INITIAL LUMENS	
	WATTS/ TYPE	VOLTAGE	5-1/2" OPTIC THREAD SIZE ②	7-3/4" OPTIC THREAD SIZE ③	NORMAL AC	EMER. BATTERY
Class II Div 1, N4X, IP66 ①	13W (1 x 13) Emer Only	120V or 277VAC	DE3B0013E10	DE4B0013E10	—	625
	26W (2 x 13) Emer Only		DE3B0026E10	DE4B0026E10	—	1250
	13W (1x13) Normal	120VAC 60Hz	DE3B1313E01	DE4B1313E01	825	625
	13W (1x13) Emergency	277VAC 60Hz	DE3B1313E04	DE4B1313E04	825	625
	26W (2x13) Normal	120VAC 60Hz	DE3B2613E01	DE4B2613E01	1650	625
	13W (1x13) Emergency	277VAC 60Hz	DE3B2613E04	DE4B2613E04	1650	625
	26W (2x13) Normal	120VAC 60Hz	DE3B2626E01	DE4B2626E01	1650	1250
	26W (2x13) Emergency	277VAC 60Hz	DE3B2626E04	DE4B2626E04	1650	1250
Class I Div 2, Class II Div 1, N4X, IP66 ①	13W (1 x 13) Emer Only	120V or 277VAC	VE3B0013E10	VE4B0013E10	—	625
	26W (2 x 13) Emer Only		VE3B0026E10	VE4B0026E10	—	1250
	13W (1x13) Normal	120VAC 60Hz	VE3B1313E01	VE4B1313E01	825	625
	13W (1x13) Emergency	277VAC 60Hz	VE3B1313E04	VE4B1313E04	825	625
	26W (2x13) Normal	120VAC 60Hz	VE3B2613E01	VE4B2613E01	1650	625
	13W (1x13) Emergency	277VAC 60Hz	VE3B2613E04	VE4B2613E04	1650	625
	26W (2x13) Normal	120VAC 60Hz	VE3B2626E01	VE4B2626E01	1650	1250
	26W (2x13) Emergency	277VAC 60Hz	VE3B2626E04	VE4B2626E04	1650	1250
	18W (1 x 18) Emer Only	120 to 277 50-60Hz	VE3Q0018E30	VE4Q0018E30	—	400
	36W (2 x 18) Emer Only	120 to 277 50-60Hz	VE3Q0036E30	VE4Q0036E30	—	800
	18W (1x18) Normal/Emer	120 to 277 50-60Hz	VE3Q1818E30	VE4Q1818E30	1200	400
	36W (2x18) Normal 18W (1x18) Emergency	120 to 277 50-60Hz	VE3Q3618E30	VE4Q3618E30	2400	400
	36W (2x18) Normal/Emer	120 to 277 50-60Hz	VE3Q3636E30	VE4Q3636E30	2400	800
	26W 1 x 26 Emer Only	120 to 277 50-60Hz	VE3Q0026E30	VE4Q0026E30	—	425
	52W 2 x 26 Emer Only	120 to 277 50-60Hz	VE3Q0052E30	VE4Q0052E30	—	850
	26W (1x26) Normal/Emer	120 to 277 50-60Hz	VE3Q2626E30	VE4Q2626E30	1800	425
	52W (2x26) Normal 26W (1x26) Emergency	120 to 277 50-60Hz	VE3Q5226E30	VE4Q5226E30	3600	425
	52W (2x26) Normal/Emer	120 to 277 50-60Hz	VE3Q5252E30	VE4Q5252E30	3600	850
	32W (1 x 32) Emer Only	120 to 277 50-60Hz	VE3Q0032E30	VE4Q0032E30	—	525
	64W (2 x 32) Emer Only	120 to 277 50-60Hz	VE3Q0064E30	VE4Q0064E30	—	1050
	32W (1x32) Normal/Emer	120 to 277 50-60Hz	VE3Q3232E30	VE4Q3232E30	2400	525
	64W (2x32) Normal 32W (1x32) Emergency	120 to 277 50-60Hz	VE3Q6432E30	VE4Q6432E30	4800	525
	64W (2x32) Normal/Emer	120 to 277 50-60Hz	VE3Q6464E30	VE4Q6464E30	4800	1050
	42W (1 x 42) Emer Only	120 to 277 50-60Hz	VE3Q0042E30	VE4Q0042E30	—	700
	84W (2 x 42) Emer Only	120 to 277 50-60Hz	VE3Q0084E30	VE4Q0084E30	—	1400
	42W (1x42) Normal/Emer	120 to 277 50-60Hz	VE3Q4242E30	VE4Q4242E30	3200	700
	84W (2x42) Normal 42W (1x42) Emergency	120 to 277 50-60Hz	VE3Q8442E30	VE4Q8442E30	6400	700
	84W (2x42) Normal/Emer	120 to 277 50-60Hz	VE3Q8484E30	VE4Q8484E30	6400	1400

① See hazardous location data pages L204 - L205 for application suitability
② See VM3 5-1/2" Optics Page L95; xE3x series use VM mounts and accessories
③ See VM4 7-3/4" Optics Page L95; xE4x series use VM mounts and accessories


Pendant


Flexible Pendant


Ceiling


Cone Top


25° Stanchion


Straight Stanchion


EZ Adapter* VMEZA

See Ordering Information on Page L83 for EZ Mounting Boxes

MOUNTING SPLICE BOXES

	CATALOG NUMBER							
HUB SIZE	PENDANT	FLEXIBLE PENDANT	CEILING 4 HUB	CEILING 5 HUB	WALL	CONE TOP	25 DEGREE STANCHION	90 DEGREE STANCHION
3/4"	VMA2B	VMF2B	VMX2B	VMX6B	VMB2B	VMC2B	—	—
1"	VMA3B	VMF3B	VMX3B	VMX7B	VMB3B	VMC3B	—	—
1-1/4"	—	—	—	—	—	—	VMD4B	VMS4B
1-1/2"	—	—	—	—	—	—	VMD5B	VMS5B
M-20	—	—	VMX8B**	VMX9B	—	—	—	—

VMEZA is used between a ballast tank and an EZ mount-ordered separately. See L94 for more information.
**VMX8B furnished with 3 non-metallic Ex plugs.*

OPTICS & GUARDS

DESCRIPTION	5-1/2" Optic Thread Size		7-3/4" Optic Thread Size	
	OPTICS	GUARD	OPTICS	GUARD
Globe (glass)	VMG17	VMAG17	VMG25	VMAG25S
Refractor (all glass) Type V	VMR175	VMAG17	VMR255	VMAG25S
Refractor (all glass) Type I	VMR171	VMAG17	VMR251	VMAG25S
Refractor (all glass) Type III	—	—	VMR253	VMAG25S
Refractor (spin top glass) 8" Type V	VZRG1550	VMRWG8	—	—
Refractor (spin top glass) 12" Type V	VZRG2550	VMRWG	VZRG4050	VMRWG
Refractor (spin top glass) 12" Type II	VZRG2520	VMRWG	VZRG4020	VMRWG
Refractor (spin top plastic) 12" Type V	VZRP175	VMRWG	—	—
Enclosed Reflector (glass lens)	—	—	VMER40	VMERG
Enclosed Reflector (plastic lens)	—	—	VMEP40	—

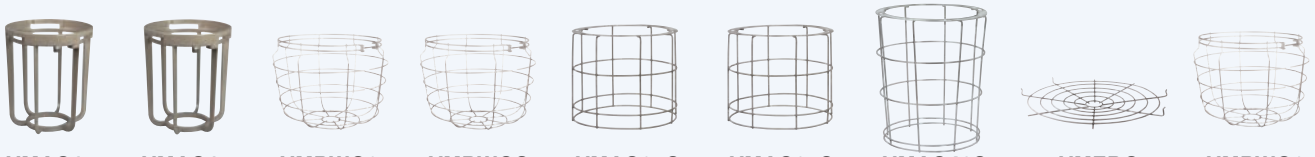

DE3B/VE3B/VE3Q
5-1/2" Optic


DE4B/VE4B/VE4Q
7-3/4" Optic

OPTICS


VMG17 | VMR175 VMR171 | VZRG1550 | VZRG2550 VZRG2520 VZRP175 | VMG25 | VMR255 VMR253 VMR251 | VMG40 | VMER40 | VZRG4050 VZRG4020 | VMEP40

GUARDS


VMAG17 | VMAG17 | VMRWG8 | VMRWGS | VMAG25S | VMAG25S | VMAG40S | VMERG | VMRWG8

REFLECTORS


VMPSD40
Standard Dome Fiberglass White Reflector Dia: 16"


VMPA40
30° Angle Fiberglass White Reflector Dia: 16"

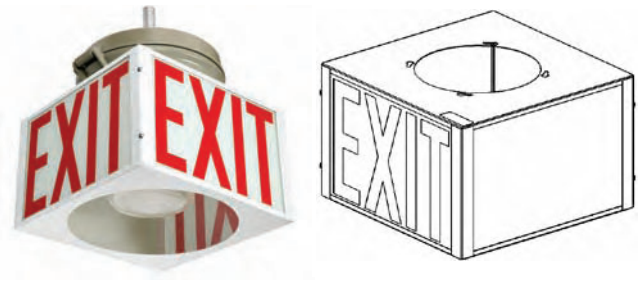

HRD400
Deep Aluminum White Reflector Dia: 21"


HRD400ALZ
Deep Aluminum Anodized Reflector Dia: 21"

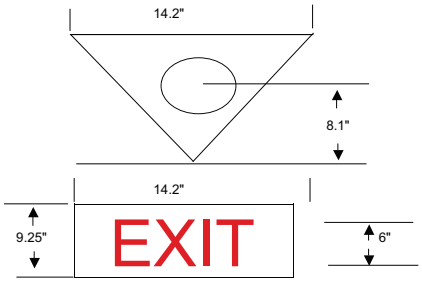

VMAGBC
Bottom Closure for VMAG25S/VMAG40S

HUBBELL
KILLARK®

VEXA400 4-Sided EXIT for all Models
Letters are 3/4" x 8" Red on white
Unit includes 3 EXIT Faces and
2 Blank for Maximum Flexibility
Dimensions: 14.56" x 9.22"



VEXA100B 3-Sided EXIT Accessory for xE3x models
Letters are 3/4" x 6" Red on White



VEXA100B Exit Accessory Dimensions

FEATURES-SPECIFICATIONS

REPLACEMENT BATTERY UNITS	
WATTAGE/TYPE	CATALOG NUMBER
13W BI-PIN	**KFBP6 FOR DEXB**
13W BI-PIN	**KFBP5 FOR VEXB**
18/26/32/42W QUAD-PIN	**KFBP7**

REPLACEMENT LAMPS	
WATTAGE/TYPE	CATALOG NUMBER
13W BI-PIN	**MPL-13**
26W QUAD-PIN	**MQL18**
26W QUAD-PIN	**MQL26**
32W QUAD-PIN	**MQL32**
42W QUAD-PIN	**MQL42**

See pages L94-L96 for VM mounts, optics and accessories including reflectors and suspension devices.

