

# Mercmaster™ III Induction Luminaires

## Enclosed and Gasketed. For Hazardous and Adverse Locations

**NEC/CEC:**  
Class I, Division 2, Groups A, B, C, D  
Class II, Division 1 and 2, Groups E, F, G  
NEMA 4X

**NEC/CEC:**  
Class I, Zone 2  
AEx nA nR, IIC  
Ex nA nR IIC

### Applications

- Areas where access for relamping is difficult, reliability is essential and the environment is costly to maintain.
- Cold environment applications.
- Enclosed and gasketed fixtures suitable for use in marine and wet locations, and in a wide range of industrial, chemical processing and other areas where flammable gases and vapors or combustible dusts are present under conditions defined by NEC Class I, Division 2.
- Fixtures are also well suited for use in non-hazardous areas where severe weather conditions, excessive moisture, dirt, dust and corrosive atmospheres are a problem.
- Typical applications include pulp and paper mills, processing plants, chemical plants, oil refineries, foundries, manufacturing plants, storage areas and marine applications. Fixtures have NEMA 4X listing.

### Features

- Instant start and restrike.
- High lumen output and efficacy (up to 73 lumens per Watt).
- Fixtures operate safely in a 40 °C (104 °F) ambient.
- Good lumen maintenance provides less than 30% depreciation after 60K hours of operation.
- Virtually maintenance free.
- Ultra long 100,000 hours of life keeps maintenance costs to a minimum.
- Starts in temperatures as low as -40 °C (-40 °F).
- Low total harmonic distortion (less than 10%).
- No cycling at end of life.
- Modular design allows scores of fixture component combinations to meet installation and lighting needs.
- Mounting hoods include cone-shaped pendant, standard pendant, flexible pendant, ceiling and wall (tapped for 3/4" or 1" NPT), 25° angle stanchion and straight stanchion (both tapped for 1-1/4" or 1-1/2" NPT).
- Cone hood fixtures for pendant mounting shed dust, dirt and combustible fibers, and inhibit build-up that "insulates" fixture and slows heat transfer. Also provide increased surface area for more effective heat dissipation.
- Reflector choice includes standard dome and 30° angle types, both made of fiberglass reinforced white polyester. Highly resistant to unusually corrosive applications. Reflectors are vented for cooler, dirt-free operation and maintained lumen output. They secure to ballast housing with stainless steel screws threading into stainless steel inserts.
- For high corrosion resistance, fixture housing, mounting hoods and guards are copperfree (4/10 of 1% max.) cast aluminum with baked epoxy finish, electrostatically applied for uniformity. All exposed hardware is stainless steel.
- Hinge has high lip for added safety during installation and servicing. Hinge and bolt construction assures 360° compression at all points on ballast housing gasket for positive sealing. Swing-away design of captive bolt and nut simplifies servicing.
- Body gaskets and globe gaskets are high-temperature silicone rubber.
- All Mercmaster III mounting hoods have provision for easy field installation of fuses in fixtures (see fuse kit listings in this catalog section).
- For electrical protection, a ground wire is provided on each Mercmaster to bond hood and ballast housing.



85 Watt Wall Mount Fixture with  
Prismatic Glass Globe

### Standard Materials

- Mounting hoods, ballast bodies and guards: cast copperfree (4/10 of 1% max.) aluminum
- Exposed hardware: stainless steel; latch assemblies have stainless steel bolt and captive nut; reflectors and guards attach with stainless steel screws threading into stainless steel inserts
- Reflectors: fiberglass reinforced white polyester
- Globes: heat-resistant prismatic glass

### Standard Finishes

- Mounting hoods, ballast bodies, guards: epoxy powder coat finish, electrostatically applied for complete, uniform surface protection
- Reflectors: white polyester finish

### Options

- Fuses can be field-installed on Mercmaster III fixtures. Kits include fuse block, wire connectors and screws for attaching to mounting hood. Fixtures with fuses do not comply with Marine Type Electric Fixtures Outside Type (Salt Water) requirements for marine listing.
- Photocell optional for all fixtures except cone and ceiling mounts; provides automatic "on-off" control.

### NEC/CEC Certifications and Compliances

- UL Standard: UL 1598, UL 844, UL 1598A
- CSA Standard: C22.2 No. 250, C22.2 No. 137
- cULus Listed: E10444

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## Illustrated Features

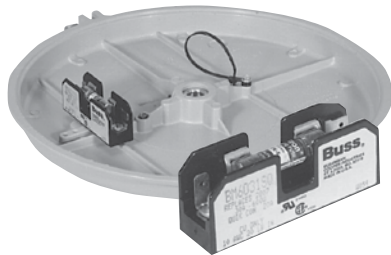


### Aluminum Inner Reflector

Solid aluminum inner reflector improves photometric efficiency.

### Epoxy Finish

Ballast housing, hoods and guards are copperfree aluminum with epoxy powder coat finish.



