Design Standard
Exterior Lighting and Installation

This standard was revised on July 22, 2020, and the latest changes are underlined. Please refer to Part 4 of this standard for full revision history.

General Exterior Campus Lighting Guidelines

Examine all available lighting source technologies to determine the appropriate source for the application, lowest life cycle cost and energy requirements for any given project. High performance HID, Compact Fluorescent, Induction, and LED technologies all have appropriate applications, based on energy efficiency, lighting level requirements, color of light, maintenance, cost, and other project criteria. Any deviation from the campus standards must be approved through Utilities & Energy Services (UES).

- All on/off control circuits for exterior lighting shall utilize photocells; the use of timers to control these circuits is unacceptable. ¹
- All fixtures must be dark-sky compliant as required by state law.
- All Pole mounted pedestrian lighting, Pole mounted street lighting and Pole mounted parking lot lighting shall have dedicated raceways not to be shared with convenience outlet circuits, building mounted exterior lighting circuits, irrigation systems etc. ⁶
- All pole bases shall be minimum 12 inches above final grade. ⁷
- Wire shall be XXHWr XXHW-2. ⁸
- Photo cell control with Hand / Off / Auto over-ride. ⁹
- All terminations shall be made with Gel Tap splice with closure. NSI easy-splice gel tap splice kit provides a method for connecting, insulating, and environmentally sealing low-voltage splices. The splice kit is designed for underground and overhead environments and is useful for street lighting applications. The hinged splice closure can be installed over the connector in seconds by snapping the cover shut. Qualified to ANSI CI 19.1 -1986 for underground splicing. Rated -40 to 90 degrees C, UV resistant. ¹⁰
- Non-grounded conductor or conductors in each pole shall have an inline fuse holder fused appropriately for light fixture. ¹⁴

**Typical Design Lighting Levels:** Designers shall submit point-by-point computer software calculations reflecting compliance with the lighting level chart below to the UES Project Manager or Liaison. Refer to IESNA RP-8 (latest edition) for additional information. ¹⁵

**Lighting Level Verification:** After installation and during project commissioning, representative lighting levels shall be tested, documented, and submitted to UES Project Manager or Liaison to verify that required design standard has been achieved. ¹⁶
Lighting Level Specifications

<table>
<thead>
<tr>
<th>Location</th>
<th>Avg. Horizontal Footcandles (fc)</th>
<th>Uniformity Ratio (Avg. fc : Min fc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian Ways, Bikeways, and Parking Lots</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Activity a</td>
<td>1.0</td>
<td>4:1</td>
</tr>
<tr>
<td>Medium Activity b</td>
<td>0.5</td>
<td>4:1</td>
</tr>
<tr>
<td>Low Activity c</td>
<td>0.2</td>
<td>10:1</td>
</tr>
<tr>
<td>Roadways</td>
<td>0.6</td>
<td>6:1</td>
</tr>
<tr>
<td>Roadway Intersections &amp; Crosswalks</td>
<td>1.3</td>
<td>6:1</td>
</tr>
</tbody>
</table>

a High activity: Commercial areas in urban environments with high nighttime pedestrian activity – high probability for detection of pedestrians is required.

b Medium activity: Intermediate areas with moderate nighttime pedestrian activities, where pedestrian safety and provision of guidance for primary travel ways are key design elements.

c Low activity: Allow the pedestrian to visually orient in the environment, detect obstacles, identify other pedestrians, read street signs and recognize landmarks.

PART 1 Pedestrian & General Area Lighting (Primary Campus Standard)

1.01 FIXTURE
   A. Gardco Round Form 10, Kim CC/CCS, or NLS VSR-1-YM11
   B. Finish: Pearl Mouse Grey RAL7048
   C. Distribution Type specific for location or Type 2 open area.

1.02 POLES
   A. Gardco, Sterner, or NLS11
   B. Finish: Bronze Anodized Hiawatha Metal #311
   C. All pedestrian lighting applications shall have poles at least ten feet tall. Ten foot pole mounted fixtures are preferred. Fifteen foot poles are an acceptable alternative if site lighting needs require the additional height.