BALLAST DATA *						
LAMP WATTS	VOLTAGE AC	START	OPERATING	INPUT WATTS	BALLAST CIRCUIT	REGULATION
26WATT (1X13)	120 / 277	0.39/.35	0.3	16	NPF	—
26WATT (2X13)	120 / 277	0.78/.70	0.6	32	NPF	—
18 WATT (1X18)	120 THROUGH 277	—	.16@120V /.07 @277V	19	HPF	—
26WATT (1X26)	120 THROUGH 277	—	.27@120V /.13 @277V	29	HPF	ELECTRONIC
32WATT (1X32)	120 THROUGH 277	—	.31@120V /.15 @277V	36	HPF	ELECTRONIC
42WATT (1X42)	120 THROUGH 277	—	.37@120V /.17 @277V	46	HPF	ELECTRONIC
36 WATT (2X18)	120 THROUGH 277	—	.32@120V /.14 @277V	38	HPF	—
52WATT (2X26)	120 THROUGH 277	—	.54@120V /.26 @277V	58	HPF	ELECTRONIC
64WATT (2X32)	120 THROUGH 277	—	.62@120V /.30 @277V	72	HPF	ELECTRONIC
84WATT (2X42)	120 THROUGH 277	—	.74@120V /.34 @277V	92	HPF	ELECTRONIC

** Add per battery prox .6 amp for charging current. Prox 24 hours to full recharge after full discharge.*

APPLICATION DATA					
			CLASS II DIVISION 1②		
CATALOG SERIES*	LAMP WATTS	AMBIENT DEG. C	GLOBE OR REFRACTOR①	GLOBE + REFLECTOR	SUPPLY WIRE TEMP. MIN. °C
DE3B0013	1 X 13	40	T3B (EFG)	T3B (EFG)	60
DE3B0026	2 X 13	40	T3B (EFG)	T3C (EFG)	60
DE3B1313	1 X 13	40	T3B (EFG)	T3C (EFG)	60
DE3B2613	2 X 13	40	T3B (EFG)	T3C (EFG)	60
DE3B2626	2 X 13	40	T3B (EFG)	T3C (EFG)	60
DE4B0013	1 X 13	40	T4A (EFG)	T4A (EFG)	60
DE4B0026	2 X 13	40	T4A (EFG)	T4A (EFG)	60
DE4B1313	1 X 13	40	T4A (EFG)	T4A (EFG)	60
DE4B2613	2 X 13	40	T4A (EFG)	T4A (EFG)	60
DE4B2626	2 X 13	40	T4A (EFG)	T4A (EFG)	60

① T-codes for Refractors include VMR "All Glass" and VZ Spin-Top Types. Also applies for VMER40 and VMEP40 in DE4B models.
② Models suitable for Class II Div. 1 are also suitable for Class III.
** DE3B models use 5-1/2" CertiLite®V VM optics; DE4B models use 7-3/4" VM optics.*

APPLICATION DATA									
CATALOG SERIES*	LAMP WATTS	AMBIENT DEG. C	CLASS I DIVISION 2 GLOBE OR REFRACTOR①	CLASS I DIVISION 2 GLOBE + REFLECTOR	CLASS I ZONE 2 nR II GLOBE OR REFRACTOR②	CLASS I ZONE 2 nR II GLOBE + REFLECTOR	CLASS II DIVISION 1③ GLOBE OR REFRACTOR①	CLASS II DIVISION 1③ GLOBE + REFLECTOR	SUPPLY WIRE TEMP. MIN. °C
VE3B0013	1 X 13	40	T3	T3	T6	T6	T3B (EFG)	T3B (EFG)	60
VE3B0026	2 X 13	40	T3	T3	T6	T6	T3B (EFG)	T3C (EFG)	60
VE3B1313	1 X 13	40	T3A	T3A	T6	T6	T3B (EFG)	T3C (EFG)	60
VE3B2613	2 X 13	40	T3	T3	T6	T6	T3B (EFG)	T3C (EFG)	60
VE3B2626	2 X 13	40	T3	T3	T6	T6	T3B (EFG)	T3C (EFG)	60
VE3Q0018	1 X 18	40	T6	T6	T6	T6	T3B (EFG)	T3C (EFG)	60
VE3Q0036	2 X 18	40	T3C	T3C	T6	T6	T3B (EFG)	T3C (EFG)	60
VE3Q1818	1 X 18	40	T3A	T3A	T6	T6	T3B (EFG)	T3C (EFG)	60
VE3Q3618	2 X 18	40	T3C	T3C	T6	T6	T3B (EFG)	T3C (EFG)	60
VE3Q3636	2 X 18	40	T3C	T3C	T6	T6	T3B (EFG)	T3C (EFG)	60
VE3Q0026	1 X 26	40	T6	T6C	T6	T6	T3B (EFG)	T3C (EFG)	75
VE3Q0052	2 X 26	40	T2D	T2D	T6	T6	T3B (EFG)	T3C (EFG)	75
VE3Q2626	1 X 26	40	T3A	T3A	T6	T6	T3B (EFG)	T3C (EFG)	60
VE3Q5226	2 X 26	40	T2D	T2D	T5	T5	T3B (EFG)	T3C (EFG)	75
VE3Q5252	2 X 26	40	T2D	T2D	T5	T5	T3B (EFG)	T3C (EFG)	75
VE3Q0032	1 X 32	40	T6	T6	T6	T6	T3B (EFG)	T3C (EFG)	75
VE3Q0064	2 X 32	40	T2D	T2D	T6	T6	T3B (EFG)	T3C (EFG)	75
VE3Q3232	1 X 32	40	T3A	T3A	T6	T6	T3B (EFG)	T3C (EFG)	60
VE3Q6432	2 X 32	40	T2D	T2D	T5	T5	T3B (EFG)	T3C (EFG)	75
VE3Q6464	2 X 32	40	T2D	T2D	T5	T5	T3B (EFG)	T3C (EFG)	75
VE3Q0042	1 X 42	40	T6	T6	T6	T6	T3B (EFG)	T3C (EFG)	75
VE3Q0084	2 X 42	40	T2B	T2B	T6	T6	T3B (EFG)	T3C (EFG)	75
VE3Q4242	1 X 42	40	T3A	T3A	T6	T6	T3B (EFG)	T3C (EFG)	60
VE3Q8442	2 X 42	40	T2B	T2B	T4	T4	T3B (EFG)	T3C (EFG)	75
VE3Q8484	2 X 42	40	T2B	T2B	T4	T4	T3B (EFG)	T3C (EFG)	75
VE4B0013	1 X 13	40	T3	T3	T6	T6	T3B (EFG)	T3C (EFG)	60
VE4B0026	2 X 13	40	T3	T3	T6	T6	T3B (EFG)	T3C (EFG)	60
VE4B1313	1 X 13	40	T3A	T3A	T6	T6	T3B (EFG)	T3C (EFG)	60
VE4B2613	2 X 13	40	T3	T3	T6	T6	T3B (EFG)	T3C (EFG)	60
VE4B2626	2 X 13	40	T3	T3	T6	T6	T3B (EFG)	T3C (EFG)	60
VE4Q0018	1 X 18	40	T3C	T3C	T6	T6	T4A (EFG)	T4A (EFG)	60
VE4Q0036	2 X 18	40	T3C	T3C	T6	T6	T4A (EFG)	T4A (EFG)	60
VE4Q1818	1 X 18	40	T3C	T3C	T6	T6	T4A (EFG)	T4A (EFG)	60
VE4Q3618	2 X 18	40	T3C	T3C	T6	T6	T4A (EFG)	T4A (EFG)	60
VE4Q3636	2 X 18	40	T3C	T3C	T6	T6	T4A (EFG)	T4A (EFG)	60
VE4Q0026	1 X 26	40	T3C	T3C	T6	T6	T4A (EFG)	T4A (EFG)	60
VE4Q0052	2 X 26	40	T3C	T3C	T6	T6	T4A (EFG)	T4A (EFG)	60
VE4Q2626	1 X 26	40	T3C	T3C	T6	T6	T4A (EFG)	T4A (EFG)	60
VE4Q5226	2 X 26	40	T3	T3	T6	T6	T4A (EFG)	T4A (EFG)	75
VE4Q5252	2 X 26	40	T3	T3	T6	T6	T4A (EFG)	T4A (EFG)	75
VE4Q0032	1 X 32	40	T3	T3	T6	T6	T4A (EFG)	T4A (EFG)	75
VE4Q0064	2 X 32	40	T3	T3	T6	T6	T4A (EFG)	T4A (EFG)	75
VE4Q3232	1 X 32	40	T3	T3	T6	T6	T4A (EFG)	T4A (EFG)	75
VE4Q6432	2 X 32	40	T3	T3	T6	T6	T4A (EFG)	T4A (EFG)	75
VE4Q6464	2 X 32	40	T3	T3	T6	T6	T4A (EFG)	T4A (EFG)	75
VE4Q0042	1 X 42	40	T3	T3	T6	T6	T4A (EFG)	T4A (EFG)	75
VE4Q0084	2 X 42	40	T3	T3	T6	T6	T4A (EFG)	T4A (EFG)	75
VE4Q4242	1 X 42	40	T3	T3	T6	T6	T4A (EFG)	T4A (EFG)	75
VE4Q8442	2 X 42	40	T3	T3	T6	T6	T4A (EFG)	T4A (EFG)	75
VE4Q8484	2 X 42	40	T3	T3	T6	T6	T4A (EFG)	T4A (EFG)	75

① *T-codes for Refractors include VMR "All Glass" and VZ Spin-Top Types. Also applies for VMER40 and VMEP40 in DE4B models.*
② *Models suitable for Class II Div. 1 are also suitable for Class III.*
** DE3B models use 5-1/2" CertiLite®V VM optics; DE4B models use 7-3/4" VM optics.*

Wall Mounted

Ceiling Mounted

Exit Sign

Class I, Div. 2, Groups A,B,C,D
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. I, Groups F,G
Class III
Marine
NEMA 3, 4, 4X, IP66

Certified - File LR11713

FEATURES-SPECIFICATIONS

ENVIRORITE®

Surface Mount Luminaires
13-26W Fluorescent

Applications

Killark's NWP Series of fluorescent luminaires are designed for task lighting of wet & corrosive NEMA 4X environments and hazardous locations.

Typical uses include manufacturing plants, chemical and petrochemical processing facilities, sewage treatment plants, off-shore and dockside installations, agricultural, commercial, industrial, and mining facilities.

NWP surface mount luminaires contain no exposed glass and carry Class II, F&G ratings required for many food proccessing areas.

Features

- Non-metallic housing has a lightweight yet robust low profile construction
- Can be wall mounted or ceiling mounted in horizontal or vertical position
- Energy and labor saving fluorescent
- Emergency and normal power models available.
- Emergency version has internal battery which provides 90 minutes of illumination in the event of a power failure
- Resists corrosive effects of most chemicals, hydrocarbons and solvents
- Designed for indoor and outdoor applications
- Includes fluorescent lamp
- 'World Voltage' ballasts for 120VAC through 277VAC 50/60Hz installations
- Wiring terminals are included as standard

Materials

- Enclosure - High strength polycarbonate
- Gasket - Silicone
- External Hardware - Stainless steel
- Lens - Lexan®
- Entry - One ¾" NPT copper-free aluminum hub with ¾ x ½" reducer is standard. A second hub may be purchased separately.

Lexan® is a registered trademark of General Electric

Catalog Number Logic

Catalog Number Logic NWP 00 - 00(00) - 00(00) -

Constant for NWP series

Power & Ballast Type
FN - Fluorescent Normal Power
FE - Fluorescent w/Battery Backup

Lamp Wattage
13-13W (AC Normal only operation)
18-18W (AC Normal only operation)
26-26W (AC or DC Normal only operation)
1313-13W (AC ballast w/battery backup)
1818-18W (AC ballast w/battery backup)
0013-13W Emergency only
0018-18W Emergency only
0026-26W Emergency only②

Supply (input) voltage
30 - 120-277V 50/60Hz
DC120 - FN26 c SP us
FE26 self-certified

HUBS & ACCESSORIES
A - 3/4" Single Entry aluminum
P - 3/4" Single Entry PVC coated zinc
S - 3/4" Single Entry Stainless Steel
M - M20 single entry*
AA - 3/4" Feed-Thru, Aluminum
PP - 3/4" Feed-Thru, PVC Coated Zinc
SS - 3/4" Feed-Thru, Stainless Steel
MM - M20 Feed-Thru entry*
PI - Photocell 120V**
P2 - Photocell 208-277V**

NOTES:
* Certification Pending.
** Photocells for FN Models only - Class I, Div. 2 NEMA 4X only.

