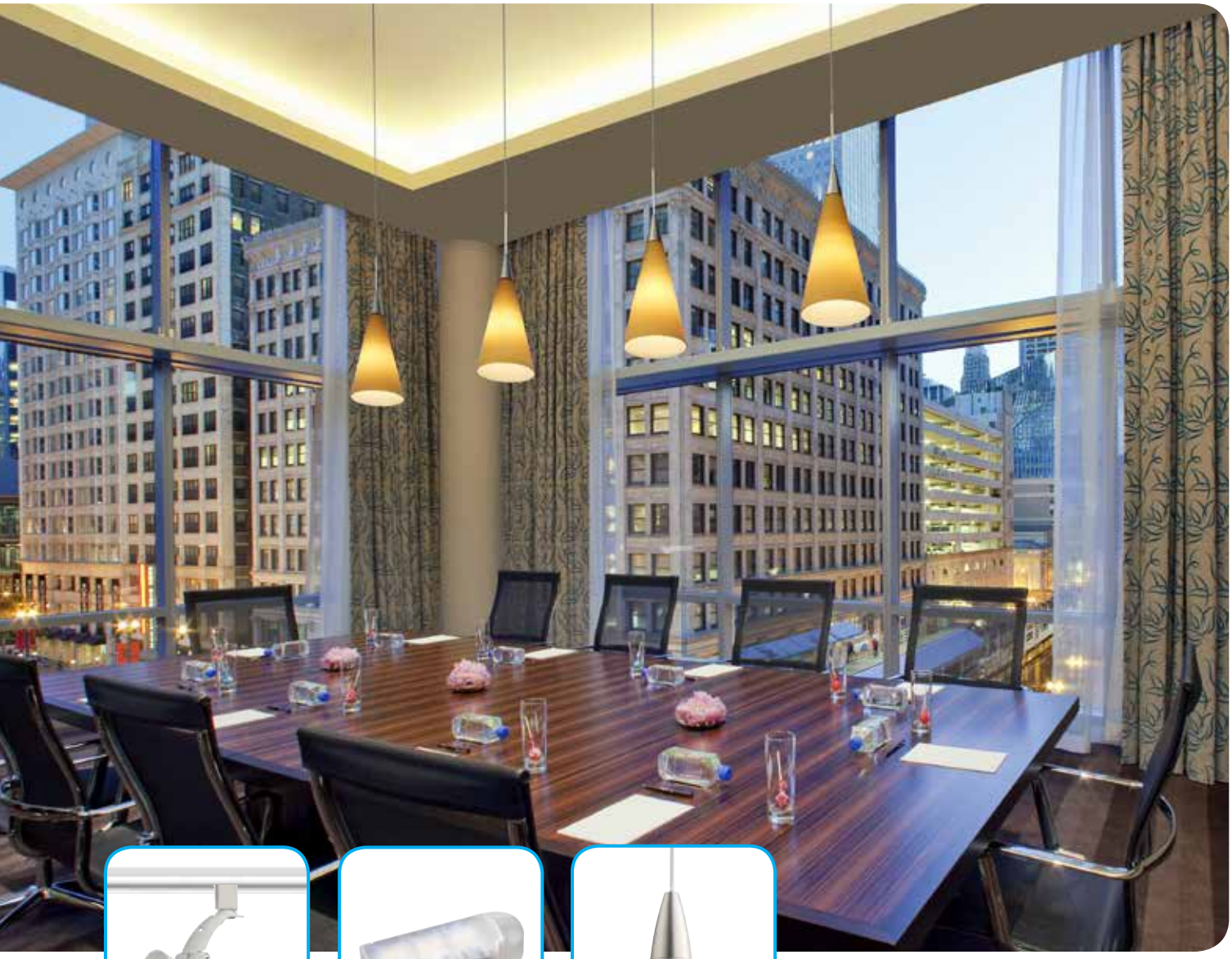
JUNO®
Recessed and Trac Lighting

# Trac 12™

Miniaturized, low voltage trac system
offers exceptional lighting versatility



JUNO LIGHTING GROUP
an AcuityBrands company

# Trac 12™ Lighting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**Halogen Flood** 13
Provides wide-spread uniform illumination from 10-20W halogen capsules.

**MR11 Mini-Spotlights** 17
The perfect easy-to-conceal, ultra-miniature accent lights for spotlighting in cabinetry and displays.

**Linear Lampholders** 12
3-10 watt, single and double wedge base, rigid loop and festoon lampholders provide a complete selection to satisfy any cabinetry or cove lighting need.

**LED Modules** 6
Ultra-efficient, maintenance-free linear lighting for coves, cabinetry, and casework displays.

**Spotlights** 18

A wide selection of MR11 and MR16 miniature-scale spotlights for accent and display lighting.

**Decorative Pendants** 28

LED and halogen luminaires in a broad spectrum of shapes, colors, and finishes in both lustrous metals and luminescent glass to complement virtually any interior palette.

**LED Spotlights** 14

Miniature spotlights offer effective, energy-efficient accent lighting.

**LED Mini-Flood** 13

Effective flood and task lighting in a low-profile, energy-efficient package.

# Trac 12™ Miniaturized Trac System

Juno Trac 12 boldly goes where no other trac system can go. Small and compact, Trac 12 can be ceiling mounted or suspended in cramped quarters. Or it can be integrated into casework, coves, or displays. Wherever it goes, Trac 12 creates stunning illumination, from accent to spot to linear lighting effects.

This low voltage system features a wide variety of diminutive fixtures that are perfectly matched to its miniaturized scale. LED modules, mini-floods, mini-cylinders, and mini-pendants offer maximum performance with minimal energy consumption. And an array of halogen and xenon fixtures offers economical, high-quality illumination.

In residential, retail or commercial environments, the Trac 12 system provides the flexibility, style, and lighting performance you need and the economy and energy efficiency you demand.

## Adaptive. Stylish. Diminutive.

# Supremely versatile trac-based lighting

## Linear Lighting

Thanks to its ultra-slim profile, Trac 12 can be easily installed in coves, cabinetry, and casework displays to produce uniform linear lighting. Variable spacing of either LED modules or xenon lampholders permits on-site fine tuning to create even illumination at the desired light intensity.

## Spotlighting

Trac 12 is easily integrated into displays, low soffits, and ceilings or it can be pendant-suspended for dramatic accent lighting. The diminutive dimensions of Trac 12 allow it to squeeze into tight spaces inaccessible to standard-size, line voltage track systems. Trac 12 is powered by remote low voltage transformers, eliminating the need for transformers at each fixture. This can be helpful in meeting today's stringent energy codes, since power calculations are typically based on the capacity of the transformers, rather than the linear feet of installed track.

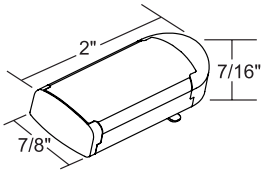
## Energy-Efficient Illumination

The Trac 12 system is offered with a variety of light sources, including the latest in ultra-efficient LEDs. An extensive range of advanced LED fixtures for linear, spot and flood applications feature unparalleled energy savings and remarkably long service life.

# Trac 12™ Linear WarmDim® LED Lighting

Juno Trac 12 Linear LED modules with exclusive WarmDim incorporate a proprietary control circuit and multi-LED light engine that warms the module color temperature while dimming to capture all the warmth and ambiance previously achieved only with incandescent dimming. From residential living spaces to commercial meeting rooms to hospitality environments, now you can match the mood to every occasion while still experiencing the operating efficiencies of LED lighting. These miniature LED modules approximate the lumen output and light distribution of 10W xenon lamps, utilizing up to 15% of the energy and having a rated life of 50,000 hours. Modules can be placed anywhere on the trac which can be cut-to-length during installation. Perfect for cove, cabinet, undershelf or casework lighting the Trac 12 LED WarmDim Modules are the most flexible, fully dimmable LED linear lighting choice.

## Dimensions



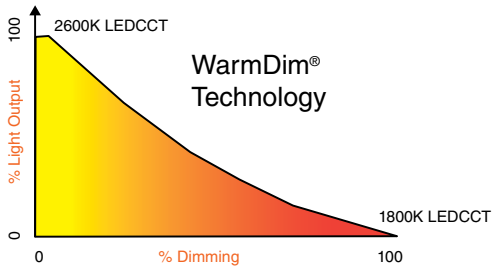

## Trac 12 WarmDim LED Modules

| Cat. No. | Nominal Wattage | Full-On Color Temperature | Full-Dim Color Temperature | Initial Lumens |
|---|---|---|---|---|
| TL214LED-27K-WD | 1.1 Watts | 2700K | 1800K | 43 |

## Features

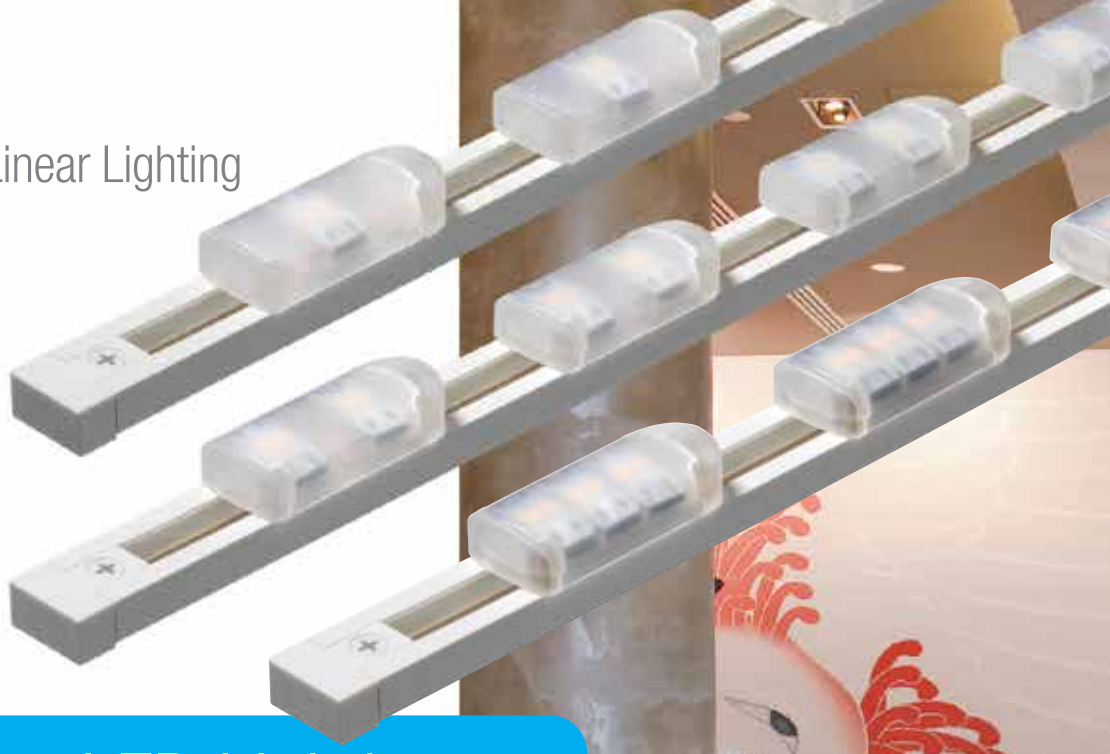
- Available in an initial full-on color temperature of just less than 2700K, which gradually dims to approximately 1800K as the input voltage is reduced.
- Infinitely adjustable module spacing enables fine tuning of illumination levels in the field.
- 1.1-watt power consumption.
- 85 CRI typical at full-on brightness.
- Chromaticity range within 3-step MacAdam ellipse.
- Compatible with standard Trac 12 and Trac 12/25 trac operating with 12V AC power.

WarmDim®
Bringing Warmth to LED Dimming™



Kitchen setting with Trac 12 WarmDim Modules at 5% dim level on left and at full brightness on right.

Lounge setting with Trac 12 WarmDim Modules at full brightness on left and at 5% dim level on right.



# Trac 12™ Linear LED Lighting

The third generation of Juno Trac 12 LED Modules are the superior choice for linear lighting. They deliver bright-white illumination equivalent to xenon lamps but consume just one-eighth the energy. And with a rated service life of 50,000 hours, they can provide over 10 years of maintenance-free operation*. The modules are available in five color temperatures and can be placed anywhere along the trac, which can be custom-cut to length during installation. The low profile and miniaturized dimensions of the Trac 12 system make it ideal for cove, undercabinet, undershelf, task, and casework display lighting in any residential, retail, or commercial interior.

**"Next Generation" Performance —** Modules produce up to 478 lumens per foot with fixture efficacy up to 57 lumens per watt and 85 CRI typical.

**Unprecedented Energy Savings —** Up to 1.5W modules produce light output equivalent to 5W-10W xenon, while reducing energy consumed by over 85%.

**Exceptional Service Life —** At 50,000 hours of operation, the LEDs maintain 70% of their initial lumens.

**Cool UV-Free Operation —** Virtually no forward projected heat; will not fade ultraviolet-sensitive objects.

**Wide, Uniform Light Distribution —** Modules with lightly diffused lenses provide wide, uniform light distribution and place more lumens in useful zones than comparable xenon lamps.

**Longer Runs/Fewer Transformers —** Installs directly on Trac 12 or Trac 12/25 systems using a variety of standard 12-volt AC magnetic transformers or electronic drivers; lower power consumption permits longer runs using fewer transformers than comparable xenon installations.

**Constant Color Dimming —** Color temperature remains constant over the full dimming range using Juno-qualified, widely available, two-wire, low voltage dimmers.

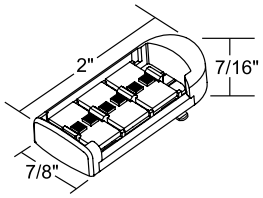
** Based on operating 12 hours per day.*

Brighter, whiter and more efficient than ever

# Trac 12™ Low Power LED Modules

Miniature LED linear lighting modules replicate the light output and distribution of 5-watt to 10-watt xenon lamps. Ideal for a variety of linear lighting applications including cove, undercabinet, undershelf, task and casework display lighting.

## Dimensions




## Trac 12 Low Power LED Modules

| | Cat. No. | Nominal Wattage | Color Temperature | Initial Lumens |
|---|---|---|---|---|
| | TL214LEDX1-22K | 0.5 Watt | 2200K | 20 |
| | TL214LEDX2-22K | 1.0 Watt | 2200K | 40 |
| | TL214LEDX3-22K | 1.5 Watts | 2200K | 56 |
| | TL214LED-27K | 1.5 Watts | 2700K | 76 |
| | TL214LED-3K | 1.5 Watts | 3000K | 78 |
| | TL214LED-35K | 1.5 Watts | 3500K | 79 |
| | TL214LED-4K | 1.5 Watts | 4000K | 80 |

## Features

- High efficiency, long-life LED module with uniform light distribution in 2200K, 2700K, 3000K, 3500K and 4000K color temperatures.
- 85 CRI typical with 3-step MacAdam ellipse color consistency.
- Infinitely adjustable module spacing enables fine tuning of illumination levels in the field.
- Engineered thermoplastic enclosure electrically insulates and protects LED circuit boards.
- Compatible with Trac 12 and Trac 12/25 trac systems and a variety of Juno 12-volt AC electronic drivers and magnetic transformers.

# Trac 12™ Linear Color LED Lighting

Trac 12 miniature color LED modules enable a simple, economical and flexible way to add a splash of color to any environment. Available in rich blue, green or red colors these long life, low profile modules are compatible with standard Trac 12 and Trac 12/25 trac, operating with 12V AC power. Unique lighting effects can be created by mixing modules of different colors on the same trac. They are the perfect linear lighting choice for coves, niches and other accent or display lighting applications. Modules can be placed anywhere on the trac, which can be cut-to-length during installation.

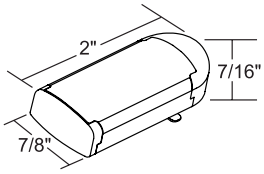
## Trac 12 Linear Color LED Modules

| Cat. No. | LED Color | Nominal Wattage | Maximum Lumens/Ft. |
|---|---|---|---|
| TL214LED-BLUE | Blue | 1.0 Watt | 138 |
| TL214LED-GREEN | Green | 0.5 Watt | 174 |
| TL214LED-RED | Red | 0.65 Watt | 108 |

### Features

- Perfect for restaurants, lounges, theaters, lobbies, retail spaces or anywhere a splash of color is desired.
- Infinitely adjustable module spacing enables fine tuning of illumination intensity and color saturation in the field.
- 0.5-watt to 1.0-watt power consumption.
- Rated life of 50,000 hours provides years of maintenance-free operation.
- Dimmable – color temperature remains constant over dimming range.
- Compatible with all 12VAC Remote Mount Magnetic Transformers and with all 12VAC TL601E or TL602 Electronic Drivers.

## Dimensions



TL201 TL202 TL211 TL212

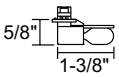
## Wedge Base

Wedge base lampholders are an economical choice for linear lighting applications. They have a minimal profile and produce bright, uniform illumination. They are compatible with wedge base lamps that are 10W or less and T3-1/4 size or smaller including xenon, LED, etc. Xenon lamps emit a white light that approximates the color of halogen, but have up to a 20,000-hour lamp life and do not require fixture lenses or special handling.

### Ordering Information

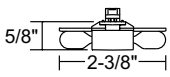
| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL201** | One 12V or 24V, 10W max. T3-1/4 wedge base lamp | **BL** Black<br>**WH** White |

### Dimensions




| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL202** | Two 12V or 24V, 10W max. T3-1/4 wedge base lamps | **BL** Black<br>**WH** White |

### Dimensions




### Finishes

BLACK (BL) WHITE (WH)

### Xenon T3-1/4 Wedge Base Lamps

| Cat. No. | Volts | Watts | Clear/ Frosted | Initial Lumens |
|---|---|---|---|---|
| TL900 | 12 | 3 | Clear | 15 |
| TL901 | 12 | 5 | Clear | 33 |
| TL903 | 12 | 10 | Clear | 83 |
| TL905-24V | 24 | 5 | Frosted | 29 |
| TL910-24V | 24 | 10 | Frosted | 91 |

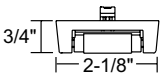
## Rigid Loop

Rigid loop lampholders are ideally suited for linear lighting applications. They have a low profile and produce bright, uniform illumination. The rigid loop lampholder includes a stationary reflector to forward project more of the 360° light from the lamp. They are compatible with rigid loop style lamps that are 10W or less and T3-1/4 size or smaller including xenon, LED, etc. Rigid loop lamps possess all of the advantages of the wedge base lamps, but offer a more symmetrical light distribution and slightly higher output that is optimal for cove lighting applications. Xenon lamps emit a white light that approximates the color of halogen, but have up to a 20,000-hour lamp life and do not require fixture lenses or special handling.

### Ordering Information

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL211** | One 12V or 24V, 10W max. T3-1/4 rigid loop lamp | **BL** Black<br>**WH** White |

### Dimensions




### Finishes

BLACK (BL) WHITE (WH)

### Xenon T3-1/4 Rigid Loop Lamps

| Cat. No. | Volts | Watts | Clear/ Frosted | Initial Lumens |
|---|---|---|---|---|
| TL950CL | 12 | 5 | Clear | 45 |
| TL950FR | 12 | 5 | Frosted | 45 |
| TL951CL | 12 | 10 | Clear | 100 |
| TL951FR | 12 | 10 | Frosted | 100 |
| TL952CL-24V | 24 | 5 | Clear | 40 |
| TL952FR-24V | 24 | 5 | Frosted | 40 |
| TL953CL-24V | 24 | 10 | Clear | 90 |
| TL953FR-24V | 24 | 10 | Frosted | 90 |

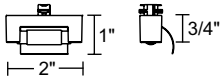
## Festoon

Festoon lampholders are ideally suited for linear lighting applications. They have a low profile and produce bright, uniform illumination. The festoon lampholder includes an articulating reflector, enabling more precise aiming of the light. They are compatible with festoon type lamps that are 10W or less and T3-1/4 size or smaller including xenon, LED, etc. The festoon lamp is similar to the rigid loop lamp, though more widely available and offering slightly greater light output. Xenon lamps emit a white light that approximates the color of halogen, but have up to a 20,000-hour lamp life and do not require fixture lenses or special handling.

### Ordering Information

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL212** | One 12V or 24V, 10W max. T3-1/4 festoon lamp | **BL** Black<br>**WH** White |

### Dimensions




### Finishes

BLACK (BL) WHITE (WH)

### Xenon T3-1/4 Festoon Lamps

| Cat. No. | Volts | Watts | Clear/ Frosted | Initial Lumens |
|---|---|---|---|---|
| TL960CL | 12 | 5 | Clear | 50 |
| TL960FR | 12 | 5 | Frost | 50 |
| TL961CL | 12 | 10 | Clear | 120 |
| TL961FR | 12 | 10 | Frost | 120 |
| TL964CL-24V | 24 | 5 | Clear | 50 |
| TL964FR-24V | 24 | 5 | Frost | 50 |
| TL965CL-24V | 24 | 10 | Clear | 120 |
| TL965FR-24V | 24 | 10 | Frost | 120 |

TL103LED

TL103

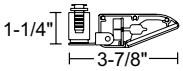
## Halogen Flood

The Trac 12 Halogen Flood is an attractive, low-profile fixture that offers an economical flood and task lighting solution. It is available with either 10W or 20W halogen lamps to suit a wide variety of applications. Lamp service life is rated at 2,000 hours. The Halogen Flood operates on any 12-volt or 24-volt, Trac 12 or Trac 12/25 transformer, adding to its specification flexibility.

### Ordering Information

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL103** | 12V or 24V 10W-20W T3 halogen bi-pin lamp | **BL** Black<br>**WH** White |

### Dimensions




### Finishes

BLACK (BL) WHITE (WH)

### T3 Halogen Bi-Pin Lamps

| Cat. No. | Volts | Watts | Clear/ Frosted | Initial Lumens |
|---|---|---|---|---|
| TL922 | 12 | 10 | Clear | 134 |
| TL923 | 12 | 20 | Clear | 307 |
| TL924-24V | 24 | 20 | Clear | 288 |

## LED Mini-Flood

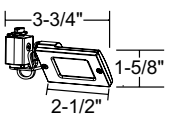
The Trac 12 LED Mini-Flood offers effective flood and task lighting in a low-profile, energy-efficient package. Consuming only 4 watts of power, it approximates the lumen output and light distribution of 20W halogen, using less than 25% of the energy while providing a rated life of 50,000 hours. LEDs have no IR or UV in their beam, making them an ideal choice for illuminating heat-sensitive or UV-sensitive objects. Available in 3000K (192 lumens) and 4100K (217 lumens) color temperatures, the white-light Trac 12 LED Mini-Flood is compatible with Trac 12 and Trac 12/25 systems, operating with 12V AC transformers approved for use with Juno LED products.

### Ordering Information

**Example: TL103LED-3K-SL**

| Cat. No. | Color Temp. | Finishes |
|---|---|---|
| **TL103LED** | **3K** 3000K<br>**4K** 4100K | **BL** Black<br>**WH** White<br>**SL** Silver |

### Dimensions




### Finishes

BLACK (BL) WHITE (WH) SILVER (SL)

# Trac 12™ Directional Spotlights

The Juno Trac 12 system offers a spectacular array of contemporary directional spotlights. With miniaturized sizing and multiple light sources to choose from – including ultra-efficient LEDs – these dynamic little fixtures can enhance any residential, retail, or commercial décor.

TL252L

TL261L

## Cylindra™ LED

The contemporary styling of the Cylindra LED subtly enhances practically any décor without diverting attention from the surrounding environment. Soft curved surfaces combine with clean, crisp edges to provide a uniquely attractive aesthetic. The Trac 12 Cylindra 13W LED spotlight approximates the light output and distribution of 75W MR16 halogen lamps, utilizing less than 1/5 of the energy and having a rated life of 50,000 hours. Available in 2700K, 3000K, 3500K and 4000K color temperatures with a minimum 80 CRI. An optional high CRI version is available in 2700K or 3000K with a minimum of 90 CRI. Cylindra's integral, bayonet-mounted accessory holder accommodates one accessory if desired. The white-light Cylindra LED is compatible with standard Trac 12 and Trac 12/25 trac, operating with 12V AC power.