1.03 LAMPS
   A. Light Emitting Diodes (LED)
   B. All LEDs must have a color of 4000K

1.04 LIGHTING CONTROL
   A. NEMA 7-Pin Twist Lock Photocell Receptacle
   B. The use of timeclocks to control exterior lighting circuits is prohibited. 2
### Pedestrian Light Poles

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Manufacture</th>
<th>Style</th>
<th>Catalog Number Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>10'</td>
<td>Sterner</td>
<td>Tapered</td>
<td>RTA10-4.5x3.0-0.125-10-C-LBZ#311</td>
</tr>
<tr>
<td>10'</td>
<td>Gardco</td>
<td>Tapered</td>
<td>TAMU-TRA-HB-10-D1-BRA#311</td>
</tr>
<tr>
<td>10'</td>
<td>NLS</td>
<td>Tapered</td>
<td>RTAP-10-125-4.5&quot;-3.0&quot;-SGL-3430-ANO-HB</td>
</tr>
<tr>
<td>15'</td>
<td>Sterner</td>
<td>Tapered</td>
<td>RTA15-4.5x3.2-0.125-10-C-LBZ#311</td>
</tr>
<tr>
<td>15'</td>
<td>Gardco</td>
<td>Tapered</td>
<td>TAMU-TRA-HB-15-D1-BRA#311</td>
</tr>
<tr>
<td>15'</td>
<td>NLS</td>
<td>Tapered</td>
<td>RTAP-15-125-4.5&quot;-3.0&quot;-SGL-3430-ANO-HB</td>
</tr>
</tbody>
</table>

Note: D1-Light Duty Pole – engineer to specify correct relative strength based on site wind load factors.

### Pedestrian Light Fixtures

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Manufacture</th>
<th>Style</th>
<th>Catalog Number Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>66W</td>
<td>Kim</td>
<td>CC/CCS LED</td>
<td>FM/CCS17PXE35/60L4K277/CCRAL7048</td>
</tr>
<tr>
<td>70W</td>
<td>Phillips Gardco</td>
<td>Form 10 LED</td>
<td>CP17L-P22-X-70LA-NW-UNIV-OC-RAL7048</td>
</tr>
<tr>
<td>66W</td>
<td>Kim</td>
<td>CC/CCS Wall LED</td>
<td>1W/CCS17AXE35/60L4K277/CCRAL7048</td>
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<tr>
<td>70W</td>
<td>Phillips Gardco</td>
<td>Form 10 Wall LED</td>
<td>CW17L-1-X-70LA-NW-UNIV-OC-RAL7048</td>
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<tr>
<td>71W</td>
<td>NLS</td>
<td>VSR-1YM</td>
<td>VSR-1-T*-32L-7-40K-UNV-YM*T-CS(RAL7048)-PE7</td>
</tr>
</tbody>
</table>

Note: Fixtures must come with a 7 pin NEMA Photocell receptacle.

Note: X denotes distribution type
Historical Pedestrian & Heritage Area Lighting (standard per noted locations)

Historic District Lighting Areas include New Main Roadway and Military Walk.

2.01 FIXTURE
   A. Lumec Zenith Series or Beacon Mediterranean Series.
   B. Roman Bronze finish of decorative cast 356 aluminum.
   C. Hood: spun aluminum with disk to block the up light out from hood.