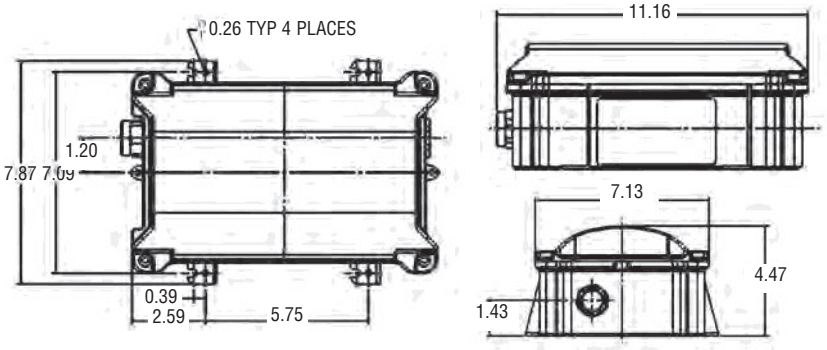
NWP WALLPACK 13-26W FLUORESCENT WLONE 3/4" ALUMINUM HUB

LAMP	VOLTAGE	DESCRIPTION	CAT. NUMBER①	MAX. AMBIENT SUITIBILITY③	MIN START
NORMAL POWER MODELS - AMBIENT SUITABILITY 40°C MAX.					
1-13W	120-277V 50/60HZ	13W WALL OR CEILING	NWPFN1330A	40°C	15°C
1-18W	120-277V 50/60HZ	18W WALL OR CEILING	NWPFN1830A	40°C	15°C
1-26W	120-277V 50/60HZ	26W WALL OR CEILING	NWPFN2630A	40°C	15°C
1-26W	120V DCK	26W WALL OR CEILING	NWPFN26DC120A	40°C	15°C
NORMAL AND EMERGENCY MODELS					
1-13W	120-277V 50/60HZ	13W WALL OR CEILING	NWPFE131330A	35°C	15°C
1-18W	120-277V 50/60HZ	18W WALL OR CEILING	NWPFE181830A	30°C	15°C
EMERGENCY ONLY MODELS - AMBIENT SUITABILITY 40°C MAX.					
1-13W	120-277V 50/60HZ	13W WALL OR CEILING	NWPFEO01330A	40°C	0°C
1-18W	120-277V 50/60HZ	18W WALL OR CEILING	NWPFEO01830A	40°C	0°C
1-26W	120-277V 50/60HZ	26W WALL OR CEILING	NWPFE002630A	40°C	0°C
1-26W	120V DC②	26W WALL OR CEILING	NWPFE0026DC120A	40°C	0°C

① Provided with one 3/4 aluminum hub as standard.
② NWPFN 120V DC model is c CSA us, NWPFE 120V DC emergency-only model is Killark self-certified.
③ T-code measurements taken in 40°C ambient; operating ambient reduced for normal and emergency models to maintain battery performance.

HUBBELL®
KILLARK®

Keyhole Slots Provided for Ease in Mounting



TECHNICAL DATA

T-Codes @ 40c ③					
WATTS	Class I Div. 2 ①	Class I Div. 2 ②	Class II Div. 2	Minimum Start C°	Minimum Start F°
13W	T3	T6	F,G	-15	4
18W	T3	T3	F,G	-15	4
26W	T3	T3	F,G	-15	4

①Normal power or normal + emergency
②Emergency only models
③See catalog grids for ambient suitability

Fluorescent Operating Max. Amps		
TYPE	120VAC	277VAC
13W Fluorescent	.144	.067
18W Fluorescent	.158	.073
26W Fluorescent	.22	.097

Use .1 Amp for 'Emergency Only' units, or as an adder for Normal & Emergency models.

BOLT ON EXIT SIGN

Catalog Number NWP-EXIT-SIGN
DESCRIPTION
Bolt-on Exit Sign accessory includes hardware to mount to fixture and ability to make arrows left, right or none. Construction white painted steel and nonglass red diffuser, with bottom opening for downlight.

ACCESSORIES

FIELD HUB KITS	
Catalog #	Description
NWP-HUBA	Aluminum hub, gasket, locknut
NWP-HUBP	Precoated zinc hub, gasket, locknut
NWP-HUBS	Stainless steel hub, gasket, locknut
NWP-HUBM	M20 Plated Brass

SELF ADHESIVE DECALS

NWP-DECAL01 NWP-DECAL02 NWP-DECAL03 NWP-DECAL04

NWP-DECAL05 NWP-DECAL06 NWP-DECAL07 NWP-DECAL08

NWP-DECAL09 NWP-DECAL10 NWP-DECAL11 NWP-DECAL12

Optional decal styles available upon request - Minimums apply.
Factory installed decals, order as FAD_ _. Example FAD01.

NWP Replacement Parts & Lamps	
Catalog #	Description
NWP-LENSONLY	Replacement Lens
NWP-KFBP7	Replacement battery pack
MQL- 13	13W Quad-pin lamp
MQL- 18	18W Quad-pin lamp
MQL- 26	26W Quad-pin lamp

PHOTOMETRICS

NWPFN2630x
Candlepower - 26 Watt
CFL26 lamp 1800 lumens
For 13 Watt multiply by .50
For 18 Watt multiply by .67

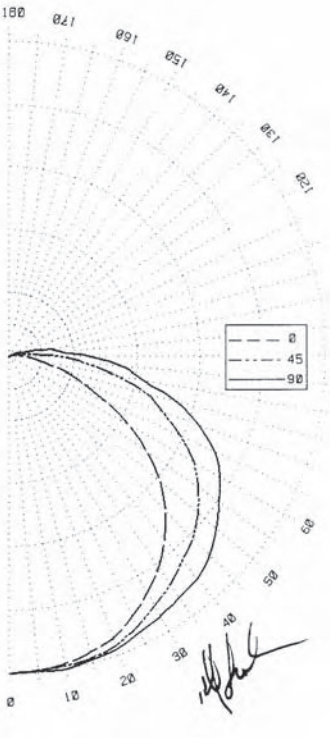
Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-30	275	15.3%	20.3%
0-40	463	25.7%	34.2%
0-60	886	49.2%	65.5%
0-90	**1301**	72.3%	96.1%
90-120	52	2.9%	3.9%
90-130	52	2.9%	3.9%
90-150	52	2.9%	3.9%
90-180	**52**	2.9%	3.9%
0-180	**1353**	75.2%	100

Total Luminaire Efficiency = 75.2%
Space to Mt. Ht. Ratio: End 1.3; Side 1.4
Certified Report BAL 15312.0

CANDLEPOWER DISTRIBUTION

VERT ANG	HORIZONTAL ANGLE 0	22.5	45	67.5	90
0	340.	340.	340.	340.	340.
5	338.	339.	338.	339.	339.
10	335.	336.	337.	339.	341.
15	329.	330.	335.	336.	337.
20	322.	324.	330.	335.	334.
25	309.	314.	321.	325.	327.
30	294.	302.	310.	320.	322.
35	278.	285.	300.	314.	317.
40	258.	267.	288.	308.	313.
45	236.	247.	278.	299.	304.
50	210.	224.	264.	287.	290.
55	180.	201.	247.	267.	275.
60	147.	178.	228.	247.	261.
65	115.	146.	202.	231.	243.
70	84.	114.	175.	210.	216.
75	64.	81.	153.	182.	186.
80	38.	54.	117.	143.	146.
85	26.	36.	83.	114.	122.
90	17.	20.	57.	80.	87.
95	13.	11.	29.	50.	57.
100	10.	5.	18.	38.	45.
105	12.	5.	9.	18.	25.
110	12.	4.	4.	9.	12.
115	10.	3.	2.	5.	5.
120	6.	2.	1.	3.	3.
125	2.	0.	0.	1.	1.
130	0.	0.	0.	0.	0.
135	0.	0.	0.	0.	0.
140	0.	0.	0.	0.	0.
145	0.	0.	0.	0.	0.
150	0.	0.	0.	0.	0.
155	0.	0.	0.	0.	0.
160	0.	0.	0.	0.	0.



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HUBBELL
KILLARK®

Class I, Div. 2, Groups A,B,C,D
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 2 Groups F,G
NEMA 3, 4

UL Listed
Compliances: UL 44; UL 81570, UL924
UL Wet Location Listed (Indoor & Outdoor)

FEATURES-SPECIFICATIONS

LINEARLITE®*E
* marca registrada MEXICO
EMERGENCY

Applications

LINEAR*LITE* DBFE Emergency Lighting fixtures provide continuous illumination under normal power and switch to emergency battery backup during power outages. Units contain a battery unit that provides the OSHA required 90 minutes of illumination for egress.

Units are designed for general and task lighting in areas where flammable gases or vapors or combustible dusts may exist due to abnormal conditions, and create a Division 2 hazardous location, as defined by the NEC.

Features

- Sheet steel 20 ga. housing with continuous weld prevents foreign matter from entering enclosure
- Lens frame assembly has silicon rubber gasketing and heat tempered glass lens
- Electrostatically applied polyester finish
- NEMA 4 construction for wet locations
- LED charging indicator light visible through lens
- Push-To-Test Button mounted on sloping side of fixture - allows end-to-end mounting of fixtures

DBFE FLUORESCENT EMERGENCY LIGHTING

CATALOG NUMBER	CONDUIT SIZE	NUMBER OF LAMPS	LINE VOLTAGE	DESCRIPTION
DBFE232302	3/4"	2	120-277V 50/60 Hz	32W T8 electronic ballast 0°F start Medium bi-pin base
DBFE24012 DBFE24042			120V 60 Hz 277V 60 Hz	40W T12 bi-pin 50°F start electronic Medium bi-pin base
DBFE16012 DBFE16042			120V 60 Hz 277V 60 Hz	60W rapid start high output F48T12/HO Recessed double contact 800MA
DBFE232303	3/4"	3	120-277V 50/60 Hz	32W T8 electronic ballast 0°F start Medium bi-pin base
DBFE24013 DBFE24043			120V 60 Hz 277V 60 Hz	40W T12 bi-pin 50°F start electronic Medium bi-pin base
KFBP7	(32/40 or 60 Watt) Replacement battery unit			

Notes: Emergency unit will start lamps at 0°F
32W T8 Electronic ballast minimum start is 0°F;
40W ballast is electronic with 50°F start (add CW for electromagnetic 0°F);
60W electromagnetic ballast start -20°F

32W & 40W units operate 2 Lamps in emergency mode for maximum illumination
60W units operate a single lamp. 3 Lamp 60W emergency units not available.

For dimensional data and mounting accessories, see DBF series page L172.

Digit after E is number of lamps energized during power loss.

EMERGENCY LUMEN CHART

LAMPS	INITIAL LUMENS	AFTER 90 MINUTES
2 32W Lamps	625	455
2 40W Lamps	610	420
1 60W Lamp	780	460

DBFE HAZARDOUS LOCATION APPLICATION DATA

NO. OF LAMPS	LAMP WATTS	RATED AMBIENT °C	SUPPLY WIRE SUITABLE FOR °C MIN.	CLASS I, DIV. 2, GROUPS A,B,C,D MAX. LAMP TEMP.°C UL/CSA TEMP./I.D.	CLASS II, DIV. 2, GROUPS E.F,G MAX. SURF. TEMP.°C UL/CSA TEMP./I.D.	NEMA TYPE 3 (RAINTIGHT)	NEMA TYPE 4 (HOSEDOWN)
2	32/40	40	90	T6 (85°C/185°F)	T6 (85°C/185°F)	YES	YES
3	32/40	40	90	T5 (100°C/212°F)	T6 (85°C/185°F)	YES	YES
2	60	40	90	T4A (120°C/248°F)	T6 (85°C/185°F)	YES	YES

LZ2NE 2' Non-metallic

LZ2SE 4' Stainless

Class I, Div. 2 Groups A,B,C,D
Class I, Zones 2, Groups IIC,IIB,IIA
Class II, Div. 1 & 2, Groups E③, F,G
AEx nAII, Ex nAII
Wet Locations
NEMA 4X, IP66

Certified - File LR11713

ABS Type Approval
NSF Food Handling④

FEATURES-SPECIFICATIONS

LINEARLITE®*E
* marca registrada MEXICO EMERGENCY

Applications

LINEAR*LITE* Emergency Lighting fixtures provide continuous illumination under normal power and switch to emergency battery back-up during power outages. Units contain a battery unit that provides the OSHA required 90 minutes of illumination for egress.

Units are available in non-metallic or 316 Stainless construction and designed for wet, harsh and corrosive environments. The LZ2NE and LZ2SE Series can also be used in Class I, Division 2 and Zone 2 hazardous vapors and in Class II areas where combustible dusts may exist. Typical areas used are in refineries, chemical plants, waste water & sewage treatment facilities, as well as in tunnels, food processing and coastal areas.

