



LED WATTAGE CHART

DRIVE CURRENT	TSL-1-16L	TSL-2-32L	TSL-3-48L	TSL-4-64L	TSL-5-80L
350mA					
530mA					
700mA					
825mA			-	-	-
1050mA		-	-	-	-

**FORM**

- Elegant Rectilinear Extruded Aluminum Housing
- Corrosion Resistant Stainless Steel External Hardware
- Sleek, Low Profile Housing
- Spec Grade Performance
- Engineered For Optimum Thermal Management
- 10 Architectural Finishes Standard, RAL Colors Available

**FUNCTION**

- Micro Optics IES Distributions 15°, 30°, 55°, 85°, T2, T3, T4, T4FTW
- 0-10V Dimming Drivers THD @ Max Load < 15% Power factor @ Max Load < 0.95
- Amber, 2700K, 3000K, 3500K, 4000K, or 5000K
- 16L, 32L, 48L, or 64L LED Configuration
- 21-205 Watts
- CRI 70, 80, or 90
- Extruded Aluminum Heat Sink
- 5 Mils Powder Coat
- Standard With Clear lens
- 7 Mounting Arm Configurations

**RELIABILITY**

- Silicone Micro Optics
- 5 Year Standard Warranty
- IP67 Optics
- Reduces Energy Consumption And Costs Up To 65%

**BUY AMERICAN**

To ensure the latest BAA/TAA/BABA Standards are being met, please select BAA, TAA, or BABA in the options section. Please contact the factory before placing an order for any NLS products requesting BAA (Buy American Act), TAA (Trade American Act), or BABA (Build America, Buy America).



Project Name:

Type:

# TSL ORDERING GUIDE

Cat#	Light Dist.	# of LEDs	Drive Current	Color Temp./CRI	Volts
TRAC Signlighter Size 1 (TSL-1) <sup>16</sup>	15° Very Narrow Beam (15)	16 LED (16L) <sup>16</sup>	350mA (35)	Amber LED Standard Turtle Friendly 595nm Dominant Wavelength (AMBER) 1, 7, 8	120-277 (UNV)
TRAC Signlighter Size 2 (TSL-2) <sup>17</sup>	30° Narrow Beam (30)	32 LED (32L) <sup>17</sup>	530mA (53)	Amber LED Phosphor Converted (AMBER/PC) 1, 8	347-480 (HV)
TRAC Signlighter Size 3 (TSL-3) <sup>18</sup>	55° Medium Beam (55)	48 LED (48L) <sup>18</sup>	700mA (7)	2700K, 70 CRI (27K7) <sup>2</sup>	
TRAC Signlighter Size 4 (TSL-4) <sup>19</sup>	85° Wide Beam (85)	64 LED (64L) <sup>19</sup>	825mA (82) <sup>21</sup>	2700K, 80 CRI (27K8) <sup>2</sup>	
TRAC Signlighter Size 5 (TSL-5) <sup>20</sup>	IES T2/NEMA 7Hx5V (T2)	80 LED (80L) <sup>20</sup>	1050mA (1) <sup>16</sup>	3000K, 70 CRI (30K7) <sup>2</sup>	
	IES T3/NEMA 7Hx5V (T3)			3000K, 80 CRI (30K8) <sup>2</sup>	
	IES T4 Forward Throw (T4)			3000K, 80 CRI (30K8) <sup>2</sup>	
	IES T4 Forward Throw Wide (T4FTW)			3500K, 80 CRI (35K8) <sup>2</sup>	
	IES T5 Wide (T5W)			4000K, 70 CRI (40K7) <sup>2</sup>	
				4000K, 80 CRI (40K8) <sup>2</sup>	
				5000K, 70 CRI (50K7) <sup>2</sup>	
				5000K, 80 CRI (50K8) <sup>2</sup>	