2.02 POLES
   A. Lumec
   B. Shaft: 12 fluted round cast 356 aluminum tapered shaft, .250" wall thickness
   C. Base: round fluted cast 356 Aluminum, .357" avg. wall thickness, double fuse double fuse holders, and a cast-in anchor plate

2.03 LAMPS
   A. Light Emitting Diodes (LED)
   B. All LEDs must have a color of 4000K

2.04 LIGHTING CONTROL
   A. NEMA 7-Pin Twist Lock Photocell Receptacle
   B. The use of timeclocks to control exterior lighting circuits is prohibited. ³

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Manufacture</th>
<th>Style</th>
<th>Catalog Number</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Fixture</td>
<td>Lumec</td>
<td>Zenith</td>
<td>Z47A-65W42LED4K-R-AC-RLE5-XXX-SFZ4-SCUS542M65SM</td>
<td></td>
</tr>
<tr>
<td>12’ Pole</td>
<td>Lumec</td>
<td>RTA</td>
<td>RTA50F-12-SCUS542M65SM</td>
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<tr>
<td>Fixture</td>
<td>Beacon</td>
<td>Mediterranean</td>
<td>T1/AC/NC/24ND-55/4K/UNIV/DIR5/PCR-TL/DBT</td>
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</tr>
</tbody>
</table>

XXX denotes system voltages
D1-Light Duty Pole – engineer to specify correct relative strength based on site wind load factors.
Note: Fixtures must come with a 7 pin NEMA Photocell receptacle
PART 3 Parking & Roadway Lighting

3.01 FIXTURE
   A. Fixture: Phillips Gardco EcoForm, or NLS Lighting NV-1
   B. Finish: Pearl Mouse Grey RAL7048 or Platinum Bronze
   C. Distribution Type specific for location or Type 3 open area

3.02 POLES
   A. Gardco, Sterner, Kim, or NLS
   B. Finish: Bronze Anodized Hiawatha Metal #311
   C. Parking lighting applications for small and medium sized parking areas and the perimeter of large parking areas shall have a cutoff fixture.

3.03 LAMPS
   A. Light Emitting Diodes (LED)
   B. All LEDs must have a color of 4000K

3.04 LIGHTING CONTROL
   A. NEMA 7-Pin Twist Lock Photocell Receptacle
   B. The use of timeclocks to control exterior lighting circuits is prohibited.

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### Roadway & Parking Light Poles

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Manufacture</th>
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<th>Catalog Number Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>20'</td>
<td>Gardco</td>
<td>Tapered</td>
<td>TAMU-TRA-CB-20M-D1-BRA-#311</td>
</tr>
<tr>
<td>20'</td>
<td>Kim</td>
<td>Tapered</td>
<td>LTRA20-6156-1A-DBA311/BC/PC4RDB/96068/95518</td>
</tr>
<tr>
<td>20'</td>
<td>NLS</td>
<td>Tapered</td>
<td>RTAP-20-188-8.0&quot;-4.5&quot;:SGL-1360-ANO-VB</td>
</tr>
<tr>
<td>30'</td>
<td>Sterner</td>
<td>Tapered</td>
<td>RTA30-8.0x4.5-0.188-10-L-VD-LBZ#311</td>
</tr>
<tr>
<td>30'</td>
<td>Gardco</td>
<td>Tapered</td>
<td>TAMU-TRA-CB-30L-D1-BRA#311-VDA</td>
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<tr>
<td>30'</td>
<td>Kim</td>
<td>Tapered</td>
<td>LTRA30-7156-1A-DBA311/BC-PC4RDB/96068/95518</td>
</tr>
<tr>
<td>30'</td>
<td>NLS</td>
<td>Tapered</td>
<td>RTAP-30-188-8.0&quot;:4.5&quot;:SGL-1360-ANO-VB</td>
</tr>
</tbody>
</table>

Note: D1 - Light Duty Pole – engineer to specify correct relative strength based on site wind load factors.

### Roadway & Parking Light Fixtures

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Manufacture</th>
<th>Style</th>
<th>Catalog Number Specification</th>
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</thead>
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<tr>
<td>156W</td>
<td>NLS Lighting</td>
<td>NV-1</td>
<td>NV-1-T*-48L-1-40K-UNV-ASA-CS(RAL7048)-PE7-10K</td>
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<tr>
<td>160W</td>
<td>Phillips Gardco</td>
<td>EcoForm</td>
<td>ECF-DIM-1-3-160LA-481A-NW-UNV-OC-RAL7048-PCR7</td>
</tr>
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</table>

Note: X denotes distribution type.
Note: Fixtures must come with a 7 pin NEMA Photocell receptacle.