### Fuses Mount to Hood Bosses

Two screws secure fuse kit to mounting boss in any Mercmaster mounting hood.

### Electrical Protection

Ground wire provided to bond mounting hood to ballast housing.



### Stainless Steel Latch Assembly

Captive, stainless steel latch assembly bolt and nut closes securely, resists attack of corrosive atmospheres. Swing-away design simplifies servicing.



### Rugged, Vented Reflectors

Reflectors are thick, tough fiberglass reinforced white polyester, vented for cooler operation. Quickly attach with stainless steel screws provided.

### Threaded Stainless Steel Inserts for Screws

Fixture bodies have stainless steel threaded inserts to receive stainless steel screws for reflector and guard. Prevents "freezing", allowing guards and reflectors to be easily removed and replaced at any time, without damage to the housing.

### Prismatic Glass Globes, Refractors and Enclosed Reflector

Heat-resistant globes, refractors and enclosed reflectors thread into ballast housing and seal against a high-temperature silicone rubber gasket.



### Mounting Hood and Globe Gaskets

Silicone rubber gaskets seals out moisture, dirt and dust. Stays flexible, withstands high temperatures. Closure design assures uniform gasket compression.



### Cooler Operating Cone Hood

Sloped surface sheds insulating dust, dirt, and combustible fibers. Provides cleaner, larger surface area for better heat dissipation.

### Photocell

Available for all fixtures except cone and ceiling mount. Installs through knock-out in mounting hood. Provides continuous ON-OFF dusk-to-dawn control.



### "Safety" High Hinge

Extra-high hinge provides additional protection against accidental ballast housing disengagement during installation or maintenance.

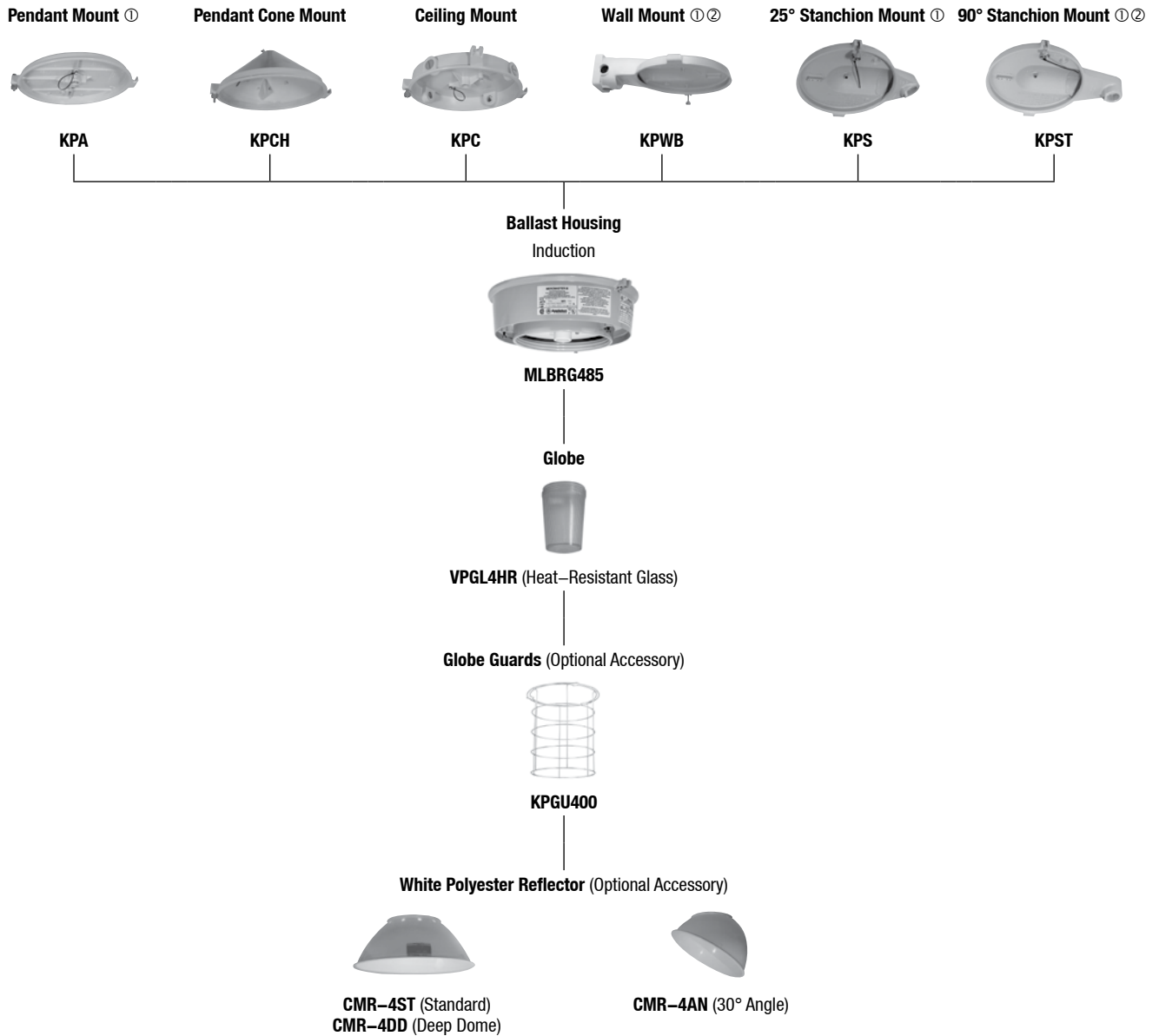
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### Mercmaster III Induction Family Tree