### Ordering Information

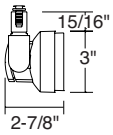
**Example: TL252L-27HC-S-BL**

| Cat. No. | Color Temperature | Color Rendering Index | Beam Spread | Finishes |
|---|---|---|---|---|
| **TL252L** 13W LED Cylindra | **27** 2700K<br>**3** 3000K<br>**35** 3500K<br>**4** 4000K | **K** 80 CRI Minimum<br>**HC** 90 CRI Minimum (2700K & 3000K only) | **S** Spot<br>**N** Narrow Flood<br>**F** Flood | **BL** Black<br>**WH** White<br>**SL** Silver |

### Finishes

BLACK (BL) WHITE (WH) SILVER (SL)

### Dimensions




### Accessories

| Description | Cat. No. |
|---|---|
| Hexcell Louver | **T7459BL** |
| Color Filters | **T741-6** |
| Dichroic Filters | **T7401-16** |
| Color Correction Filter[1] | **T7418** |
| Diffusion Lens | **T7420** |
| Uniformity Lens | **T7421** |
| Prismatic Lens | **T7477** |
| Linear Spread Lens | **T7478** |
| TIR Optic-Spot | **TIR-2-SP** |
| TIR Optic-Narrow Flood | **TIR-2-NFL** |
| TIR Optic-Flood | **TIR-2-FL** |

*[1] T7418 corrects 3000K color to approximately 2700K and 4000K color to approximately 3400K*

## Conix® II LED

The sleek sculptured Conix II LED fixture has integral TIR optics which enable uniform spot, flood or narrow flood distributions to be achieved. The Conix II LED spotlight approximates the light output and distribution of 75W MR16 halogen lamps, utilizing less than 1/5 of the energy and having a rated life of 50,000 hours. Available in 2700K, 3000K, 3500K and 4000K color temperatures with a minimum of 80 CRI. An optional high CRI version is available in 2700K or 3000K with a minimum of 90 CRI. Its integral, bayonet-mounted accessory holder accommodates one accessory if desired. The white-light Conix II LED is compatible with standard Trac 12 and Trac 12/25 trac, operating with 12V AC power.

### Ordering Information

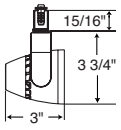
**Example: TL261L-3K-N-WH**

| Cat. No. | Color Temperature | Color Rendering Index | Beam Spread | Finishes |
|---|---|---|---|---|
| **TL261L** 13W LED Conix II | **27** 2700K<br>**3** 3000K<br>**35** 3500K<br>**4** 4000K | **K** 80 CRI Minimum<br>**HC** 90 CRI Minimum (2700K & 3000K only) | **S** Spot<br>**N** Narrow Flood<br>**F** Flood | **BL** Black<br>**WH** White<br>**SL** Silver |

### Finishes

BLACK (BL) WHITE (WH) SILVER (SL)

### Dimensions




### Accessories

| Description | Cat. No. |
|---|---|
| Hexcell Louver | **T7459BL** |
| Color Filters | **T741-6** |
| Dichroic Filters | **T7401-16** |
| Color Correction Filter[1] | **T7418** |
| Diffusion Lens | **T7420** |
| Uniformity Lens | **T7421** |
| Prismatic Lens | **T7477** |
| Linear Spread Lens | **T7478** |
| TIR Optic-Spot | **TIR-2-SP** |
| TIR Optic-Narrow Flood | **TIR-2-NFL** |
| TIR Optic-Flood | **TIR-2-FL** |

*[1] T7418 corrects 3000K color to approximately 2700K and 4000K color to approximately 3400K*

# JUNO Trac 12™ Directional Spotlights

## LED Mini-Cylinder Spotlight

The Trac 12 LED Mini-Cylinder Spotlight delivers big-time performance from a fixture so small that it fits easily in the palm of your hand. It offers the light output and distribution of 20W MR11 halogen but requires just one-third the energy and lasts more than 10-times longer. And unlike halogen, LEDs produce no IR or UV emissions, making them ideal for illuminating heat-sensitive or UV-sensitive objects. LED Mini-Cylinders provide up to 332 lumens of brilliant white light in color temperatures of 2700K, 3000K, 3500K and 4000K and are compatible with standard Trac 12 systems utilizing 12V AC LED-compatible transformers. These fixtures can be placed anywhere along the trac, which can be cut-to-length during installation, making LED Mini-Cylinders an exceptionally versatile accent lighting choice.

Actual size

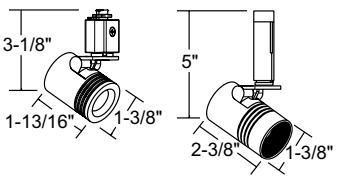
**Ordering Information** **Examples: TL114G2-2S-WH, TL114G2-3N-BL-S**

| Cat. No. | Color Temperature | Description | Finishes | Options |
|---|---|---|---|---|
| **TL114G2**<br>6W LED<br>Mini-Cylinder | **2**<br>2700K<br>**3**<br>3000K<br>**35**<br>3500K<br>**4**<br>4000K | **S**<br>Spot<br>**N**<br>Narrow Flood<br>**F**<br>Flood | **BL** Black<br>**WH** White<br>**SL** Silver | **Blank**<br>No Snoot<br>**S**<br>Snoot |

**Finishes**

BLACK (BL) WHITE (WH) SILVER (SL)

**Dimensions**



## MR11 Mini-Spot

Extending just 2-1/2" from the trac surface, the MR11 Mini-Spot is ideal for lighting confined spaces such as cabinetry, casework, or displays.

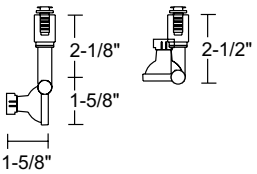
### Ordering Information

**Example: TL110BL**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL110** | 12V or 24V<br>35W max. MR11 | **BL** Black<br>**WH** White |

### Finishes

### Dimensions




### Accessories

| Cat. No. | Description |
|---|---|
| **T5558BL** | Hexcell Louver |

## MR11 Suspended Cylinder

The MR11 Suspended Cylinder provides an enclosed lamp option for miniature display lighting.

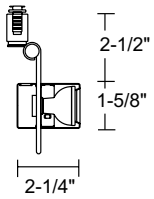
### Ordering Information

**Example: TL112SC**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL112** | 12V or 24V<br>20W max. MR11 | **BL** Black<br>**WH** White<br>**SC** Satin Chrome |

### Finishes

### Dimensions




### Accessories

| Cat. No. | Description |
|---|---|
| **T5558BL** | Hexcell Louver |

# JUNO Trac 12™ Directional Spotlights

TL141

## Cylindra™

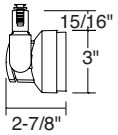
The Trac 12 version of Juno's popular Cylindra Series fixture transforms this unique design into a miniature, low-profile MR16 unit. Because it is fully enclosed, Cylindra is ideal where shielding from lamp backlighting is desired. Cylindra incorporates a clear glass lens and features an integral bayonet-mount media cartridge that can simultaneously accept up to two light control accessories.

### Ordering Information

**Example: TL141WH**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL141** | 12V or 24V<br>50W max.<br>MR16 | **BL** Black<br>**WH** White<br>**SL** Silver |

### Dimensions




### Finishes

BLACK (BL) WHITE (WH) SILVER (SL)

### Accessories

| Description | Cat. No. |
|---|---|
| Uniformity Lens | **T7421** |
| Diffusion Lens | **T7420** |
| Prismatic Spread Lens | **T7477** |
| Linear Spread Lens | **T7478** |
| Color Filters | **T741-6** |
| Dichroic Filters | **T7401-18** |
| UV Filter | **T7422** |
| Hexcell Louver | **T7459BL** |



## Professional-Grade Media Cartridge

All Cylindra™ lampholders feature a quick-release bayonet-mount media cartridge that simultaneously accepts up to two light control accessories. Media can be easily installed or removed without the use of tools. The bayonet-mount attachment simplifies relamping and fixture maintenance, making Cylindra a popular choice with owners, designers and installers.

TL106

# Conix®

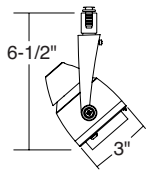
The stylish Conix, featuring Juno's proprietary wishbone yoke design, has a fully enclosed lamp housing and can rotate more than 360° to eliminate aiming dead spots. The Conix Trac 12 low voltage fixture is designed for 50W MR16 lamps. An integral snoot simultaneously accepts up to two light control accessories.

## Ordering Information

**Example: TL106SL**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL106** | 12V or 24V<br>50W max.<br>MR16 | **BL** Black<br>**WH** White<br>**SL** Silver |

## Dimensions




## Finishes

BLACK (BL) WHITE (WH) SILVER (SL)

## Accessories

| Description | Cat. No. |
|---|---|
| Uniformity Lens | **T5521** |
| Diffusion Lens | **T5520** |
| Prismatic Spread Lens | **T557** |
| Linear Spread Lens | **T559** |
| Color Filters | **T551-5** |
| Dichroic Filters | **T5501-18** |
| UV Filter | **T5522** |
| Hexcell Louver | **T5559BL** |

TL155

TL170

TL150

## Mamba®

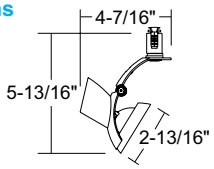
The strikingly original, daring aesthetic of Mamba has been perfectly proportioned for the miniaturized Trac 12 system. The Mamba combines gracefully curved and tapered elements to produce a unique and totally unexpected result. Its front-loading gimbal ring design makes lamp maintenance simple and convenient.

Mamba for Trac 12 is compatible with up to 50W MR16CG low voltage lamps with integral cover glass. The Mamba features high-quality, die cast aluminum construction in attractive white, black and silver finishes.

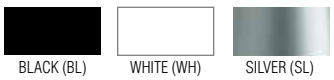
**Ordering Information** **Example: TL155WH**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL155** | 12V or 24V 50W max. MR16CG cover glass | **BL** Black<br>**WH** White<br>**SL** Silver |

**Dimensions**




**Finishes**



BLACK (BL) WHITE (WH) SILVER (SL)

## Xanadu®

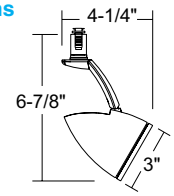
The stunning simplicity of this design, a pure shape devoid of any extraneous detail, makes Xanadu a classic beauty. Its yoke appears to have been carved directly from its conical form, which has been perfectly proportioned for the miniaturized Trac 12 system.

Xanadu for Trac 12 is compatible with up to 50W MR16 low voltage lamps. An integral, bayonet-mount media cartridge is standard and simultaneously accepts up to two light control accessories. The Xanadu features high-quality, die cast aluminum construction in attractive white, black and silver finishes.

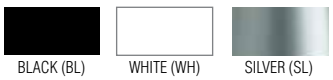
**Ordering Information** **Example: TL170WH**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL170** | 12V or 24V 50W max. MR16 | **BL** Black<br>**WH** White<br>**SL** Silver |

**Dimensions**




**Finishes**



BLACK (BL) WHITE (WH) SILVER (SL)

**Accessories**

| Description | Cat. No. |
|---|---|
| Uniformity Lens | **T7421** |
| Diffusion Lens | **T7420** |
| Prismatic Spread Lens | **T7477** |
| Linear Spread Lens | **T7478** |
| Color Filters | **T741-6** |
| Dichroic Filters | **T7401-18** |
| UV Filter | **T7422** |
| Hexcell Louver | **T7459BL** |

## Facet®

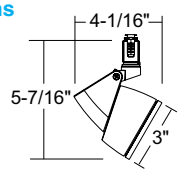
The sweeping arcs and arresting angles of the Facet deliver a unique asymmetrical aesthetic that is perfectly proportioned for the miniaturized Trac 12 system. With a socket housing that morphs into a horizontal stem, Facet's bold simplicity gives it an ultra-clean appearance.

Facet for Trac 12 is compatible with up to 50W MR16 low voltage lamps. An integral, bayonet-mount media cartridge is standard and simultaneously accepts up to two light control accessories. The Facet features high-quality, die cast aluminum construction in attractive white, black and silver finishes.

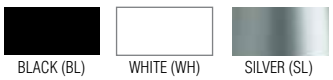
**Ordering Information** **Example: TL150WH**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL150** | 12V or 24V 50W max. MR16 | **BL** Black<br>**WH** White<br>**SL** Silver |

**Dimensions**




**Finishes**



BLACK (BL) WHITE (WH) SILVER (SL)

**Accessories**

| Description | Cat. No. |
|---|---|
| Uniformity Lens | **T7421** |
| Diffusion Lens | **T7420** |
| Prismatic Spread Lens | **T7477** |
| Linear Spread Lens | **T7478** |
| Color Filters | **T741-6** |
| Dichroic Filters | **T7401-18** |
| UV Filter | **T7422** |
| Hexcell Louver | **T7459BL** |

TL190

TL180

## Cubix®

Cubix is a study of the visual relationship between two different geometric forms: the ring and the cube. In this most playful design, the stem becomes the central element, forming a pleasing visual extension of the cube form. The interplay of each of the elements has been perfectly proportioned for the miniaturized Trac 12 system.

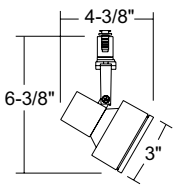
Cubix for Trac 12 is compatible with up to 50W MR16 low voltage lamps. An integral, bayonet-mount media cartridge is standard and simultaneously accepts up to two light control accessories. The Cubix features high-quality, die cast aluminum construction in attractive white, black and silver finishes.

### Ordering Information

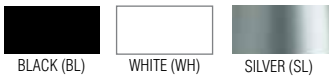
**Example: TL190WH**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL190** | 12V or 24V<br>50W max.<br>MR16 | **BL** Black<br>**WH** White<br>**SL** Silver |

### Dimensions




### Finishes



BLACK (BL) WHITE (WH) SILVER (SL)

### Accessories

| Description | Cat. No. |
|---|---|
| Uniformity Lens | **T7421** |
| Diffusion Lens | **T7420** |
| Prismatic Spread Lens | **T7477** |
| Linear Spread Lens | **T7478** |
| Color Filters | **T741-6** |
| Dichroic Filters | **T7401-18** |
| UV Filter | **T7422** |
| Hexcell Louver | **T7459BL** |

## Glacis®

The flower-like Glacis reflects the beauty of the natural world. Its truncated conical element at the top cloaks the stem pivot when viewed from conventional viewing angles. Its natural form has been perfectly proportioned for the miniaturized Trac 12 system.

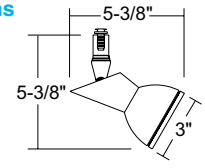
Glacis for Trac 12 is compatible with up to 50W MR16 low voltage lamps. An integral, bayonet-mount media cartridge is standard and simultaneously accepts up to two light control accessories. The Glacis features high-quality, die cast aluminum construction in attractive white, black and silver finishes.

### Ordering Information

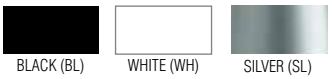
**Example: TL180WH**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL180** | 12V or 24V<br>50W max.<br>MR16 | **BL** Black<br>**WH** White<br>**SL** Silver |

### Dimensions



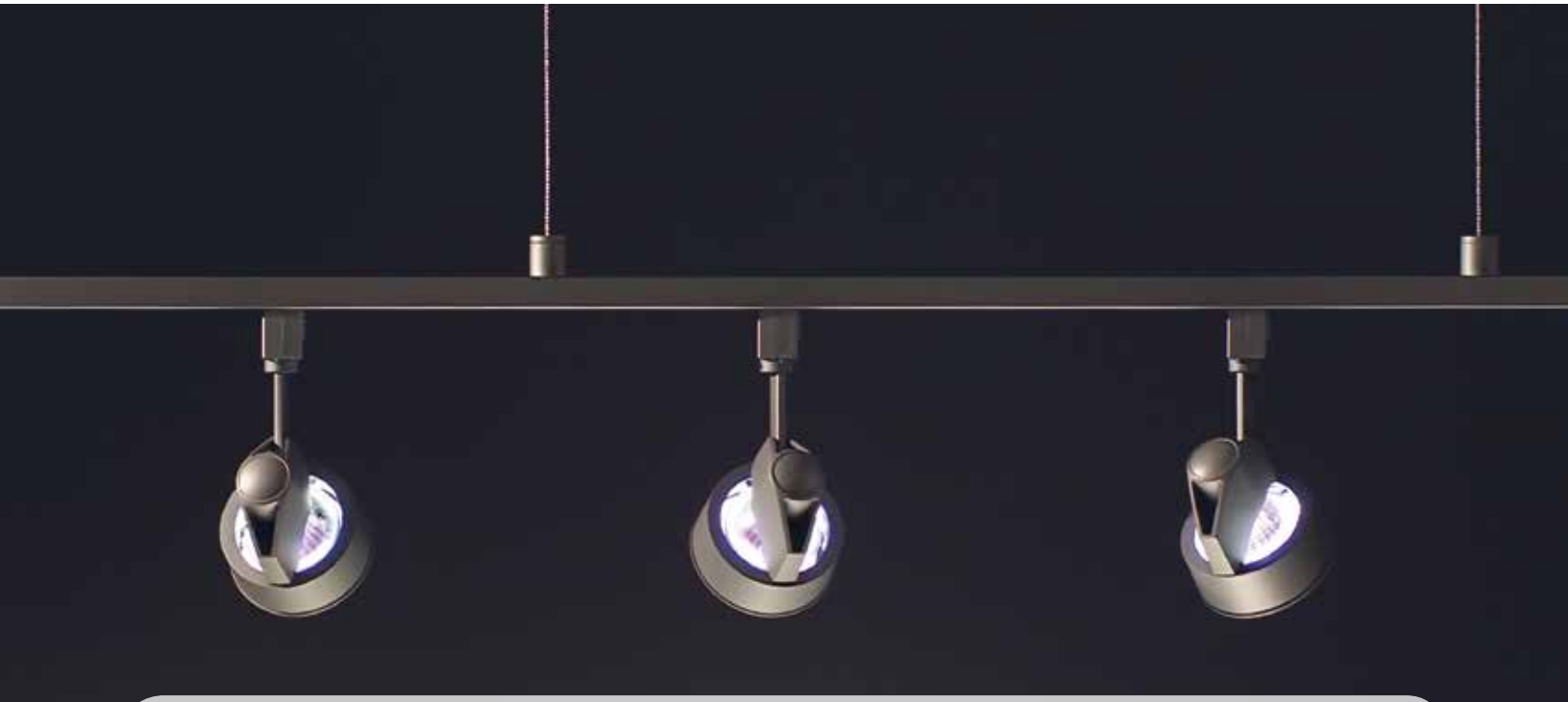

### Finishes



BLACK (BL) WHITE (WH) SILVER (SL)

### Accessories

| Description | Cat. No. |
|---|---|
| Uniformity Lens | **T7421** |
| Diffusion Lens | **T7420** |
| Prismatic Spread Lens | **T7477** |
| Linear Spread Lens | **T7478** |
| Color Filters | **T741-6** |
| Dichroic Filters | **T7401-18** |
| UV Filter | **T7422** |
| Hexcell Louver | **T7459BL** |



# Looks great and saves energy

The rigid aluminum, miniaturized Trac 12/25 system can be easily suspended from cables or stems to bring the fixtures closer to the objects being illuminated. This installation technique not only looks great, but can also save energy because lower wattage lamps can often be employed. And lower wattage lamps mean more fixtures can be powered by the same transformer, saving even more.

TL130-9

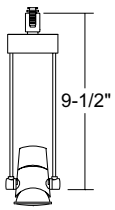
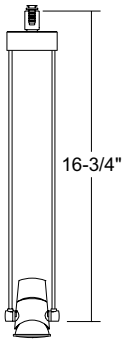
TL130-16

TL140

## Trapezia™

Trapezia suspends the MR16 lamp from the trac with the grace of a trapeze artist. Slender 9" or 16" long tubes conceal supply wires that feed into the elegantly sculpted, die cast aluminum lamp housing. The light, airy appearance is perfect for display, exhibition, and gallery lighting, and the downward reach can make pendant mounting of the trac unnecessary.

**Ordering Information** **Example: TL130-9-WH**

| Cat. No. | Lamp | Finishes | Dimensions |
|---|---|---|---|
| **TL130-9** | 12V or 24V 50W max. MR16CG cover glass | **BL** Black<br>**WH** White<br>**SL** Silver |  |
| **TL130-16** | 12V or 24V 50W max. MR16CG cover glass | **BL** Black<br>**WH** White<br>**SL** Silver |  |





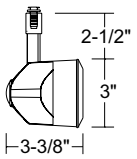
**Finishes**

BLACK (BL) WHITE (WH) SILVER (SL)

## Gyrus™

A new spin on a traditional design, the Gyrus combines dramatic aerodynamic styling with an integral accessory holder that accepts up to two standard 2" diameter lenses and louvers. The snap-on design makes this an easy to accessorize fixture for more demanding display lighting applications.

**Ordering Information** **Example: TL140WH**

| Cat. No. | Lamp | Finishes | Dimensions |
|---|---|---|---|
| **TL140** | 12V or 24V 50W max. MR16 | **BL** Black<br>**WH** White<br>**SL** Silver |  |



**Finishes**

BLACK (BL) WHITE (WH) SILVER (SL)

**Accessories**

| Description | TL130-9 & TL130-16 Cat. No. | TL140 Cat. No. |
|---|---|---|
| Dual Accessory Holder (Required) | **T7400BL, SA** | – |
| Uniformity Lens* | **T7421** | **T7421** |
| Diffusion Lens* | **T7420** | **T7420** |
| Prismatic Spread Lens* | **T7477** | **T7477** |
| Linear Spread Lens* | **T7478** | **T7478** |
| Color Filters* | **T741-6** | **T741-6** |
| Dichroic Filters* | **T7401-18** | **T7401-18** |
| UV Filter* | **T7422** | **T7422** |
| Hexcell Louver* | **T7459BL** | **T7459BL** |
| Black Barn Doors* | **T7470BL** | – |

**TL130-9 and TL130-16 require dual accessory holder for filters, lenses, louvers and barn doors. Use of light control accessories negates the need for MR16 cover glass lamp (except barn doors).*

# JUNO Trac 12™ Directional Spotlights

## Universal

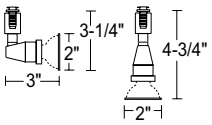
The minimalist Universal fixture can be used “as is” for a do-everything, basic lampholder. Or it can be used in combination with one of the scoop accessories to create a playful metallic or luminous accent. Designed for use with integral cover glass MR16 lamps only.

### Ordering Information

**Example: TL301WH**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL301** | 12V or 24V 50W max. MR16CG cover glass | **BL** Black<br>**WH** White<br>**SL** Silver |

### Dimensions




### Finishes

BLACK (BL) WHITE (WH) SILVER (SL)

### Accessories

| Description | Cat. No. |
|---|---|
| Dual Accessory Holder (Required) | **T7400BL, SA** |
| Uniformity Lens* | **T7421** |
| Diffusion Lens* | **T7420** |
| Prismatic Spread Lens* | **T7477** |
| Linear Spread Lens* | **T7478** |
| Color Filters* | **T741-6** |
| Dichroic Filters* | **T7401-18** |
| UV Filter* | **T7422** |
| Hexcell Louver* | **T7459BL** |
| Black Barn Doors* | **T7470BL** |

**Filters, lenses, louvers and barn doors require dual accessory holder for installation. Use of light control accessories negates the need for MR16 cover glass lamp (except barn doors).*

**TL301BL with TF308BL** | **TL301SL with TF308SL** | **TL301WH with TF308WH** | **TL301WH with TF309BU-WH** | **TL301WH with TF309W-WH** | **TL301WH with TF309YL-WH**

## Metal and Luminous Scoops

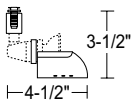
Universal halogen spotlights take on a whole new appearance when you dress them up in one of these metal or luminous scoops.

### Ordering Information

**Example: TF308WH**

| Cat. No. | Description | Finishes |
|---|---|---|
| **TF308** | Perforated Metal Scoop | **BL** Black<br>**WH** White<br>**SL** Silver |

### Dimensions




### Finishes

BLACK (BL) WHITE (WH) SILVER (SL)

### Ordering Information

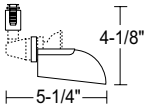
**Example: TF309BU-SL**

| Cat. No. | Description | Finishes |
|---|---|---|
| **TF309** | Luminous Scoop | **W** White<br>**BU** Blue Frost<br>**YL** Yellow Frost |

**Retaining Collar Finishes**

**BL** Black
**WH** White
**SL** Silver

### Dimensions



# Timeless simplicity

## Geometrics

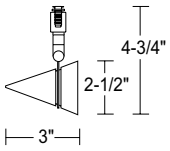
Experience the timeless simplicity of cones and spheres. Choose the petite MR11 Dart for a playful accent, the MR16 Cone for a more sophisticated look, or the MR16 Orb for a balanced, consistent appearance regardless of aiming angle.

## Dart

**Ordering Information** **Example: TL161WH**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL161** | 12V or 24V<br>35W max.<br>MR11 | **BL** Black<br>**WH** White<br>**SL** Silver |

**Dimensions**




**Finishes**

**Accessories**

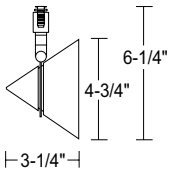
| Description | Cat. No. |
|---|---|
| Color Filters | **T551-5** |
| Dichroic Filters | **T5501-18** |
| UV Filter | **T5522** |

## Cone

**Ordering Information** **Example: TL160WH**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL160** | 12V or 24V<br>50W max.<br>MR16 | **BL** Black<br>**WH** White<br>**SL** Silver |

**Dimensions**




**Finishes**

**Accessories**

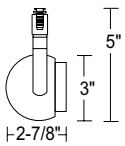
| Description | Cat. No. |
|---|---|
| Uniformity Lens | **T5521** |
| Diffusion Lens | **T5520** |
| Prismatic Spread Lens | **T557** |
| Linear Spread Lens | **T559** |
| Color Filters | **T551-5** |
| Dichroic Filters | **T5501-18** |
| UV Filter | **T5522** |
| Hexcell Louver | **T5559BL** |

## Orb

**Ordering Information** **Example: TL165WH**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL165** | 12V or 24V<br>50W max.<br>MR16 | **BL** Black<br>**WH** White<br>**SL** Silver |

**Dimensions**




**Finishes**

**Accessories**

| Description | Cat. No. |
|---|---|
| Uniformity Lens | **T5521** |
| Diffusion Lens | **T5520** |
| Prismatic Spread Lens | **T557** |
| Linear Spread Lens | **T559** |
| Color Filters | **T551-5** |
| Dichroic Filters | **T5501-18** |
| UV Filter | **T5522** |

# Trac 12™ Directional Spotlights

TL191

TL109

TL116

TLP116

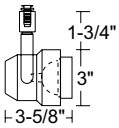
## Studio II

Studio II fixtures add a contemporary, miniaturized stage-and-studio flavor to any environment.