Version 6.1.2020
Exterior Lighting and Installation
## PART 4 - REVISIONS TO DESIGN STANDARD

<table>
<thead>
<tr>
<th>Revision #</th>
<th>Date</th>
<th>Location</th>
<th>Brief Description</th>
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<tbody>
<tr>
<td>1</td>
<td>11/28/2018</td>
<td>1st page of standard</td>
<td>All on/off control circuits for exterior lighting shall utilize photocells</td>
</tr>
<tr>
<td>2,3,4,5</td>
<td>11/28/2018</td>
<td>1.04B, 2.04B, 3.04B, 4.02B</td>
<td>The use of timeclocks to control exterior lighting circuits is prohibited</td>
</tr>
<tr>
<td>6</td>
<td>11/28/2018</td>
<td>1st page of standard</td>
<td>Lighting shall have dedicated raceways</td>
</tr>
<tr>
<td>7</td>
<td>11/28/2018</td>
<td>1st page of standard</td>
<td>All pole bases shall be minimum 12 inches above final grade</td>
</tr>
<tr>
<td>8</td>
<td>11/28/2018</td>
<td>1st page of standard</td>
<td>Wire shall be XXHW or XXHW-2</td>
</tr>
<tr>
<td>9</td>
<td>11/28/2018</td>
<td>1st page of standard</td>
<td>Photo cell control with Hand / Off / Auto over-ride</td>
</tr>
<tr>
<td>10</td>
<td>11/28/2018</td>
<td>1st page of standard</td>
<td>All terminations shall be made with Gel Tap splice with closure</td>
</tr>
<tr>
<td>11</td>
<td>9/27/2019</td>
<td>Part 1</td>
<td>NLS lighting models added to standard</td>
</tr>
<tr>
<td>12</td>
<td>9/27/2019</td>
<td>Part 3</td>
<td>NLS lighting models added to standard</td>
</tr>
<tr>
<td>13</td>
<td>9/27/2019</td>
<td>Part 4</td>
<td>NLS lighting models added to standard</td>
</tr>
<tr>
<td>-</td>
<td>9/27/2019</td>
<td>All</td>
<td>Cree lighting models removed from standard</td>
</tr>
<tr>
<td>14</td>
<td>2/6/2020</td>
<td>Page 1</td>
<td>Non grounded conductor or conductors in each pole shall have an inline fuse holder fused appropriately for light fixture.</td>
</tr>
<tr>
<td>15</td>
<td>3/2/2020</td>
<td>Page 1</td>
<td>Typical Design Lighting Levels updated</td>
</tr>
<tr>
<td>16</td>
<td>3/2/2020</td>
<td>Page 1</td>
<td>Lighting Level Verification added to standard</td>
</tr>
<tr>
<td>-</td>
<td>2/4/2020</td>
<td>All</td>
<td>Bollard lighting removed from standard</td>
</tr>
<tr>
<td>-</td>
<td>7/22/2020</td>
<td>Appendix</td>
<td>Pole Base Detail added to standard</td>
</tr>
</tbody>
</table>
IES Roadway Luminaire Classifications (Types I, II, III, IV and V) Summary:

The Illuminating Engineering Society of North America (IESNA) defines roadway and area lighting fixtures by their photometric properties and distance to the half maximum candela trace and the maximum candela value.

The definitions of the IES classifications follow:

The lateral classification describes the lateral light distribution with regards to the lighted area width described as multiples of the mounting height (MH). The width of the half-maximum candela trace within the longitudinal distribution range (Short, Medium or Long) is used. The boundaries for each classification in terms of Longitudinal Roadway Lines (LRL, running along the roadway) are as follows:

- **Type I** - Half-maximum candela trace falls between 1 MH LRL on the House side and 1 MH LRL on the Street side.
- **Type II** - Half-maximum candela trace on the Street side is beyond the 1 MH LRL but not beyond the 1.75 MH LRL.
- **Type III** - Half-maximum candela trace on the Street side is beyond the 1.75 MH LRL but not beyond the 2.75 MH LRL.
- **Type IV** - Half-maximum candela trace on the Street side is beyond the 2.75 MH LRL.
- **Type V** - Has circular symmetry being essentially the same at all lateral angles around the luminaire.