① Mounting hood with a 120 V or 208-277 V factory installed photocell is available.

② Standard and deep dome reflectors may interfere with bottom conduit entry if used with KPST and KPWB mounting hoods..

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Ex nA nR IIC

**“T” Numbers for Mercmaster III Induction Fixtures – Class I, Division 2 and Class II, Division 1 and 2**

Lamp Watts	Lamp Type	Supply Wire Temp. °C (°F)	Ambient Temp. °C (°F)	Input Voltage	Class I, Division 2, Groups A, B, C, D NEC/CEC Temp. Ident. Number Nameplate Marking			Class II, Division 1 and 2, Groups E, F, G NEC/CEC Temp. Ident. Number Nameplate Marking		
					with Globe or Reflector	with Refractor	with Enclosed Reflector	with Globe or Reflector	with Refractor	with Enclosed Reflector
85	Induction	90 (194)	40 (104)	100-120	T3	—	—	T6	—	—
85	Induction	90 (194)	40 (104)	200-277	T3	—	—	T6	—	—

**“T” Numbers for Mercmaster III Induction Fixtures – Class I, Zone 2**

Lamp Watts	Lamp Type	Supply Wire Temp. °C (°F)	Ambient Temp. °C (°F)	Input Voltage	Class I, Zone 2 AEx nA nR IIC / Ex nA nR IIC		Class I, Zone 2 AEx nR IIC / Ex nR IIC			
					with Globe	with Globe and Reflector	with Globe	with Globe and Reflector	with Refractor	Reflector with Lens
85	Induction	90 (194)	40 (104)	100-120	T4	T4	—	—	—	—
85	Induction	90 (194)	40 (104)	200-277	T4	T4	—	—	—	—

**“T” Numbers Represent the Maximum Lamp Temperature for Class I, Division 2 Locations and Maximum Surface Temperature Under Dust Blanket for Class II, Division 1 Locations.**




“T” Number	T1	350	325	T2	T2A	T2B	T2C	T2D	T3	T3A	T3B	T3C	T4	T4A	T5	T6
Temp Range (°C)	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
Temp. Range (°F)	664-842	619-662	574-617	538-572	502-536	448-500	421-446	394-419	358-392	331-356	322-329	277-320	250-275	214-248	187-212	185

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	Type Mounting	Lamp Watts	Hub Size (Inches)	Catalog Numbers ① ② ③ with Globe
 Shown with Globe	<b>Pendant</b>			
	One Hub Rigid Mounting ④	85 ⑤ ⑥	3/4	MLAQ852G4N
 Shown with Globe	<b>Pendant Cone Hood</b>			
	One Hub Rigid Mounting	85 ⑤ ⑥	3/4	MLDQ852G4N
 Shown with Refractor	<b>Ceiling</b>			
	Five Hubs Four Close-Up Plugs	85 ⑤ ⑥	3/4	MLCQ852G4N
			1	MLCQ853G4N




- ① Add voltage suffix **-A1** for 120 Vac: 90-140 Vac; **-A6** for 277: 180-305 Vac.
- ② See following pages for accessory ordering information.
- ③ For fixtures with guard, substitute **G** for **N** before adding suffix.
- ④ For flexible pendant mount, change **A** to **F** in catalog number.
- ⑤ Add **Z2** suffix for factory sealed non-sparking/restricted breathing protection (AEx nA nR).
- ⑥ Add **Z** suffix for factory sealed non-sparking/restricted breathing protection (Ex nA nR).