**Ordering Information** **Example: TL191WH**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL191** | 12V or 24V<br>50W max.<br>MR16 | **BL** Black<br>**WH** White<br>**SL** Silver |

**Dimensions**




**Finishes**

**Accessories**

| Description | Cat. No. |
|---|---|
| Uniformity Lens | **T5521** |
| Diffusion Lens | **T5520** |
| Prismatic Spread Lens | **T557** |
| Linear Spread Lens | **T559** |
| Color Filters | **T551-5** |
| Dichroic Filters | **T5501-18** |
| UV Filter | **T5522** |
| Hexcell Louver | **T5559BL** |

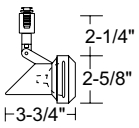
## Slant Cylinder

A simple, solid form, this unique stepped cylinder adds a hint of sophistication to applications that call for a fully enclosed lamp.

**Ordering Information** **Example: TL109WH**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL109** | 12V or 24V<br>50W max.<br>MR16 | **BL** Black<br>**WH** White |

**Dimensions**




**Finishes**

**Accessories**

| Description | Cat. No. |
|---|---|
| Uniformity Lens | **T5521** |
| Diffusion Lens | **T5520** |
| Prismatic Spread Lens | **T557** |
| Linear Spread Lens | **T559** |
| Color Filters | **T551-5** |
| Dichroic Filters | **T5501-18** |
| UV Filter | **T5522** |
| Hexcell Louver | **T5559BL** |
| Black Snoot | **T558BL** |
| Black Eyebrow | **T556BL** |
| Black Barn Doors | **T74BL** |

## Delta 200 Series®

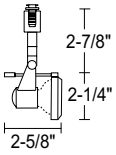
An angular, die cast fixture body and rod-supported lamp bezel create a semi- exposed, technical appearance. For special effects, an optional louver or color filter can be substituted for the clear glass lens that is smartly contained in the front bezel.

**Ordering Information** **Examples: TL116WH, TLP116WH**

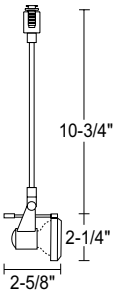
| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL116**<br>**TLP116** | 12V or 24V<br>50W max.<br>MR16 | **BL** Black<br>**WH** White<br>**SL** Silver |

**Dimensions**

**TL116**




**TLP116**




**Finishes**

**Accessories**

| Description | Cat. No. |
|---|---|
| Uniformity Lens | **T5521** |
| Diffusion Lens | **T5520** |
| Prismatic Spread Lens | **T557** |
| Linear Spread Lens | **T559** |
| Color Filters | **T551-5** |
| Dichroic Filters | **T5501-18** |
| UV Filter | **T5522** |
| Hexcell Louver | **T5559BL** |
| Black Snoot | **T558BL** |
| Black Eyebrow | **T556BL** |
| Black Barn Doors | **T74BL** |

TL143 TL117 TL196 TL296

## Notch Back

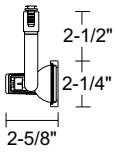
The rectangular back of this contemporary design offers visual lines that parallel the trac itself.

### Ordering Information

**Example: TL143WH**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL143** | 12V or 24V 50W max. MR16 | **BL** Black<br>**WH** White |

### Dimensions




### Finishes

BLACK (BL) WHITE (WH)

### Accessories

| Description | Cat. No. |
|---|---|
| Uniformity Lens | **T5521** |
| Diffusion Lens | **T5520** |
| Prismatic Spread Lens | **T557** |
| Linear Spread Lens | **T559** |
| Color Filters | **T551-5** |
| Dichroic Filters | **T5501-18** |
| UV Filter | **T5522** |
| Hexcell Louver | **T5559BL** |

## Flyback

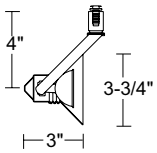
Uniquely angled back at 45 degrees, Flyback fixtures project visual energy into any interior space.

### Ordering Information

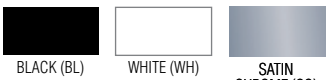
**Example: TL117SC**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL117** | 12V or 24V 50W max. MR16 cover glass | **BL** Black<br>**WH** White<br>**SC** Satin Chrome |

### Dimensions




### Finishes



BLACK (BL) WHITE (WH) SATIN CHROME (SC)

### Accessories

| Description | Cat. No. |
|---|---|
| Dual Accessory Holder (Required) | **T7400BL, SA** |
| Uniformity Lens* | **T7421** |
| Diffusion Lens* | **T7420** |
| Prismatic Spread Lens* | **T7477** |
| Linear Spread Lens* | **T7478** |
| Color Filters* | **T741-6** |
| Dichroic Filters* | **T7401-18** |
| UV Filter* | **T7422** |
| Hexcell Louver* | **T7459BL** |

**Filters, lenses and louvers require dual accessory holder for installation. Use of light control accessories negates the need for MR16 cover glass lamp.*

## Gimbal Rings

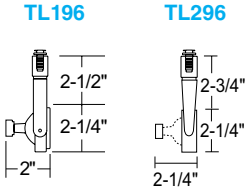
Choose the basic single yoke or the more elegant, sculpted dual-yoke design.

### Ordering Information

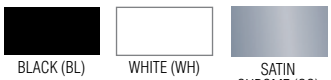
**Examples: TL196WH, TL296SC**

| Cat. No. | Lamp | Finishes |
|---|---|---|
| **TL196**<br>**TL296** | 12V or 24V 50W max. MR16 | **BL** Black<br>**WH** White<br>**SC** Satin Chrome (TL296 only) |

### Dimensions




### Finishes



BLACK (BL) WHITE (WH) SATIN CHROME (SC)

### Accessories

| Description | Cat. No. |
|---|---|
| Uniformity Lens | **T5521** |
| Diffusion Lens | **T5520** |
| Prismatic Spread Lens | **T557** |
| Linear Spread Lens | **T559** |
| Color Filters | **T551-5** |
| Dichroic Filters | **T5501-18** |
| UV Filter | **T5522** |
| Hexcell Louver | **T5559BL** |

# Decorative Pendants

Juno Decorative Pendants for the Trac 12 system feature a brilliant collection of styles, shapes and materials, ranging from luminous artisan-crafted glass to the fashionable look of lustrous metal. These stunning fixtures are available with a variety of light sources and cordset options, providing virtually unlimited possibilities in residential and commercial lighting.

Juno pendants are now offered with ultra-efficient LEDs that require as little as 5 watts per fixture to produce up to 389 lumens. They exceed the output and aesthetics of 20-watt halogen but consume just 25% of the energy. And with an expected service life of 50,000 hours, they provide virtually maintenance-free operation. Cool operating LEDs save even more by reducing air conditioning loads. Beauty, versatility and efficiency . . . it's the best of all possible worlds.

# Beautiful, efficient and eco-friendly

Juno Decorative Pendants for Trac 12 are celebrated for their stunning good looks and cost-efficient operation. But in these days of environmental awareness, there is another reason to love LEDs . . . they are the most eco-friendly light source in the world today.

LEDs not only help conserve our energy resources, they are also free of toxic mercury, lead, or PCB's; have no UV or IR emissions; and are RoHS compliant. So whether your application is retail, commercial or residential, Juno LED pendants are more than just beautiful and economical to operate . . . they are the environmentally responsible choice.

## Juno LED vs. Halogen Comparison

| Juno LED Decorative Pendants | Fixture/Lamp Data | 20W Halogen Decorative Pendants |
|---|---|---|
| **5** | Watts | 20 |
| **389** | Lumens | 300 |
| **78** | Efficacy (Lumens/Watt) | 15 |
| **3000** | Color Temperature | 2900 |
| **50,000** | Rated Life (Hours)* | 2000 |
| **Full Range No Color Shift** | Dimmability | Full Range With Color Shift |
| **Operating Cost Summary** | | |
| **$2.63** | Annual Energy Cost per Fixture** | $10.51 |
| **$9.64** | Annual Relamping Cost per Fixture*** | $29.57 |
| **$12.27** | Annual Operating Costs | $40.08 |
| **$83.43** | Annual Savings for 3 Pendants | |

** Halogen rated life is based on 50% lamp failure; LED rated life is based on 0% failure with 70% lumen maintenance.*

*** Based on 12 hours per day @ $0.12 per kilowatt hour.*

**** Replacement cost per lamp + replacement labor cost x annual hours of operation/rated life.*

TLP310AMBERDRIFT

TLP311SILVER

TLP312COBALT

## Short Cone-Glass

Hand-blown, cased glass with opal interior and satin nickel-plated finial.

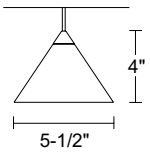
### Ordering Information

| Cat. No. | Lamp/Cordset Compatibility |
|---|---|
| **TLP310** | LED<br>12V, 5W LED<br><br>HALOGEN<br>12V or 24V, 50W max.<br>T4 Halogen GY6.35 bi-pin<br>capsule or MR16CG<br>cover glass |

### Finishes

OPAL AMBER DRIFT

### Dimensions




*Pendant cordset required.*
*Must be ordered separately.*

## Short Cone-Metal

Spun metal shade with a textured, metallic-silver paint. High-reflectance white interior finish and satin nickel-plated finial.

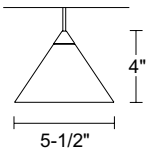
### Ordering Information

| Cat. No. | Lamp/Cordset Compatibility |
|---|---|
| **TLP311** | LED<br>12V, 5W LED<br><br>HALOGEN<br>12V or 24V, 50W max.<br>T4 Halogen GY6.35 bi-pin<br>capsule or MR16CG<br>cover glass |

### Finishes

SILVER

### Dimensions




*Pendant cordset required.*
*Must be ordered separately.*

## Tall Cone

Hand-blown, cased glass with opal interior and satin nickel-plated finial.

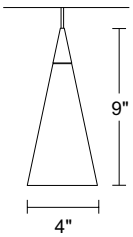
### Ordering Information

| Cat. No. | Lamp/Cordset Compatibility |
|---|---|
| **TLP312** | LED<br>12V, 5W LED<br><br>HALOGEN<br>12V or 24V, 50W max.<br>T4 Halogen GY6.35 bi-pin<br>capsule or MR16CG<br>cover glass |

### Finishes

OPAL COBALT PISTACHIO ROUGE

### Dimensions




*Pendant cordset required.*
*Must be ordered separately.*

**For Cordset and Mounting Options – see page 35**

*When ordering add finish name after catalog number.* **Example: TLP310AMBERDRIFT**

TLP314GLACIER

TLP315SILVER

TLP322PISTACHIO

## Flute-Glass

Hand-blown, cased glass with opal interior and satin nickel-plated finial.

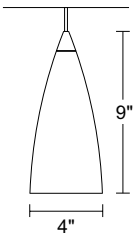
### Ordering Information

| Cat. No. | Lamp/Cordset Compatibility |
|---|---|
| **TLP314** | LED<br>12V, 5W LED<br><br>HALOGEN<br>12V or 24V, 50W max.<br>T4 Halogen GY6.35 bi-pin capsule or MR16CG<br>cover glass |

### Finishes

OPAL GLACIER INFERNO

### Dimensions




*Pendant cordset required.*
*Must be ordered separately.*

## Flute-Metal

Spun metal shade with a textured, metallic-silver paint. High-reflectance white interior finish and satin nickel-plated finial.

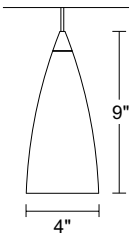
### Ordering Information

| Cat. No. | Lamp/Cordset Compatibility |
|---|---|
| **TLP315** | LED<br>12V, 5W LED<br><br>HALOGEN<br>12V or 24V, 37W max.<br>T4 Halogen GY6.35 bi-pin capsule or MR16CG<br>cover glass |

### Finishes

SILVER

### Dimensions




*Pendant cordset required.*
*Must be ordered separately.*

## Ellipse

Hand-blown, cased glass with opal interior and satin nickel-plated support spider.

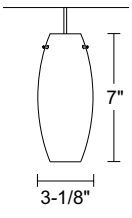
### Ordering Information

| Cat. No. | Lamp/Cordset Compatibility |
|---|---|
| **TLP322** | LED<br>12V, 5W LED<br><br>HALOGEN<br>12V or 24V, 50W max.<br>T4 Halogen GY6.35 bi-pin capsule |

### Finishes

OPAL COBALT PISTACHIO

### Dimensions




*Pendant cordset required.*
*Must be ordered separately.*

**For Cordset and Mounting Options – see page 35**

*When ordering add finish name after catalog number.* **Example: TLP314GLACIER**

TLP318GLACIER

## Teardrop

Hand-blown, cased glass with opal interior and satin nickel-plated finial.

### Ordering Information

| Cat. No. | Lamp/Cordset Compatibility |
|---|---|
| **TLP318** | LED<br>12V, 5W LED<br><br>HALOGEN<br>12V or 24V, 50W max.<br>T4 Halogen GY6.35 bi-pin capsule or MR16CG cover glass |

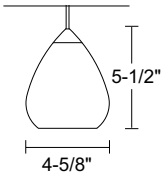
### Finishes

GLACIER

# Luminous or opaque

Translucent glass shades provide a degree of downlighting, but are more often selected for their emotive luminous effect. One's eye is drawn to their artful display of form and color. Metal shades with their opaque character and high-reflectance white interiors deliver higher levels of downlighting while drawing less attention to themselves. Like Yinand Yang, there is no right or wrong in the selection of a shade style . . . it is simply a matter of picking what best harmonizes with the design intent of a given interior.

### Dimensions




*Pendant cordset required.*
*Must be ordered separately.*

**For Cordset and Mounting Options – see page 35**

*When ordering add finish name after catalog number.* **Example: TLP318GLACIER**

TLP326MAIZE

## RLM

Hand-blown, cased glass with opal interior and chrome-plated top cap.

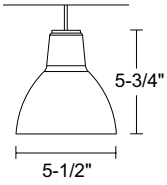
### Ordering Information

| Cat. No. | Lamp/Cordset Compatibility |
|---|---|
| **TLP326** | LED<br>12V, 5W LED<br><br>HALOGEN<br>12V or 24V, 50W max.<br>T4 Halogen GY6.35 bi-pin capsule or MR16CG cover glass |

### Finishes

OPAL MAIZE

### Dimensions




*Pendant cordset required.*
*Must be ordered separately.*

# Trac 12™ Decorative Pendants

TLP324OPAL

TLP316ORANGEPEEL

TLP328FROST

## Cylinder

Hand-blown, cased glass with opal interior and satin nickel-plated support spider.

### Ordering Information

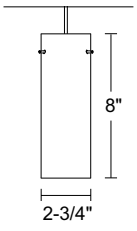
| Cat. No. | Lamp/Cordset Compatibility |
|---|---|
| **TLP324** | LED<br>12V, 5W LED<br><br>HALOGEN<br>12V or 24V, 50W max.<br>T4 Halogen GY6.35 bi-pin capsule or MR16CG cover glass |

### Finishes



OPAL

### Dimensions




*Pendant cordset required.*
*Must be ordered separately.*

## Wrap

Precision cut, interleaved layers of suede polycarbonate or parchment sheet, captured by nickel-plated support spider and cap nuts.

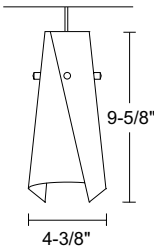
### Ordering Information

| Cat. No. | Lamp/Cordset Compatibility |
|---|---|
| **TLP316** | LED<br>12V, 5W LED<br><br>HALOGEN<br>12V or 24V, 50W max.<br>T4 Halogen GY6.35 bi-pin capsule or MR16CG cover glass |

### Finishes

FROST ORANGE PEEL PARCHMENT

### Dimensions




*Pendant cordset required.*
*Must be ordered separately.*

## Disc

Precision aluminum casting with integrated aperture ring securely supports tempered glass disc. When used with dichroic lamp, inverted cone is washed with a decorative aura.

### Ordering Information

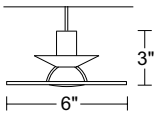
| Cat. No. | Lamp/Cordset Compatibility |
|---|---|
| **TLP328** | HALOGEN<br>12V or 24V, 50W max.<br>MR16CG cover glass |

### Finishes



FROST

### Dimensions




*Pendant cordset required.*
*Must be ordered separately.*

**For Cordset and Mounting Options – see page 35**

*When ordering add finish name after catalog number.* **Example: TLP316ORANGEPEEL**

# Trac 12™ LED Pendant Cordsets

LED pendant cordsets for Trac 12 systems and monopoints include: LED light engine with heat sink and proprietary silicone diffuser ball; Trac 12 adapter; splice compartment with terminal block for field-shortening cable; 78" or 144" of plated coaxial cable; 7" cord straightening sleeve.

**Ordering Information** **Example: TLPLG278-3KWH**

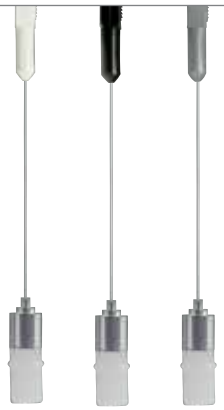
| Cat. No. | Description | Color Temperature | Finishes |
|---|---|---|---|
| **TLPLG278** | 12V, 5W Trac 12 LED Pendant Cordset, 78" long | **27K** 2700K<br>**3K** 3000K | **BL** Black<br>**WH** White<br>**SL** Silver |
| **TLPLG2144** | 12V, 5W Trac 12 LED Pendant Cordset, 144" long | | |

# Trac 12™ Halogen Pendant Cordsets

Halogen pendant cordsets for Trac 12 systems and monopoints include: Trac 12 adapter; splice compartment with terminal block for field-shortening cable; 78" or 144" of plated coaxial cable; 7" cord straightening sleeve; socket assembly; and frosted glass diffuser capsule. Order lamps separately.

**Ordering Information** **Example: TLP78BL**

| Cat. No. | Description | Finishes |
|---|---|---|
| **TLP78** | Trac 12 Halogen Pendant Cordset, 78" long | **BL** Black<br>**WH** White<br>**SL** Silver |
| **TLP144** | Trac 12 Halogen Pendant Cordset, 144" long | |



**Finishes**

BLACK (BL) WHITE (WH) SILVER (SL)

# Trac 12™ LED Mini-Pendants

Pendant shown actual size.

Trac 12 LED Mini-Pendants offer energy-efficient LED operation in an elegant, miniaturized package. Choose from the striking Flute design or the slender Cylinder, which is available with optional factory-installed colored glass accents.

## Features

- Miniature precision-machined aluminum pendant body in a variety of plated or painted finishes
- Ultra-thin, plated, braided cable produces elegant aesthetic
- 6-watt nominal power consumption approximates 20-watt halogen
- 41° flood distribution ideal for illuminating tables, countertops, and cash wraps
- 2700K and 3000K color temperatures with 85 CRI typical provides outstanding color rendering
- 12V AC operation using Juno LED-compatible transformers and monopoints*
- Dimmable using high-quality, low voltage dimmers*
- 50,000-hour rated life provides virtually maintenance-free operation
- 5-year warranty

**See specification sheets for dimming and transformer compatibility recommendations*

## Initial Footcandles

***One Unit, 6W LED Mini-Pendant, 3000K, 41° Beam***

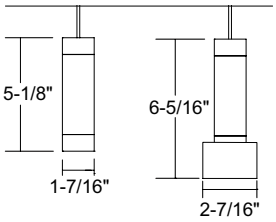
| Distance to Illuminated Work Plane (Feet) | Footcandles Beam Center | Beam Diameter |
|---|---|---|
| 1.5 | 204 | 1.1' |
| 2.0 | 115 | 1.5' |
| 2.5 | 74 | 1.9' |
| 3.0 | 51 | 2.2' |
| 3.5 | 38 | 2.6' |
| 4.0 | 29 | 3.0' |

Pendants with optional glass accents may exhibit slightly lower light output.

# Cylinder

Optional: Colored glass accent

**Dimensions**




## Ordering Information

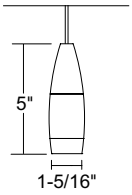
**Examples: TLPL1782WHWH, TLPL11443SNFRTWH**

| System Type | Lamp | Pendant Style | Cord Length | Color Temperature | Pendant Body Finish | Glass Color | Adapter Finish* |
|---|---|---|---|---|---|---|---|
| **TLP** | **L** | **1** | **78** | **2** | **WH** | | **WH** |
| **TLP** Trac 12 Pendant | **L** 6W LED | **1** Cylinder | **78** 78"<br>**144** 144" | **2** 2700K<br>**3** 3000K | **WH** White<br>**BL** Black<br>**SN** Satin Nickel<br>**BZ** Bronze | **BLANK** No Glass<br>**AMB** Amber<br>**BLU** Blue<br>**FRT** Frost | **WH** White<br>**BL** Black<br>**SL** Silver |

**Select pendant adapter finish to match trac system, monopoint finish*

# Flute

**Dimensions**




## Ordering Information

**Example: TLPL2782WHWH**

| System Type | Lamp | Pendant Style | Cord Length | Color Temperature | Pendant Body Finish | Adapter Finish* |
|---|---|---|---|---|---|---|
| **TLP** | **L** | **2** | **78** | **2** | **WH** | **WH** |
| **TLP** Trac 12 Pendant | **L** 6W LED | **2** Flute | **78** 78"<br>**144** 144" | **2** 2700K<br>**3** 3000K | **WH** White<br>**BL** Black<br>**SN** Satin Nickel<br>**BZ** Bronze | **WH** White<br>**BL** Black<br>**SL** Silver |

**Select pendant adapter finish to match trac system, monopoint finish*

# Trac 12/25 and Trac 12™ System Comparisons

The original Trac 12 and the rigid profile, higher amperage Trac 12/25 systems each offer unique features and advantages that are best suited for particular applications. Both systems accept the full complement of Trac 12 linear, spotlight and decorative pendant fixtures.

## Trac 12/25

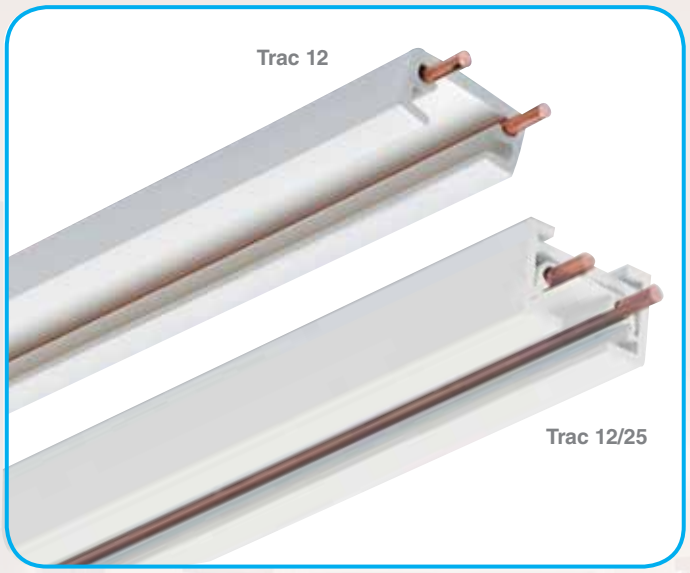
Trac 12/25 offers a rigid aluminum profile and an increased 25-amp capacity that make it ideally suited for general display lighting and longer cove lighting runs. The rigid profile requires fewer installation mounting points, holds straight and true over long runs, and can be surface or pendant mounted. The increased 25-amp capacity allows more fixtures per run of trac, which can reduce the installed system cost.

### Key Features

- 25 amps per circuit: 300 watts at 12 volts or 600 watts at 24 volts
- Miniature 5/8"H x 15/16"W rigid aluminum profile
- For surface or suspended mounting
- White, black or silver finish

### Best Applications

- Ceiling or pendant mounted trac display lighting
- Longer linear lighting cove or casework runs up to 600 watts




# Trac 12™

Trac 12 is the original extruded thermoplastic 20-amp system that Juno introduced when it first pioneered the concept of miniature low voltage trac. It is optimized for cabinetry, special displays, exhibits and other confined spaces where minimal size is required, either because the trac must be concealed from view or is being mounted closer to eye level.