Informally, there is also a Type V-S, similar to Type V, but square in shape.

This image is from the IESNA Lighting Handbook, 9th Edition, © 2000, In this example, the luminaire is a Type III -- Medium distribution.
The Philips Gardco TRA tapered round aluminum pole consists of a one-piece design fabricated aluminum tubing circumferentially welded to a structural quality hot rolled carbon steel plate. The poles are finished with either Architectural Class I anodizing or electrostatically applied TGIC polyester powdercoat. All poles include anchor bolts, hand hole, ground lug and top cap.

**Poles**

**Tapered Round Aluminum - Hinged Base**

Select the appropriate poles for your application. The poles can be ordered in other finishes and configurations. See the ordering information below.

**Prefix**

- **TRA**
- **CB**
- **HG/HINGED BASE**
- **BRA/311**
- **BLA**
- **NA**
- **OC**
- **SC**

**Options**

- **BRP** Bronze Paint
- **BLP** Black Paint
- **WP** White Paint
- **NP** Natural Aluminum Paint
- **GFCI** Ground Fault Receptacle
- **VUA** Vibration Damper
- **DR** Duplex Receptacle
- **GFCI** Ground Fault Receptacle
- **VUA** Vibration Damper

**Motion Response Provisions**

- **GMR** Provision for Gardco HID Motion Reversal System
- **NL** Non-Linear - External thread
- **CL** Coupling - Internal thread
- **MSF** Motion Sensor Mounting Provision for LED Uplighters available with Motion Response
- **A15BH-19** Single - 1.9" OD
- **A15BH-24** Single - 2.4" OD
- **A21EBH-19** 2-Ton - 1.9" OD
- **A21EBH-24** 2-Ton - 2.4" OD

**Drilling Options**

- **1 Way**
- **2 Way**
- **3 Way**
- **4 Way**

**Finish Options**

- **Drilled Hole**
- **1/2" Diameter**
- **2" Holes**
- **3" Holes**
- **4" Holes**
- **5" Holes**

**Height Options**

- **14" LH**
- **18" LH**
- **30" LH**
- **36" LH**
- **42" LH**
- **48" LH**
- **60" LH**
- **72" LH**
- **96" LH**

**Width Options**

- **3" OD**
- **4" OD**
- **5" OD**
- **6" OD**

**Length Options**

- **10'**
- **12'**
- **14'**
- **16'**
- **18'**
- **20'**
- **24'**
- **28'**
- **32'**

**Base Options**

- **Road Cast Base**
- **Hinged Base**

**Style Options**

- **TRAM-TRA**
- **Baseline**
- **Hinge Base**
- **BRA/311**

**Notes**

- Refer to the installation instructions for detailed assembly and installation information.
- Contact Gardco for further assistance or to order custom configurations.

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1411 Cowlam, San Antonio, TX 78244
(800) 278-0758 (512) 753-1000 FAX: (512) 753-7855 atlighting.com
© 2011 Konswig Philips Electronics N.V. All Rights Reserved.
Philips Gardco reserves the right to change materials or modify the design of this product without notification as part of the company's continuing product improvement program.

79151-240811
**Tapered Round Aluminum - Hinged Base**

The Philips Gardco TRA tapered round aluminum pole consists of a one-piece design fabricated aluminum tubing circumferentially welded to a structural quality hot rolled carbon steel plate. The poles are finished with either Architectural Class I anodizing or electrostatically applied TGIC polyester powdercoat. All poles include anchor bolts, hand hole, ground lug and top cap.