## Mounting

## Color

## Controls Options

## Options

## Lens Options

Knuckle Mount  
(KM)Bronze Textured  
(BRZ)Nema 7-Pin Receptacle  
(PE7)Black Optical Frame  
(BOF)Clear Tempered Glass Lens  
(CTG)<sup>22</sup>**Adjustable Arms**White Textured  
(WHT)Button Type Photocell  
(PC)Dual Circuit Option  
(DC)<sup>8, 15</sup>Diffused Polycarbonate  
Visual Comfort Lens  
(DPCL)3" Adjustable Arm  
(AA3)Smooth White Gloss  
(SWT)FSP-211 w/Motion Sensor  
8' Heights & Below  
(FSP-8-L)<sup>12, 14</sup>Emergency Battery 4W  
(EM4)HAL Lens  
(HAL)<sup>10</sup>6" Adjustable Arm  
(AA6)Silver Metallic  
(SVR)FSP-211 w/Motion Sensor  
9-20' Heights  
(FSP-20-L)<sup>12, 14</sup>Emergency Battery 8W  
(EM8)<sup>15</sup>12" Adjustable Arm  
(AA12)Black Textured  
(BLK)(FSP-20-R)<sup>12, 14</sup>Marine Grade Finish  
(MGF)**Fixed Arms**Smooth Black Gloss  
(SBK)FSP-221 w/Motion Sensor  
8' Heights & Below  
(FSP-HV-8-L)<sup>13, 14</sup>Rotate Optic Left  
(ROL)3" Adjustable Arm  
(FA3)Graphite Textured  
(GPH)(FSP-HV-8-L)<sup>13, 14</sup>Rotate Optic Right  
(ROR)6" Adjustable Arm  
(FA6)Grey Textured  
(GRY)FSP-221 w/Motion Sensor  
9-20' Heights  
(FSP-HV-20-L)<sup>13, 14</sup>Tamper Proof Hardware  
(TPH)12" Adjustable Arm  
(FA12)Green Textured  
(GRN)(FSP-HV-20-R)<sup>13, 14</sup>Buy American Act  
(BAA)<sup>6</sup>Hunter Green Textured  
(HGN)Custom Controls Integration  
(CCI)<sup>4</sup>Trade Agreement Act  
(TAA)<sup>6</sup>Custom  
(CS)Build America Buy American  
(BABA)<sup>6</sup>

## NOTES:

- Consult Factory for Lead Time.
- Consult Factory for 90 CRI Requests.
- Consult factory for all BAA/TAA/BABA requests
- 120V-277V
- 347V - 480V
- 3000K CCT or lower must be selected to meet International Dark-Sky Association certification
- Turtle Safe
- Not available over 530mA
- Not available over 700mA
- HAL Lens: Yellow Polycarbonate Lens - less than 2% Blue Light Content
- Please contact Factory for Custom Control Integration requests (nLight, NX, WaveLinX, Crestron, DMX/RDM, Synapse, Casambi, Dali II, Avi-On, or other control systems)
- FSP-211, 120V/277V, 230-240VAC (single phase), 50/60Hz
- FSP-221, 100-347VAC (single phase) or 208/230/480VAC (phase-to-phase)
- Projects with sensors require Qty. 1 FSIR per project
- Dual Circuit Option (requires TSL-3, TSL-4, or TSL-5 housing)
- TSL-1 - 16L Only
- TSL-2 - 32L Only
- TSL-3 - 48L Only
- TSL-4 - 64L Only
- TSL-5 - 80L Only
- TSL-1 - 16L & TSL-2 - 32L Only
- Standard with Clear Tempered Glass Lens



701 Kingshill Place, Carson, CA 90746  
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## PRODUCT SPECIFICATIONS

### ELECTRICAL

- 120-277 Volts (UNV) or 347-480 Volts (HV)
- 0-10V dimming driver
- Driver power factor at maximum load is  $\geq .95$ , THD maximum load is 15%
- LED Drivers Ambient Temp. Min is  $-40^{\circ}\text{C}$  and Ambient Temp. Max ranges from  $50^{\circ}\text{C}$  to  $55^{\circ}\text{C}$  and, in some cases, even higher. Consult the factory for revalidation by providing the fixture catalog string before quoting and specifying it.
- All drivers, controls, and sensors housed in enclosed compartment
- CRI 70, 80, or 90
- Color temperatures: Amber, 2700K, 3000K, 3500K, 4000K, 5000K
- Surge Protection: 20KA Standard.