## Key Features

- 20 amps maximum per circuit: 240 watts at 12 volts or 480 watts at 24 volts
- Ultra-miniature 3/8"H x 3/4"W thermoplastic profile
- Surface mounting only
- White or black finish

## Best Applications

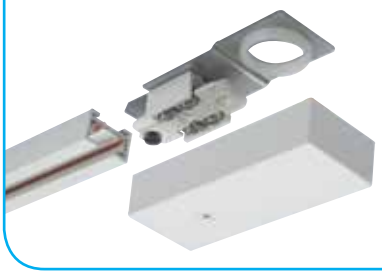
- Linear lighting in cabinetry and casework
- Shorter cove lighting runs up to 480 watts
- Displays, exhibits and kiosks where short trac runs are mounted closer to eye level

# Trac 12/25 Low Voltage Trac System

Trac 12/25 combines the 25-amp capacity of 10-gauge conductors with a miniature, rigid profile that can be surface mounted or pendant suspended. The system operates using remotely located 12-volt or 24-volt transformers. A maximum of 300 watts (12 volts) or 600 watts (24 volts) can be placed per circuit of trac.

### Trac 12/25 Trac Sections

Includes dead end and mounting hardware. Electrical feeds are ordered separately.



*Electrical feeds for Trac 12/25 are ordered separately.*

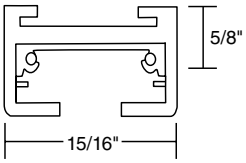
### Key Features

- 12-gauge solid copper conductors with 20-amp capacity
- Engineered thermoplastic, ultra-miniature 3/8"H x 3/4"W profile
- Accepts all standard Trac 12 lampholders
- White or black finish
- Can be cut to length by installer

### Ordering Information

| Cat. No. | Description | Finishes |
|---|---|---|
| **TLR2** | **2' Trac** (actual length 20-5/8") | **BL** Black |
| **TLR4** | **4' Trac** (actual length 44-5/8") | **WH** White |
| **TLR6** | **6' Trac** (actual length 68-5/8") | **SL** Silver |
| **TLR8** | **8' Trac** (actual length 92-5/8") | |

### Dimensions




## Electrical Feeds and Dead End

### TLR21 End Feed Connector and Outlet Box Cover

Allows trac to be fed via remote transformer from an outlet box. Includes terminal block, cover and mounting plate.

**FINISHES: BL** Black, **WH** White, **SL** Silver

### TLR38 End Feed Connector

Allows trac to be fed via remote transformer from top using standard electrical connectors. Includes terminal block connector and cover.

**FINISHES: BL** Black, **WH** White, **SL** Silver

### TLR34 End Feed Connector and Conduit Feed

Allows trac to be fed via remote transformer with conduit through the end or top using standard 1⁄2" electrical connectors. Includes terminal block feed connector, mounting plate and cover.

**FINISHES: BL** Black, **WH** White, **SL** Silver

### TLR36 Outlet Box/T-Bar Ceiling Canopy

Mounts over outlet boxes or on T-bar ceiling to feed up to four tracs via a remote transformer. Includes one TLR36TB, mounting plate and cover. To feed more than one trac, order additional TLR36TB connectors. Requires TLR37 for T-bar installation.

**FINISHES: BL** Black, **WH** White

### TLR36TB Terminal Block Connector

**FINISHES: BL** Black, **WH** White

### TLR28 Dead End

Dead end to use on extra field-cut trac sections.

**FINISHES: BL** Black, **WH** White, **SL** Silver

### TLR50 Pendant Feed End Connector

For use in conjunction with TLR90/91 Pendant Stem assemblies to feed power into end of trac. Includes terminal block connector, support plate and cover.

**FINISHES: BL** Black, **WH** White, **SL** Silver

## Joiners and T-Bar Attachment Clips

### TLR23 Miniature Straight Connector

Joins two trac sections end-to-end. Includes terminal block joiner and cover.

**FINISHES: BL** Black, **WH** White, **SL** Silver

### TLR24 Adjustable Connector

Joins two trac sections to form a 90-degree corner or straight coupling. Includes two terminal block connectors, joiner wires and both 90-degree and straight covers.

**FINISHES: BL** Black, **WH** White, **SL** Silver

### TLR20 Accordion Adjustable Joiner

Joins two trac sections at variable angles to left, right, up or down. Includes two terminal block connectors, joiner wires and covers.

**FINISHES: BL** Black, **WH** White, **SL** Silver

### TLR37 T-Bar Attachment Clip

To attach trac to inverted 15/16" T-bar ceiling runner. Compatible with either flush tile or drop tile installations.

### TLR37-9-16 T-Bar Attachment Clip

Same as above but for 9/16" inverted tee.

## Pendant Mounting Accessories

### Pendant Stem Feed & Mechanical Support

**TLR90*T-Bar Ceilings**

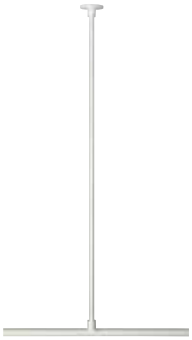
**TLR91*Rigid Ceilings**

**STEM LENGTHS:**

-12 12"
-18 18"
-24 24"
-36 36"
-48 48"

**FINISHES: BL** Black, **WH** White, **SL** Silver

***Ordering Example: TLR90-12-WH****



### Pendant Stem Mechanical Support

**TLR92**

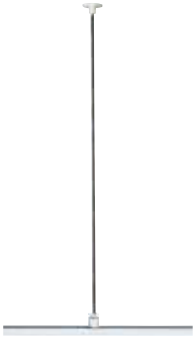
**Designed for use on rigid ceilings or 15/16 T-bar ceilings.**

**STEM LENGTHS:**

-12 12"
-18 18"
-24 24"
-36 36"
-48 48"

**FINISHES: BL** Black, **WH** White, **SL** Silver

***Ordering Example: TLR92-18-BL***



### 10-24 Threaded Rod Mechanical Support

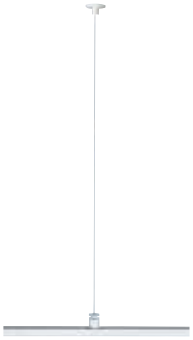
**TLR93**

**Designed for use on rigid ceilings or 15/16 T-bar ceilings.**

Includes ceiling canopy and trac mounting hardware only; threaded rod by others.

**FINISHES: BL** Black, **WH** White, **SL** Silver

***Ordering Example: TLR93BL***



### Stainless Steel Cable Mechanical Support

**TLR95**

**Designed for use on rigid ceilings or 15/16 T-bar ceilings.**

**CABLE LENGTHS:**

-48 48"
-144 144"

**FINISHES: BL** Black, **WH** White, **SL** Silver

***Ordering Example: TLR95-144-WH***

### Stainless Steel Cable Feed & Mechanical Support

**TLR96***

**Designed for use on rigid ceilings only.**

**CABLE LENGTHS:**

-48 48"
-144 144"

**FINISHES: BL** Black, **WH** White, **SL** Silver

***Ordering Example: TLR96-48-SL****

***Order TLR50 pendant end-feed connector separately.** Use 2 supports for each 2', 4' or 6' section of trac, 3 supports for each 8' section of trac. Stainless steel cable recommended only for trac patterns, not straight runs.*

### T96 Pendant Stem Coupling

Joins pendant stems for use in higher ceiling applications.

**FINISHES: BL** Black, **WH** White, **SL** Silver

### T94 Sloped Ceiling Adapter

Permits pendant stems to be hung vertically from sloped ceilings. Used in conjunction with TLR90, TLR91 or TLR92 Ceiling Canopies (not included). Allows feeding of wires to trac at up to a 60 degree angle. Accommodates a maximum of two 12 gauge solid THHN copper wires. 20-amp capacity.

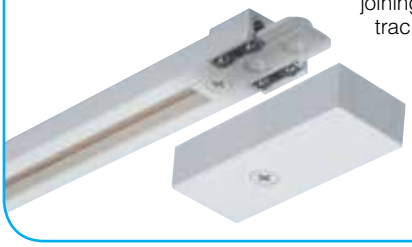
**FINISHES: BL** Black, **WH** White, **SL** Silver

# Trac 12™ Low Voltage Trac System

Trac 12 is the original miniature, low voltage system that combines a 20-amp capacity with an extremely small, engineered-plastic profile. The system operates using remotely located or in-line 2-volt or 24-volt transformers. A maximum of 240 watts (12 volts) or 480 watts (24 volts) can be placed per circuit of trac.

### Trac 12 Trac Sections

Includes end feed connector, dead end and mounting hardware. End feed connector converts to a straight joiner when joining multiple trac sections.



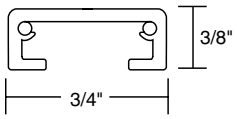
## Key Features

- 12-gauge solid copper conductors with 20-amp capacity
- Engineered thermoplastic, ultra-miniature 3/8"H x 3/4"W profile
- Accepts all standard Trac 12 lampholders
- White or black finish
- Can be cut to length by installer

### Ordering Information

| Cat. No. | Description | Finishes |
|---|---|---|
| **TL2** | **2' Trac** (actual length 20-5/8") | **BL** Black |
| **TL4** | **4' Trac** (actual length 44-5/8") | **WH** White |
| **TL6** | **6' Trac** (actual length 68-5/8") | |
| **TL8** | **8' Trac** (actual length 92-5/8") | |

### Dimensions




## Electrical Feeds

### TL38 End Feed Connector/Straight Joiner with Dead End

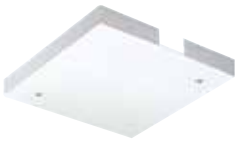
For use with field cut-off trac sections. Includes terminal block connector with cover and dead end. Terminal block connector also serves as a straight joiner to join two trac sections.

**FINISHES: BL** Black, **WH** White

### TL34 End Feed Connector for Conduit

Allows trac to be fed via remote transformer with conduit through the end or top using standard electrical connectors. Includes mounting plate, surface conduit adapter and cover.

**FINISHES: BL** Black, **WH** White



### TL21 Outlet Box Cover/ T-Bar Ceiling Canopy

May be mounted over outlet boxes or on T-bar ceiling runners to feed up to four trac sections via a remote transformer. Includes mounting plate and cover with four breakouts. Requires TLR37 for T-bar ceiling installation.

**FINISHES: BL** Black, **WH** White

## Joiner Connectors

### TL24 Right Angel Joiner

Joins two trac sections end-to-end. Includes terminal block joiner and cover.

**FINISHES: BL** Black, **WH** White

### TL20 Adjustable Joiner

Joins two trac sections at variable angles to left, right, up or down. Includes one terminal block connector with cover and 4" flexible joiner cable.

**FINISHES: BL** Black, **WH** White

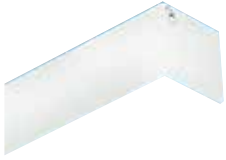
## Mounting Accessories

### TLR37 T-Bar Attachment Clip

To attach trac to inverted 15/16" T-bar ceiling runner. Compatible with either flush tile or drop tile installations.

### TLR37-9-16 T-Bar Attachment Clip

Same as above but for 9/16" inverted tee.



### TL4000 Extruded Aluminum Fascia

Conceals trac and Xenon linear lampholders. 6' length may be field cut to size. 1 3/8" x 1 3/8" profile.

**FINISHES: BL** Black, **WH** White

## Electronic Transformers

### Direct Wire Transformer (Incandescent-Compatible Only)

**TL546 150-Watt Canopy Transformer**

Canopy mount electronic 12-volt transformer for incandescent loads between 50-150 watts. Mounts over standard 120-volt ceiling outlet boxes and can end-feed one trac section or center feed two trac sections. **Note:** This is not a floating feed and is not suitable for use with Trac 12/25. Dimmable. Recommended for trac runs up to 20 feet max.

**Dimensions:** 2-1/8"H x 4-3/4"W x 5"L
**FINISHES: BL** Black, **WH** White

**TL547 150-Watt Surface Transformer-**

Low profile electronic 12-volt transformer for incandescent loads between 50-150 watts. May be installed in-line with trac (Trac 12 only) or remotely mounted up to 5' away (Trac 12 or Trac12/25). 120-volt supply can be fed into end or top using standard 1/2" electrical connectors. Includes on/off push button switch.Dimmable. Recommended for tracruns up to 20 feet max.

**Dimensions:** 1-5/8"H x 2-1/2"W x 7"L
**FINISHES: BL** Black, **WH** White

### Direct Wire Transformer (LED-Compatible)

**TL566U 100-Watt Canopy Transformer**

Canopy mount electric 12-volt transformer for LED or incandescent loads between 0-100 watts. Mounts over standard 120-volt ceiling outlet boxes and can end-feed one trac section or center feed two trac sections. Supplied with mounting plate. **Note:** This is not a floating feed and is not suitable for use with Trac 12/25. Dimmable. Recommended for trac runs up to 20 feet max.

**Dimensions:** 2-1/8"H x 4-3/4"W x 5"L
**FINISHES: BL** Black, **WH** White

**TL567U 100-Watt Surface Transformer**

Low profile electronic 12-volt transformer for LED or incandescent loads between 0-100 watts. May be installed in-line with trac (Trac 12 only) or remotely mounted up to 5' away (Trac 12 or Trac12/25). 120-volt supply can be fed into end or top using standard 1/2" electrical connectors. Includes on/off push button switch.Dimmable. Recommended for tracruns up to 20 feet max.

**Dimensions:** 1-5/8"H x 2-1/2"W x 7"L
**FINISHES: BL** Black, **WH** White

**TL548U 60-Watt Plug-In Transformer**

Plug-in electronic 12V transformer for LED or incandescent loads between 0.5-60 watts. Includes 10', 2-wire cord and integral on/off switch. May be used with Trac 12 or Trac 12/25 trac.

**Dimensions:** 3-1/2"H x 2"W
**FINISHES: BL** Black, **WH** White

**TL544U 60-Watt Surface Mount Transformer**

Surface mount electronic 12-volt transformer for LED or incandescent loads up to 60 watts. Includes 6', 3-wire cord and plug, 4-1/2" leads with mating connector for TL43 monopoint and on/off switch. Recommended for trac runs up to 20 feet max.

**Dimensions:** 1-3/8"H x 2"W x 4-7/8"L
**FINISHES: BL** Black, **WH** White

### 12V Electronic Transformers (LED-Compatible)

Trac 12 LED-compatible electronic driver/transformers are compact and lightweight — and thus ideal for mounting in close proximity to the trac. They are designed for 120-volt input and may be dimmed using a variety of dimmers qualified by Juno for use with a non-resistive LED load. See specification sheet for a list of qualified dimmers. These driver/transformers are recommended for trac run lengths not exceeding 21 feet. TL601E is supplied with 18" jacketed secondary wire; TL602E has an open slot in the housing for Class 2 secondary wires to exit. While specifically designed for use with Trac 12 LED luminaires, these electronic transformers are compatible with all Trac 12 low voltage luminaires including incandescent. Consult factory for other available wattages.

| Cat. No. | Output Voltage/ Input Voltage | Total Wattage | Number Of Circuits/Recommended Wattage Range Per Circuit | Dimensions |
|---|---|---|---|---|
| **TL601E-10-WH** | 12V/120V | 10W | 1 / 0.5-10W | 5-1/2"L x 1-1/2"W x 1"D |
| **TL601E-10-BL** | 12V/120V | 10W | 1 / 0.5-10W | 5-1/2"L x 1-1/2"W x 1"D |
| **TL601E-25-WH** | 12V/120V | 25W | 1 / 0.5-25W | 5-1/2"L x 1-1/2"W x 1"D |
| **TL601E-25-BL** | 12V/120V | 25W | 1 / 0.5-25W | 5-1/2"L x 1-1/2"W x 1"D |
| **TL601E-60-WH** | 12V/120V | 60W | 1 / 0.5-60W | 5-1/2"L x 1-1/2"W x 1"D |
| **TL601E-60-BL** | 12V/120V | 60W | 1 / 0.5-60W | 5-1/2"L x 1-1/2"W x 1"D |
| **TL601E-75-WH** | 12V/120V | 75W | 1 / 0.5-75W | 5-1/2"L x 1-1/2"W x 1"D |
| **TL601E-75-BL** | 12V/120V | 75W | 1 / 0.5-75W | 5-1/2"L x 1-1/2"W x 1"D |
| **TL602E-10-WH** | 12V/120V | 10W | 1 / 0.5-10W | 5-1/2"L x 1-1/2"W x 1-1/16"D |
| **TL602E-25-WH** | 12V/120V | 25W | 1 / 0.5-25W | 5-1/2"L x 1-1/2"W x 1-1/16"D |
| **TL602E-60-WH** | 12V/120V | 60W | 1 / 0.5-60W | 5-1/2"L x 1-1/2"W x 1-1/16"D |

*NOTE: TL601E & TL602E transformers are available with a 6-foot cord and plug option. For cord and plug installation, add -CP6 as suffix to catalog number.*
***Example: TL601E-75-BL-CP6.***

## In-Line Feed Surface Mount Transformers

### 12V LED-Compatible In-Line Feed Surface Mount Transformers

Designed to directly power Trac12/25 trac when surface mounted, these compact transformers are available in 60W, 100W or 150W versions in a variety of finishes. All are LED or halogen-compatible and dimmable.

**FINISHES: BL** Black, **WH** White, **SL** Silver

| Cat. No. | Output Voltage/ Input Voltage | Total Wattage | Number Of Circuits/Recommended Wattage Range Per Circuit | Dimensions |
|---|---|---|---|---|
| **TLR6060** | 12V/120V | 60W | 1 / 0.5-60W | 6"D x 7-1/8"W x 1-1/2"D |
| **TLR60100** | 12V/120V | 100W | 1 / 0.5-100W | 6"D x 7-1/8"W x 2-3/4"D |
| **TLR60150** | 12V/120V | 150W | 1 / 50-150W | 6"D x 7-1/8"W x 2-3/4"D |

## Magnetic Transformers

### Remote Mount Magnetic Transformers

Remote Mount Magnetic Transformers are designed to be installed in remote locations such as basements, attics, plenums and electrical closets. The location must be accessible and well ventilated with ambient temperatures below 140°F. 12-volt transformers are typically used for spotlighting applications due to the ready availability of 12-volt MR11 and MR16 lamps. 24-volt transformers double the wattage capacity versus a 12-volt system and are more commonly selected for incandescent linear lighting due to their capacity for longer runs per circuit. These transformers are designed for either 120-volt or 277-volt input, and have premium resettable magnetic circuit breakers, dual-tap standard/boost tap primary input leads to adjust for voltage drop and may be dimmed using dimmers qualified by Juno. See specification sheets for dimming recommendations. Primary and secondary circuits are physically and electrically isolated and grounded. TF Series transformers have terminal block connections while TL Series transformers have wire nut connections. Remote Mount Magnetic Transformers are compatible with all Trac 12 low voltage luminaires including halogen and LED (12V transformers only).

### 12V Transformers (Trac 12/25 Only – LED or Halogen-Compatible)

| Cat. No. | Output Voltage/ Input Voltage | Total Wattage | Number Of Circuits/Recommended Wattage Range Per Circuit | Dimensions |
|---|---|---|---|---|
| **TF5300BL** | 12V/120V | 300W | 1 / 150-300W | 10-3/4"H x 4-3/8"W x 4-1/8"D |
| **TF5300BL-277** | 12V/277V | 300W | 1 / 150-300W | 10-3/4"H x 4-3/8"W x 4-1/8"D |
| **TF5600BL** | 12V/120V | 600W | 2 / 150-300W | 11-3/8"H x 5-3/8"W x 5-1/8"D |
| **TF5600BL-277** | 12V/277V | 600W | 2 / 150-300W | 11-3/8"H x 5-3/8"W x 5-1/8"D |

### 24V Transformers (Trac 12/25 Only – Halogen-Compatible)

| Cat. No. | Output Voltage/ Input Voltage | Total Wattage | Number Of Circuits/Recommended Wattage Range Per Circuit | Dimensions |
|---|---|---|---|---|
| **TF5600BL-24V** | 24V/120V | 600W | 1 / 300-600W | 11-1/2"H x 5-3/8"W x 5-1/8"D |
| **TF5600BL277-24V** | 24V/277V | 600W | 1 / 300-600W | 11-1/2"H x 5-3/8"W x 5-1/8"D |
| **TF51200BL-24V** | 24V/120V | 1200W | 2 / 300-600W | 12-1/2"H x 6-1/8"W x 5-7/8"D |

### 12V Transformers (Trac 12 & Trac 12/25 – LED or Halogen-Compatible)

| Cat. No. | Output Voltage/ Input Voltage | Total Wattage | Number Of Circuits/Recommended Wattage Range Per Circuit | Dimensions |
|---|---|---|---|---|
| **TL575-20-BL** | 12V/120V | 20W | 1 / 0.5-20W | 10-3/4"H x 4-3/8"W x 4-1/8"D |
| **TL575-20-277-BL** | 12V/277V | 20W | 1 / 0.5-20W | 10-3/4"H x 4-3/8"W x 4-1/8"D |
| **TL575-40-BL** | 12V/120V | 40W | 1 / 0.5-40W | 10-3/4"H x 4-3/8"W x 4-1/8"D |
| **TL575-40-277-BL** | 12V/277V | 40W | 1 / 0.5-40W | 10-3/4"H x 4-3/8"W x 4-1/8"D |
| **TL575-75-BL** | 12V/120V | 75W | 1 / 0.5-75W | 10-3/4"H x 4-3/8"W x 4-1/8"D |
| **TL575-75-277-BL** | 12V/277V | 75W | 1 / 0.5-75W | 10-3/4"H x 4-3/8"W x 4-1/8"D |
| **TL576-10-BL*** | 12V/120V | 10W | 1 / 0.5-10W | 10-3/4"H x 4-3/8"W x 4-1/8"D |
| **TL576-25-BL*** | 12V/120V | 25W | 1 / 0.5-25W | 10-3/4"H x 4-3/8"W x 4-1/8"D |
| **TL576-60-BL*** | 12V/120V | 60W | 1 / 0.5-60W | 10-3/4"H x 4-3/8"W x 4-1/8"D |
| **TF5150BL** | 12V/120V | 150W | 1 / 50-150W halogen, 75-150W LED | 10-1/2"H x 3-5/8"W x 3-7/8"D |
| **TF5150BL-277** | 12V/277V | 150W | 1 / 50-150W halogen, 75-150W LED | 10-1/2"H x 3-5/8"W x 3-7/8"D |
| **TL554N-BL** | 12V/120V | 150W | 1 / 50-150W halogen, 75-150W LED | 8"H x 3-5/8"W x 3-1/2"D |
| **TL554N-277-BL** | 12V/277V | 150W | 1 / 50-150W halogen, 75-150W LED | 8"H x 3-5/8"W x 3-1/2"D |
| **TL549N-BL** | 12V/120V | 240W | 1 / 120-240W | 7-7/8"H x 4-3/8"W x 4"D |
| **TL549N-277-BL** | 12V/277V | 240W | 1 / 120-240W | 7-7/8"H x 4-3/8"W x 4"D |
| **TL550N-BL** | 12V/120V | 480W | 2 / 120-240W | 11-3/8"H x 5"W x 5"D |
| **TL550N-277-BL** | 12V/277V | 480W | 2 / 120-240W | 11-3/8"H x 5"W x 5"D |

**TL576 is Class 2 rated.*

### 24V Transformers (Trac 12 & Trac 12/25 – Halogen-Compatible)

| Cat. No. | Output Voltage/ Input Voltage | Total Wattage | Number Of Circuits/Recommended Wattage Range Per Circuit | Dimensions |
|---|---|---|---|---|
| **TL553N-BL-24V** | 24V/277V | 240W | 1/120-240W | 8"H x 4-1/4"W x 4"D |
| **TL553N-277-BL-24V** | 24V/277V | 240W | 1/120-240W | 8"H x 4-1/4"W x 4"D |
| **TL551N-BL-24V** | 24V/120V | 480W | 1/240-480W | 11-3/8"H x 5"W x 4-7/8"D |
| **TL551N-277-BL-24V** | 24V/277V | 480W | 1/240-480W | 11-3/8"H x 5"W x 4-7/8"D |
| **TL552N-BL-24V** | 24V/120V | 960W | 2/240-480W | 12-1/2"H x 6-1/8"W x 5-7/8"D |
| **TL552N-277-BL-24V** | 24V/277V | 960W | 2/240-480W | 12-1/2"H x 6-1/8"W x 5-7/8"D |

*NOTE: 120V magnetic transformers are available with a 6-foot cord and plug option. For cord and plug installation, add -CP6 as suffix to catalog number.* ***Examples: TF5150BL-CP6, TL550N-BL-CP6.***

## Remote Powered Monopoints

### TL40 Monopoint for Remote Transformer

Mounts over standard ceiling outlet boxes supplied with 12 or 24 volts from a remote transformer. Accepts Juno Trac 12 spotlights and decorative pendants.

**Dimensions:** 5" Dia. X 1/4"H
**FINISHES: BL** Black, **WH** White, **SL** Silver

### TL43 Mini-Monopoint for Remote Transformer

Mounts directly into ceiling, wall or cabinet surfaces with no visible mounting screws. Includes mounting retaining spring and 50" of wire with mating connector to TL544N transformer (ordered separately). Accepts all Juno Trac 12 spotlights and decorative pendants.