ABS (American Bureau of Shipping) type approval for use on decks, vessels, platforms, garages, ships and boats. Also suitable for docks and marinas.

③ *LZ2SE only for Group E*
④ *LZ2NE is NSF approved*

Additional Data

L173 or L174 - Features
L175 - Ballast Data
L176 - Mounting Accessories
L176 - L177 - Photometrics

REPLACEMENT BATTERY UNIT	
⑤ KFBP7	⑥ KFBP7HO

HUBBELL®
KILLARK®

LZ2NE/LZ2SE BATTERY-BACKED

NUMBER OF LAMPS/WATTS	VOLTAGE AC 60 Hz	DESCRIPTION	LZ2NE①	LZ2SE①
BIAXIAL LAMP TYPE FIXTURES				
1-40W⑥	120-277V	2' 1-Lamp Biaxial Electronic 50/60 Hz 0°F Start 4-Pin	LZ2NE1-40130	LZ2SE1-40130
1-55W⑥	120-277V	2' 1-Lamp Biaxial Electronic 50/60 Hz 0°F Start 4-Pin	LZ2NE1-55130	LZ2SE1-55130
2-40W⑥	120-277V	2' 2-Lamp Biaxial Electronic 50/60 Hz 0°F Start 4-Pin	LZ2NE1-40230	LZ2SE1-40230
4-40W⑥	120-277V	4' 4-Lamp Biaxial Electronic 50/60 Hz 0°F Start 4-Pin	LZ2NE1-40430	LZ2SE1-40430
DOUBLE-ENDED LAMP TYPE FIXTURES				
2-17W⑤	120-277V	2' 2-Lamp T-8 Electronic 50/60 Hz 0°F Start Medium Bi-Pin	LZ2NE2-17230	LZ2SE2-17230
3-17W⑤	120-277V	2' 3-Lamp T-8 Electronic 50/60 Hz 0°F Start Medium Bi-Pin	LZ2NE2-17330	LZ2SE2-17330
2-28W⑥	120-277V	4' 2-Lamp T-5 Electronic 50/60 Hz 0°F Start Miniature Bi-Pin	LZ2NE1-28230	LZ2SE1-28230
3-28W⑥	120-277V	4' 3-Lamp T-8 Electronic 50/60 Hz 0°F Start Miniature Bi-Pin	LZ2NE1-28330	LZ2SE1-28330
2-32W⑥ 2-32W⑤	120-277V 120-277V 347V	4' 2-Lamp T-8 Electronic 50/60 Hz 0°F Start Medium Bi-Pin	LZ2NE1-32230 LZ2NE2-32230 LZ2NE2-32215	LZ2SE1-32230 LZ2SE2-32230 LZ2SE2-32215
3-32W⑥ 3-32W⑤	120-277V 120-277V 347V	4' 3-Lamp T-8 Electronic 50/60 Hz 0°F Start Medium Bi-Pin	LZ2NE1-32330 LZ2NE2-32330 LZ2NE2-32315	LZ2SE1-32330 LZ2SE2-32330 LZ2SE2-32315
2-40W⑤	120V 277V 230V 50 Hz②	4' 2-Lamp T-12 Electronic Medium Bi-Pin Start 50°F 40W/60°F 34W	LZ2NE2-40201 LZ2NE2-40204 LZ2NE2-40208	LZ2SE2-40201 LZ2SE2-40204 LZ2SE2-40208
2-44W⑥	120-277V	4' 2-Lamp T-8 Electronic -20°F Start High Output Recessed Double Contact	LZ2NE1-44230	LZ2SE1-44230
2-54W⑥	120-277V	4' 2-Lamp T-5 Electronic 50/60 Hz -20°F Start Miniature Bi-Pin	LZ2NE1-54230	LZ2SE1-54230
2-60W⑤	120-277V	4' 2-Lamp T-12 Electronic -20°F Start High Output Recessed Double Contact	LZ2NE1-60201	LZ2SE1-60230

① *Digit after E is number of lamps energized during power loss. For optional fused ballasts, add to catalog number F1 for 120V, F4 for 277V, F8 for 230V. Fusing no for marine or Canadian use. Lamps not included.*
② *Magnetic ballast*

Features

- NEMA 4 & IP66 rated enclosure
- Housing-one piece fiberglass reinforced polyester or 316 Stainless Steel
- Clear Lexan® impact resistant polycarbonate lens (Lexan is a registered trademark of General Electric)
- Two 3/4" NTP hubs - one at each end (includes one 3/4" close-up plug and two 3/4" X 1/2" reducers for maximum user flexibility
- Two 1/4"- 20 bushings furnished in top of fixture for threaded rod

EMERGENCY LUMEN CHART	
LAMPS	INITIAL LUMENS
2 X 17 T8	550
1 X 40 BIAXIAL	900
1 X 55 BIAXIAL	950
1 X 28 T5	1175
1 X 32 T8 (E1)	925
2 X 32 T8 (E2)	625
2 X 40 T12	610
1 X 44 T8	950
1 X 54 T5	1200
1 X 60 T12	780

L

4' Nominal Style

2' Nominal Style

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III, Div. 1 & 2
NEMA 3, 7(C,D) 9(E,F,G)
Suitable for wet locations

Listed - File E12976 and E89665 (Marine)③
UL 924, UL 844

Certified - File LR11713

FEATURES-SPECIFICATIONS

Applications

HFXE Series Emergency Lighting fixtures provide continuous illumination under normal power and switch to emergency battery backup during power outages. Units contain a battery unit that provides the OSHA required 90 minutes of illumination for egress.

Units are designed for installations where moisture, dirt, dust, corrosion and vibration may be present, or wet locations where wind, water and snow can be expected. They can also be used in locations made hazardous due to the presence of flammable or explosive gases, vapors and combustible ducts as defined by the NEC.

Features

- Construction is strong lightweight corrosion resistant copper-free aluminum alloy, less than 4/10 of 1%
- All external hardware is corrosion resistant 316 stainless steel to provide maintenance free long life
- World voltage ballasts standard on 32W and BIAXIAL models (120-277V 50/60 Hz)
- LED charging indicator light on ballast enclosure.

HFXE FLUORESCENT EMERGENCY LIGHTING

CATALOG NUMBER①②	CONDUIT SIZE	LINE VOLTAGE	DESCRIPTION	PROFILE
HFXE2-265-302	3/4"	120-277V 50/60 Hz	32W T8 electronic ballast 265MA	Two Glass Tubes 4' Nominal
HFXE2-430-12		120V 60 Hz	40W T12 electronic ballast 430MA	
HFXE2-430-42		277V 60 Hz	40W T12 electronic ballast 430MA	
HFXE1-800-12		120V 60 Hz	60W T12 electronic ballast 800MA	
HFXE1-800-42		277V 60 Hz	60W T12 electronic ballast 800MA	
HFXE2-265-303	3/4"	120-277V 50/60 Hz	32W T8 electronic ballast 265MA	Three Glass Tubes 4' Nominal
HFXE2-430-13		120V 60 Hz	40W T12 electronic ballast 430MA	
HFXE2-430-43		277V 60 Hz	40W T12 electronic ballast 430MA	
HFXE1-800-13		120V 60 Hz	60W T12 electronic ballast 800MA	
HFXE2-265-304	3/4" ③	120-277V 50/60 Hz	32W T8 electronic ballast 265MA	Four Glass Tubes 4' Nominal
HFXE2-430-14		120V 60 Hz	40W T12 electronic ballast 430MA	
HFXE2-430-44		277V 60 Hz	40W T12 electronic ballast 430MA	
HFXE1-800-14		120V 60 Hz	60W T12 electronic ballast 800MA	
HFXE1-800-44		277V 60 Hz	60W T12 electronic ballast 800MA	
BIAXIAL SERIES				
HFXE1-40T-302	3/4"	120-277V 50/60 HZ	2' 2 Lamp 40W BIAXIAL	Two Glass Tubes 4' Nominal
HFXE1-55T-302			2' 2 Lamp 55W BIAXIAL	
HFXE1-40T-304			4' 4 Lamp 40W BIAXIAL	
HFXE1-55T-304			4' 4 Lamp 55W BIAXIAL	

① *Digit after "E" in catalog logic indicates number of lamps energized in emergency mode.*

② *Consult non-emergency HFX pages L164-169 for thermal, dimensional and other data, plus for available accessories. 40W & 60W are not available with universal voltage or 240V 50Hz ballasts.*

③ *1,2 and 3 tube models are third party certified. 4 tube models are self-certified.*

NOTES: For fusing, add suffix F1 for 120V; F4 for 277V.

Emergency unit will start lamps at 0°F
32W T8 electronic ballast minimum start is 0°F
40W ballast is electronic with 50°F start (add CW for electromagnetic 0°F)
60W elecromagnetic ballast start at -20°F
32W & 40W units operate 2 lamps in emergency mode for a maximum illumination
60W and BIAXIAL units operate a single lamp. 3 lamp 277V 60W emergency units not available.
Replacement Battery Pack #KFBP10

SEE PAGES L180 TO L185 FOR DIMENSIONS, ACCESSORIES AND PHOTOMETRICS

EMERGENCY LUMEN CHART

LAMPS	INITIAL LUMENS	AFTER 90 MINUTES
2 32W lamps	1350	900
2 40W lamps	1100	640
1 60W lamp	1200	810
1 40W BIAXIAL	900	540
1 55W BIAXIAL	900	465

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
NEMA 3

Compliances: UL 844; UL 1570, UL924 (File E162407)
UL Wet Location Listed (Indoor & Outdoor)
Rated for 40C° ambient. Minimum start 0° C
Temperature codes:
Class I C,D **T6**;
Class II E,F,G **T4**;
Suitable for Class III
Certified File LR11713

FEATURES-SPECIFICATIONS

HOSTILE*LITE*® E
EMERGENCY

Applications

HOSTILE*LITE*® EEQ Emergency Lighting fixtures provide continuous illumination under normal power and switch to emergency battery backup during power outages. Emergency Units ONLY are available that operate only when normal power fails.

Units contain battery unit that provides the OSHA required 90 minutes of illumination (same lamp) for egress.

Units are designed for general and task lighting indoors or outdoors where flammable gases or vapors or combustible dusts exist and create a hazardous location, as defined by the NEC.

See Page L212 for available Push-To-Test hazardous location control stations.

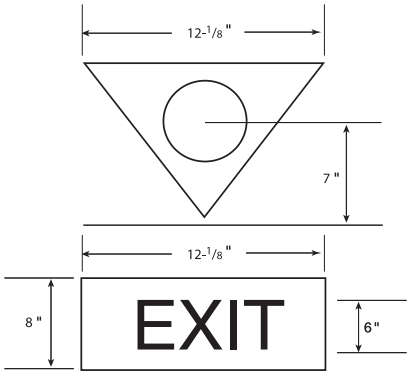
Features

- Quad-Pin long-life triple-tube compact fluorescent lamps **included**
- Choice of Pendant, Ceiling, Wall or Stanchion mount
- Factory Sealed - No external seal required
- Corrosion resistant-Copper-free aluminum (less than 4/10 of 1%) die-cast construction w/Baked-on epoxy/polyester powder finish
- Exposed hardware is 316 grade stainless steel
- LED charging indicator light visible through lens

Accessories

Exit sign: Model **HEXA-100** (note omit 2nd "**G**" in catalog number for globe-only fixture) see page L144.

Reflectors: Use standard dome **ERSD15** or angle model **ERA15** (see page L146).