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Class I, Zone 2  
AEx nA nR, IIC  
Ex nA nR IIC

	Type Mounting	Lamp Watts	Hub Size (Inches)	Catalog Numbers <sup>①②③</sup> with Globe
 Shown with Globe	Wall		3/4	<b>MLWQ852G4N</b>
	Five Hubs Four Close-Up Plugs	85 <sup>④⑤</sup>	1	<b>MLWQ853G4N</b>
 Shown with Globe	25° Stanchion		1-1/4	<b>MLSQ854G4N</b>
	One Hub	85 <sup>④⑤</sup>	1-1/2	<b>MLSQ855G4N</b>
 Shown with Globe	Straight Stanchion		1-1/4	<b>MLRQ854G4N</b>
	One Hub	85 <sup>④⑤</sup>	1-1/2	<b>MLRQ855G4N</b>

① Add voltage suffix **-A1** for 120 Vac: 90-140 Vac; **-A6** for 277: 180-305 Vac.  
 ② See following pages for accessory ordering information.  
 ③ For fixtures with guard, substitute **G** for **N** before adding suffix.  
 ④ Add **Z2** suffix for factory sealed non-sparking/restricted breathing protection (AEx nA nR).  
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### Mounting Hoods

	Description	Hub Size (Inches)	Catalog Number
<b>Pendant</b>			
	One Hub, Rigid Mounting	3/4 1	KPA-75 KPA-100
<b>Pendant – Flexible</b>			
	One Hub, Flexible Mounting	3/4 1	KPAF-75 KPAF-100
<b>Pendant Cone</b>			
	Cone Hood Rigid Mounting	3/4 1	KPCH-75 KPCH-100
<b>Ceiling</b>			
	Five Hubs, Four Close-Up Plugs	3/4 1	KPC-75 KPC-100
<b>Wall</b>			
	Five Hubs, Four Close-Up Plugs	3/4 1	KPWB-75 KPWB-100
<b>25° Stanchion</b>			
	One Hub	1-1/4 1-1/2	KPS-125 KPS-150
<b>90° Stanchion</b>			
	One Hub	1-1/4 1-1/2	KPST-125 KPST-150


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## Fixture Units – Less Mounting Hoods

	Type	Frequency	Fixture Unit Catalog Number	Add Voltage Suffixes	
				120 V	277 V
<b>Globe</b>					
	Induction	50/60 Hz	<b>MLBRG485Q</b>	-A1	-A6

## Accessories and Replacement Parts

Item	Description	Catalog Number
<b>White Polyester Reflectors</b>		
	Standard Dome	<b>CMR-4ST</b> ①
	Deep Dome (Dark Skies Compliant)	<b>CMR-4DD</b> ①
	30° Angle	<b>CMR-4AN</b> ①

## Prismatic Glass Globes – Heat-Resistant

	Clear	<b>VPGL-4HR</b>
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## Guards

		<b>KPGU400</b>
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## Mercmaster III Fixture Unit, Component and Accessory Weights ②

Fixture Unit and Mounting Hoods	Wt. kg (lbs)	Reflectors	Wt. kg (lbs)	Reflectors, Globes and Guard	Wt. kg (lbs)
Fixture	12.7 (28.00)	Standard Dome	1.1 (2.50)	Glass Globe	1.7 (3.75)
Pendant	1.0 (2.25)	30° Angle	1.1 (2.50)	Globe Guard	0.5 (1.00)
Pendant Cone	1.1 (2.50)	Deep Dome	1.6 (3.50)		
Ceiling	1.4 (3.00)				
Wall	1.8 (4.00)				
25° Stanchion	1.5 (3.25)				
90° Stanchion	1.5 (3.33)				

① Standard and deep dome reflectors may interfere with bottom conduit entry if used with KPST and KPWB mounting hoods.

② Weights are approximate.



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Fuse Kit includes fuse, fuse holder and necessary hardware for field installation. Mounts easily to hood with one screw. ①

Lamp Watts	Volts	Fuse Qty. Req.
85	120/277	1
	208-240	2

### Electromagnetic Compatibility

- A.) Complies with European norms EN55015, EN6100-3-2 and EN61547  
 B.) RFI  
 a.) Meets standard EN55022 and is valid for frequencies up to 1000 MHz.

### Electrical Characteristics

		85 W 100–120 V	85 W 200–277 V
System power ② nom.	W	85	85
System power ② min.	W	82	82
System power ② max.	W	88	88
AC supply voltage nom.	V	120	230
AC supply voltage min.	V	90	180
AC supply voltage max.	V	140	305
DC supply voltage nom.	V	120	230
DC supply voltage min.	V	90	180
DC supply voltage max.	V	180	350
Supply frequency nom.	Hz	60	50
Supply frequency min.	Hz	47	47
Supply frequency max.	Hz	63	63
Supply current nom.	mA	730	400
Inrush current max.	A	16	12
Duration inrush current max.	usec	170	170
Power factor nom.		>0.92	>0.92
HF output frequency nom.	MHz	2.65	2.65
HF output frequency min.	MHz	2.3	2.3
HF output frequency max.	MHz	3	3
HF output voltage max.	kV	1.5	1.5
Leakage current	mA	<0.5	<0.5
Overvoltage		200Vac	400Vac

### Lamp Characteristics

	Values at 100 Hrs.	QL 85 W
Luminous flux nom.	lm	6,000
Luminous flux min.	lm	5,500
Luminous flux max.	lm	6,500
System efficacy nom.	lm/W	70

### Lamp Operation

- A.) Ignition and Lifetime Performance  
 a.) Ignition time <0.5 seconds  
 Hot Restrike time <0.5 seconds  
 b.) Induction lighting offers a direct, flicker-free ignition after switch-on, in both cold and hot conditions  
 B.) Lumen Maintenance  
 a.) The lumens of an induction lamp are expected to have depreciated after 60,000 hours to no less than 75% of the initial lumens

① Canadian Electrical Code does NOT allow fusing in hazardous locations.