**Dimensions:** 2-1/2" Dia. X 1/8"H
**FINISHES: BL** Black, **WH** White, **SL** Silver

### TL44 IC Recessed Mini-Monopoint, New or Remodel Construction

Mounts directly into mounting surface with no visible mounting screws. Includes pre-wired IC rated recessed wiring compartment, universal electrical connector and canopy with retaining spring. Installs from below the mounting surface in 2x6 construction and up to ¾" max. surface thickness. Can be supplied with 12 or 24 volts from a remote transformer. Accepts all Juno Trac 12 spotlights and decorative pendants.

**Housing Depth:** 6"
**Dimensions:** 2-1/2" Dia. X 1/8"H
**FINISHES: BL** Black, **WH** White, **SL** Silver

## Recessed Monopoint Power Packs (For 12V only)

### TL644 TC Recessed Mini-Monopoint, New or Remodel Construction

Includes 60VA 12-volt LED-compatible electronic transformer, pre-wired TC rated recessed wiring compartment, universal electrical connector and canopy with retaining spring. Installs from below the mounting surface in 2x6 construction and up to ¾" max. surface thickness. Accepts Juno Trac 12 LED or halogen spotlights and decorative pendants.

**Housing Depth:** 6"
**Dimensions:** 2-1/2" Dia. X 1/8"H
**FINISHES: BL** Black, **WH** White, **SL** Silver

### TL543 IC Recessed Monopoint, New Construction

Includes 50VA 12-volt electronic transformer, pre-wired IC rated recessed housing with adjustable real-nail bar hangers and canopy. Accepts Juno Trac 12 halogen spotlights and decorative pendants.

**Housing Depth:** 6"
**Canopy Dimensions:** 5" Dia. X 1/4"H
**FINISHES: WH** White

### TL542 IC Recessed Monopoint, Remodel Construction

Includes 50VA 12-volt electronic transformer, pre-wired IC rated recessed housing with adjustable real-nail bar hangers and canopy. Accepts Juno Trac 12 halogen spotlights and decorative pendants.

**Housing Depth:** 6"
**Canopy Dimensions:** 5" Dia. X 1/4"H
**FINISHES: WH** White

## Surface Monopoint Adapters w/Integral Electronic Transformer

### TL539 6" Recessed Housing Monopoint Adapter Trim

Includes 50VA 12-volt electronic transformer and screw in socket adapter. Mounts directly to all Juno 6" universal recessed incandescent housings. Accepts Juno Trac 12 halogen spotlights and pendants.

**Dimensions:** 7-5/8" Dia. X 3/16"H
**FINISHES: WH** White

### TL540 Cylindrical Surface Monopoint with Integral Transformer

Mounts over standard ceiling outlet boxes. Includes 50VA electronic transformer. Accepts Juno Trac 12 halogen spotlights and decorative pendants.

**Dimensions:** 6-1/2" Dia. X 1-3/8"H
**FINISHES: BL** Black, **WH** White, **SL** Silver

### TL540U LED-Compatible Cylindrical Surface Monopoint with Integral Transformer

Same as above but compatible with both LED and halogen fixtures.



### TL541 Conical Surface Monopoint with Integral Transformer

Mounts over standard ceiling outlet boxes. Includes 50VA electronic transformer. Accepts Juno Trac 12 halogen spotlights and decorative pendants.

**Dimensions:** 5-3/8" Dia. X 2-3/8"H
**FINISHES: BL** Black, **WH** White, **SL** Silver

### TL541U LED-Compatible Conical Surface Monopoint with Integral Transformer

Same as above but compatible with both LED and halogen fixtures.

## Trac 12 Extension Wands

### Extensions Wands

Extension wands allow any Trac 12 fixture to be suspended without having to lower the trac section itself. For use with either rigid aluminum Trac 12/25 trac or Trac 12 trac or Monopoints.

### Ordering Information

| Cat. No. | Overall Length | Finishes |
|---|---|---|
| TLRW12 | 14" | BL Black |
| TLRW18 | 20" | WH White |
| TLRW24 | 26" | SL Silver |
| TLRW36 | 38" | |
| TLRW48 | 50" | |

## Trac 12 Quick Jack Adapter

### TLQJA Trac 12 Quick Jack Adapter

Quick Jack Adapter for Quick Jack directionals or decorative pendants. For use on Juno's Trac 12 and Trac 12/25 miniature Low Voltage Trac Systems. Rated for fixtures using 50W maximum 12V or 24V lamps.

**Dimensions:** 3/4"L x 3/4"W x 1-5/8"H
**FINISHES: BL** Black, **WH** White, **SL** Silver

JUNO Trac 12™

# Light Control Accessories

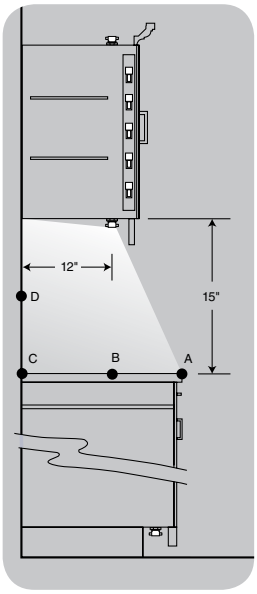
Juno offers a complete selection of light control accessories to enable the customization of lighting effects.

| | | 1¾" Diameter | Compatible With | 2" Diameter | Compatible With |
|---|---|---|---|---|---|
| **Accessory Holders**<br>Required for listed fixtures. Accepts two filters, lenses, or louvers except where noted. | | | | **T7400BL, SA**<br>Accepts up to 2 accessories | TL117, TL130, TL301 |
| **Light Control Lenses**<br>Light Control Lenses alter the light distribution of a given lamp, enlarging or elongating it, softening the beam edge or removing striations. | Linear Spread Lens | **T559** | TL106*, TL109, TL116, TL143, TL160, TL165, TL191, TL196, TL296, TLP116 | **T7478** | TL140*, TL141*, TL150*, TL170*, TL180*, TL190*, TL252L and fixtures with T7400 Accessory Holder |
| | Prismatic Spread Lens | **T557** | | **T7477** | |
| | Diffusion Lens | **T5520** | | **T7420** | |
| | Uniformity Lens | **T5521** | | **T7421** | |
| **UV Filters**<br>These museum quality lenses filter out ultraviolet radiation below 400 nanometers to protect fade sensitive art and objects. | | **T5522** | TL106*, TL109, TL116, TL143, TL160, TL161, TL165, TL191, TL196, TL296, TLP116 | **T7422** | |
| **Dichroic Color Correction Filters**<br>Color Correction Filters correct the light, either to warm it up to approximate incandescent, or cool it down to approximate daylight. | Halogen-to-Incandescent, 2700K | **T5518** | | **T7418** | |
| | Halogen-to-Daylight, 4250K | **T5516** | | **T7416** | |
| **Color Filters**<br>Color Filters change white light into colored light and are available in colored glass and more efficient/ saturated dichroic filters. | **Colored Glass Filters** | | | | |
| | Medium Pink | **T551** | | **T741** | |
| | Warm Red | | | **T742** | |
| | Daylight Blue | | | **T743** | |
| | Medium Blue | **T553** | | **T744** | |
| | Medium Amber | **T555** | | **T745** | |
| | Medium Green | | | **T746** | |
| | **Dichroic Glass Filters** | | | | |
| | Red | **T5501** | | **T7401** | |
| | Warm Green | **T5503** | | **T7403** | |
| | Medium Blue | **T5504** | | **T7404** | |
| | Yellow | **T5505** | | **T7405** | |
| | Magenta | **T5506** | | **T7406** | |
| | Blue-Green (Cyan) | **T5511** | | **T7411** | |
| **Hexcell Louvers**<br>Hexcell Louvers reduce perceived fixture brightness. | | **T5559BL** | TL106*, TL109 TL116, TL143 TL160, TL165 TL191, TL196, TL296, TLP116 | **T7459BL** | |
| **Snoots and Eyebrows**<br>Snoots and Eyebrows extend lamp shielding and can reduce spill light in the edge of a beam pattern. | Snoots | **T558BL** | TL109, TL116 TLP116 | | |
| | Eyebrows | **T556BL** | TL109 | | |
| **Barn Doors**<br>Barn Doors create a theatrical look and allow control of the spill light coming off of a lamp. | | **T74BL** | TL109, TL116 TLP116 | **T7470BL** | Fixtures with T7400 Accessory Holder |

# Linear Lighting Application Data – LED

## Cabinetry Lighting Guidelines (LED)

*Footcandles on Horizontal Work Surface*




### Over Cabinets

Trac 12, using modules spaced 6" on-center or TL103LED fixtures spaced 12" on-center, generally provides excellent indirect lighting. For lower-level mood lighting, closer module spacing and dimming is recommended. Placing the fixture at the front edge of the cabinet top will project light into the space and illuminate any displayed objects. Locate top of lamp even with top edge of cove molding to prevent a harsh shadow line.

### Inside Cabinets

Running Trac 12 vertically on the front inside of cabinets avoids the need to put trac on each shelf. Placing modules 4"- 6" on-center generally provide adequate lighting inside a cabinet.

### Under Cabinets

Placing Juno Trac 12 at the front lip of the cabinet conceals the fixture from view, minimizes veiling reflections, and provides maximum light on the working area of the countertop.

### Footcandles on Horizontal Work Surface*

| Cat. No. | Color Temperature | On-Center Spacing | Footcandles A | B | C | D |
|---|---|---|---|---|---|---|
| **TL214LED-27K-WD** | 2700K – 1800K | 3" | 27 | 72 | 41 | 34 |
| **TL214LEDX1-22K** | 2200K | 3" | 12 | 33 | 19 | 16 |
| **TL214LEDX2-22K** | 2200K | 3" | 24 | 65 | 39 | 31 |
| **TL214LEDX3-22K** | 2200K | 3" | 36 | 96 | 56 | 45 |
| **TL214LEDX1-22K** | 2200K | 4" | 9 | 25 | 15 | 12 |
| **TL214LEDX2-22K** | 2200K | 4" | 18 | 49 | 30 | 24 |
| **TL214LEDX3-22K** | 2200K | 4" | 27 | 72 | 42 | 34 |
| **TL214LED-27K** | 2700K | 3" | 49 | 127 | 73 | 63 |
| **TL214LED-3K** | 3000K | 3" | 50 | 134 | 78 | 63 |
| **TL214LED-35K** | 3500K | 3" | 53 | 139 | 82 | 66 |
| **TL214LED-4K** | 4000K | 3" | 55 | 147 | 86 | 69 |
| **TL214LED-27K** | 2700K | 4" | 37 | 95 | 55 | 47 |
| **TL214LED-3K** | 3000K | 4" | 38 | 100 | 58 | 47 |
| **TL214LED-35K** | 3500K | 4" | 40 | 105 | 62 | 50 |
| **TL214LED-4K** | 4000K | 4" | 42 | 111 | 65 | 52 |
| **TL103LED-3K** | 3000K | 12" | 31 | 78 | 48 | 38 |
| **TL103LED-4K** | 4100K | 12" | 36 | 89 | 55 | 44 |

**Data shown is for operation at 12-volts. For operation at 11.5-volts, multiply by 0.94.*

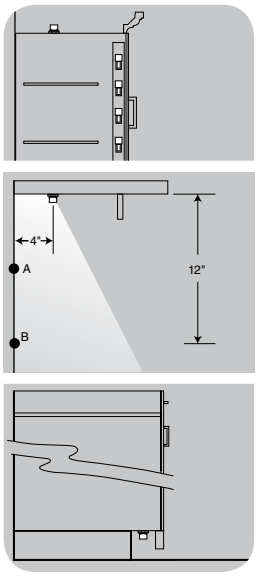
### Kick Spaces

Modules spaced 4" on-center generally provides adequate kick space lighting. Wider spacings can be used when the distance from the trac to the floor is greater than 4" or when even illumination is not required.

*NOTE: Shiny flooring or countertops may cause lamp image reflections.*

## Color LED Accent Lighting Guidelines

*Footcandles on Vertical Surface*




### Over Cabinets

Installing TL214LED color modules, spaced 3-4" on-center, generally provides excellent mood lighting and color saturation uniformity. Placing the fixture at the front edge of the cabinet top will project light into the space. Locate top of module even with top edge of cove molding to prevent a harsh shadow line on the ceiling.

### Inside Cabinets

Running Trac 12 vertically on the front inside of cabinets avoids the need to put trac on each shelf. TL214LED color modules, space 4" on-center, generally provide adequate lighting inside a cabinet. Refer to TL214LEDX modules specification sheets (D3.2.13, D3.2.16) for white-light inside cabinet lighting guidelines.

### Under Counters/Shelves

Placing Juno Trac 12 approximately 4" from the back of the shelf/counter conceals the fixture from view and typically maximizes the wash of color on the rear surface without noticeable hotspots.

### Footcandles on Vertical Surface*

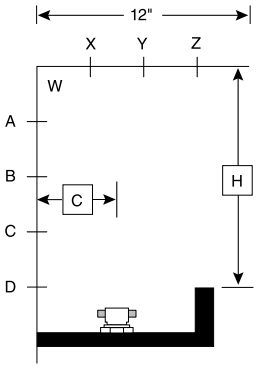
| Cat. No. | Color Temperature | On-Center Spacing | Footcandles A | B |
|---|---|---|---|---|
| **TL214LED-BLUE** | Blue | 2" | 62 | 22 |
| **TL214LED-GREEN** | Green | 2" | 66 | 23 |
| **TL214LED-RED** | Red | 2" | 41 | 14 |
| **TL214LED-BLUE** | Blue | 4" | 35 | 13 |
| **TL214LED-GREEN** | Green | 4" | 34 | 12 |
| **TL214LED-RED** | Red | 4" | 21 | 7 |

**Data shown is for operation at 12-volts. For operation at 11.5-volts, multiply by 0.94.*

### Kick Spaces

TL214LED color modules spaced 4" on-center generally provides adequate kick space accent lighting. Wider spacings can be used when the distance from the trac to the floor is greater than 4" or when perfectly uniform illumination is not required.

## Cove Lighting (LED)




**Placement Guidelines**

1. For uniform illumination, o.c. lamp spacing must be equal to or less than lamp spacing from wall "C"

### Footcandles on Vertical and Horizontal Planes*

| Cat. No. | Lamp Spacing From Wall C | O.C. Lamp Spacing | Cove Height H | Footcandles on Vert. Plane (Wall) A | B | C | D | Footcandles on Horiz. Plane (Ceiling) W | X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TL214LED-27K-WD** | 3" | 3" | 6" | 143 | 164 | 159 | 119 | 206 | 243 | 174 | 101 |
| | 3" | 3" | 9" | 84 | 108 | 141 | 95 | 149 | 160 | 132 | 90 |
| | 3" | 3" | 12" | 54 | 71 | 120 | 87 | 110 | 116 | 103 | 79 |
| | 4" | 4" | 6" | 104 | 107 | 95 | 75 | 130 | 177 | 151 | 90 |
| | 4" | 4" | 9" | 67 | 79 | 82 | 56 | 103 | 118 | 107 | 78 |
| | 4" | 4" | 12" | 45 | 58 | 76 | 48 | 80 | 88 | 82 | 65 |
| **TL214LEDX1-22K** | 3" | 3" | 6" | 68 | 78 | 76 | 57 | 98 | 116 | 83 | 48 |
| | 3" | 3" | 9" | 40 | 52 | 68 | 45 | 71 | 76 | 63 | 43 |
| | 3" | 3" | 12" | 25 | 34 | 58 | 41 | 53 | 55 | 49 | 37 |
| | 4" | 4" | 6" | 50 | 51 | 45 | 36 | 62 | 84 | 72 | 43 |
| | 4" | 4" | 9" | 32 | 37 | 39 | 27 | 49 | 56 | 51 | 37 |
| | 4" | 4" | 12" | 22 | 27 | 36 | 23 | 38 | 42 | 39 | 31 |
| **TL214LEDX2-22K** | 3" | 3" | 6" | 134 | 153 | 149 | 112 | 193 | 228 | 163 | 95 |
| | 3" | 3" | 9" | 79 | 101 | 132 | 89 | 140 | 150 | 124 | 84 |
| | 3" | 3" | 12" | 50 | 67 | 112 | 81 | 103 | 109 | 96 | 74 |
| | 4" | 4" | 6" | 98 | 100 | 89 | 71 | 122 | 166 | 142 | 84 |
| | 4" | 4" | 9" | 63 | 74 | 77 | 53 | 96 | 111 | 100 | 73 |
| | 4" | 4" | 12" | 42 | 54 | 71 | 45 | 75 | 83 | 77 | 61 |
| **TL214LED-3K, TL214LED-35K[1]** | 4" | 4" | 6" | 200 | 204 | 181 | 143 | 248 | 337 | 288 | 171 |
| | 4" | 4" | 9" | 128 | 150 | 156 | 107 | 196 | 225 | 204 | 148 |
| | 4" | 4" | 12" | 87 | 110 | 145 | 92 | 153 | 168 | 156 | 125 |
| | 5" | 5" | 6" | 148 | 143 | 124 | 105 | 167 | 245 | 255 | 160 |
| | 5" | 5" | 9" | 103 | 113 | 107 | 75 | 141 | 171 | 169 | 129 |
| | 5" | 5" | 12" | 72 | 88 | 99 | 63 | 114 | 129 | 125 | 105 |
| **TL214LED-BLUE** | 3" | 3" | 6" | 78 | 90 | 87 | 65 | 112 | 132 | 94 | 55 |
| | 3" | 3" | 9" | 46 | 59 | 77 | 52 | 81 | 87 | 72 | 49 |
| | 3" | 3" | 12" | 29 | 39 | 66 | 47 | 60 | 63 | 56 | 43 |
| | 4" | 4" | 6" | 57 | 58 | 52 | 41 | 71 | 96 | 82 | 49 |
| | 4" | 4" | 9" | 37 | 43 | 44 | 30 | 56 | 64 | 58 | 43 |
| | 4" | 4" | 12" | 25 | 31 | 41 | 26 | 44 | 48 | 44 | 35 |
| **TL214LED-GREEN** | 3" | 3" | 6" | 98 | 113 | 110 | 82 | 141 | 167 | 119 | 69 |
| | 3" | 3" | 9" | 58 | 75 | 97 | 65 | 103 | 110 | 91 | 62 |
| | 3" | 3" | 12" | 36 | 49 | 83 | 59 | 76 | 80 | 70 | 54 |
| | 4" | 4" | 6" | 71 | 74 | 65 | 52 | 89 | 121 | 104 | 62 |
| | 4" | 4" | 9" | 74 | 54 | 56 | 38 | 70 | 81 | 74 | 54 |
| | 4" | 4" | 12" | 31 | 39 | 52 | 33 | 55 | 60 | 56 | 45 |
| **TL214LED-GREEN** | 3" | 3" | 6" | 61 | 70 | 68 | 51 | 87 | 104 | 74 | 43 |
| | 3" | 3" | 9" | 36 | 46 | 60 | 41 | 64 | 68 | 57 | 39 |
| | 3" | 3" | 12" | 23 | 30 | 51 | 37 | 47 | 50 | 44 | 33 |
| | 4" | 4" | 6" | 44 | 46 | 41 | 32 | 55 | 75 | 64 | 39 |
| | 4" | 4" | 9" | 29 | 33 | 35 | 24 | 44 | 50 | 46 | 33 |
| | 4" | 4" | 12" | 19 | 24 | 32 | 21 | 34 | 37 | 35 | 28 |

[1] *Data shown is for 3000K/3500K. For 2200K modules, use 0.72 multiplier; for 2700K modules, use 0.97 multiplier; for 4000K modules, use 1.02 multiplier.*

### Lumens per Foot*

| Cat. No. | Lamp Spacing 2" | 3" | 4" | 6" | 12" |
|---|---|---|---|---|---|
| **TL214LED-27K-WD** | 258 | 172 | 129 | 86 | - |
| **TL214LEDX1-22K** | 120 | 80 | 60 | 40 | - |
| **TL214LEDX2-22K** | 240 | 160 | 120 | 80 | - |
| **TL214LEDX3-22K** | 332 | 224 | 168 | 112 | - |
| **TL214LED-27K** | 456 | 304 | 228 | 152 | - |
| **TL214LED-3K** | 470 | 313 | 235 | 157 | - |
| **TL214LED-35K** | 472 | 315 | 236 | 157 | - |
| **TL214LED-4K** | 478 | 319 | 239 | 159 | - |
| **TL103LED-3K** | - | - | 576 | 384 | 192 |
| **TL103LED-4K** | - | - | 651 | 434 | 217 |
| **TL214LED-BLUE** | 138 | 92 | 69 | 46 | - |
| **TL214LED-GREEN** | 174 | 116 | 87 | 58 | - |
| **TL214LED-RED** | 108 | 72 | 54 | 36 | - |

**Data shown is for operation at 12-volts. For operation at 11.5-volts multiply by 0.94.*

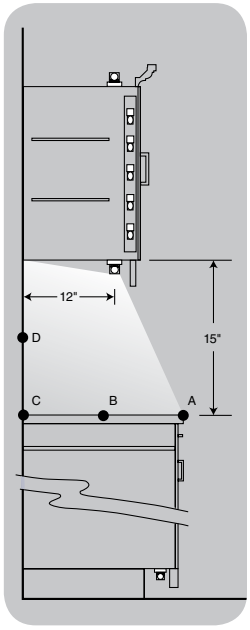
### Maximum Trac Run Length**

| Cat. No. | | Lamp Spacing 2" | 3" | 4" | 6" | 12" |
|---|---|---|---|---|---|---|
| **TL214LED-27K-WD** | Electronic | 9' | 12' | 13' | 16' | - |
| | Magnetic | 24' | 30' | 32' | 42' | - |
| **TL214LEDX1-22K** | Electronic | 14' | 17' | 19' | 24' | - |
| | Magnetic | 38' | 47' | 54' | 65' | - |
| **TL214LEDX2-22K** | Electronic | 10' | 11' | 13' | 15' | - |
| | Magnetic | 30' | 36' | 44' | 52' | |
| **TL214LEDX3-22K TL214LED-27K, TL214LED-3K, TL214LED-35K, TL214LED-4K** | Electronic | 9' | 12' | 13' | 16' | - |
| | Magnetic | 24' | 30' | 32' | 42' | - |
| **TL103LED** | Electronic | - | - | 5' | 8' | 8' |
| | Magnetic | - | - | 18' | 27' | 35' |
| **TL214LED-GREEN** | Electronic | 14' | 17' | 19' | 24' | - |
| | Magnetic | 38' | 47' | 54' | 65' | - |
| **TL214LED-BLUE, TL214LED-RED** | Electronic | 10' | 11' | 13' | 15' | - |
| | Magnetic | 30' | 36' | 44' | 52' | - |

***Based on 20% maximum light output decrease between first and last fixture on trac due to voltage drop; to utilize full capacity of trac and transformers, individual transformer circuits may have to feed multiple runs using separate feed points.*

# Linear Lighting Application Data – Xenon & Halogen

## Cabinetry Lighting Guidelines (Xenon & Halogen)




### Over Cabinets

The Trac 12 system, using 10-watt lamps spaced 6" on center, generally provides excellent indirect lighting. For lower-level mood lighting, use 3-watt or 5-watt lamps with slightly closer spacing. Placing the fixture at the front edge of the cabinet top will project light into the space and illuminate any displayed objects. Locate top of lamp even with top edge of cove molding to prevent a harsh shadow line.

### Inside Cabinets

Running Running the Trac 12 system vertical on the front inside of cabinets avoids the need to put trac on each shelf. 3-watt xenon lamps 3" on center will generally provide adequate lighting inside a cabinet.

### Under Cabinets

Placing the Juno Trac 12 system at the front lip of the cabinet conceals the fixture from view, minimizes veiling reflections, and provides maximum light on the working area of the countertop.

### Footcandles on Horizontal Work Surface

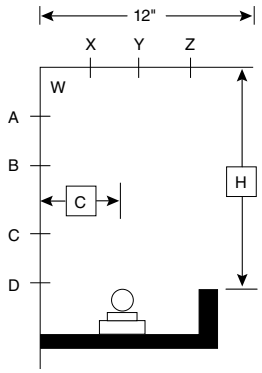
| Lamp Type | Catalog No. | Number of Lamps | Volts/ Watts | On-Center Spacing | Footcandles A | B | C | D |
|---|---|---|---|---|---|---|---|---|
| **Xenon Wedge Base** | **TL201** | 1 | 12V/5W | 3" | 10 | 31 | 20 | 22 |
| | | 1 | 12V/10W | 6" | 12 | 36 | 23 | 25 |
| | **TL202** | 2 | 12V/5W | 6" | 10 | 29 | 18 | 20 |
| | | 2 | 12V/10W | 12" | 12 | 36 | 23 | 25 |
| **Xenon Rigid Loop** | **TL211** | 1 | 12V/5W | 3" | 14 | 42 | 27 | 30 |
| | | 1 | 12V/10W | 6" | 14 | 43 | 28 | 30 |
| **Xenon Festoon** | **TL212** | 1 | 12V/5W | 3" | 16 | 47 | 30 | 33 |
| | | 1 | 12V/10W | 6" | 16 | 48 | 31 | 33 |
| **Halogen Bi-Pin** | **TL103** | 1 | 12V/20W | 12" | 16 | 66 | 56 | 60 |

### Kick Spaces

3-watt xenon lamps spaced on 4" centers provide adequate kick space lighting. Wider spacings can be used when the distance from trac to floor is greater than 4" or when even illumination is not required.