EEQ 26, 32 & 42WATT NORMAL & EMERGENCY MODE FIXTURES					
QUAD-PIN FLUOR. LAMP INCLUDED	LINE VOLTAGE @ 60 HZ	CATALOG NUMBER ③④⑥			
		PENDANT 3/4" ①	CEILING 3/4" ①	BRACKET 3/4" ①	STANCHION 1-1/4" ②
26Watt	120 or 277VAC⑤	EEQ2626E10A2GG	EEQ2626E10X2GG	EEQ2626E10B2GG	EEQ2626E10D4GG
32Watt	120 or 277VAC⑤	EEQ3232E10A2GG	EEQ3232E10X2GG	EEQ3232E10B2GG	EEQ3232E10D4GG
42Watt	120 or 277VAC⑤	EEQ4242E10A2GG	EEQ4242E10X2GG	EEQ4242E10B2GG	EEQ4242E10D4GG

EEQ 26, 32 & 42WATT EMERGENCY-ONLY MODE FIXTURES					
QUAD-PIN FLUOR. LAMP INCLUDED	LINE VOLTAGE @ 60 HZ	CATALOG NUMBER ③④⑥			
		PENDANT 3/4" ①	CEILING 3/4" ①	BRACKET 3/4" ①	STANCHION 1-1/4" ②
26Watt	120 or 277VAC⑤	EEQ0026E10A2GG	EEQ0026E10X2GG	EEQ0026E10B2GG	EEQ0026E10D4GG
32Watt	120 or 277VAC⑤	EEQ0032E10A2GG	EEQ0032E10X2GG	EEQ0032E10B2GG	EEQ0032E10D4GG
42Watt	120 or 277VAC⑤	EEQ0042E10A2GG	EEQ0042E10X2GG	EEQ0042E10B2GG	EEQ0042E10D4GG

① *Pendant, Ceiling & Bracket models may be changed to 1" hubs by changing the 12th character from 2 to 3; e.g. EEQ2626E10A3GG.*
② *Stanchion fixtures are 1-1/2" with a 1-1/2 to 1-1/4" reducer.*
③ *Omit 2nd "G" for globe-only fixture for use with HEXA-100 Exit Accessory.*
④ *Standard color for fixtures is Killark beige. Add -R for RED adder..*
⑤ *All EEQ fixtures are factory set to 120V and can be changed to 277V in field by following included instructions. Replacement battery pack kit KFBP9.*
⑥ *EEQ fixtures use a tank extension ring and are 2-1/2" taller than EBF fixtures (see page L143).*
⑦ *Photometric characteristics similar to EBF26 page L152, except adjusted for lumen output.*

LUMEN OUTPUT⑦		
LAMP SOURCE	NORMAL POWER	EMERG. POWER
26Watt	1800	450
32Watt	2400	575
42Watt	3200	750

BALLAST DATA					
LAMP WATTS	VOLTAGE	OPERATING AMPS	INPUT WATTS	BALLAST CIRCUIT	REGULATION
26Watt (1x26)	120 / 277 VAC	.24@120V /.11 @277V	29	HPF	Electronic
32Watt (1X32)	120 / 277 VAC	.31@120V /.13 @277V	36	HPF	Electronic
42Watt (1x42)	122 / 277 VAC	.38@120V /.17 @277V	46	HPF	Electronic

HUBBELL®
KILLARK®

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB, IIA
Class II, Div. 1 & 2 Groups E,F,G
Class III, Div. 1 & 2
NEMA 7CD, 9EFG

Listed File E162407
UL-844 Electric Lighting Fixtures for use in Hazardous Locations
UL-924 Emergency Lighting & Power Equipment
Certified File LR11713

FEATURES-SPECIFICATIONS

HOSTILE LITE® E
EMERGENCY

Applications

Where required by NEC, Life Safety Code, etc., to provide illumination during interruption of normal power to lighting system.

Hazardous Locations (gas, vapor, dust), include such areas as: Oil & Gas Refining, Production & Storage, Grain Processing, Paint Manufacture.

Features

- Patented design three high intensity lamps can be independently adjusted to provide custom emergency lighting to a specific area
- Three 20 watt MR16 lamps included
- Pendant, bracket and ceiling mounting styles for a mounting arrangement that suits any lighting layout
- Remote hazardous location test station **(included)** allows testing of fixture at a convenient ground level location
- Factory wired for 120V; can be field changed to 208/240/277V.
- Four tough, long life lead-acid batteries require no maintenance and have a 12 VDC output of 60 watts for 90 minutes
- Safety disconnect feature automatically disconnects lamps from battery if globe is removed
- Solid state battery charger has a low voltage disconnect feature
- Red pilot light, easily visible inside globe, indicates AC power is being supplied to batter charger
- Fixture housings are factory sealed by the electro-mechanical connection block
- The only wiring required is attaching supply wires to the integral female connection block in the mounting cap. Threading fixture onto mounting cap makes the electrical connection
- Electrical continuity is not made during assembly or disassembly without five or more threads secured to insure a flame path
- Suitable in ambients 0°C to 40°C

EBB HALOGEN EMERGENCY LIGHTING

ANSI LAMP TYPE	WATTS	VOLTAGE①	HUB SIZE	CATALOG NUMBER		
				PENDANT	WALL	CEILING
MR16	3x20W	120, 208, 240, 277V	3/4"	EBB32010A2	EBB32010B2	—
			1"	EBB32010A3	EBB32010B3	EBB32010X3

① *Suitable for 220V/50Hz.*

EBB ACCESSORIES

CATALOG NUMBER	DESCRIPTION
EZG1	Guard (die cast aluminum)
VMPSD40	Reflector (standard dome)
EBB-L12	MR16 12 volt lamp
17505AAAB	MR16 lamp socket
EBB-RB	Rechargeable battery (4 used per unit)
EBB-BC	Battery charger (circuit board)
EBB-TRANS*	Transformer Kit 120, 208, 240, 277V
EBB-PL	LED pilot light

Remote test station (included) allows "Push-To-Test" at a location convenient to the user. ②

HAZARDOUS LOCATION APPLICATION DATA

LAMP TYPE	LAMP WATTS	RATED AMBIENT DEGREES	MAX SURFACE TEMPERATURE		
			CLASS I	CLASS II	SIMULTANEOUS CLASS I & II
MR16 Halogen	60W Total	40°C	T6 (85°C)	T5 (100°C)	T5 (100°C)

Note: EBB Series fixtures should not be stored for extended periods before energizing.
② Furnished with 3/4" feed thru mounting box. For Push-To-Test N.C. momentary cover only. Use also with HFXE, DE3B, VE3Q, EEQ, and LZ2NE. Cover only XCS-0B2-PTT. Order SWB back box separately.
** Replaces #17506AAAB.*

Pendant

Ceiling

Wall Mount

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB, IIA
Class II, Div. 1 & 2 Groups E,F,G
Class III, Div. 1 & 2
NEMA 7CD, 9EFG

UL Listed File E162407
UL-844 Electric Lighting Fixtures for use in Hazardous Locations
UL-924 Emergency Lighting & Power Equipment
CSA Certified File LR11713

FEATURES-SPECIFICATIONS

Dimensions: See EZ 50-250 Watt dimensions on page L147

Factory sealed; external seals not required

Cast of copper-free Aluminum (Less than 0.4% copper)

Electrostatically applied epoxy polyester finish is baked on for high density corrosion protection

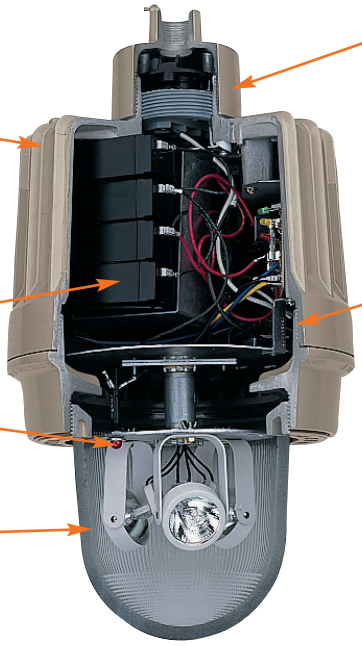
*Four lead-acid batteries are maintenance free and provide 60 watts to the lamps for 90 minutes**

Red pilot light indicates AC power flow to battery charger

Lamps automatically disconnect from battery if globe is disengaged

Glass globe prestressed for heat and impact resistance - Globe is internally fluted on sides and prismatic on bottom

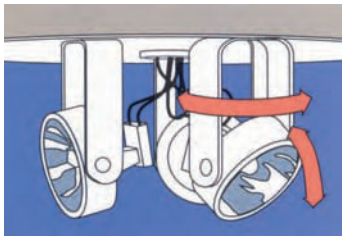
** EBB Series fixtures should not be stored for extended periods before energizing.*



Wireless assembly of fixture tank to mounting cap — Electro-mechanical male/female block allows fast, easy installation and bench top servicing without disconnecting supply wires

Nameplate displays Third Party Certifications and ratings in English and French (large red plate identifies it as an emergency fixture)

Acme double lead threads assure quick and trouble free assembly

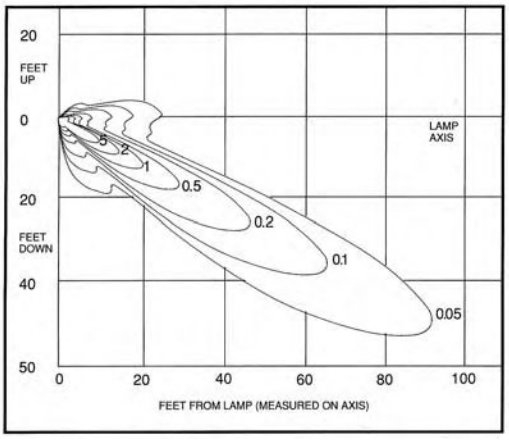


Lamps adjustable on 2 axis for maximum aiming flexibility.

L

VEXA400 Exit Accessory

- White painted steel frame
- 8" Red Letters
- 5 Panes: 3 Exit and 2 Blank
- Fits EBB and VE4Q with globe only
- Dimensions: 14.57" x 9.22"



Photometrics
Typical vertical ISO foot candle distribution.

One 20 watt lamp aimed at 20° below horizontal.

Note: Some minor variations in light spread will occur as each lamp is rotated up/down within the glass globe.

HUBBELL
KILLARK

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III, Div. 1 & 2
Suitable for wet locations
UL Marine
NEMA 3, 4X
Factory sealed

Listed - File E84609

Certified - File LR11713

FEATURES-SPECIFICATIONS

HOSTILE*LITE*®

Applications

HOSTILE*LITE*® ESX Series strobe fixtures can be an excellent warning device in hazardous, hostile or wet locations where hearing is impaired due to high ambient noise conditions.

Compliances

- UL-1203 explosion-proof and dust ignition-proof electrical equipment for use in hazardous (classified) locations
- UL-1638 visual signaling appliances
- UL Marine-type electric lighting fixtures
- NEMA 3, 4, 4X, 7CD, 9EFG

Specifications

- Electronic component temperature range –40˚C to +55˚C
- NEC temperature code, T6 (<85°C)
- Flash rate–85 flashes per minute
- Xenon type lamp

- Voltage and amperage:
  - 12-74 VDC:
    Draws 1.25A avg. @ 12 VDC tapering to 0.2A avg. @ 74 VDC, .75A avg. @ 24 VDC
  - 120 VAC (50/60 HZ):
    Draws 0.30A avg.
  - 240 VAC (50/60 HZ):
    Draws 0.17A avg.

- Power supply output:
  - 13 watts standard
  - 11 watts for 12-74 VDC
- Intensity:

Clear	200 candela effective
Amber	170 candela effective
Blue	90 candela effective
Red	40 candela effective
Green	70 candela effective

Catalog Number Logic

ES X 0 0000 00 0 (CEN)*

Series Constant

Signal Type
X—Strobe

Lens Color
A—Amber
B—Blue
C—Clear
G—Green
R—Red

Voltage
120A—120 VAC 50/60 Hz.
240A—240 VAC 50/60 Hz.
1274—12 through 74 VDC

Guard
G—Guard
Add letter "**G**" to end of catalog number if guard is required.