② At design voltage.

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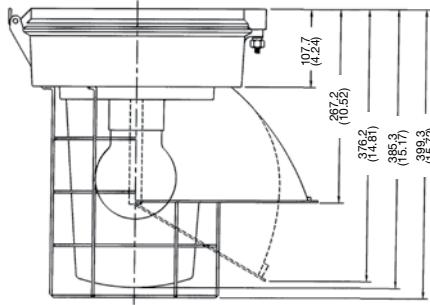
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Dimensions in Millimeters (Inches)

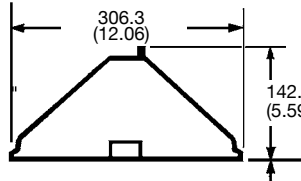
Appleton

INDUCTION/AREA: NEC/CEC ENCLOSED AND GASKETED

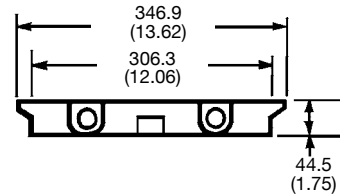
**Pendant (Rigid or Flex)**



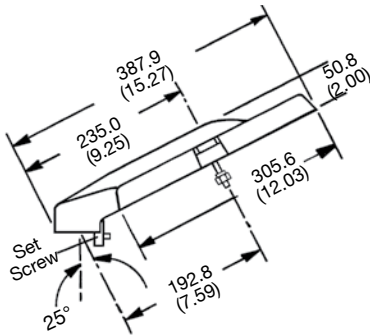
**Pendant Cone**



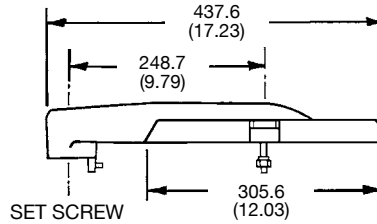
**Ceiling**



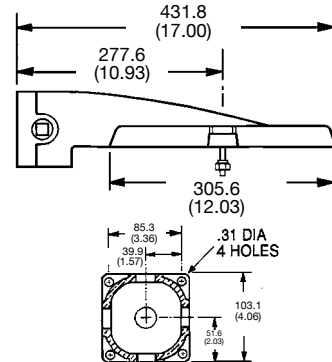
**25° Stanchion**



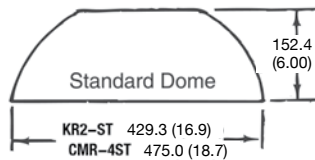
**90° Stanchion**



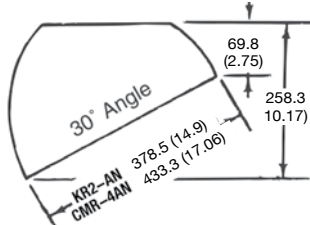
**Wall Mount**



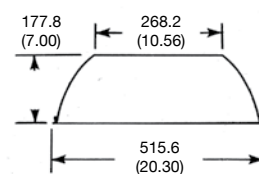
**Standard Polyester Reflector**



**30° Angle Polyester Reflector**



**Deep Dome**



# PCD2 Series Factory Sealed Hazardous Location Photocontrol

For use in Class I, Division 2, Groups A, B, C, D locations

Maintains Class I, Division 2 rating for Mercmaster III – Low Profile, Mercmaster III, and Mercmaster III – 400 Series Luminaires, Mercmaster LED

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NEMA 4X

## Applications

- Encapsulated photocontrol provides automatic dusk-to-dawn lighting control in Class I, Division 2 locations.
- Typical applications include walkways, security areas and any other outdoor lighting application.
- For use with Mercmaster III – Low Profile, Mercmaster III, and Mercmaster III – 400 Series Luminaires.
- For remote mounting in FS Boxes.

## Features

- Factory sealed design eliminates the need for an explosionproof enclosure.
- Can be easily installed in the field.
- Solid state design for performance and reliability.
- Available for 120, 208, 240, or 277 volts.


- 50-400 W HID, incandescent or fluorescent, 50/60 Hz.
- 1000 V.A. Voltage/Ampere
- Minimum time delay: 15 seconds to eliminate nuisance tripping.
- Provided with (3) 18AWG stranded leads 152.4 mm (6.00 in) length.
- Will fit through standard 1/2" knockout.
- Supplied with locknut and gasket.