### CONSTRUCTION

- Formed Aluminum
- One-piece clear glass lens
- Corrosion resistant external hardware
- One-piece silicone gasket ensures water tight seal for electronics compartment
- Two-piece silicone Micro Optic system ensures IP67 seal around each PCB

### OPTIONS

- MARINE GRADE FINISH (MGF)—A multi-step process creating protective finishing coat against harsh environments. Chemically washed in a 5 stage cleaning system. Pre-baked, Powder coated 3-5 mils of Zinc Rich Super Durable Polyester Primer. Oven Baked. Finished Powder Coating of Super Durable Polyester Powder Coat 3-5 mil thickness.
- Emergency Battery Backup 4W or 8W (EM4, EM8)
- Dimming Control (FSP-20) (FSP-40)

### CONTROLS

- Button Type Photo Cell (PC)
- FSP-211 with Motion Sensor (FSP-XX)—Passive infrared (PIR) sensor providing multi-level control based on motion/daylight contribution. 120V-277V (UNV)
- FSP-221 with Motion Sensor (FSP-XX)—Passive infrared (PIR) sensor providing multi-level control based on motion/daylight contribution. 347V-480V (HV)
- All control parameters adjustable via wireless configuration remote storing and transmitting sensor profiles.
- FSP-20 mounting heights 9-20 feet
- Includes 5 dimming event cycles, 0-10V dimming with motion sensing, re-programmable in the field.
- Motion sensor sidecar mounted
- FSIR-100 commissioning remote is required to change sensor settings.
- Controls Agnostic: Please contact factory for your preferred controls option. (nLight, NX, WaveLinx, Crestron, DMX/RDM, Synapse, Casambi, DALI II, Avi-On, or other control systems)

### FINISH

- 3-5 mils electrostatic powder coat.
- NLS Lighting standard high-quality finishes prevent corrosion and protects against extreme environmental conditions.

### WARRANTY

Five-year limited warranty for drivers and LEDs.

### OPTICS

Silicone optics high thermal stability and light output provide higher powered LEDs with minimized lumen depreciation. UV stability with scratch resistance increases exterior application durability. Silicone optics do not yellow, crack or brittle over time.

### LISTINGS

- UL Listed in compliance with UL 1598, the Standard for Safety of Luminaires, including the applicable wet location requirements
- Compliant with UL 8750 LED driver design and test safety standards
- CSA C22.2 No. 250.0
- IP67 Rated Optics
- IK10 Rated

### BUY AMERICAN OPTION

While all of the NLS Lighting products listed in this document qualify for the Buy America(n) Act of 1933, we reserve the right to change our listings without notice.

The information provided above is for general informational purposes only. We encourage you to consult legal professionals for advice particular to your projects concerning BAA, TAA, BABA or Buy America.

Additional NLS Products that meet BAA, TAA standards can be found at the following link:

<https://nslighting.com/buy-american/>



The information and specifications on this document are subject to change without any notification. All values are design, nominal, typical or prorated values when measured under internal and external laboratory conditions.



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# PRODUCT SPECIFICATIONS

## TRAC SIGNLIGHTER - NO SENSORS

MODEL	WIDTH	HEIGHT	LENGTH	LED COUNT
TSL-1	6"	4"	7.8"	16L
TSL-2	6"	4"	13.5"	32L
TSL-3	6"	4"	18"	48L
TSL-4	6"	4"	23.1"	64L
TSL-5	6"	4"	28.3"	80L

## TRAC SIGNLIGHTER - WITH SENSORS

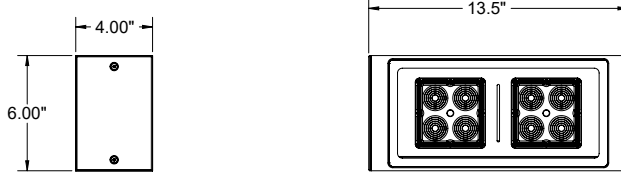
MODEL	WIDTH	HEIGHT	LENGTH	LED COUNT
TSL-1	6"	4"	16"	16L
TSL-2	6"	4"	23"	32L
TSL-3	6"	4"	30"	48L
TSL-4	6"	4"	40"	64L
TSL-5	6"	4"	48"	80L