Mounting Style
A2—3/4" Pendant
A3—1" Pendant
X2—3/4" Ceiling
X3—1" Ceiling
B2—3/4" Bracket
B3—1" Bracket
D4—1-1/4"/1-1/2" Stanchion

**CEN (CENELEC) approved option available. See pages L144 for more information. ESX Series strobes with CENELEC labeling are rated T6 by PTB.*

REPLACEMENT POWER SUPPLY	
CATALOG NUMBER	VOLTAGE
ESX120PS	120VAC, 50/60 HZ.
ESX240PS	220/240VAC, 50/60 HZ.
ESX1274PS	12-74 VDC

REPLACEMENT LENS & LAMP ASSEMBLY	
CATALOG NUMBER	DESCRIPTION
ESXAL	Amber
ESXBL	Blue
ESXCL	Clear
ESXGL	Green
ESXRL	Red
EMGS2	Rep globe support assembly

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III, Div. 1 & 2
Suitable for wet locations
Marine
NEMA 3, 4X
Factory sealed

Listed - File E84609

Certified - File LR11713

FEATURES-SPECIFICATIONS

PENDANT

CEILING

WALL

STANCHION

PENDANT ESX STROBE SIGNAL LIGHT① ②			
LAMP TYPE	HUB SIZE③	VOLTAGE @60 HERTZ	CATALOG NUMBER GLOBE AND MOUNT①
STROBE	3/4"	120 VAC, 50/60 HZ.	ESXR120AA2
		240 VAC, 50/60 HZ.	ESXR240AA2
		12-74 VDC	ESXR1274A2

CEILING ESX STROBE SIGNAL LIGHT① ②			
LAMP TYPE	HUB SIZE③	VOLTAGE @60 HERTZ	CATALOG NUMBER GLOBE AND MOUNT①
STROBE	3/4"	120 VAC, 50/60 HZ.	ESXR120AX2
		240 VAC, 50/60 HZ.	ESXR240AX2
		12-74 VDC	ESXR1274X2

WALL ESX STROBE SIGNAL LIGHT① ②			
LAMP TYPE	HUB SIZE③	VOLTAGE @60 HERTZ	CATALOG NUMBER GLOBE AND MOUNT①
STROBE	3/4"	120 VAC, 50/60 HZ.	ESXR120AB2
		240 VAC, 50/60 HZ.	ESXR240AB2
		12-74 VDC	ESXR1274B2

STANCHION ESX STROBE SIGNAL LIGHT① ②			
LAMP TYPE	HUB SIZE④	VOLTAGE @60 HERTZ	CATALOG NUMBER GLOBE AND MOUNT①
STROBE	1-1/4"	120 VAC, 50/60 HZ.	ESXR120AD4
		240 VAC, 50/60 HZ.	ESXR240AD4
		12-74 VDC	ESXR1274D4

① *Catalog numbers do not include guards. To order add letter "G" to end of catalog number or order EMG2 separately.*
② *Catalog numbers include Red lens. To specify different colored lens, change fourth character in catalog number to one of the following: "B"=Blue, "C"=Clear, "A"=Amber, "G"=Green.*
③ *Standard hub size is 3/4" NPT. To order 1" NPT, change last character of catalog number from "2" to "3".*
④ *Stanchion mount is standard with 1-1/2" NPT and a 1-1/2" NPT to 1-1/4" NPT reducer installed.*

NOTE: See EM series for dimensions, page L143.

HUBBELL
KILLARK®


PENDANT LED

CEILING LED


WALL XENON

LED TECHNOLOGY

Class I, Div. 2, Groups A,B,C,D
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1&2, Group F,G;
Class III
CSA Enclosure Type 4X, IP66
NEMA 4X, Marine Rated

Certified - File LR11713

FEATURES-SPECIFICATIONS

ENVIRORITE®

Signal Luminaires

Applications

These new signal luminaires can be excellent warning devices in corrosive, wet NEMA 4X harsh environments, and in hazardous locations.

NVS signals contain no exposed glass and carry Class II, F&G ratings required for many food processing areas.

Features

- NVSL Series LED with very compact profile and 50,000 hours expected life; steady - on or flashing.
- NVSZ Series Xenon with 10,000 hours expected life; flashing only.
- LED utilizes inverted cone design to provide full 360 degree coverage for more light projection.
- LED and Xenon available in five colors colors - red, green, amber, blue and clear.
- Flash rate for LED is 7 micro flashes approximately every second for increased visual perception.
- Xenon flash rate 60 to 80 per minute
- Can be mounted in any orientation including lens in the UP or SIDE positions.
- Materials: High strength 30% glass-filled thermoset polyester body with Lexan®* lens.
- Resists corrosive effects of most chemicals, hydrocarbons and solvents
- Designed for indoor and outdoor applications

Catalog Numeric Logic

NVS	L	C	F	G	01	A	A	G
	1	2	3	4	5	6	7	8	9

1 NVS - Series Constant
Non-Metallic Signal

2 Source
L = LED
Z = Xenon

3 Fixture Size
C = Compact LED
M = Medium Xenon

4 Flash State
F = Flashing LED or Xenon
S = Steady LED

5 Color (Body, Mount, Guard)
G = Gray

6 Voltage

01 - 120VAC 50/60Hz	Xenon model
08 - 240VAC 50/60Hz	Xenon model
25 - 120-240VAC 50/60Hz	LED model
26 - 12-80VDC (24VAC)	LED or Xenon

7 Color of Strobe
A = Amber, R = Red, G = Green, B = Blue, C = Clear

8 Mount Type
A = 3/4" pendant
X = 3/4" Ceiling
B = 3/4" Wall Bracket (consists of ceiling box and elbow to support body)
M = M20 Ceiling
W = M20 Wall Mount

9 Guard
G = Guard
N = No Guard

Example: NVSLCFG25AAG
LED Gray Body Flashing Amber Pendant w/Guard 120-240VAC

HAZARDOUS LOCATION SUITABILITY

Source	Series	CL1 Div.2 Operating Temp. Code	CL2 Div.1 Groups	Ambient Range
LED	NVSLC	T6	F,G	-40°C to +40°C
Xenon	NVSZM	T2C	F,G	-40°C to +40°C

Intensity in Candellas		Flashing	Steady
LED	Amber	4.3/7.4*	11.3
	Red	5.9/10.1*	15.4
	Green	4.5/7.8*	11.8
	Blue	2.5/4.3*	6.6
	Clear	4.8/8.2*	12.5
Xenon	Amber	40	-
	Red	10	-
	Green	20	-
	Blue	20	-
	Clear	50	-

*CD-S/CD-Effective

Electrical Ratings Max.		
LED	120VAC	040mA Flash
	240VAC	020mA Flash
	12VDC	400mA
	80VDC	60mA
	24VAC	198mA Flash
Xenon	120VAC	.04 Avg.
	240VAC	.02 Avg.
	12VDC	.40 Avg.
	80VDC	.05 Avg.
	24VAC	.35 Avg.

to the following standards:

- UL 1598 Standard for luminaires
- UL 1598A Marine type luminaires
- UL 844 Standard for lighting fixtures for hazardous locations
- UL 1638 Standard for visual signalling applications
- CSA C22.2 no. 137-M1981 electric luminaires for use in hazardous locations
- Enclosed and gasketed, NEMA 3, 4X IP66

* Lexan® is a registered trademark of General Electric.

Down & side orientation

Up & side orientation

Class I, Div. 2, Groups A,B,C,D
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1&2, Group F,G;
Class III
CSA Enclosure Type 4X, IP66
NEMA 4X, Marine Rated

Certified - File LR11713

FEATURES-SPECIFICATIONS

NVS SERIES DESCRIPTION/CATALOG ORDERING INFORMATION

	3/4" Pendant	Amber	Red	Green	Blue	Clear
LED	Flashing 120-240VAC	NVSLCFG25AAG	NVSLCFG25RAG	NVSLCFG25GAG	NVSLCFG25BAG	NVSLCFG25CAG
	Flashing 12-80VDC; 24VAC	NVSLCFG26AAG	NVSLCFG26RAG	NVSLCFG26GAG	NVSLCFG26BAG	NVSLCFG26CAG
	Steady 120-240VAC	NVSLCSG25AAG	NVSLCSG25RAG	NVSLCSG25GAG	NVSLCSG25BAG	NVSLCSG25CAG
	Steady 12-80VDC; 24VAC	NVSLCSG26AAG	NVSLCSG26RAG	NVSLCSG26GAG	NVSLCSG26BAG	NVSLCSG26CAG
XENON	Flashing 120VAC	NVSZMFG01AAG	NVSZMFG01RAG	NVSZMFG01GAG	NVSZMFG01BAG	NVSZMFG01CAG
	Flashing 12-80VDC; 24VAC	NVSZMFG26AAG	NVSZMFG26RAG	NVSZMFG26GAG	NVSZMFG26BAG	NVSZMFG26CAG
	Flashing 240VAC	NVSZMFG08AAG	NVSZMFG08RAG	NVSZMFG08GAG	NVSZMFG08BAG	NVSZMFG08CAG
	3/4" Ceiling	**Amber**	**Red**	**Green**	**Blue**	**Clear**
LED	Flashing 120-240VAC	NVSLCFG25AXG	NVSLCFG25RXG	NVSLCFG25GXG	NVSLCFG25BXG	NVSLCFG25CXG
	Flashing 12-80VDC; 24VAC	NVSLCFG26AXG	NVSLCFG26RXG	NVSLCFG26GXG	NVSLCFG26BXG	NVSLCFG26CXG
	Steady 120-240VAC	NVSLCSG25AXG	NVSLCSG25RXG	NVSLCSG25GXG	NVSLCSG25BXG	NVSLCSG25CXG
	Steady 12-80VDC; 24VAC	NVSLCSG26AXG	NVSLCSG26RXG	NVSLCSG26GXG	NVSLCSG26BXG	NVSLCSG26CXG
XENON	Flashing 120VAC	NVSZMFG01AXG	NVSZMFG01RXG	NVSZMFG01GXG	NVSZMFG01BXG	NVSZMFG01CXG
	Flashing 12-80VDC; 24VAC	NVSZMFG26AXG	NVSZMFG26RXG	NVSZMFG26GXG	NVSZMFG26BXG	NVSZMFG26CXG
	Flashing 240VAC	NVSZMFG08AXG	NVSZMFG08RXG	NVSZMFG08GXG	NVSZMFG08BXG	NVSZMFG08CXG
	3/4" Wall	**Amber**	**Red**	**Green**	**Blue**	**Clear**
LED	Flashing 120-240VAC	NVSLCFG25ABG	NVSLCFG25RBG	NVSLCFG25GBG	NVSLCFG25BBG	NVSLCFG25CBG
	Flashing 12-80VDC; 24VAC	NVSLCFG26ABG	NVSLCFG26RBG	NVSLCFG26GBG	NVSLCFG26BBG	NVSLCFG26CBG
	Steady 120-240VAC	NVSLCSG25ABG	NVSLCSG25RBG	NVSLCSG25GBG	NVSLCSG25BBG	NVSLCSG25CBG
	Steady 12-80VDC; 24VAC	NVSLCSG26ABG	NVSLCSG26RBG	NVSLCSG26GBG	NVSLCSG26BBG	NVSLCSG26CBG
XENON	Flashing 120VAC	NVSZMFG01ABG	NVSZMFG01RBG	NVSZMFG01GBG	NVSZMFG01BBG	NVSZMFG01CBG
	Flashing 12-80VDC; 24VAC	NVSZMFG26ABG	NVSZMFG26RBG	NVSZMFG26GBG	NVSZMFG26BBG	NVSZMFG26CBG
	Flashing 240VAC	NVSZMFG08ABG	NVSZMFG08RBG	NVSZMFG08GBG	NVSZMFG08BBG	NVSZMFG08CBG

COMPONENT/REPLACEMENT PARTS

CATALOG NO.	DESCRIPTION
NVSLC LED SERIES①	
NVSLCFG25A	LED BODY AMBR FLASH 120-240VAC
NVSLCFG25R	LED BODY RED FLASH 120-240VAC
NVSLCFG25G	LED BODY GRN FLASH 120-240VAC
NVSLCFG25B	LED BODY BLUE FLASH 120-240VAC
NVSLCFG25C	LED BODY CLR FLASH 120-240VAC
NVSLCSG25A	LED BODY AMBR STEADY 120-240VAC
NVSLCSG25R	LED BODY RED STEADY 120-240VAC
NVSLCSG25G	LED BODY GRN STEADY 120-240VAC
NVSLCSG25B	LED BODY BLUE STEADY 120-240VAC
NVSLCSG25C	LED BODY CLR STEADY 120-240VAC
NVSLCFG26A	LED BODY AMBR FLASH 12-80VDC: 24VAC
NVSLCFG26R	LED BODY RED FLASH 12-80VDC: 24VAC
NVSLCFG26G	LED BODY GRN FLASH 12-80VDC: 24VAC
NVSLCFG26B	LED BODY BLUE FLASH 12-80VDC: 24VAC
NVSLCFG26C	LED BODY CLR FLASH 12-80VDC: 24VAC
NVSLCSG26A	LED BODY AMBR STEADY 12-80VDC: 24VAC
NVSLCSG26R	LED BODY RED STEADY 12-80VDC: 24VAC
NVSLCSG26G	LED BODY GRN STEADY 12-80VDC: 24VAC
NVSLCSG26B	LED BODY BLUE STEADY 12-80VDC: 24VAC
NVSLCSG26C	LED BODY CLR STEADY 12-80VDC: 24VAC
NV2GG-S	NVSLC COMPACT LED GUARD