*NOTE: Shiny flooring may cause lamp image reflections.*

## Cove Lighting (Xenon & Halogen)




**Placement Guidelines**

1. For uniform illumination, o.c. lamp spacing must be equal to or less than lamp spacing from wall "C"

### Footcandles on Vertical and Horizontal Planes

| Lamp Type | Lamp Spacing from Wall C | O.C. Lamp Spacing | Cove Height H | Footcandles on Vert. Plane (Wall) A | B | C | D | Footcandles on Horiz. Plane (Ceiling) W | X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **24V, 10W Rigid Loop or Wedge Base Xenon Lamp** | 3" | 3" | 6" | 111 | 155 | 162 | 31 | 176 | 164 | 93 | 44 |
| | 3" | 3" | 9" | 62 | 89 | 155 | 21 | 118 | 121 | 93 | 54 |
| | 3" | 3" | 12" | 42 | 56 | 120 | 15 | 83 | 87 | 78 | 56 |
| | 4" | 4" | 6" | 88 | 111 | 105 | 23 | 124 | 123 | 85 | 38 |
| | 4" | 4" | 9" | 53 | 74 | 99 | 16 | 88 | 89 | 76 | 46 |
| | 4" | 4" | 12" | 36 | 49 | 96 | 11 | 63 | 66 | 61 | 46 |
| | 5" | 5" | 6" | 68 | 71 | 67 | 19 | 85 | 96 | 81 | 35 |
| *(Test conducted with 70% reflectances at 23.5 volts)* | 5" | 5" | 9" | 44 | 57 | 61 | 13 | 66 | 69 | 63 | 43 |
| | 5" | 5" | 12" | 31 | 42 | 58 | 8 | 48 | 51 | 48 | 40 |

### Conversions Factors for Other Lamps

| Lamp | Multiplier |
|---|---|
| **12V, 10W Rigid Loop** | 1.11 |
| **12V, 10W Wedge Base** | 0.92 |
| **24V, 5W Rigid Loop** | 0.44 |
| **24V, 5W Wedge Base** | 0.32 |
| **12V, 5W Rigid Loop** | 0.50 |
| **12V, 5W Wedge Base** | 0.37 |

*NOTE: Frosted lamps provide slightly less lumen output, but more uniformity with wider spacings.*

### Maximum Run Length per 20 Amp Circuit**

| Cat. No. | Lamp Type | Lamp Spacing 2" | 3" | 4" | 6" | 12" |
|---|---|---|---|---|---|---|
| **10 Watt Xenon Lamps** | Lumens/Foot (24V Lamp) | - | 340 | 255 | 204 | 170 |
| | Maximum Run Length-24V | - | 12' | 16' | 20' | 24' |
| | Maximum Run Length-12V | - | 6' | 8' | 10' | 12' |
| **5 Watt Xenon Lamps** | Lumens/Foot (24V Lamp) | 162 | 108 | 81 | 65 | 54 |
| | Maximum Run Length-24V | 16' | 24' | 32' | 40' | 48' |
| | Maximum Run Length-12V | 8' | 12' | 16' | 20' | 24' |
| **3 Watt Xenon Lamps** | Lumens/Foot | 93 | 62 | 42 | 37 | 31 |
| | Maximum Run Length-12V | 13' | 20' | 27' | 33' | 40' |

### Maximum Run Length per 25 Amp Circuit**

| Cat. No. | Lamp Type | Lamp Spacing 2" | 3" | 4" | 6" | 12" |
|---|---|---|---|---|---|---|
| **10 Watt Xenon Lamps** | Lumens/Foot (24V Lamp) | - | 340 | 255 | 204 | 170 |
| | Maximum Run Length-24V | 10' | 15' | 20' | 25' | 30' |
| | Maximum Run Length-12V | 5' | 7.5' | 10' | 12.5' | 15' |
| **5 Watt Xenon Lamps** | Lumens/Foot (24V Lamp) | 162 | 108 | 81 | 65 | 54 |
| | Maximum Run Length-24V | 20' | 30' | 40' | 50' | 60' |
| | Maximum Run Length-12V | 10' | 15' | 20' | 25' | 30' |
| **3 Watt Xenon Lamps** | Lumens/Foot | 93 | 62 | 42 | 37 | 31 |
| | Maximum Run Length-12V | 17' | 25' | 34' | 42' | 50' |

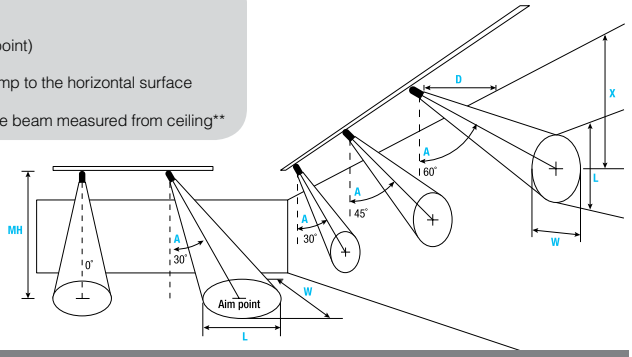
***Based on 20% maximum light output decrease between first and last fixture on trac due to voltage drop; to utilize full capacity of trac and transformers, individual transformer circuits may have to feed multiple runs using separate feed points.*

# Lamp Photometric Data

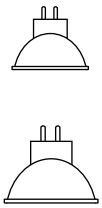
The photometric charts on the following pages provide illumination levels (FC) and beam size (in feet) for lamps of various wattages and beam patterns. Data is given for lamps aimed at both horizontal and vertical surfaces.

Maximum candlepower and rated life is also indicated for each lamp. Lamp performance is based on bare lamp photometrics provided by lamp manufacturers. Additional information may be obtained from Juno.

| | |
|---|---|
| **A** | Aiming angle of fixture/lamp, measured from 0° |
| **CBCP** | Centerbeam candlepower |
| **D** | Distance from fixture/lamp to wall |
| **FC** | Footcandles at beam center (aim point) |
| **L** | Length of beam* |
| **MH** | Vertical distance from the fixture/lamp to the horizontal surface |
| **W** | Width of beam* |
| **X** | Vertical distance to the center of the beam measured from ceiling** |



## 12-Volt and 24-Volt MR11/MR16 (Mirrored Reflector)



These Mirrored Reflector (MR) lamps have smaller "point-source" filaments that are precisely aligned in a miniature multi-faceted reflector to produce exacting beam distributions of white, halogen light. For spot distributions they produce more usable light per watt of energy than comparable wattage halogen PAR lamps. Available in a wide range of beam spreads and wattages, the miniature 2" MR16 lamps allow for very compact fixture designs and, in combination with light control lenses, a high degree of specificity in lighting design. They are the best accent source for highlighting artwork, sculpture, or creating dramatic effects. Smaller, lower wattage 1-3/8" diameter MR11 lamps are also available for special situations where ultra-miniature fixture size is required. Like halogen PAR lamps, many MR16 lamps are now available in "IR" models whereby the infrared heat produced by the lamp is reflected back onto the filament, enabling it to burn hotter and brighter, improving energy efficiency up to 30%. Life ranges from 2000 to 6000 hours. MR lamps require a step-down transformer to supply their required 12 or 24 volts.

**The beam spread in degrees and the beam "L" and "W" in the following tables are computed at 50% of centerbeam candlepower and represent areas of "effective illumination."*

***In vertical aiming applications, aim point (X) is determined by dividing distance from the wall (D) by the tangent of the desired aim angle (A) (0.577 for 30˚, 1.0 for 45˚, 1.732 for 60˚)*

## Photometry
## Mini-Cylinder Spotlight – 6W LED (TL114G2)

| Lamp | Beam Type | Beam Spread | Rated Life | CBCP | Horizontal Surface 0 Degrees MH | FC | L | W | 30 Degrees FC | L | W | Vertical Surface 30 Degrees D | FC | X | L | W | 45 Degrees FC | X | L | W | 60 Degrees D | FC | X | L | W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TL114LG2** | S | 21° | 50000 | 1708 | 2 | 427 | 0.7 | 0.7 | 277 | 1.0 | 0.9 | 1 | 214 | 1.7 | 1.7 | 0.7 | 604 | 1.0 | 0.8 | 0.5 | 2 | 277 | 1.2 | 1.0 | 0.9 |
| **6W LED** | | | | | 4 | 107 | 1.5 | 1.5 | 69 | 2.0 | 1.7 | 2 | 53 | 3.5 | 3.3 | 1.5 | 151 | 2.0 | 1.5 | 1.0 | 3 | 123 | 1.7 | 1.5 | 1.3 |
| **3000K** | | | | | 6 | 47 | 2.2 | 2.2 | 31 | 3.0 | 2.6 | 3 | 24 | 5.2 | 5.0 | 2.2 | 67 | 3.0 | 2.3 | 1.6 | 4 | 69 | 2.3 | 2.0 | 1.7 |
| | | | | | 8 | 27 | 3.0 | 3.0 | 17 | 4.0 | 3.4 | 4 | 13 | 6.9 | 6.6 | 3.0 | 38 | 4.0 | 3.1 | 2.1 | 5 | 44 | 2.9 | 2.5 | 2.1 |
| | | | | | 10 | 17 | 3.7 | 3.7 | 11 | 5.0 | 4.3 | 5 | 9 | 8.7 | 8.3 | 3.7 | 24 | 5.0 | 3.8 | 2.6 | 6 | 31 | 3.5 | 3.0 | 2.6 |
| | N | 25° | 50000 | 1078 | 2 | 270 | 0.9 | 0.9 | 175 | 1.2 | 1.0 | 1 | 135 | 1.7 | 2.1 | 0.9 | 381 | 1.0 | 0.9 | 0.6 | 1 | 700 | 0.6 | 0.6 | 0.5 |
| | | | | | 4 | 67 | 1.8 | 1.8 | 44 | 2.4 | 2.1 | 1.5 | 60 | 2.6 | 3.1 | 1.3 | 169 | 1.5 | 1.4 | 0.9 | 2 | 175 | 1.2 | 1.2 | 1.0 |
| | | | | | 6 | 30 | 2.7 | 2.7 | 19 | 3.6 | 3.1 | 2 | 34 | 3.5 | 4.2 | 1.8 | 95 | 2.0 | 1.9 | 1.3 | 3 | 78 | 1.7 | 1.8 | 1.5 |
| | | | | | 8 | 17 | 3.6 | 3.6 | 11 | 4.8 | 4.1 | 2.5 | 22 | 4.3 | 5.2 | 2.2 | 61 | 2.5 | 2.3 | 1.6 | 4 | 44 | 2.3 | 2.4 | 2.1 |
| | | | | | 10 | 11 | 4.5 | 4.5 | 7 | 6.0 | 5.1 | 3 | 15 | 5.2 | 6.3 | 2.7 | 42 | 3.0 | 2.8 | 1.9 | 5 | 28 | 2.9 | 3.0 | 2.6 |
| | F | 38° | 50000 | 519 | 2 | 130 | 1.4 | 1.4 | 84 | 1.9 | 1.6 | 0.5 | 260 | 0.9 | 2.2 | 0.7 | 734 | 0.5 | 0.8 | 0.5 | 1 | 337 | 0.6 | 1.0 | 0.8 |
| | | | | | 2.5 | 83 | 1.7 | 1.7 | 54 | 2.4 | 2.0 | 1 | 65 | 1.7 | 4.3 | 1.4 | 183 | 1.0 | 1.6 | 1.0 | 2 | 84 | 1.2 | 1.9 | 1.6 |
| | | | | | 3 | 58 | 2.1 | 2.1 | 37 | 2.9 | 2.4 | 1.5 | 29 | 2.6 | 6.5 | 2.1 | 82 | 1.5 | 2.4 | 1.5 | 3 | 37 | 1.7 | 2.9 | 2.4 |
| | | | | | 3.5 | 42 | 2.4 | 2.4 | 28 | 3.4 | 2.8 | 2 | 16 | 3.5 | 8.7 | 2.8 | 46 | 2.0 | 3.1 | 2.0 | 4 | 21 | 2.3 | 3.8 | 3.2 |
| | | | | | 4 | 32 | 2.8 | 2.8 | 21 | 3.8 | 3.2 | 2.5 | 10 | 4.3 | 10.8 | 3.5 | 29 | 2.5 | 3.9 | 2.4 | 5 | 13 | 2.9 | 4.8 | 4.0 |

For 2700K use 0.95 multiplier; for 4100K use 1.11 multiplier.

## Photometry

## Cylindra™ Spotlight – 13W LED (TL252L)

| Lamp | Beam Type | Beam Spread | Rated Life | CBCP | Horizontal Surface 0 Degrees MH | FC | L | W | 30 Degrees FC | L | W | Vertical Surface 30 Degrees D | FC | X | L | W | 45 Degrees FC | X | L | W | 60 Degrees D | FC | X | L | W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TL252L 13W LED 3000K** | S | 15° | 50000 | 7592 | 6 | 211 | 1.5 | 1.5 | 137 | 2.1 | 1.8 | 3 | 105 | 5.2 | 3.2 | 1.5 | 298 | 3.0 | 1.6 | 1.1 | 6 | 137 | 3.5 | 2.1 | 1.8 |
| | | | | | 8 | 119 | 2.0 | 2.0 | 77 | 2.7 | 2.4 | 4 | 59 | 6.9 | 4.3 | 2.0 | 168 | 4.0 | 2.1 | 1.4 | 8 | 77 | 4.6 | 2.7 | 2.4 |
| | | | | | 10 | 76 | 2.6 | 2.6 | 49 | 3.4 | 3.0 | 5 | 38 | 8.7 | 5.4 | 2.6 | 107 | 5.0 | 2.6 | 1.8 | 10 | 49 | 5.8 | 3.4 | 3.0 |
| | | | | | 12 | 53 | 3.1 | 3.1 | 34 | 4.1 | 3.6 | 6 | 26 | 10.4 | 6.5 | 3.1 | 75 | 6.0 | 3.1 | 2.2 | 12 | 34 | 6.9 | 4.1 | 3.6 |
| | | | | | 14 | 39 | 3.6 | 3.6 | 25 | 4.8 | 4.1 | 7 | 19 | 12.1 | 7.5 | 3.6 | 55 | 7.0 | 3.6 | 2.5 | 14 | 25 | 8.1 | 4.8 | 4.1 |
| | N | 27° | 50000 | 3473 | 5 | 139 | 2.4 | 2.4 | 90 | 3.3 | 2.8 | 2 | 109 | 3.5 | 4.7 | 2.0 | 307 | 2.0 | 2.1 | 1.4 | 4 | 141 | 2.3 | 2.7 | 2.3 |
| | | | | | 6 | 96 | 2.9 | 2.9 | 63 | 4.0 | 3.4 | 3 | 48 | 5.2 | 7.1 | 2.9 | 136 | 3.0 | 3.1 | 2.1 | 5 | 90 | 2.9 | 3.3 | 2.8 |
| | | | | | 7 | 71 | 3.4 | 3.4 | 46 | 4.6 | 3.9 | 4 | 27 | 6.9 | 9.5 | 3.9 | 77 | 4.0 | 4.1 | 2.8 | 6 | 63 | 3.5 | 4.0 | 3.4 |
| | | | | | 8 | 54 | 3.9 | 3.9 | 35 | 5.3 | 4.5 | 5 | 17 | 8.7 | 11.9 | 4.9 | 49 | 5.0 | 5.2 | 3.4 | 7 | 46 | 4.0 | 4.6 | 3.9 |
| | | | | | 9 | 43 | 4.4 | 4.4 | 28 | 6.0 | 5.1 | 6 | 12 | 10.4 | 14.2 | 5.9 | 34 | 6.0 | 6.2 | 4.1 | 8 | 35 | 4.6 | 5.3 | 4.5 |
| | F | 41° | 50000 | 1797 | 3 | 200 | 2.2 | 2.2 | 130 | 3.1 | 2.6 | 1.5 | 100 | 2.6 | 7.6 | 2.2 | 282 | 1.5 | 2.6 | 1.6 | 3 | 130 | 1.7 | 3.1 | 2.6 |
| | | | | | 4 | 112 | 3.0 | 3.0 | 73 | 4.1 | 3.4 | 2.0 | 56 | 3.5 | 10.1 | 3.0 | 159 | 2.0 | 3.4 | 2.1 | 4 | 73 | 2.3 | 4.1 | 3.4 |
| | | | | | 5 | 72 | 3.7 | 3.7 | 47 | 5.2 | 4.3 | 2.5 | 36 | 4.3 | 12.6 | 3.7 | 102 | 2.5 | 4.3 | 2.6 | 5 | 47 | 2.9 | 5.2 | 4.3 |
| | | | | | 6 | 50 | 4.5 | 4.5 | 32 | 6.2 | 5.1 | 3.0 | 25 | 5.2 | 15.2 | 4.5 | 71 | 3.0 | 5.2 | 3.1 | 6 | 32 | 3.5 | 6.2 | 5.1 |
| | | | | | 7 | 37 | 5.2 | 5.2 | 24 | 7.3 | 6.0 | 3.5 | 18 | 6.1 | 17.7 | 5.2 | 52 | 3.5 | 6.0 | 3.7 | 7 | 24 | 4.0 | 7.3 | 6.0 |

For 2700K fixtures, use 0.93 multiplier; for 2700HC fixtures, use 0.69 multiplier; for 3000HC fixtures, use 0.74 multiplier; for 3500K fixtures, use 1.07 multiplier; for 4000K fixtures, use 1.00 multiplier.

## Conix® II Spotlight - 13W LED (TL261L)

| Lamp | Beam Type | Beam Spread | Rated Life | CBCP | MH | FC | L | W | FC | L | W | D | FC | X | L | W | FC | X | L | W | D | FC | X | L | W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TL261L 13W LED 3000K** | S | 17° | 50000 | 6578 | 6 | 183 | 1.8 | 1.8 | 119 | 2.4 | 2.1 | 3 | 91 | 5.2 | 3.9 | 1.8 | 258 | 3.0 | 1.9 | 1.3 | 6 | 119 | 3.5 | 2.4 | 2.1 |
| | | | | | 8 | 103 | 2.4 | 2.4 | 67 | 3.3 | 2.8 | 4 | 51 | 6.9 | 5.2 | 2.4 | 145 | 4.0 | 2.5 | 1.7 | 8 | 67 | 4.6 | 3.3 | 2.8 |
| | | | | | 10 | 66 | 3.0 | 3.0 | 43 | 4.1 | 3.5 | 5 | 33 | 8.7 | 6.5 | 3.0 | 93 | 5.0 | 3.1 | 2.1 | 10 | 43 | 5.8 | 4.1 | 3.5 |
| | | | | | 12 | 46 | 3.6 | 3.6 | 30 | 4.9 | 4.2 | 6 | 23 | 10.4 | 7.8 | 3.6 | 65 | 6.0 | 3.7 | 2.6 | 12 | 30 | 6.9 | 4.9 | 4.2 |
| | | | | | 14 | 34 | 4.2 | 4.2 | 22 | 5.7 | 4.9 | 7 | 17 | 12.1 | 9.1 | 4.2 | 47 | 7.0 | 4.3 | 3.0 | 14 | 22 | 8.1 | 5.7 | 4.9 |
| | N | 30° | 50000 | 3233 | 5 | 129 | 2.7 | 2.7 | 84 | 3.7 | 3.1 | 2 | 101 | 3.5 | 5.6 | 2.2 | 286 | 2.0 | 2.3 | 1.5 | 4 | 131 | 2.3 | 3.0 | 2.5 |
| | | | | | 6 | 90 | 3.3 | 3.3 | 58 | 4.5 | 3.8 | 3 | 45 | 5.2 | 8.4 | 3.3 | 127 | 3.0 | 3.5 | 2.3 | 5 | 84 | 2.9 | 3.7 | 3.1 |
| | | | | | 7 | 66 | 3.8 | 3.8 | 43 | 5.2 | 4.4 | 4 | 25 | 6.9 | 11.2 | 4.3 | 71 | 4.0 | 4.7 | 3.1 | 6 | 58 | 3.5 | 4.5 | 3.8 |
| | | | | | 8 | 51 | 4.3 | 4.3 | 33 | 5.9 | 5.0 | 5 | 16 | 8.7 | 14.0 | 5.4 | 46 | 5.0 | 5.9 | 3.8 | 7 | 43 | 4.0 | 5.2 | 4.4 |
| | | | | | 9 | 40 | 4.9 | 4.9 | 26 | 6.7 | 5.6 | 6 | 11 | 10.4 | 16.8 | 6.5 | 32 | 6.0 | 7.0 | 4.6 | 8 | 33 | 4.6 | 5.9 | 5.0 |
| | F | 43° | 50000 | 1558 | 3 | 173 | 2.3 | 2.3 | 112 | 3.3 | 2.7 | 1.5 | 87 | 2.6 | 8.7 | 2.3 | 245 | 1.5 | 2.8 | 1.7 | 3 | 112 | 1.7 | 3.3 | 2.7 |
| | | | | | 4 | 97 | 3.1 | 3.1 | 63 | 4.4 | 3.6 | 2.0 | 49 | 3.5 | 11.5 | 3.1 | 138 | 2.0 | 3.7 | 2.2 | 4 | 63 | 2.3 | 4.4 | 3.6 |
| | | | | | 5 | 62 | 3.9 | 3.9 | 40 | 5.5 | 4.5 | 2.5 | 31 | 4.3 | 14.4 | 3.9 | 88 | 2.5 | 4.6 | 2.8 | 5 | 40 | 2.9 | 5.5 | 4.5 |
| | | | | | 6 | 43 | 4.7 | 4.7 | 28 | 6.6 | 5.4 | 3.0 | 22 | 5.2 | 17.3 | 4.7 | 61 | 3.0 | 5.5 | 3.3 | 6 | 28 | 3.5 | 6.6 | 5.4 |
| | | | | | 7 | 32 | 5.5 | 5.5 | 21 | 7.7 | 6.3 | 3.5 | 16 | 6.1 | 20.2 | 5.5 | 45 | 3.5 | 6.5 | 3.9 | 7 | 21 | 4.0 | 7.7 | 6.3 |

For 2700K fixtures, use 0.93 multiplier; for 2700HC fixtures, use 0.69 multiplier; for 3000HC fixtures, use 0.74 multiplier; for 3500K fixtures, use 1.07 multiplier; for 4000K fixtures, use 1.00 multiplier.