### DIMENSIONS

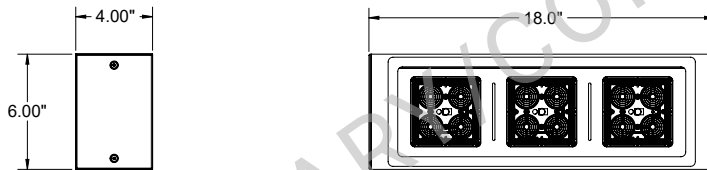
#### TSL-1



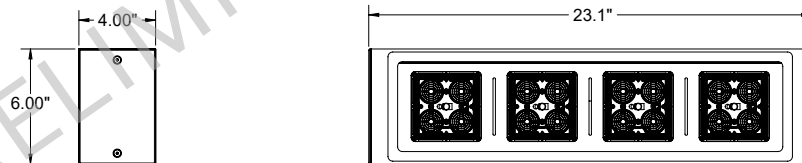
#### TSL-2



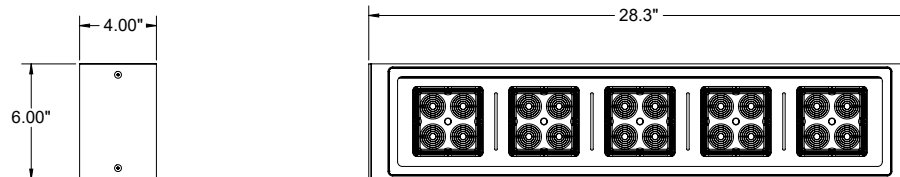
#### TSL-3



#### TSL-4



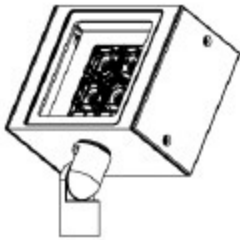
#### TSL-5



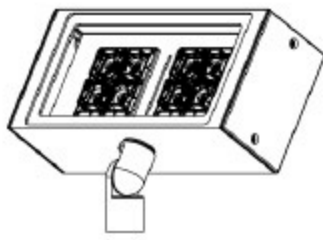
# PRODUCT SPECIFICATIONS

## MOUNTINGS

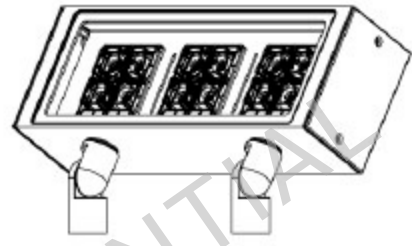
### KNUCKLE MOUNT



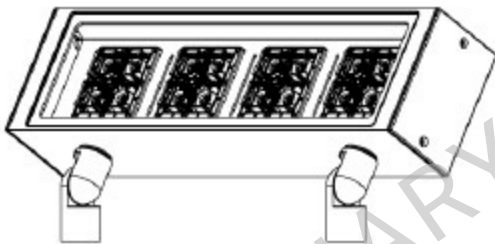
**TSL-1-KM**



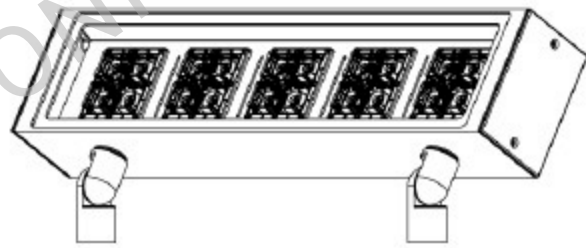
**TSL-2-KM**



**TSL-3-KM**

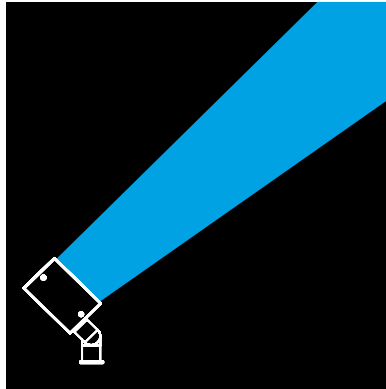
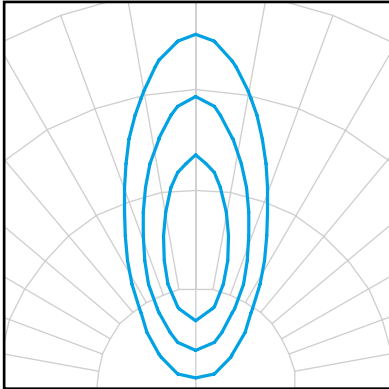