①BODY AND LENS W/O MOUNTING BOX OR GUARD

NVSZM XENON SERIES②	
NVSZMFG01	NVS XENON BODY WITH LAMP 120VAC
NVSZMFG08	NVS XENON BODY WITH LAMP 240VAC
NVSZMFG26	NVS XENON BODY WITH LAMP 12-80VDC; 24VAC
NVSZ-LAMP	NVS XENON REPLACEMENT LAMP
NVSMA	NVS AMBER LENS & GASKET
NVSMR	NVS RED LENS & GASKET
NVSMG	NVS GREEN LENS & GASKET
NVSMB	NVS BLUE LENS & GASKET
NVSMC	NVS CLEAR LENS & GASKET
NV2GG	NVSZM MEDIUM XENON GUARD

②BODY AND POWER SUPPLY W/LAMP

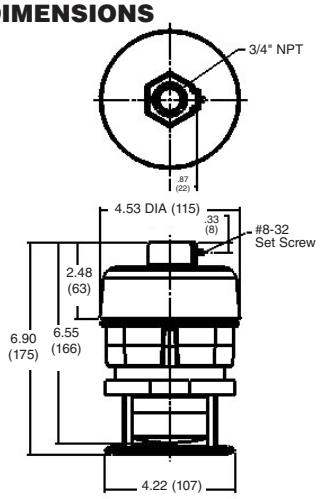
NVS MOUNTING BOXES③	
NV2XG	NVS Ceiling/Wall Mtg Box
NV2AG	NVS Pendant Box
NV2BG	NVS Wall Elbow (use with NV2XG/NV2MG Box)
NV2MG	NVS M20 Ceiling/Wall Mtg Box

③See NV2 series page L3 for additional information.

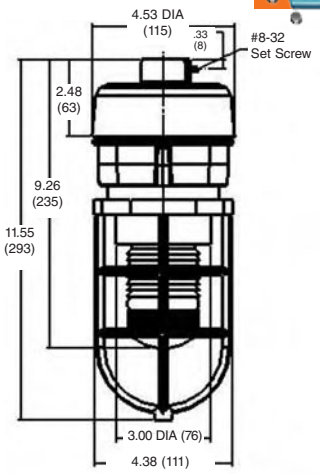
NV2GG-S Compact Guard

NV2GG Medium Guard

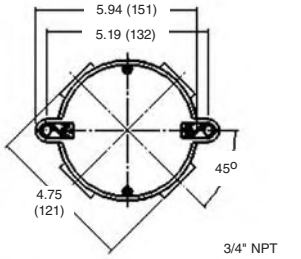
DIMENSIONS

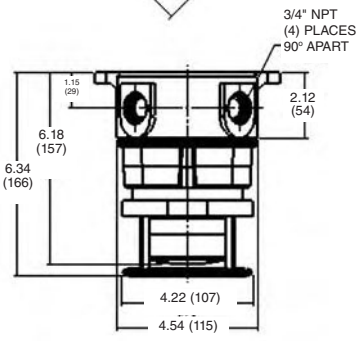


Pendant NVSL LED

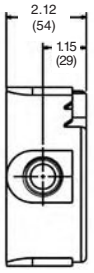


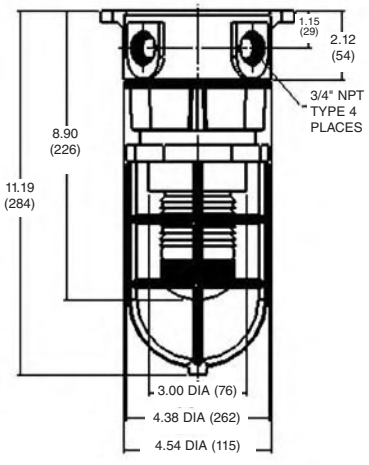
Pendant NVSZ Xenon



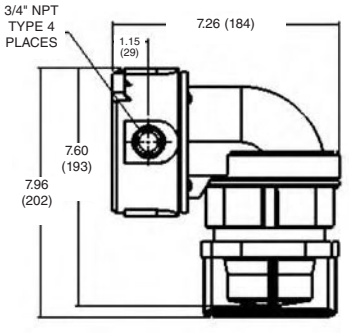


Ceiling/Wall NVSL LED

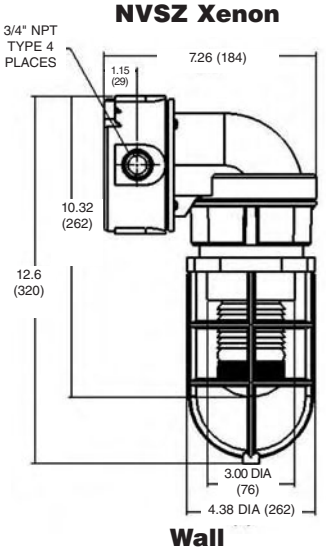




Ceiling/Wall NVSZ Xenon



Wall NVSL LED



Wall NVSZ Xenon

HUBBELL®
KILLARK®

FKA

FH

HOOKLOOP

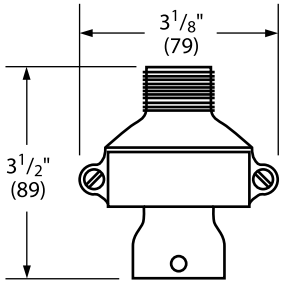
FEATURES-SPECIFICATIONS

FKA

Features

- Ball joint permits fixture to hang plumb. Fixture may swing up to 20° from vertical in any direction
- Cast of aluminum alloy (copper-free aluminum; less than 4/10 of 1%)
- Set screw locks fixture stem in place. Cannot accidently loosen – intended for use with threaded metal conduit
- Joint cannot twist conductor
- Suitable for fixtures up to 125 pounds

FKA		
CATALOG NUMBER	MALE THREAD	FIXTURE STEM SIZE
FKA-22	3/4"	3/4"



For replacement ball only catalog number 00890545

Listed - File E27731

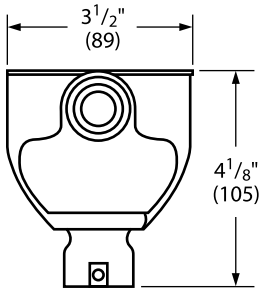
Certified - File LR11851
See files for details or call Killark.

FH

Features

- Combination splice box and flexible fixture hanger
- Ball joint permits fixture to hang plumb. Fixture may swing up to 20° from vertical
- Cast of aluminum alloy (copper-free aluminum; less than 4/10 of 1%)
- Set screw locks fixture stem in place – intended for use with threaded metal conduit
- Joint cannot twist conductors
- Cover may be removed for easy wiring– 11 cu. inches
- Mounts directly to metal conduit
- Suitable for fixtures up to 125 pounds

FH			
TWO HUBS FEED THRU	THREE HUBS T	CONDUIT SIZE	FIXTURE STEM SIZE
FHC-21	FHT-21	3/4"	1/2"
FHC-22	FHT-22	3/4"	3/4"



For replacement ball only catalog number 00890545

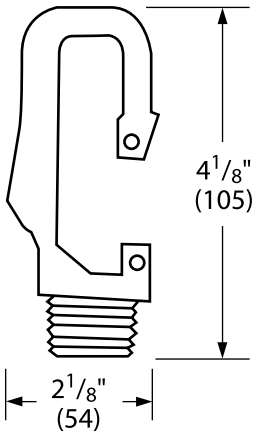
Listed - File E27731

HOOKLOOP

Features

- Pendant fixture hanger consists of a "HOOK" and safety bar which allows conversion to a "LOOP" configuration as necessary
- 3/4" male thread
- Maximum load 125 pounds

HOOKLOOP
CATALOG NUMBER
HOOKLOOP



Listed - File E27731

Certified - File LR11851
See files for details or call Killark.

L

FH

Hook

V Hanger Boxes

VGA

VGC

VGH

VGX

Covers

Flexible Hanger Covers

Hub Covers
(for Rigid Mounting)

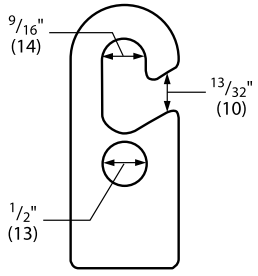
FEATURES-SPECIFICATIONS

FH HOOK

Features

- Economical hanger for pendant fixtures
- Fixtures may absorb minor bumps and vibration through free swinging action
- Hub provided with a set screw to prevent accidental loosening of fixture stem
- A 1/2 inch hole in body is for flexible cable. Cord may be assembled with plug for quick removal of fixtures
- Cast of aluminum alloy (copper-free—less than 4/10 of 1%)
- FH supports up to 125 pounds

FH HOOK, LOOP		
CATALOG NUMBER	DESCRIPTION	FIXTURE STEM SIZE
FH-2	Hook	3/4"



Listed - File E27731 or E3397
See files for details or call Killark.

V SERIES

Features

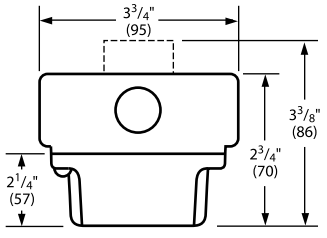
- Flexible fixture hanger for threaded fixture stem
- Enclosed and gasketed, suitable for wet locations
- Permits angular displacement of fixture without twisting wires
- Cushioned—absorbs shock and vibration. Internal strap assures ground continuity
- Combines splice box and hanger in one unit. Splice box available in four configurations
- Cast of corrosion resistant aluminum alloy (copper-free—less than 4/10 of 1%)
- Supports up to 125 pounds

Listed - File E27731 or E3397

FLEXIBLE HANGERS, V SERIES ENCLOSED AND GASKETED			
CATALOG NUMBER		HUB SIZE	FIXTURE STEM SIZE
HANGER W/SPLICE BOX	SPLICE BOX ONLY		
VPFHA-12	VGA-1	1/2"	3/4"
VPFHA-22	VGA-2	3/4"	3/4"
VPFHC-12	VGC-1	1/2"	3/4"
VPFHC-22	VGC-2	3/4"	3/4"
VPFHH-12	VGH-1	1/2"	3/4"
VPFHH-22	VGH-2	3/4"	3/4"
VPFHX-12	VGX-1	1/2"	3/4"
VPFHX-22	VGX-2	3/4"	3/4"

FIXTURE HANGERS ONLY		
CATALOG NUMBER	DESCRIPTION	FIXTURE STEM SIZE
VPFH-2	Flexible hanger cover, maximum load 125 Lbs.	3/4"
VG-2	Hub cover for rigid mounting	3/4"

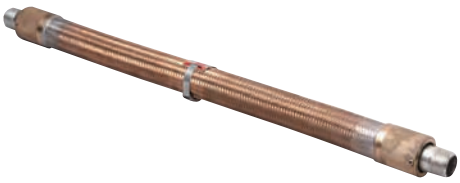
See page L11 for other box configurations.



Flexible cover with box, dotted line is VGA pendant.

HXB

XFH



EKJ

FEATURES-SPECIFICATIONS

HXB

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB,IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III

Features

- Fixture hanger for hazardous locations combining splice box and hanger
- Set screws in female hub prevents accidental loosening of fixture stem; set screws in hub cover lock cover to the splice box
- Four hubs in "X" configuration up to 3/4"
- Flange mounting ring cast as integral part of box
- Splice box wiring hole with cover for access to box interior
- Cast of corrosion resistant aluminum alloy (copper-free aluminum; less than 4/10 of 1%)
- Supports to 125 pounds; vol. 16 cu."