## Materials


- Encapsulated with epoxy sealing compound
- FS: aluminum

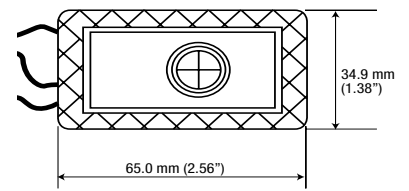
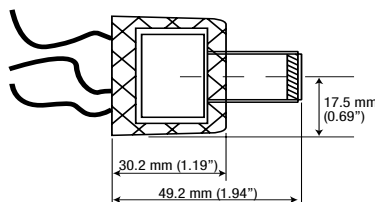
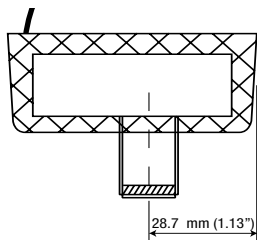
## NEC/CEC Certifications and Compliances

- UL Standard: 1604 – Hazardous (Classified) Locations
- cULus Recognized

	Voltage Range	Max VA	Max Current Amps	Suffix Designation Catalog Number
<b>Factory-Installed Photocontrol - Not for ceiling or pendant cone.</b> <i>Add to fixture catalog after voltage; i.e.: KPWBL1075MTH1.</i>				
	120 V, 50/60 Hz	1000	—	H1
	208 V, 50/60 Hz	1000	—	H2
	240 V, 50/60 Hz	1000	—	H3
	277 V, 50/60 Hz	1000	—	H4

	Voltage Range	Max VA	Max Current Amps	Suffix Designation Catalog Number
<b>Photocontrol for Field Installation</b>				
	120 V, 50/60 Hz	1000	8.3 Amp	PC120D2
	208 V, 50/60 Hz	1000	4.8 Amp	
	240 V, 50/60 Hz	1000	4.2 Amp	PC247D2
	277 V, 50/60 Hz	1000	3.6 Amp	

	Voltage Range	Max VA	Max Current Amps	Suffix Designation Catalog Number
<b>Photocontrol in FS Cover for Use with FS/FD Box</b> <i>Supplied with two stainless steel screws. For neoprene gasket, order catalog number FS-GKR-1N.</i>				
	120V, 50/60 Hz	1000	8.3 Amp	FSKA-PC120D2
	208, 50/60 Hz	1000	4.8 Amp	
	240 V, 50/60 Hz	1000	4.2 Amp	FSKA-PC247D2
	277 V, 50/60 Hz	1000	3.6 Amp	



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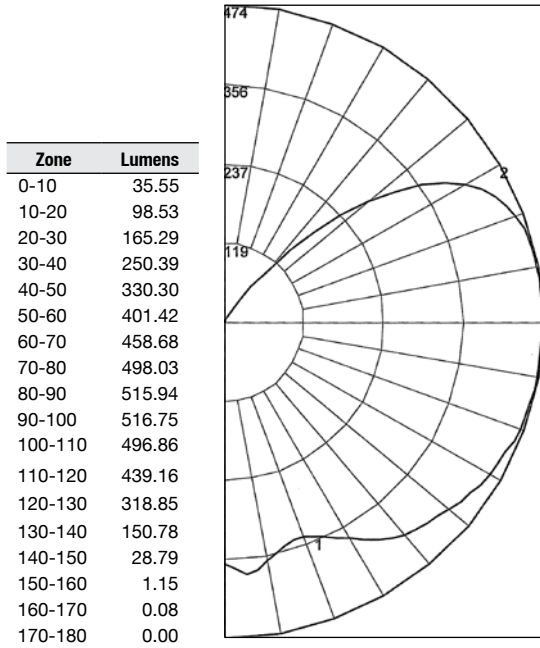
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### Photometric Data