## Low Voltage – Halogen

| Lamp | Beam Type | Beam Spread | Rated Life | CBCP | MH | FC | L | W | FC | L | W | D | FC | X | L | W | FC | X | L | W | D | FC | X | L | W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **20W MR11 Halogen 12 Volt** | SP | 15° | 3500 | 1760 | 4 | 110 | 1.1 | 1.1 | 71 | 1.4 | 1.2 | 2 | 55 | 3.5 | 2.2 | 1.1 | 156 | 2.0 | 1.1 | 0.7 | 4 | 71 | 2.3 | 1.4 | 1.2 |
| | | | | | 6 | 49 | 1.6 | 1.6 | 32 | 2.1 | 1.8 | 3 | 24 | 5.2 | 3.3 | 1.6 | 69 | 3.0 | 1.6 | 1.1 | 5 | 46 | 2.9 | 1.8 | 1.5 |
| | | | | | 8 | 28 | 2.1 | 2.1 | 18 | 2.8 | 2.4 | 4 | 14 | 6.9 | 4.4 | 2.1 | 39 | 4.0 | 2.1 | 1.5 | 6 | 32 | 3.5 | 2.1 | 1.8 |
| | | | | | 10 | 18 | 2.6 | 2.6 | 11 | 3.5 | 3.0 | 5 | 9 | 8.7 | 5.6 | 2.6 | 25 | 5.0 | 2.7 | 1.9 | 7 | 23 | 4.0 | 2.5 | 2.1 |
| | | | | | 12 | 12 | 3.2 | 3.2 | 8 | 4.2 | 3.6 | 6 | 6 | 10.4 | 6.7 | 3.2 | 17 | 6.0 | 3.2 | 2.2 | 8 | 18 | 4.6 | 2.8 | 2.4 |
| | NFL | 30° | 3500 | 600 | 2 | 150 | 1.1 | 1.1 | 97 | 1.5 | 1.2 | 1 | 75 | 1.7 | 2.7 | 1.1 | 212 | 1.0 | 1.2 | 0.8 | 2 | 97 | 1.2 | 1.5 | 1.2 |
| | | | | | 3 | 67 | 1.6 | 1.6 | 43 | 2.2 | 1.9 | 2 | 19 | 3.5 | 5.5 | 2.1 | 53 | 2.0 | 2.3 | 1.5 | 3 | 43 | 1.7 | 2.2 | 1.9 |
| | | | | | 4 | 38 | 2.1 | 2.1 | 24 | 2.9 | 2.5 | 3 | 8 | 5.2 | 8.2 | 3.2 | 24 | 3.0 | 3.5 | 2.3 | 4 | 24 | 2.3 | 2.9 | 2.5 |
| | | | | | 5 | 24 | 2.7 | 2.7 | 16 | 3.7 | 3.1 | 4 | 5 | 6.9 | 10.9 | 4.3 | 13 | 4.0 | 4.6 | 3.0 | 5 | 16 | 2.9 | 3.7 | 3.1 |
| | | | | | 6 | 17 | 3.2 | 3.2 | 11 | 4.4 | 3.7 | 5 | 3 | 8.7 | 13.7 | 5.4 | 8 | 5.0 | 5.8 | 3.8 | 6 | 11 | 3.5 | 4.4 | 3.7 |
| **35W MR11 Halogen 12 Volt** | SP | 20° | 3500 | 3000 | 4 | 188 | 1.4 | 1.4 | 122 | 1.9 | 1.6 | 2 | 94 | 3.5 | 3.1 | 1.4 | 265 | 2.0 | 1.5 | 1.0 | 4 | 122 | 2.3 | 1.9 | 1.6 |
| | | | | | 6 | 83 | 2.1 | 2.1 | 54 | 2.9 | 2.4 | 3 | 42 | 5.2 | 4.7 | 2.1 | 118 | 3.0 | 2.2 | 1.5 | 5 | 78 | 2.9 | 2.4 | 2.0 |
| | | | | | 8 | 47 | 2.8 | 2.8 | 30 | 3.8 | 3.3 | 4 | 23 | 6.9 | 6.2 | 2.8 | 66 | 4.0 | 2.9 | 2.0 | 6 | 54 | 3.5 | 2.9 | 2.4 |
| | | | | | 10 | 30 | 3.5 | 3.5 | 19 | 4.8 | 4.1 | 5 | 15 | 8.7 | 7.8 | 3.5 | 42 | 5.0 | 3.6 | 2.5 | 7 | 40 | 4.0 | 3.3 | 2.9 |
| | | | | | 12 | 21 | 4.2 | 4.2 | 14 | 5.7 | 4.9 | 6 | 10 | 10.4 | 9.3 | 4.2 | 29 | 6.0 | 4.4 | 3.0 | 8 | 30 | 4.6 | 3.8 | 3.3 |
| | NFL | 30° | 3500 | 1300 | 2 | 325 | 1.1 | 1.1 | 211 | 1.5 | 1.2 | 1 | 163 | 1.7 | 2.7 | 1.1 | 460 | 1.0 | 1.2 | 0.8 | 2 | 211 | 1.2 | 1.5 | 1.2 |
| | | | | | 4 | 81 | 2.1 | 2.1 | 53 | 2.9 | 2.5 | 2 | 41 | 3.5 | 5.5 | 2.1 | 115 | 2.0 | 2.3 | 1.5 | 3 | 94 | 1.7 | 2.2 | 1.9 |
| | | | | | 6 | 36 | 3.2 | 3.2 | 23 | 4.4 | 3.7 | 3 | 18 | 5.2 | 8.2 | 3.2 | 51 | 3.0 | 3.5 | 2.3 | 4 | 53 | 2.3 | 2.9 | 2.5 |
| | | | | | 8 | 20 | 4.3 | 4.3 | 13 | 5.9 | 5.0 | 4 | 10 | 6.9 | 10.9 | 4.3 | 29 | 4.0 | 4.6 | 3.0 | 5 | 34 | 2.9 | 3.7 | 3.1 |
| | | | | | 10 | 13 | 5.4 | 5.4 | 8 | 7.3 | 6.2 | 5 | 7 | 8.7 | 13.7 | 5.4 | 18 | 5.0 | 5.8 | 3.8 | 6 | 23 | 3.5 | 4.4 | 3.7 |

## Photometry
## Low Voltage – Halogen

| Lamp | Beam Type | Beam Spread | Rated Life | CBCP | Horizontal Surface 0 Degrees MH | FC | L | W | 30 Degrees FC | L | W | Vertical Surface 30 Degrees D | FC | X | L | W | 45 Degrees FC | X | L | W | 60 Degrees D | FC | X | L | W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **20W MR16 Halogen 12 Volt** | VNSP | 7° | 3000 | 7400 | 6 | 206 | 0.7 | 0.7 | 134 | 1.0 | 0.8 | 3 | 103 | 5.2 | 1.5 | 0.7 | 291 | 3.0 | 0.7 | 0.5 | 6 | 134 | 3.5 | 1.0 | 0.8 |
| | | | | | 9 | 91 | 1.1 | 1.1 | 59 | 1.5 | 1.3 | 4 | 58 | 6.9 | 2.0 | 1.0 | 164 | 4.0 | 1.0 | 0.7 | 7 | 98 | 4.0 | 1.1 | 1.0 |
| | | | | | 12 | 51 | 1.5 | 1.5 | 33 | 2.0 | 1.7 | 5 | 37 | 8.7 | 2.5 | 1.2 | 105 | 5.0 | 1.2 | 0.9 | 8 | 75 | 4.6 | 1.3 | 1.1 |
| | | | | | 15 | 33 | 1.8 | 1.8 | 21 | 2.4 | 2.1 | 6 | 26 | 10.4 | 3.0 | 1.5 | 73 | 6.0 | 1.5 | 1.0 | 9 | 59 | 5.2 | 1.5 | 1.3 |
| | | | | | 18 | 23 | 2.2 | 2.2 | 15 | 2.9 | 2.5 | 7 | 19 | 12.1 | 3.5 | 1.7 | 53 | 7.0 | 1.7 | 1.2 | 10 | 48 | 5.8 | 1.6 | 1.4 |
| | NSP | 15° | 5000 | 3750 | 4 | 234 | 1.1 | 1.1 | 152 | 1.4 | 1.2 | 2 | 117 | 3.5 | 2.2 | 1.1 | 331 | 2.0 | 1.1 | 0.7 | 4 | 152 | 2.3 | 1.4 | 1.2 |
| | | | | | 6 | 104 | 1.6 | 1.6 | 68 | 2.1 | 1.8 | 3 | 52 | 5.2 | 3.3 | 1.6 | 147 | 3.0 | 1.6 | 1.1 | 5 | 97 | 2.9 | 1.8 | 1.5 |
| | | | | | 8 | 59 | 2.1 | 2.1 | 38 | 2.8 | 2.4 | 4 | 29 | 6.9 | 4.4 | 2.1 | 83 | 4.0 | 2.1 | 1.5 | 6 | 68 | 3.5 | 2.1 | 1.8 |
| | | | | | 10 | 38 | 2.6 | 2.6 | 24 | 3.5 | 3.0 | 5 | 19 | 8.7 | 5.6 | 2.6 | 53 | 5.0 | 2.7 | 1.9 | 7 | 50 | 4.0 | 2.5 | 2.1 |
| | | | | | 12 | 26 | 3.2 | 3.2 | 17 | 4.2 | 3.6 | 6 | 13 | 10.4 | 6.7 | 3.2 | 37 | 6.0 | 3.2 | 2.2 | 8 | 38 | 4.6 | 2.8 | 2.4 |
| | FL | 40° | 5000 | 525 | 3 | 58 | 2.2 | 2.2 | 38 | 3.0 | 2.5 | 1 | 66 | 1.7 | 4.8 | 1.5 | 186 | 1.0 | 1.7 | 1.0 | 2 | 85 | 1.2 | 2.0 | 1.7 |
| | | | | | 5 | 21 | 3.6 | 3.6 | 14 | 5.1 | 4.2 | 1.5 | 29 | 2.6 | 7.2 | 2.2 | 82 | 1.5 | 2.5 | 1.5 | 3 | 38 | 1.7 | 3.0 | 2.5 |
| | | | | | 7 | 11 | 5.1 | 5.1 | 7 | 7.1 | 5.9 | 2 | 16 | 3.5 | 9.7 | 2.9 | 46 | 2.0 | 3.4 | 2.1 | 4 | 21 | 2.3 | 4.1 | 3.4 |
| | | | | | 9 | 6 | 6.6 | 6.6 | 4 | 9.1 | 7.6 | 2.5 | 11 | 4.3 | 12.1 | 3.6 | 30 | 2.5 | 4.2 | 2.6 | 5 | 14 | 2.9 | 5.1 | 4.2 |
| | | | | | 11 | 4 | 8.0 | 8.0 | 3 | 11.2 | 9.2 | 3 | 7 | 5.2 | 14.5 | 4.4 | 21 | 3.0 | 5.0 | 3.1 | 6 | 9 | 3.5 | 6.1 | 5.0 |
| **20W MR16 Halogen 12 Volt Lensed** | NSP | 15° | 5000 | 3150 | 4 | 197 | 1.1 | 1.1 | 128 | 1.4 | 1.2 | 2 | 96 | 3.5 | 2.2 | 1.1 | 278 | 2.0 | 1.1 | 0.7 | 4 | 128 | 2.3 | 1.4 | 1.2 |
| | | | | | 6 | 88 | 1.6 | 1.6 | 57 | 2.1 | 1.8 | 3 | 44 | 5.2 | 3.3 | 1.6 | 124 | 3.0 | 1.6 | 1.1 | 5 | 82 | 2.9 | 1.8 | 1.5 |
| | | | | | 8 | 49 | 2.1 | 2.1 | 32 | 2.8 | 2.4 | 4 | 25 | 6.9 | 4.4 | 2.1 | 70 | 4.0 | 2.1 | 1.5 | 6 | 57 | 3.5 | 2.1 | 1.8 |
| | | | | | 10 | 32 | 2.6 | 2.6 | 20 | 3.5 | 3.0 | 5 | 16 | 8.7 | 5.6 | 2.6 | 45 | 5.0 | 2.7 | 1.9 | 7 | 42 | 4.0 | 2.5 | 2.1 |
| | | | | | 12 | 22 | 3.2 | 3.2 | 14 | 4.2 | 3.6 | 6 | 11 | 10.4 | 6.7 | 3.2 | 31 | 6.0 | 3.2 | 2.2 | 8 | 32 | 4.6 | 2.8 | 2.4 |
| | FL | 40° | 5000 | 475 | 2 | 119 | 1.5 | 1.5 | 77 | 2.0 | 1.7 | 1 | 59 | 1.7 | 4.8 | 1.5 | 168 | 1.0 | 1.7 | 1.0 | 2 | 77 | 1.2 | 2.0 | 1.7 |
| | | | | | 4 | 30 | 2.9 | 2.9 | 19 | 4.1 | 3.4 | 2 | 15 | 3.5 | 9.7 | 2.9 | 42 | 2.0 | 3.4 | 2.1 | 3 | 34 | 1.7 | 3.0 | 2.5 |
| | | | | | 6 | 13 | 4.4 | 4.4 | 9 | 6.1 | 5.0 | 3 | 7 | 5.2 | 14.5 | 4.4 | 19 | 3.0 | 5.0 | 3.1 | 4 | 19 | 2.3 | 4.1 | 3.4 |
| | | | | | 8 | 7 | 5.8 | 5.8 | 5 | 8.1 | 6.7 | 4 | 4 | 6.9 | 19.3 | 5.8 | 10 | 4.0 | 6.7 | 4.1 | 5 | 12 | 2.9 | 5.1 | 4.2 |
| | | | | | 10 | 5 | 7.3 | 7.3 | 3 | 10.2 | 8.4 | 5 | 2 | 8.7 | 24.2 | 7.3 | 7 | 5.0 | 8.4 | 5.1 | 6 | 9 | 3.5 | 6.1 | 5.0 |
| **20W MR16 Halogen IR 12 Volt Lensed** | NSP | 10° | 5000 | 6000 | 6 | 167 | 1.0 | 1.0 | 108 | 1.4 | 1.2 | 3 | 83 | 5.2 | 2.1 | 1.0 | 236 | 3.0 | 1.1 | 0.7 | 6 | 108 | 3.5 | 1.4 | 1.2 |
| | | | | | 9 | 74 | 1.6 | 1.6 | 48 | 2.1 | 1.8 | 4 | 47 | 6.9 | 2.9 | 1.4 | 133 | 4.0 | 1.4 | 1.0 | 7 | 80 | 4.0 | 1.6 | 1.4 |
| | | | | | 12 | 42 | 2.1 | 2.1 | 27 | 2.8 | 2.4 | 5 | 30 | 8.7 | 3.6 | 1.7 | 85 | 5.0 | 1.8 | 1.2 | 8 | 61 | 4.6 | 1.9 | 1.6 |
| | | | | | 15 | 27 | 2.6 | 2.6 | 17 | 3.5 | 3.0 | 6 | 21 | 10.4 | 4.3 | 2.1 | 59 | 6.0 | 2.1 | 1.5 | 9 | 48 | 5.2 | 2.1 | 1.8 |
| | | | | | 18 | 19 | 3.1 | 3.1 | 12 | 4.2 | 3.6 | 7 | 15 | 12.1 | 5.0 | 2.4 | 43 | 7.0 | 2.5 | 1.7 | 10 | 39 | 5.8 | 2.3 | 2.0 |
| | NFL | 25° | 5000 | 2300 | 3 | 256 | 1.3 | 1.3 | 166 | 1.8 | 1.5 | 1 | 288 | 1.7 | 2.1 | 0.9 | 813 | 1.0 | 0.9 | 0.6 | 2 | 373 | 1.2 | 1.2 | 1.0 |
| | | | | | 5 | 92 | 2.2 | 2.2 | 60 | 3.0 | 2.6 | 2 | 72 | 3.5 | 4.2 | 1.8 | 203 | 2.0 | 1.9 | 1.3 | 3 | 166 | 1.7 | 1.8 | 1.5 |
| | | | | | 7 | 47 | 3.1 | 3.1 | 30 | 4.2 | 3.6 | 3 | 32 | 5.2 | 6.2 | 2.7 | 90 | 3.0 | 2.8 | 1.9 | 4 | 93 | 2.3 | 2.4 | 2.0 |
| | | | | | 9 | 28 | 4.0 | 4.0 | 18 | 5.4 | 4.6 | 4 | 18 | 6.9 | 8.3 | 3.5 | 51 | 4.0 | 3.7 | 2.5 | 5 | 60 | 2.9 | 3.0 | 2.6 |
| | | | | | 11 | 19 | 4.9 | 4.9 | 12 | 6.6 | 5.6 | 5 | 12 | 8.7 | 10.4 | 4.4 | 33 | 5.0 | 4.7 | 3.1 | 6 | 41 | 3.5 | 3.6 | 3.1 |
| **35W MR16 Halogen 12 Volt** | NSP | 10° | 4000 | 9100 | 6 | 253 | 1.0 | 1.0 | 164 | 1.4 | 1.2 | 3 | 126 | 5.2 | 2.1 | 1.0 | 357 | 3.0 | 1.1 | 0.7 | 5 | 236 | 2.9 | 1.2 | 1.0 |
| | | | | | 8 | 142 | 1.4 | 1.4 | 92 | 1.9 | 1.6 | 4 | 71 | 6.9 | 2.9 | 1.4 | 201 | 4.0 | 1.4 | 1.0 | 6 | 164 | 3.5 | 1.4 | 1.2 |
| | | | | | 10 | 91 | 1.7 | 1.7 | 59 | 2.3 | 2.0 | 5 | 46 | 8.7 | 3.6 | 1.7 | 129 | 5.0 | 1.8 | 1.2 | 7 | 121 | 4.0 | 1.6 | 1.4 |
| | | | | | 12 | 63 | 2.1 | 2.1 | 41 | 2.8 | 2.4 | 6 | 32 | 10.4 | 4.3 | 2.1 | 89 | 6.0 | 2.1 | 1.5 | 8 | 92 | 4.6 | 1.9 | 1.6 |
| | | | | | 14 | 46 | 2.4 | 2.4 | 30 | 3.3 | 2.8 | 7 | 23 | 12.1 | 5.0 | 2.4 | 66 | 7.0 | 2.5 | 1.7 | 9 | 73 | 5.2 | 2.1 | 1.8 |
| | SP | 20° | 5000 | 3900 | 4 | 244 | 1.4 | 1.4 | 158 | 1.9 | 1.6 | 2 | 122 | 3.5 | 3.1 | 1.4 | 345 | 2.0 | 1.5 | 1.0 | 4 | 158 | 2.3 | 1.9 | 1.6 |
| | | | | | 6 | 108 | 2.1 | 2.1 | 70 | 2.9 | 2.4 | 3 | 54 | 5.2 | 4.7 | 2.1 | 153 | 3.0 | 2.2 | 1.5 | 5 | 101 | 2.9 | 2.4 | 2.0 |
| | | | | | 8 | 61 | 2.8 | 2.8 | 40 | 3.8 | 3.3 | 4 | 30 | 6.9 | 6.2 | 2.8 | 86 | 4.0 | 2.9 | 2.0 | 6 | 70 | 3.5 | 2.9 | 2.4 |
| | | | | | 10 | 39 | 3.5 | 3.5 | 25 | 4.8 | 4.1 | 5 | 20 | 8.7 | 7.8 | 3.5 | 55 | 5.0 | 3.6 | 2.5 | 7 | 52 | 4.0 | 3.3 | 2.9 |
| | | | | | 12 | 27 | 4.2 | 4.2 | 18 | 5.7 | 4.9 | 6 | 14 | 10.4 | 9.3 | 4.2 | 38 | 6.0 | 4.4 | 3.0 | 8 | 40 | 4.6 | 3.8 | 3.3 |
| | NFL | 25° | 4000 | 3100 | 4 | 194 | 1.8 | 1.8 | 126 | 2.4 | 2.0 | 2 | 97 | 3.5 | 4.2 | 1.8 | 274 | 2.0 | 1.9 | 1.3 | 4 | 126 | 2.3 | 2.4 | 2.0 |
| | | | | | 6 | 86 | 2.7 | 2.7 | 56 | 3.6 | 3.1 | 3 | 43 | 5.2 | 6.2 | 2.7 | 122 | 3.0 | 2.8 | 1.9 | 5 | 81 | 2.9 | 3.0 | 2.6 |
| | | | | | 8 | 48 | 3.5 | 3.5 | 31 | 4.8 | 4.1 | 4 | 24 | 6.9 | 8.3 | 3.5 | 69 | 4.0 | 3.7 | 2.5 | 6 | 56 | 3.5 | 3.6 | 3.1 |
| | | | | | 10 | 31 | 4.4 | 4.4 | 20 | 6.0 | 5.1 | 5 | 16 | 8.7 | 10.4 | 4.4 | 44 | 5.0 | 4.7 | 3.1 | 7 | 41 | 4.0 | 4.2 | 3.6 |
| | | | | | 12 | 22 | 5.3 | 5.3 | 14 | 7.2 | 6.1 | 6 | 11 | 10.4 | 12.5 | 5.3 | 30 | 6.0 | 5.6 | 3.8 | 8 | 31 | 4.6 | 4.8 | 4.1 |
| | FL | 40° | 5000 | 1000 | 2 | 250 | 1.5 | 1.5 | 162 | 2.0 | 1.7 | 1 | 125 | 1.7 | 4.8 | 1.5 | 354 | 1.0 | 1.7 | 1.0 | 2 | 162 | 1.2 | 2.0 | 1.7 |
| | | | | | 4 | 63 | 2.9 | 2.9 | 41 | 4.1 | 3.4 | 2 | 31 | 3.5 | 9.7 | 2.9 | 88 | 2.0 | 3.4 | 2.1 | 3 | 72 | 1.7 | 3.0 | 2.5 |
| | | | | | 6 | 28 | 4.4 | 4.4 | 18 | 6.1 | 5.0 | 3 | 14 | 5.2 | 14.5 | 4.4 | 39 | 3.0 | 5.0 | 3.1 | 4 | 41 | 2.3 | 4.1 | 3.4 |
| | | | | | 8 | 16 | 5.8 | 5.8 | 10 | 8.1 | 6.7 | 4 | 8 | 6.9 | 19.3 | 5.8 | 22 | 4.0 | 6.7 | 4.1 | 5 | 26 | 2.9 | 5.1 | 4.2 |
| | | | | | 10 | 10 | 7.3 | 7.3 | 6 | 10.2 | 8.4 | 5 | 5 | 8.7 | 24.2 | 7.3 | 14 | 5.0 | 8.4 | 5.1 | 6 | 18 | 3.5 | 6.1 | 5.0 |
| | WFL | 60° | 4000 | 700 | 2 | 175 | 2.3 | 2.3 | 114 | 3.5 | 2.7 | 1 | 88 | 1.7 | ** | 2.3 | 247 | 1.0 | 3.5 | 1.6 | 2 | 114 | 1.2 | 3.5 | 2.7 |
| | | | | | 4 | 44 | 4.6 | 4.6 | 28 | 6.9 | 5.3 | 2 | 22 | 3.5 | ** | 4.6 | 62 | 2.0 | 6.9 | 3.3 | 3 | 51 | 1.7 | 5.2 | 4.0 |
| | | | | | 6 | 19 | 6.9 | 6.9 | 13 | 10.4 | 8.0 | 3 | 10 | 5.2 | ** | 6.9 | 27 | 3.0 | 10.4 | 4.9 | 4 | 28 | 2.3 | 6.9 | 5.3 |
| | | | | | 8 | 11 | 9.2 | 9.2 | 7 | 13.9 | 10.7 | 4 | 5 | 6.9 | ** | 9.2 | 15 | 4.0 | 13.9 | 6.5 | 5 | 18 | 2.9 | 8.7 | 6.7 |
| | | | | | 10 | 7 | 11.5 | 11.5 | 5 | 17.3 | 13.3 | 5 | 4 | 8.7 | ** | 11.5 | 10 | 5.0 | 17.3 | 8.2 | 6 | 13 | 3.5 | 10.4 | 8.0 |