**TSL-4-KM**



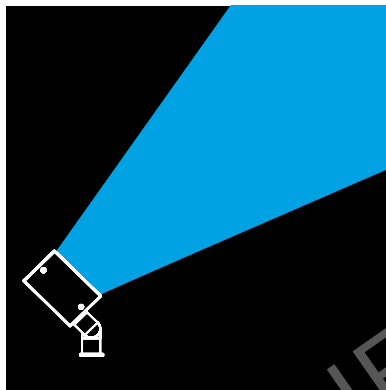
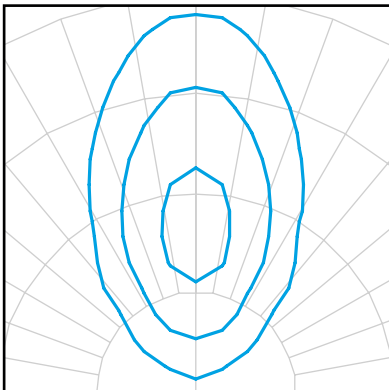
**TSL-5-KM**

DISTRIBUTIONS



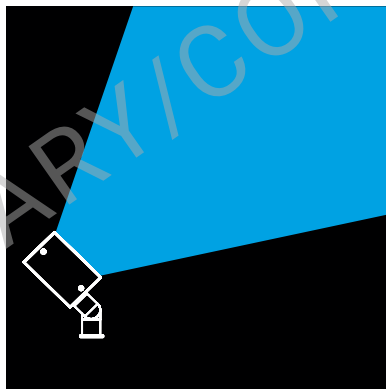
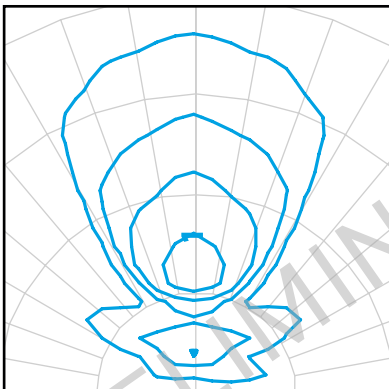
**15° Very Narrow Beam Optic**

The 15° Optic is used for very specific spot lighting. Spot Lighting a statue, a monument, or a piece of art. The NV Floods can be used indoors and outdoors. Pair the 15° Optic with the following Glare Control Options for more dramatic effect. Snoot Short (SNS), Snoot Long (SNL), or Egg Crate Louvers (ECL). These Glare Control Options help reduce glare and focus the viewing angles.



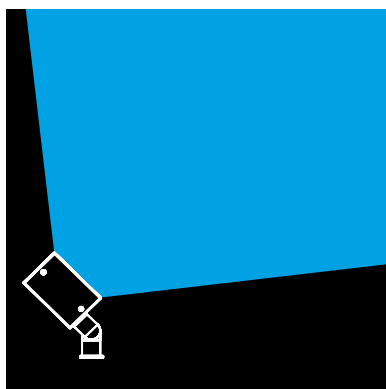
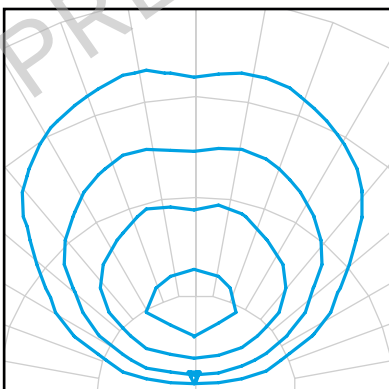
**30° Narrow Beam Optic**

The 30° Optic is used for larger objects and for spot and accent lighting. The 30° is perfect for Flag Lighting, Facade Lighting and great for showcasing Car Dealerships, display pads. Pair the 30° Optic with the following Glare Control Options for more dramatic effect. Snoot Short (SNS), Snoot Long (SNL), or Egg Crate Louvers (ECL). These Glare Control Options help reduce glare and focus the viewing angle.