Total Luminaire Efficiency = 78.4%

CIE Type – General Diffuse



REPORT NUMBER: **MLBR85QL**

Lamps: 85 W QL lamp with Globe only

### Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

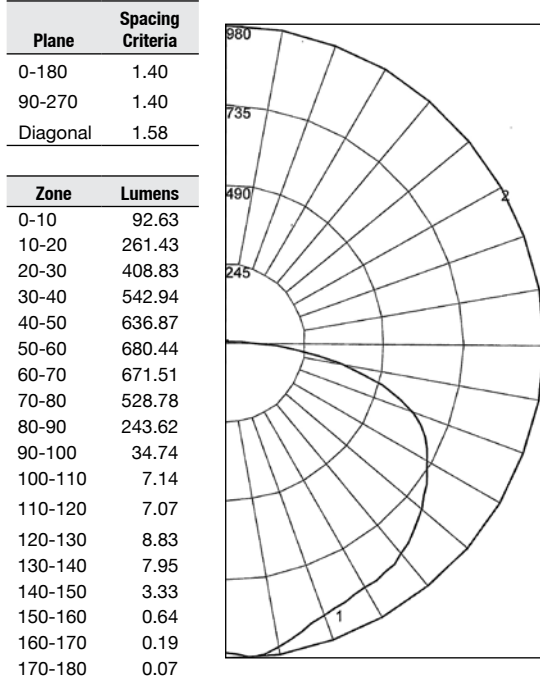
% Ceiling Rcc	% Walls Rw	80				70				50			30			10			0
		70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0		86	86	86	86	80	80	80	80	69	69	69	59	59	59	50	50	50	46
1		74	69	64	60	68	64	59	56	54	51	48	46	43	41	38	36	34	30
2		66	58	51	46	60	53	47	42	45	41	36	38	34	31	31	28	25	22
3		59	49	42	36	54	46	39	34	39	33	29	32	28	24	26	23	20	17
4		53	43	35	29	49	40	33	27	34	28	24	28	23	20	23	19	16	13
5		49	38	30	25	45	35	28	23	30	24	20	25	20	17	20	16	13	11
6		45	34	26	21	41	31	24	19	26	21	17	22	17	14	18	14	11	9
7		41	30	23	18	38	28	21	17	24	18	14	20	15	12	16	13	10	8
8		38	27	20	16	35	25	19	14	21	16	12	18	14	11	15	11	9	7
9		35	25	18	14	33	23	17	13	20	15	11	16	12	9	13	10	8	6
10		33	23	16	12	30	21	15	11	18	13	10	15	11	8	12	9	7	5

### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture	Zone	Lumens	% Lamp	% Fixture
0-30	299.37	5.0	6.4	90-120	1452.77	24.2	30.9
0-40	549.76	9.2	11.7	90-130	1771.62	29.5	37.6
0-60	1281.48	21.4	27.2	90-150	1951.19	32.5	37.6
0-90	2754.13	45.9	58.5	90-180	1952.42	32.5	41.5
				0-180	4706.55	78.4	100.0

Total Luminaire Efficiency = 69%

CIE Type – Direct



REPORT NUMBER: **MLBR85QLST**

Lamps: 85 W QL lamp with Standard Dome Reflector

### Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

% Ceiling Rcc	% Walls Rw	80				70				50			30			10			0
		70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0		82	82	82	82	80	80	80	80	76	76	76	72	72	72	69	69	69	68
1		73	68	65	61	70	67	63	60	63	60	58	60	58	56	58	56	54	52
2		65	58	52	47	63	56	51	47	54	49	45	51	47	44	49	46	43	41
3		58	50	43	38	56	48	42	37	46	41	37	44	39	36	42	38	35	33
4		53	43	36	31	51	42	36	31	40	35	30	38	34	30	37	33	29	27
5		48	38	31	26	47	37	31	26	36	30	25	34	29	25	33	28	25	23
6		44	34	27	22	43	33	27	22	32	26	22	31	25	22	29	25	21	20
7		41	31	24	19	40	30	24	19	29	23	19	28	23	19	27	22	19	17
8		38	28	21	17	37	27	21	17	26	21	17	25	20	17	24	20	16	15
9		35	25	19	15	34	25	19	15	24	19	15	23	18	15	22	18	15	13
10		33	23	18	14	32	23	17	14	22	17	13	21	17	13	21	16	13	12

### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture	Zone	Lumens	% Lamp	% Fixture
0-30	762.89	12.7	18.4	90-120	48.95	0.8	1.2
0-40	1305.83	21.8	31.6	90-130	57.78	1.0	1.4
0-60	2623.14	43.7	63.4	90-150	69.06	1.2	1.4
0-90	4067.06	67.8	98.3	90-180	69.96	1.2	1.7
				0-180	4137.02	69.0	100.0

# Mercmaster™ III Induction Luminaires

## Enclosed and Gasketed. For Hazardous and Adverse Locations

NEC/CEC:  
Class I, Division 2, Groups A, B, C, D  
Class II, Division 1 and 2, Groups E, F, G  
NEMA 4X

NEC/CEC:  
Class I, Zone 2  
AEx nA nR, IIC  
Ex nA nR IIC

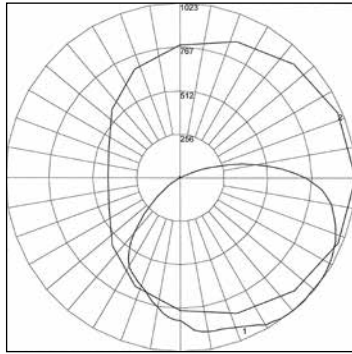
### Photometric Data

Total Luminaire Efficiency = 61.4%

CIE Type – Direct

Plane	Spacing Criteria
0-180	1.80
90-270	1.44
Diagonal	1.54

Zone	Lumens
0-10	81.53
10-20	231.27
20-30	367.34
30-40	487.91
40-50	542.61
50-60	528.65
60-70	475.60
70-80	400.17
80-90	296.45
90-100	173.50
100-110	69.93
110-120	16.29
120-130	6.47
130-140	4.19
140-150	1.67
150-160	0.59
160-170	0.44
170-180	0.10