Listed - File E10514

Certified - File LR11716

HXB SPLICE BOX AND HANGER		
CATALOG NUMBER	CONDUIT HUB SIZE	FIXTURE STEM SIZE
HXB-11	1/2"	1/2"
HXB-12	1/2"	3/4"
HXB-21	3/4"	1/2"
HXB-22	3/4"	3/4"
HXBC	Blank Cover	
HIC-SILVER	Replacement Wiring Plug	

XFH

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIB,IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III

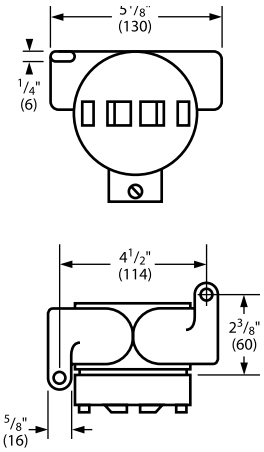
Features

- Fixture hanger for hazardous locations combining splice box and hanger
- Set screws in female hub prevents accidental loosening of fixture
- Straight through conduit hubs for through feed
- Mounting lugs are standard
- Cast of corrosion resistant aluminum alloy (copper-free aluminum; less than 4/10 of 1%)
- Supports to 125 pounds

Listed - File E10514

Certified - File LR11716

XFH SPLICE BOX AND HANGER		
CATALOG NUMBER	CONDUIT HUB SIZE	FIXTURE STEM SIZE
XFH-21	3/4"	1/2"
XFH-22	3/4"	3/4"



EKJ

Class I, Div. 1 & 2, Groups A,B,C,D
Class I, Zones 1 & 2, Groups IIC,IIB,IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III

Features

- Fixture pendant hanger for hazardous locations
- Permits free swing and plumb hang
- Set screws in each hub prevents accidental loosening of fixture
- Constructed of seamless bronze hose with brass outer braid. Asphaltum impregnated jute inner insulates and protects wire from abrasion. Brass female end fittings are supplied with short nipples
- Electrical ground continuity without bonding jumper
- Suitable for wet locations as well as hazardous locations
- Flexible lengths 4 to 18 inches
- Supports to 125 pounds

Listed - File E10514

Certified - File LR11716

EKJ FLEXIBLE PENDANT HANGER*		
CATALOG NUMBER	CONDUIT HUB SIZE	FIXTURE STEM SIZE
EKJ-14 EKJ-24	1/2" 3/4"	4"
EKJ-16 EKJ-26	1/2" 3/4"	6"
EKJ-18 EKJ-28	1/2" 3/4"	8"
EKJ-110 EKJ-210	1/2" 3/4"	10"
EKJ-112 EKJ-212	1/2" 3/4"	12"
EKJ-115 EKJ-215	1/2" 3/4"	15"
EKJ-118 EKJ-218	1/2" 3/4"	18"

*See page F67 for EKJ 1" sizes

L

HUBBELL®
KILLARK®

JL

JAL

ENY Pendant Seal

FEATURES-SPECIFICATIONS

JL/JAL

Class I, Div. 1 & 2, Groups C,D
Class I, Zones 1 & 2, Groups IIC,IIB
Class II, Div. 1 & 2, Groups E,F,G
Class III

Features

- Splice box and hub cover for mounting pendant fixtures in hazardous locations
- Conduit openings in two configurations
- Flange type cover. Set screw in hub prevents accidental loosenings of fixture stem
- Integral lugs for mounting box to ceiling
- Cast of corrosion resistant aluminum alloy (copper-free aluminum; less than 4/10 of 1%)
- Supports up to 125 pounds

Listed - File E10514

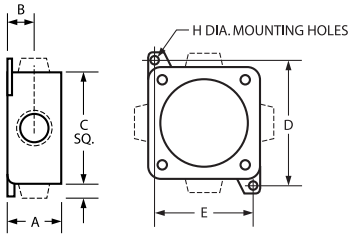
Certified - File LR11716

JL/JAL SPLICE BOX AND HUB COVER FIXTURE HANGER

CATALOG NUMBER		CONDUIT BOX	COVER	TYPE
JL SERIES W/HUB COVER	JAL SERIES W/HUB COVER			
JLC-11	—	1/2"	1/2"	C Straight Through 
JLC-12	—	1/2"	3/4"	
JLC-21	—	3/4"	1/2"	
JLC-22	—	3/4"	3/4"	
JLX-11	JALX-11	1/2"	1/2"	X Four Hubs 
JLX-12	JALX-12	1/2"	3/4"	
JLX-21	JALX-21	3/4"	1/2"	
JLX-22	JALX-22	3/4"	3/4"	
—	JALX-31	1"	1/2"	
—	JALX-32	1"	3/4"	

JL/JAL DIMENSIONS

SERIES	A	B	C	D	E	H
JL	1-15/16" (49)	11/16" (17)	3-1/4" (95)	4-7/32" (107)	2-3/8" (60)	5/16" (8)
JAL	2-3/8" (60)	15/32" (12)	4-5/8" (117)	5-1/4" (133)	4-1/8" (105)	5/16" (8)



ENY PENDANT SEALS

Class I, Div. 1 & 2, Groups A,B,C,D
Class I, Zones 1 & 2, Groups IIC,IIB,IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III

Features

- ENY Pendant Seals are designed for hazardous locations and meet code requirements for a safety set-screw when hanging fixtures. Common applications are for Class I Division I Group B or Class I Zone 2 Ex nR restricted breathing fixtures
- Cast of corrosion resistant aluminum alloy (copper-free aluminum; less than 4/10 of 1%)
- Supports up to 125 pounds

See page F48 for sealing compound and packing fiber

CATALOG NUMBER	SIZE
ENY-2SET	3/4"
ENY-3SET	1"

HUBBELL
KILLARK

Class I, Div. 2, Groups A,B,C,D
Class I, Zone 2, Groups IIC, IIB, IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III
NEMA 3, 4, 4X

c UL us Certified

FEATURES-SPECIFICATIONS

CERTILITE®

Applications

VMCHVM adapters are designed to ease upgrading of existing Crouse-Hinds® "VM, LM, DM" series fixtures to Killark "VM" CERTI*LITE*® fixtures. Units are primarily designed to aid replacement of old ceiling or wall mount units where removal of the existing mounting box and conduit would be difficult or time consuming. Adapter & Killark fixtures rated NEMA 4.

Adapters allow the upgrade of older Mercury Vapor fixtures to newer HID lamp sources, Compact Fluorescent Lamps, LED Induction or to Emergency Lighting.

Series included are VQ1F, VQ2F, VE3Q, VE3V, VE4Q and VM1L.

Note: Adapters are used with Fixture Ballast Tanks (plus globes & guards), e.g. VM3S150, VMG17, VMAG17. Complete fixture with mounting splice box is not required. Adapters are painted to match Killark beige fixture finish.

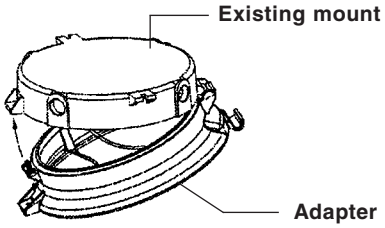
Features

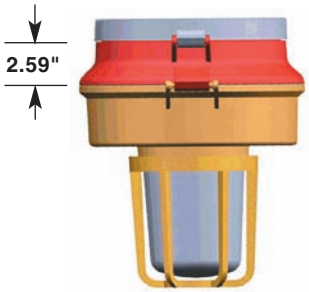
- Allows use of CertiLite®V's patented Swing-Barrel nut for ease of maintenence. Attaches to Crouse-Hinds® mount with hinge and set screw.

Temperature codes:

See Certilite®V or VM series product pages or as listed with other desired product series.

VM COMPETITIVE ADAPTER		
CATALOG NUMBER	DESCRIPTION	EXAMPLE OF MODEL UTILIZED OR REPLACED
VMCHXM	Crouse ceiling mount or wall mount splice box. Adapter allows simple attachment of Killark ballast tank to existing mount.	Ceiling mounts CM2, CM3 Wall mounts TWM2, TWM3





Note - To use the adaptor ring in assemblies using CertiLite®V housings, substitute RC for the MOUNT code.
Example: VM3S150X2GLG
Becomes VM3S150RCGLG

L

HUBBELL®
KILLARK®

EAC/EACH

EZBA12

Class I, Div. 1 & 2, Group D
Class I, Zones 1 & 2, Groups IIA
Class II, Div. 1 & 2, Groups E,F,G
Class III

c UL us Certified

FEATURES-SPECIFICATIONS

HOSTILE*LITE*®

Applications

EAC Series adapters are designed to ease upgrading of existing Crouse-Hinds® "EV" series or existing Killark "H" series to Killark HOSTILE*LITE*® EM or EZ series. Units are primarily designed to aid replacement of old ceiling or wall mount units where removal of the existing mounting box and conduit would be difficult or time consuming. Adapter & Killark fixtures rated NEMA 4.

Adapters allow the upgrade of older incandescent fixtures to newer Fluorescent or HID lamp sources, or to Emergency Lighting including ESX strobes or EEQ emergency series.

Note: Adapters are used with Fixture Housing, Globe, Globe Support assemblies, e.g. EBF261 & EMG1; EMS151 & EMG2; or EZH100 & EZG1. Complete fixture with mounting box is not required. Adapters are painted to match Killark beige fixture finish.

Features

- Setscrews permit secure adapter attachment into old mounting box and to new fixture
- Converted fixtures may be easily removed for service using the Killark EZ mounting system. Wire terminals are included in the adapter (EZTB Terminal Block)

Temperature codes:

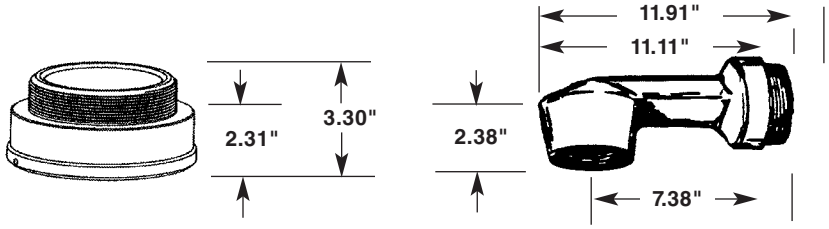
See EM/EB/EQ series pages L144 to L145

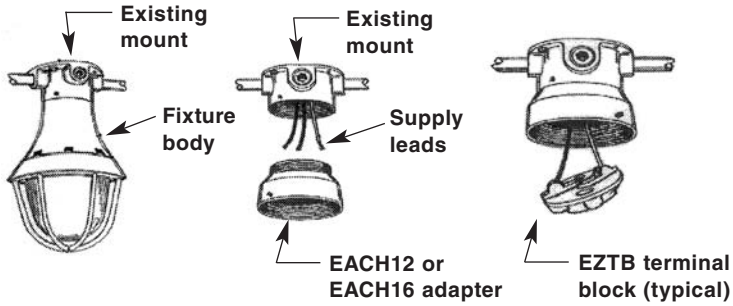
EZ series pages L164 to L165

ESX series pages L214 to L215

EEQ series page L211

EAC/EZBA FIXTURE ADAPTERS		
CATALOG NUMBER	DESCRIPTION	EXAMPLE OF MODEL UTILIZED OR REPLACED
EAC	Killark "H" series Ceiling or Wall	HXG-2-125 Fixture
EACH12	Crouse old style Ceiling Mount with lamp socket in adapter ring between fixture body and a GUF 12 pitch box	"GUF" box w/Set Screw
EZBA12	Crouse old style Wall Mount, old style Arm with integral lamp socket (socket in fixture in newer models) attached to GUF 12 pitch mounting box. EZBA12 includes arm	"GUF" box w/Set Screw
EACH16	Crouse newer style ceiling or wall fixtures w/lamp socket in fixture body; mounted to EV series 16 pitch threaded box; adapter fits in ceiling box or existing arm attached to wall fixture	EVA26/EV22 Box; EVBX240





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