**55° Medium Beam Optic**

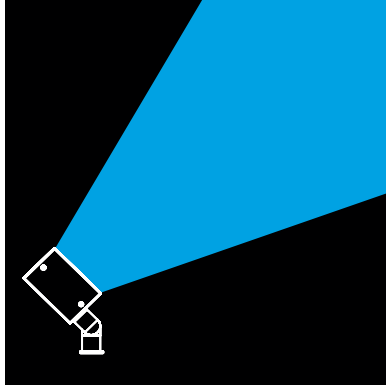
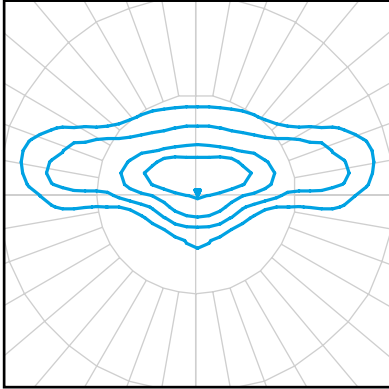
The 55° Optic is used for larger objects, flood lighting. The 55° is perfect for Facade Lighting, Landscape and general flood lighting. Pair the 55° Optic with the following Glare Control Options for more dramatic effect. Snoot Short (SNS), Angled Visor (AGV), These Glare Control Options help reduce glare and focus the beam angles.



**85° Wide Flood Optic**

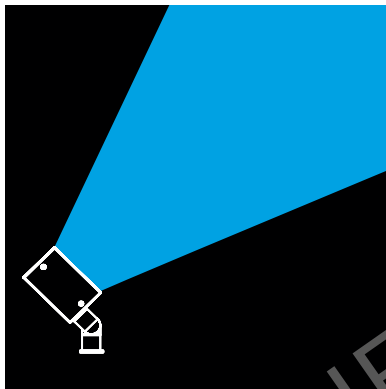
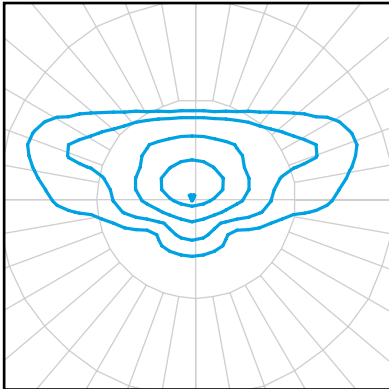
The 85° Optic is used for large area and accent lighting. The 85° is perfect for Security Lighting, general flood lighting and area lighting. Pair the 85° Optic with the following Glare Control Options for more dramatic effect. Snoot Small (SNS), Angled Visor (AGV), These Glare Control Options help reduce glare and shield unnecessary light.

DISTRIBUTIONS CONTINUED



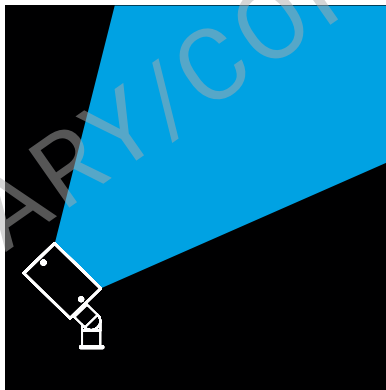
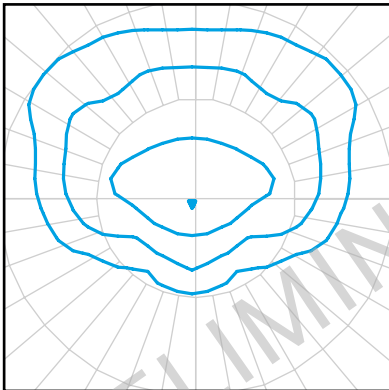
**NEMA 7X5 T2 Flood Optic**

The Type II (T2) distribution is used for narrow pathways and trails, narrow entrances of shopping centers, parking lots and office complex's.



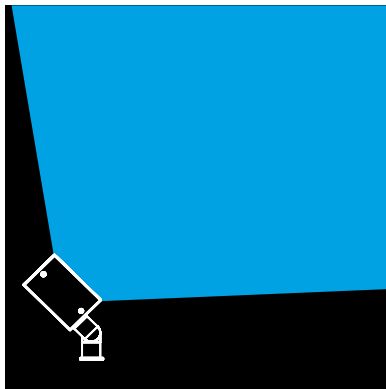
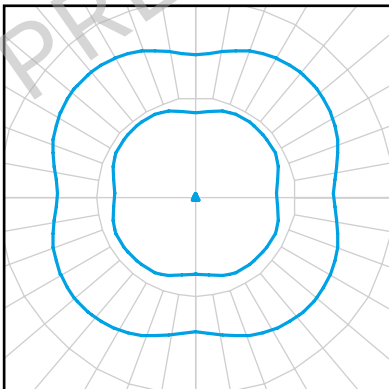
**NEMA 7X6 T3 Flood Optic**

The Type III (T3) distribution is meant for roadway lighting, general parking areas and other areas where a larger area of lighting is required. Type III lighting needs to be placed to the side of the area, allowing the light to project outward and fill the area. This produces a filling light flow.