<table>
<thead>
<tr>
<th>PREFIX</th>
<th>BASE</th>
<th>HEIGHT</th>
<th>DRILLING</th>
<th>FINISH</th>
<th>OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAMU-TRA</td>
<td>HB</td>
<td>15L</td>
<td>D1</td>
<td>BRA#311</td>
<td>OPTIONS</td>
</tr>
</tbody>
</table>

Enter the order code into the appropriate box above. Note: Gardco reserves the right to refuse a configuration. Not all combinations and configurations are valid. Refer to notes below for exclusions and limitations. For questions or concerns, please consult the factory.

<table>
<thead>
<tr>
<th>PREFIX</th>
<th>BASE</th>
<th>HEIGHT</th>
<th>DRILLING</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRA</td>
<td>CB Fixed Cast Base</td>
<td>8'</td>
<td>D1 - 1 Way</td>
</tr>
</tbody>
</table>

**Finish**
- BRP: Bronze Paint
- BLP: Black Paint
- WP: White Paint
- NP: Natural Aluminum Paint
- BRA: Bronze Anodized
- BLa: Black Anodized
- NA: Natural Anodized
- OC: Optional Color Paint
- SC: Special Color Paint

**Options**
- DR: Duplex Receptacle
- GFCI: Ground Fault Receptacle
- YDA: Vibration Damper
- NL: Nipple - External Thread
- CL: Coupling - Internal Thread
- A15BH-19 Single: - 1.9" OD
- A15BH-24 Single: - 2.4" OD
- A21EBH-19 2-Tan: - 1.9" OD
- A21EBH-24 2-Tan: - 2.4" OD

**Motion Response Provisions**
- GMR: Provision for Gardco HID Motion Response System
- MS: Provision for LED Motion Sensor Mounting Provision for LED Luminaires available with Motion Response

**minimum Pole Height of 14' includes a 1/2" coupling placed 180° to the hand hole, 15' above the pole base.**

**Minimum Pole Height of 16' includes a special hand hole with 1/2" coupling placed 180° to the hand hole, 15' above the pole base.**

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1411 Clevia Barker Road, San Marcos, TX 78664
(800) 237-0758 (512) 753-1000 FAX: (512) 753-7855 atxlighting.com
© 2011 Koninklijke Philips Electronics N V. All rights reserved. Philips Gardco reserves the right to change materials or modify the design of its product without notification as part of the company's continuing product improvement program.
CC/CCS17
17" Post Top Mounted, Curvilinear, PicoEmitter™ LED
revision 8/26/14 • UL_cc1/peled_spec.pdf

Specifications
17" Diameter
60 Light Emitting Diodes
Total System Watts = 64W

Housing: Spun aluminum; (Rolledlinear reveals; CC; Three equally spaced reveals, 1/8" wide, separated by 1/16" ribs, 1/8" deep. CCS: One 1/8" groove, 1/8" deep.) Sidewalls have a maximum 1" of tapes, and are free of welds or fasteners. A rolledformed aluminum flange is hemmed into the bottom providing support for the reflector module. An internal aluminum casting provides for mounting of the electrical module and support for the housing hinge.

Lens Frame and Yoke: One-piece cast aluminum lens frame is attached to the housing by a zinc plated cold rolled steel hinge with a stainless steel pin. Closure of the housing is by a single self-retained stainless steel screw. A stainless steel self-locking stop arm is provided to hold the housing in the open position while servicing. A 1/8" thick flat tempered glass lens is fully gasketed by a one-piece extruded and vulcanized silicone gasket. Lens is retained in the frame by removable zinc plated steel clips. Lens frame is supported at four points two aluminum U-shaped tubular arms cradled in a cast aluminum hub. Arms are welded to the lens frame, and welded to the hub along their longitudinal axis. Hub contains a field-splice compartment, a cast aluminum cover and one of the following pole attachment means: FM - Flush Mounting or PT - Pole Tenon Mounting (see page 2 for complete descriptions).