**Due to steep aiming angle, length of beam extends beyond 25'. Each angle listed is measured from 0° vertical.

## Photometry
## Low Voltage – Halogen

| Lamp | Beam Type | Beam Spread | Rated Life | CBCP | Horizontal Surface 0 Degrees MH | FC | L | W | 30 Degrees FC | L | W | Vertical Surface 30 Degrees D | FC | X | L | W | 45 Degrees FC | X | L | W | 60 Degrees D | FC | X | L | W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **35W MR16 Halogen 12 Volt Lensed** | SP | 20° | 5000 | 3200 | 4 | 200 | 1.4 | 1.4 | 130 | 1.9 | 1.6 | 2 | 100 | 3.5 | 3.1 | 1.4 | 283 | 2.0 | 1.5 | 1.0 | 4 | 130 | 2.3 | 1.9 | 1.6 |
| | | | | | 6 | 89 | 2.1 | 2.1 | 58 | 2.9 | 2.4 | 3 | 44 | 5.2 | 4.7 | 2.1 | 126 | 3.0 | 2.2 | 1.5 | 5 | 83 | 2.9 | 2.4 | 2.0 |
| | | | | | 8 | 50 | 2.8 | 2.8 | 32 | 3.8 | 3.3 | 4 | 25 | 6.9 | 6.2 | 2.8 | 71 | 4.0 | 2.9 | 2.0 | 6 | 58 | 3.5 | 2.9 | 2.4 |
| | | | | | 10 | 32 | 3.5 | 3.5 | 21 | 4.8 | 4.1 | 5 | 16 | 8.7 | 7.8 | 3.5 | 45 | 5.0 | 3.6 | 2.5 | 7 | 42 | 4.0 | 3.3 | 2.9 |
| | | | | | 12 | 22 | 4.2 | 4.2 | 14 | 5.7 | 4.9 | 6 | 11 | 10.4 | 9.3 | 4.2 | 31 | 6.0 | 4.4 | 3.0 | 8 | 32 | 4.6 | 3.8 | 3.3 |
| | FL **T5232** | 40° | 5000 | 900 | 2 | 225 | 1.5 | 1.5 | 146 | 2.0 | 1.7 | 1 | 113 | 1.7 | 4.8 | 1.5 | 318 | 1.0 | 1.7 | 1.0 | 2 | 146 | 1.2 | 2.0 | 1.7 |
| | | | | | 4 | 56 | 2.9 | 2.9 | 37 | 4.1 | 3.4 | 2 | 28 | 3.5 | 9.7 | 2.9 | 80 | 2.0 | 3.4 | 2.1 | 3 | 65 | 1.7 | 3.0 | 2.5 |
| | | | | | 6 | 25 | 4.4 | 4.4 | 16 | 6.1 | 5.0 | 3 | 13 | 5.2 | 14.5 | 4.4 | 35 | 3.0 | 5.0 | 3.1 | 4 | 37 | 2.3 | 4.1 | 3.4 |
| | | | | | 8 | 14 | 5.8 | 5.8 | 9 | 8.1 | 6.7 | 4 | 7 | 6.9 | 19.3 | 5.8 | 20 | 4.0 | 6.7 | 4.1 | 5 | 23 | 2.9 | 5.1 | 4.2 |
| | | | | | 10 | 9 | 7.3 | 7.3 | 6 | 10.2 | 8.4 | 5 | 5 | 8.7 | 24.2 | 7.3 | 13 | 5.0 | 8.4 | 5.1 | 6 | 16 | 3.5 | 6.1 | 5.0 |
| **35W MR16 Halogen 24 Volt Lensed** | SP | 12° | 4000 | 4950 | 6 | 138 | 1.3 | 1.3 | 89 | 1.7 | 1.5 | 3 | 69 | 5.2 | 2.6 | 1.3 | 194 | 3.0 | 1.3 | 0.9 | 5 | 129 | 2.9 | 1.4 | 1.2 |
| | | | | | 8 | 77 | 1.7 | 1.7 | 50 | 2.3 | 1.9 | 4 | 39 | 6.9 | 3.5 | 1.7 | 109 | 4.0 | 1.7 | 1.2 | 6 | 89 | 3.5 | 1.7 | 1.5 |
| | | | | | 10 | 50 | 2.1 | 2.1 | 32 | 2.8 | 2.4 | 5 | 25 | 8.7 | 4.3 | 2.1 | 70 | 5.0 | 2.1 | 1.5 | 7 | 66 | 4.0 | 2.0 | 1.7 |
| | | | | | 12 | 34 | 2.5 | 2.5 | 22 | 3.4 | 2.9 | 6 | 17 | 10.4 | 5.2 | 2.5 | 49 | 6.0 | 2.6 | 1.8 | 8 | 50 | 4.6 | 2.3 | 1.9 |
| | | | | | 14 | 25 | 2.9 | 2.9 | 16 | 3.9 | 3.4 | 7 | 13 | 12.1 | 6.1 | 2.9 | 36 | 7.0 | 3.0 | 2.1 | 9 | 40 | 5.2 | 2.5 | 2.2 |
| | NFL **TL942-24V** | 24° | 3500 | 1600 | 3 | 178 | 1.3 | 1.3 | 115 | 1.7 | 1.5 | 1 | 200 | 1.7 | 2.0 | 0.9 | 566 | 1.0 | 0.9 | 0.6 | 2 | 260 | 1.2 | 1.2 | 1.0 |
| | | | | | 4 | 100 | 1.7 | 1.7 | 65 | 2.3 | 2.0 | 2 | 50 | 3.5 | 3.9 | 1.7 | 141 | 2.0 | 1.8 | 1.2 | 3 | 115 | 1.7 | 1.7 | 1.5 |
| | | | | | 5 | 64 | 2.1 | 2.1 | 42 | 2.9 | 2.5 | 3 | 22 | 5.2 | 5.9 | 2.6 | 63 | 3.0 | 2.7 | 1.8 | 4 | 65 | 2.3 | 2.3 | 2.0 |
| | | | | | 6 | 44 | 2.6 | 2.6 | 29 | 3.5 | 2.9 | 4 | 13 | 6.9 | 7.9 | 3.4 | 35 | 4.0 | 3.6 | 2.4 | 5 | 42 | 2.9 | 2.9 | 2.5 |
| | | | | | 7 | 33 | 3.0 | 3.0 | 21 | 4.0 | 3.4 | 5 | 8 | 8.7 | 9.8 | 4.3 | 23 | 5.0 | 4.5 | 3.0 | 6 | 29 | 3.5 | 3.5 | 2.9 |
| | FL | 40° | 4000 | 920 | 2 | 230 | 1.5 | 1.5 | 149 | 2.0 | 1.7 | 1 | 115 | 1.7 | 4.8 | 1.5 | 325 | 1.0 | 1.7 | 1.0 | 2 | 149 | 1.2 | 2.0 | 1.7 |
| | | | | | 4 | 58 | 2.9 | 2.9 | 37 | 4.1 | 3.4 | 2 | 29 | 3.5 | 9.7 | 2.9 | 81 | 2.0 | 3.4 | 2.1 | 3 | 66 | 1.7 | 3.0 | 2.5 |
| | | | | | 6 | 26 | 4.4 | 4.4 | 17 | 6.1 | 5.0 | 3 | 13 | 5.2 | 14.5 | 4.4 | 36 | 3.0 | 5.0 | 3.1 | 4 | 37 | 2.3 | 4.1 | 3.4 |
| | | | | | 8 | 14 | 5.8 | 5.8 | 9 | 8.1 | 6.7 | 4 | 7 | 6.9 | 19.3 | 5.8 | 20 | 4.0 | 6.7 | 4.1 | 5 | 24 | 2.9 | 5.1 | 4.2 |
| | | | | | 10 | 9 | 7.3 | 7.3 | 6 | 10.2 | 8.4 | 5 | 5 | 8.7 | 24.2 | 7.3 | 13 | 5.0 | 8.4 | 5.1 | 6 | 17 | 3.5 | 6.1 | 5.0 |
| **37W MR16 Halogen IR 12 Volt Lensed** | NSP | 10° | 5000 | 12500 | 6 | 347 | 1.0 | 1.0 | 226 | 1.4 | 1.2 | 3 | 174 | 5.2 | 2.1 | 1.0 | 491 | 3.0 | 1.1 | 0.7 | 7 | 166 | 4.0 | 1.6 | 1.4 |
| | | | | | 9 | 154 | 1.6 | 1.6 | 100 | 2.1 | 1.8 | 4 | 98 | 6.9 | 2.9 | 1.4 | 276 | 4.0 | 1.4 | 1.0 | 8 | 127 | 4.6 | 1.9 | 1.6 |
| | | | | | 12 | 87 | 2.1 | 2.1 | 56 | 2.8 | 2.4 | 5 | 63 | 8.7 | 3.6 | 1.7 | 177 | 5.0 | 1.8 | 1.2 | 9 | 100 | 5.2 | 2.1 | 1.8 |
| | | | | | 15 | 56 | 2.6 | 2.6 | 36 | 3.5 | 3.0 | 6 | 43 | 10.4 | 4.3 | 2.1 | 123 | 6.0 | 2.1 | 1.5 | 10 | 81 | 5.8 | 2.3 | 2.0 |
| | | | | | 18 | 39 | 3.1 | 3.1 | 25 | 4.2 | 3.6 | 7 | 32 | 12.1 | 5.0 | 2.4 | 90 | 7.0 | 2.5 | 1.7 | 11 | 67 | 6.4 | 2.6 | 2.2 |
| | NFL | 25° | 5000 | 4400 | 4 | 275 | 1.8 | 1.8 | 179 | 2.4 | 2.0 | 2 | 138 | 3.5 | 4.2 | 1.8 | 389 | 2.0 | 1.9 | 1.3 | 4 | 179 | 2.3 | 2.4 | 2.0 |
| | | | | | 6 | 122 | 2.7 | 2.7 | 79 | 3.6 | 3.1 | 3 | 61 | 5.2 | 6.2 | 2.7 | 173 | 3.0 | 2.8 | 1.9 | 5 | 114 | 2.9 | 3.0 | 2.6 |
| | | | | | 8 | 69 | 3.5 | 3.5 | 45 | 4.8 | 4.1 | 4 | 34 | 6.9 | 8.3 | 3.5 | 97 | 4.0 | 3.7 | 2.5 | 6 | 79 | 3.5 | 3.6 | 3.1 |
| | | | | | 10 | 44 | 4.4 | 4.4 | 29 | 6.0 | 5.1 | 5 | 22 | 8.7 | 10.4 | 4.4 | 62 | 5.0 | 4.7 | 3.1 | 7 | 58 | 4.0 | 4.2 | 3.6 |
| | | | | | 12 | 31 | 5.3 | 5.3 | 20 | 7.2 | 6.1 | 6 | 15 | 10.4 | 12.5 | 5.3 | 43 | 6.0 | 5.6 | 3.8 | 8 | 45 | 4.6 | 4.8 | 4.1 |
| | FL | 40° | 5000 | 2050 | 3 | 228 | 2.2 | 2.2 | 148 | 3.0 | 2.5 | 1 | 256 | 1.7 | 4.8 | 1.5 | 725 | 1.0 | 1.7 | 1.0 | 2 | 333 | 1.2 | 2.0 | 1.7 |
| | | | | | 5 | 82 | 3.6 | 3.6 | 53 | 5.1 | 4.2 | 2 | 64 | 3.5 | 9.7 | 2.9 | 181 | 2.0 | 3.4 | 2.1 | 3 | 148 | 1.7 | 3.0 | 2.5 |
| | | | | | 7 | 42 | 5.1 | 5.1 | 27 | 7.1 | 5.9 | 3 | 28 | 5.2 | 14.5 | 4.4 | 81 | 3.0 | 5.0 | 3.1 | 4 | 83 | 2.3 | 4.1 | 3.4 |
| | | | | | 9 | 25 | 6.6 | 6.6 | 16 | 9.1 | 7.6 | 4 | 16 | 6.9 | 19.3 | 5.8 | 45 | 4.0 | 6.7 | 4.1 | 5 | 53 | 2.9 | 5.1 | 4.2 |
| | | | | | 11 | 17 | 8.0 | 8.0 | 11 | 11.2 | 9.2 | 5 | 10 | 8.7 | 24.2 | 7.3 | 29 | 5.0 | 8.4 | 5.1 | 6 | 37 | 3.5 | 6.1 | 5.0 |
| **42W MR16 Halogen 12 Volt** | VNSP | 9° | 3500 | 12300 | 8 | 192 | 1.3 | 1.3 | 125 | 1.7 | 1.5 | 4 | 96 | 6.9 | 2.6 | 1.3 | 272 | 4.0 | 1.3 | 0.9 | 7 | 163 | 4.0 | 1.5 | 1.3 |
| | | | | | 10 | 123 | 1.6 | 1.6 | 80 | 2.1 | 1.8 | 5 | 62 | 8.7 | 3.2 | 1.6 | 174 | 5.0 | 1.6 | 1.1 | 8 | 125 | 4.6 | 1.7 | 1.5 |
| | | | | | 12 | 85 | 1.9 | 1.9 | 55 | 2.5 | 2.2 | 6 | 43 | 10.4 | 3.8 | 1.9 | 121 | 6.0 | 1.9 | 1.3 | 9 | 99 | 5.2 | 1.9 | 1.6 |
| | | | | | 14 | 63 | 2.2 | 2.2 | 41 | 2.9 | 2.5 | 7 | 31 | 12.1 | 4.5 | 2.2 | 89 | 7.0 | 2.2 | 1.6 | 10 | 80 | 5.8 | 2.1 | 1.8 |
| | | | | | 16 | 48 | 2.5 | 2.5 | 31 | 3.4 | 2.9 | 8 | 24 | 13.9 | 5.1 | 2.5 | 68 | 8.0 | 2.5 | 1.8 | 11 | 66 | 6.4 | 2.3 | 2.0 |

## Photometry
## Low Voltage – Halogen

| Lamp | Beam Type | Beam Spread | Rated Life | CBCP | Horizontal Surface 0 Degrees MH | FC | L | W | 30 Degrees FC | L | W | Vertical Surface 30 Degrees D | FC | X | L | W | 45 Degrees FC | X | L | W | 60 Degrees D | FC | X | L | W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **50W MR16 Halogen 12 Volt** | NSP | 15° | 6000 | 9100 | 8 | 142 | 2.1 | 2.1 | 92 | 2.8 | 2.4 | 3 | 126 | 5.2 | 3.3 | 1.6 | 357 | 3.0 | 1.6 | 1.1 | 6 | 164 | 3.5 | 2.1 | 1.8 |
| | | | | | 10 | 91 | 2.6 | 2.6 | 59 | 3.5 | 3.0 | 4 | 71 | 6.9 | 4.4 | 2.1 | 201 | 4.0 | 2.1 | 1.5 | 7 | 121 | 4.0 | 2.5 | 2.1 |
| | | | | | 12 | 63 | 3.2 | 3.2 | 41 | 4.2 | 3.6 | 5 | 46 | 8.7 | 5.6 | 2.6 | 129 | 5.0 | 2.7 | 1.9 | 8 | 92 | 4.6 | 2.8 | 2.4 |
| | | | | | 14 | 46 | 3.7 | 3.7 | 30 | 4.9 | 4.3 | 6 | 32 | 10.4 | 6.7 | 3.2 | 89 | 6.0 | 3.2 | 2.2 | 9 | 73 | 5.2 | 3.2 | 2.7 |
| | | | | | 16 | 36 | 4.2 | 4.2 | 23 | 5.6 | 4.9 | 7 | 23 | 12.1 | 7.8 | 3.7 | 66 | 7.0 | 3.8 | 2.6 | 10 | 59 | 5.8 | 3.5 | 3.0 |
| | NFL **T527** | 25° | 6000 | 3200 | 6 | 89 | 2.7 | 2.7 | 58 | 3.6 | 3.1 | 2 | 100 | 3.5 | 4.2 | 1.8 | 283 | 2.0 | 1.9 | 1.3 | 4 | 130 | 2.3 | 2.4 | 2.0 |
| | | | | | 8 | 50 | 3.5 | 3.5 | 32 | 4.8 | 4.1 | 3 | 44 | 5.2 | 6.2 | 2.7 | 126 | 3.0 | 2.8 | 1.9 | 5 | 83 | 2.9 | 3.0 | 2.6 |
| | | | | | 10 | 32 | 4.4 | 4.4 | 21 | 6.0 | 5.1 | 4 | 25 | 6.9 | 8.3 | 3.5 | 71 | 4.0 | 3.7 | 2.5 | 6 | 58 | 3.5 | 3.6 | 3.1 |
| | | | | | 12 | 22 | 5.3 | 5.3 | 14 | 7.2 | 6.1 | 5 | 16 | 8.7 | 10.4 | 4.4 | 45 | 5.0 | 4.7 | 3.1 | 7 | 42 | 4.0 | 4.2 | 3.6 |
| | | | | | 14 | 16 | 6.2 | 6.2 | 11 | 8.4 | 7.2 | 6 | 11 | 10.4 | 12.5 | 5.3 | 31 | 6.0 | 5.6 | 3.8 | 8 | 32 | 4.6 | 4.8 | 4.1 |
| | FL | 40° | 6000 | 1700 | 3 | 189 | 2.2 | 2.2 | 123 | 3.0 | 2.5 | 1 | 213 | 1.7 | 4.8 | 1.5 | 601 | 1.0 | 1.7 | 1.0 | 2 | 276 | 1.2 | 2.0 | 1.7 |
| | | | | | 5 | 68 | 3.6 | 3.6 | 44 | 5.1 | 4.2 | 2 | 53 | 3.5 | 9.7 | 2.9 | 150 | 2.0 | 3.4 | 2.1 | 3 | 123 | 1.7 | 3.0 | 2.5 |
| | | | | | 7 | 35 | 5.1 | 5.1 | 23 | 7.1 | 5.9 | 3 | 24 | 5.2 | 14.5 | 4.4 | 67 | 3.0 | 5.0 | 3.1 | 4 | 69 | 2.3 | 4.1 | 3.4 |
| | | | | | 9 | 21 | 6.6 | 6.6 | 14 | 9.1 | 7.6 | 4 | 13 | 6.9 | 19.3 | 5.8 | 38 | 4.0 | 6.7 | 4.1 | 5 | 44 | 2.9 | 5.1 | 4.2 |
| | | | | | 11 | 14 | 8.0 | 8.0 | 9 | 11.2 | 9.2 | 5 | 9 | 8.7 | 24.2 | 7.3 | 24 | 5.0 | 8.4 | 5.1 | 6 | 31 | 3.5 | 6.1 | 5.0 |
| | WFL | 55° | 6000 | 900 | 3 | 100 | 3.1 | 3.1 | 65 | 4.6 | 3.6 | 1 | 113 | 1.7 | 223 | 2.1 | 318 | 1.0 | 2.9 | 1.5 | 2 | 146 | 1.2 | 3.1 | 2.4 |
| | | | | | 5 | 36 | 5.2 | 5.2 | 23 | 7.6 | 6.0 | 2 | 28 | 3.5 | ** | 4.2 | 80 | 2.0 | 5.7 | 2.9 | 3 | 65 | 1.7 | 4.6 | 3.6 |
| | | | | | 7 | 18 | 7.3 | 7.3 | 12 | 10.7 | 8.4 | 3 | 13 | 5.2 | ** | 6.2 | 35 | 3.0 | 8.6 | 4.4 | 4 | 37 | 2.3 | 6.1 | 4.8 |
| | | | | | 9 | 11 | 9.4 | 9.4 | 7 | 13.7 | 10.8 | 4 | 7 | 6.9 | ** | 8.3 | 20 | 4.0 | 11.4 | 5.9 | 5 | 23 | 2.9 | 7.6 | 6.0 |
| | | | | | 11 | 7 | 11.5 | 11.5 | 5 | 16.8 | 13.2 | 5 | 5 | 8.7 | ** | 10.4 | 13 | 5.0 | 14.3 | 7.4 | 6 | 16 | 3.5 | 9.2 | 7.2 |
| **50W MR16 Halogen IR 12 Volt Lensed** | NSP | 10° | 5000 | 15000 | 8 | 234 | 1.4 | 1.4 | 152 | 1.9 | 1.6 | 4 | 117 | 6.9 | 2.9 | 1.4 | 331 | 4.0 | 1.4 | 1.0 | 7 | 199 | 4.0 | 1.6 | 1.4 |
| | | | | | 12 | 104 | 2.1 | 2.1 | 68 | 2.8 | 2.4 | 5 | 75 | 8.7 | 3.6 | 1.7 | 212 | 5.0 | 1.8 | 1.2 | 8 | 152 | 4.6 | 1.9 | 1.6 |
| | | | | | 16 | 59 | 2.8 | 2.8 | 38 | 3.7 | 3.2 | 6 | 52 | 10.4 | 4.3 | 2.1 | 147 | 6.0 | 2.1 | 1.5 | 9 | 120 | 5.2 | 2.1 | 1.8 |
| | | | | | 20 | 38 | 3.5 | 3.5 | 24 | 4.7 | 4.0 | 7 | 38 | 12.1 | 5.0 | 2.4 | 108 | 7.0 | 2.5 | 1.7 | 10 | 97 | 5.8 | 2.3 | 2.0 |
| | | | | | 24 | 26 | 4.2 | 4.2 | 17 | 5.6 | 4.8 | 8 | 29 | 13.9 | 5.7 | 2.8 | 83 | 8.0 | 2.8 | 2.0 | 11 | 81 | 6.4 | 2.6 | 2.2 |
| | NFL | 25° | 5000 | 5700 | 4 | 356 | 1.8 | 1.8 | 231 | 2.4 | 2.0 | 2 | 178 | 3.5 | 4.2 | 1.8 | 504 | 2.0 | 1.9 | 1.3 | 5 | 148 | 2.9 | 3.0 | 2.6 |
| | | | | | 8 | 89 | 3.5 | 3.5 | 58 | 4.8 | 4.1 | 3 | 79 | 5.2 | 6.2 | 2.7 | 224 | 3.0 | 2.8 | 1.9 | 6 | 103 | 3.5 | 3.6 | 3.1 |
| | | | | | 12 | 40 | 5.3 | 5.3 | 26 | 7.2 | 6.1 | 4 | 45 | 6.9 | 8.3 | 3.5 | 126 | 4.0 | 3.7 | 2.5 | 7 | 76 | 4.0 | 4.2 | 3.6 |
| | | | | | 16 | 22 | 7.1 | 7.1 | 14 | 9.6 | 8.2 | 5 | 29 | 8.7 | 10.4 | 4.4 | 81 | 5.0 | 4.7 | 3.1 | 8 | 58 | 4.6 | 4.8 | 4.1 |
| | | | | | 20 | 14 | 8.9 | 8.9 | 9 | 12.0 | 10.2 | 6 | 20 | 10.4 | 12.5 | 5.3 | 56 | 6.0 | 5.6 | 3.8 | 9 | 46 | 5.2 | 5.4 | 4.6 |
| | FL | 40° | 5000 | 2600 | 4 | 163 | 2.9 | 2.9 | 106 | 4.1 | 3.4 | 1 | 325 | 1.7 | 4.8 | 1.5 | 919 | 1.0 | 1.7 | 1.0 | 4 | 106 | 2.3 | 4.1 | 3.4 |
| | | | | | 6 | 72 | 4.4 | 4.4 | 47 | 6.1 | 5.0 | 2 | 81 | 3.5 | 9.7 | 2.9 | 230 | 2.0 | 3.4 | 2.1 | 5 | 68 | 2.9 | 5.1 | 4.2 |
| | | | | | 8 | 41 | 5.8 | 5.8 | 26 | 8.1 | 6.7 | 3 | 36 | 5.2 | 14.5 | 4.4 | 102 | 3.0 | 5.0 | 3.1 | 6 | 47 | 3.5 | 6.1 | 5.0 |
| | | | | | 10 | 26 | 7.3 | 7.3 | 17 | 10.2 | 8.4 | 4 | 20 | 6.9 | 19.3 | 5.8 | 57 | 4.0 | 6.7 | 4.1 | 7 | 34 | 4.0 | 7.1 | 5.9 |
| | | | | | 12 | 18 | 8.7 | 8.7 | 12 | 12.2 | 10.1 | 5 | 13 | 8.7 | 24.2 | 7.3 | 37 | 5.0 | 8.4 | 5.1 | 8 | 26 | 4.6 | 8.1 | 6.7 |
| | WFL | 60° | 5000 | 1430 | 4 | 89 | 4.6 | 4.6 | 58 | 6.9 | 5.3 | 1 | 179 | 1.7 | ** | 2.3 | 506 | 1.0 | 3.5 | 1.6 | 4 | 58 | 2.3 | 6.9 | 5.3 |
| | | | | | 6 | 40 | 6.9 | 6.9 | 26 | 10.4 | 8.0 | 2 | 45 | 3.5 | ** | 4.6 | 126 | 2.0 | 6.9 | 3.3 | 5 | 37 | 2.9 | 8.7 | 6.7 |
| | | | | | 8 | 22 | 9.2 | 9.2 | 15 | 13.9 | 10.7 | 3 | 20 | 5.2 | ** | 6.9 | 56 | 3.0 | 10.4 | 4.9 | 6 | 26 | 3.5 | 10.4 | 8.0 |
| | | | | | 10 | 14 | 11.5 | 11.5 | 9 | 17.3 | 13.3 | 4 | 11 | 6.9 | ** | 9.2 | 32 | 4.0 | 13.9 | 6.5 | 7 | 19 | 4.0 | 12.1 | 9.3 |
| | | | | | 12 | 10 | 13.9 | 13.9 | 6 | 20.8 | 16.0 | 5 | 7 | 8.7 | ** | 11.5 | 20 | 5.0 | 17.3 | 8.2 | 8 | 15 | 4.6 | 13.9 | 10.7 |
| **50W MR16 Halogen 24 Volt Lensed** | NSP **TL945-24V** | 15° | 4000 | 8400 | 8 | 131 | 2.1 | 2.1 | 85 | 2.8 | 2.4 | 4 | 66 | 6.9 | 4.4 | 2.1 | 186 | 4.0 | 2.1 | 1.5 | 7 | 111 | 4.0 | 2.5 | 2.1 |
| | | | | | 10 | 84 | 2.6 | 2.6 | 55 | 3.5 | 3.0 | 5 | 42 | 8.7 | 5.6 | 2.6 | 119 | 5.0 | 2.7 | 1.9 | 8 | 85 | 4.6 | 2.8 | 2.4 |
| | | | | | 12 | 58 | 3.2 | 3.2 | 38 | 4.2 | 3.6 | 6 | 29 | 10.4 | 6.7 | 3.2 | 82 | 6.0 | 3.2 | 2.2 | 9 | 67 | 5.2 | 3.2 | 2.7 |
| | | | | | 14 | 43 | 3.7 | 3.7 | 28 | 4.9 | 4.3 | 7 | 21 | 12.1 | 7.8 | 3.7 | 61 | 7.0 | 3.8 | 2.6 | 10 | 55 | 5.8 | 3.5 | 3.0 |
| | | | | | 16 | 33 | 4.2 | 4.2 | 21 | 5.6 | 4.9 | 8 | 16 | 13.9 | 8.9 | 4.2 | 46 | 8.0 | 4.3 | 3.0 | 11 | 45 | 6.4 | 3.9 | 3.3 |
| | FL **TL947-24V** | 40° | 4000 | 1570 | 4 | 98 | 2.9 | 2.9 | 64 | 4.1 | 3.4 | 1 | 196 | 1.7 | 4.8 | 1.5 | 555 | 1.0 | 1.7 | 1.0 | 2 | 256 | 1.2 | 2.0 | 1.7 |
| | | | | | 5 | 63 | 3.6 | 3.6 | 41 | 5.1 | 4.2 | 2 | 49 | 3.5 | 9.7 | 2.9 | 139 | 2.0 | 3.4 | 2.1 | 3 | 113 | 1.7 | 3.0 | 2.5 |
| | | | | | 6 | 44 | 4.4 | 4.4 | 28 | 6.1 | 5.0 | 3 | 22 | 5.2 | 14.5 | 4.4 | 62 | 3.0 | 5.0 | 3.1 | 4 | 64 | 2.3 | 4.1 | 3.4 |
| | | | | | 7 | 32 | 5.1 | 5.1 | 21 | 7.1 | 5.9 | 4 | 12 | 6.9 | 19.3 | 5.8 | 35 | 4.0 | 6.7 | 4.1 | 5 | 41 | 2.9 | 5.1 | 4.2 |
| | | | | | 8 | 25 | 5.8 | 5.8 | 16 | 8.1 | 6.7 | 5 | 8 | 8.7 | 24.2 | 7.3 | 22 | 5.0 | 8.4 | 5.1 | 6 | 28 | 3.5 | 6.1 | 5.0 |

**Due to steep aiming angle, length of beam extends beyond 25'. Each angle listed is measured from 0° vertical.

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