**NEMA 6X6 Forward Throw T4 Flood Optic**

The Type IV (T4) distribution produces a semicircular light meant for mounting on the sides of buildings and walls. It is best for illuminating the perimeter of parking areas and businesses. The intensity of the Type IV lighting has the same intensity at angles from 90° to 270°.



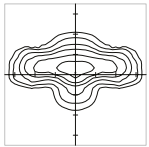
**NEMA 7X7 Symmetrical T5 Flood Optic**

The Type V (T5) produces a symmetrical distribution that has the same intensity at all angles. This distribution has a uniform symmetry of candlepower that is essentially the same at all lateral angles. It is meant for large, commercial parking lot lighting as well as areas where sufficient, evenly distributed light is necessary

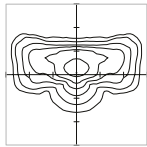
# PRODUCT SPECIFICATIONS

## OPTICS

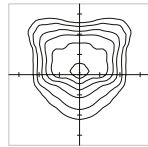
Silicone optics high photothermal stability and light output provides higher powered LEDs with minimized lumen depreciation LED life. UV and thermal stability with scratch resistance increases exterior application durability.  
IES Types



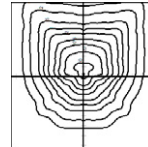
TYPE II (T2)



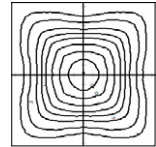
TYPE III (T3)



TYPE IV (T4)

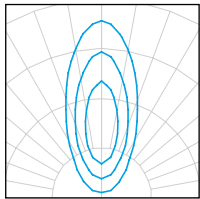


TYPE IV FORWARD (T4FTW)



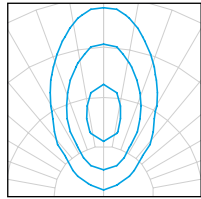
TYPE V WIDE (T5W)

## FLOOD DISTRIBUTIONS



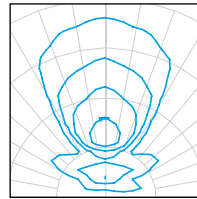
15° VERY NARROW

BEAM OPTIC



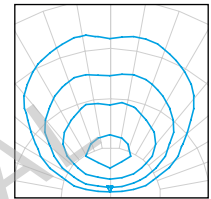
30° NARROW

BEAM OPTIC



55° MEDIUM

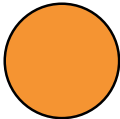
BEAM OPTIC



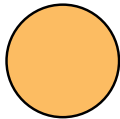
85° WIDE FLOOD

BEAM OPTIC

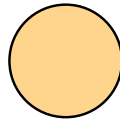
## LED KELVIN RANGE



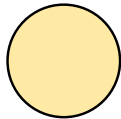
AMBER  
585-600 nm



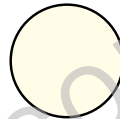
2700K 70 CRI



3000K 70 CRI



3500K 80 CRI



4000K 70 CRI



5000K 70 CRI

Color	Dominant or Peak Wavelength Range (nm)	
	Minimum	Maximum
Amber	585	600

### Lumen Maintenance Data

Ambient Temperature	Drive Current	L90 Hours*	L70 Hours**	30,000 Hours*	50,000 Hours*	60,000 Hours*	100,000 Hours**
25°C	Up to 700mA	58,000	173,000	95.7%	91.6%	89.6%	82.1%
	1050mA	48,000	143,000	94.3%	89.5%	87.2%	78.5%

\*Reported extrapolations per IESNA TM-21

\*\*Projected extrapolations per IESNA TM-21

### MULTIPLIERS FOR 70/80/90 CRI (Scaling Factor from 5000K 70 CRI)

CRI	70 CRI	80 CRI	90 CRI
2700K	0.8560	0.8015	0.6445
3000K	0.9255	0.8594	-
3500K	-	0.8594	-
4000K	1.000	0.9255	-
5000K	1.000	0.9255	-