REPORT NUMBER: **MLBR85QLAN**

Lamps: 85 W QL lamp with 30° Angle Dome Reflector

#### Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

% Ceiling Rcc	% Walls Rw	80		70		50		30		10		0							
		70	50	30	10	70	50	30	10	50	30	10	50	30	10	0			
0		72	72	72	72	70	70	70	70	66	66	66	62	62	62	58	58	58	57
1		64	60	56	53	61	58	55	52	54	52	50	51	49	47	48	46	45	43
2		57	51	46	42	55	49	45	41	46	43	39	44	40	38	41	38	36	34
3		52	44	38	34	49	43	37	33	40	36	32	38	34	31	36	32	30	28
4		47	39	33	28	45	38	32	28	35	31	27	33	29	26	31	28	25	23
5		43	34	28	24	41	33	28	23	31	26	23	30	25	22	28	24	21	20
6		39	31	25	20	38	30	24	20	28	23	20	27	22	19	25	21	19	17
7		36	28	22	18	35	27	21	18	25	21	17	24	20	17	23	19	16	15
8		34	25	20	16	33	24	19	16	23	19	15	22	18	15	21	17	14	13
9		32	23	18	14	30	22	17	14	21	17	14	20	16	13	19	16	13	12
10		30	21	16	13	29	21	16	12	20	15	12	19	15	12	18	14	12	11

#### Zonal Lumen Summary

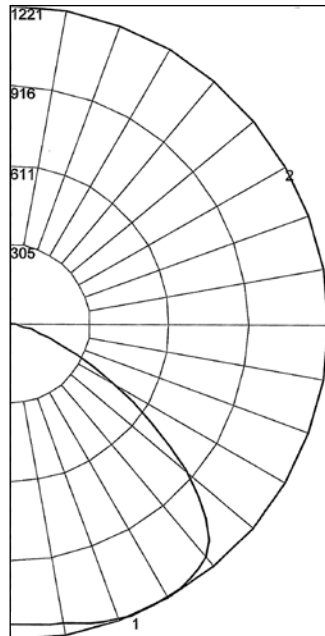
Zone	Lumens	% Lamp	% Fixture	Zone	Lumens	% Lamp	% Fixture
0-30	680.15	11.3	18.5	90-120	259.73	4.3	7.0
0-40	1168.06	19.5	31.7	90-130	266.19	4.4	7.2
0-60	2239.32	37.3	60.8	90-150	272.06	4.5	7.2
0-90	3411.54	56.9	92.6	90-180	273.19	4.6	7.4
0-180	2684.73	61.4	100.0				

Total Luminaire Efficiency = 59.5%

CIE Type – Direct

Plane	Spacing Criteria
0-180	1.58
90-270	1.58
Diagonal	1.58

Zone	Lumens
0-10	111.69
10-20	339.29
20-30	563.74
30-40	754.34
40-50	811.90
50-60	595.64
60-70	288.96
70-80	91.02
80-90	13.32
90-100	0.00
100-110	0.00
110-120	0.25
120-130	0.46
130-140	0.28
140-150	0.41
150-160	0.00
160-170	0.07
170-180	0.04



REPORT NUMBER: **MLBR85QLHB**

Lamps: 85 W QL lamp with High Bay Reflector

#### Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

% Ceiling Rcc	% Walls Rw	80		70		50		30		10		0							
		70	50	30	10	70	50	30	10	50	30	10	50	30	10	0			
0		71	71	71	71	69	69	69	69	66	66	66	63	63	63	61	61	61	59
1		66	63	61	59	64	62	60	58	59	58	56	57	56	55	55	54	53	52
2		60	56	52	49	59	55	51	49	53	50	48	51	49	46	49	47	45	44
3		55	50	45	42	54	49	44	41	47	43	40	45	42	40	44	41	39	38
4		51	44	39	35	49	43	39	35	42	38	35	40	37	34	39	36	34	33
5		47	39	34	31	45	39	34	30	38	33	30	36	33	30	35	32	29	28
6		43	35	30	27	42	35	30	27	34	30	26	33	29	26	32	29	26	25
7		40	32	27	24	39	32	27	23	31	26	23	30	26	23	29	26	23	22
8		37	29	24	21	36	29	24	21	28	24	21	27	23	21	27	23	20	19
9		35	27	22	19	34	26	22	19	26	22	19	25	21	18	24	21	18	17
10		32	25	20	17	32	24	20	17	24	20	17	23	19	17	23	19	17	16

#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture	Zone	Lumens	% Lamp	% Fixture
0-30	1014.71	16.9	28.4	90-120	0.25	0.0	0.0
0-40	1769.06	29.5	49.5	90-130	0.70	0.0	0.0
0-60	3176.60	52.9	88.9	90-150	1.39	0.0	0.0
0-90	3569.90	59.5	100.0	90-180	1.50	0.0	0.0
0-180	3571.40	59.5	100.0				