Electronic Module: All electrical components are UL and CSA recognized, mounted on a single plate and factory prewired with quick-disconnect plugs. Module includes a driver, LifeShield™ temperature control device and surge protector. Electrical module attaches to housing with no-tool hinges and latches, accessible by opening the lens frame only. Driver is rated for 40°F starting and has a 0-10V dimming interface for multi-level illumination options.

Optical Module: Precision, replaceable PicoEmitters are positioned to achieve directional control toward desired task. The entire EmitterDeck™ mounting assembly fastens to the housing as a one-piece module.

Finish/Color: TCGC thermoset polyester powder coat paint, 2.5 mil nominal thickness. Standard colors are Black, Dark Bronze, Light Gray, Stealth Gray, Platinum Silver, or White. Custom colors are available.


Warranty: Kim Lighting warrants Curvilinear LED products ("Product") sold by Kim Lighting to be free from defects in material and workmanship for (i) a period of five (5) years for metal parts, (ii) a period of ten (10) years for exterior housing paint finishes), (iii) a period of six (6) years for LED light engines (PicoEmitter reflectors) and, (iv) a period of five (5) years for LED power components (LED Driver, LifeShield temperature control device, surge protector), from the date of sale of such goods to the buyer as specified in Kim Lighting shipment documents for each product.

CAUTION: Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.
CC/CCS17
17" Post Top Mounted, Curvilinear, PicoEmitter™ LED

Standard Features

Mounting

- Type:
- Job:

- Exterior Lighting and Installation
- Pedestrian Poles and Fixture Datasheets

CC/CCS fixture and light distribution.

- CC
- CCS

Size:
17 - 1/2" Small
60 LEDs

P - Post Top Mount

Light Distribution:

- Type I
- Type II
- Type III
- Type IV
- Type V
- Type Right
- Type Left

Distribution:
- □ Type I Full Cutoff
- □ Type II Full Cutoff
- □ Type III Full Cutoff
- □ Type IV Full Cutoff
- □ Type V Square Cutoff
- □ Type L Left Full Cutoff
- □ Type R Right Full Cutoff

Electrical Module

Cat. Nos. for Electrical Modules available:

- 60L

- Source: 60L = 600 mA

- Color Temperature:
  - □ 3K = 3000K
  - □ 4K = 4200K
  - □ 5K = 5000K
  - □ 2K = 5000K - Amber

- Voltage:
  - □ 120 = 120V
  - □ 208 = 208V
  - □ 480 = 480V

- Type IV Forward Throw
- Type V Square
- Type Right
- Type Left

Finish

- TGIC powder coat

- Color:
  - □ Black
  - □ Dark Bronze
  - □ Light Gray
  - □ Stealth Gray
  - □ Platinum Silver
  - □ White
  - □ Custom Color

- Cat. No.: □ BL  □ DB  □ LG  □ SG  □ PS  □ WH  □ CC

- Custom colors subject to additional charges, minimum quantities and extended lead times. Consult representative. Custom color description: RAL/7048

0-10V Dimming Interface

- Driver has a 0-10V dimming interface with a dimming range of 10-100%. Is compatible with most control systems, including Hubbell Building Automation w/HUBB®. Approved dimmers include Lutron Diva AVTV, Lutron Nova NTV and NFTTV. Note: Not compatible with current sourcing dimmers. Controls compatible via Gray and Purple dimming lead.

- Standard Input: Black (+)
- White (-)
- Gray Dimming Lead (+)
- Purple Dimming Lead (+)

- 50 mA Max

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Form 10 Round LED

CP / MP Post Top Mount

The Philips Gardco post top mounted Round Form 10 LED products are cutoff luminaires featuring LED arrays. Round Form 10 LED luminaries provide performance excellence and advanced Philips Gardco LED thermal management technology. High performance Class 1 LED systems offer the potential for energy savings up to 50% when compared to HID systems. Housing is one-piece seamless spun aluminum and finished with either Architectural Class 1 anodizing, with hardcoat, fade resistant, electrophoretically applied TIG welded powdercoat or polyesterurethane. Optional lens, glare rings at post tops are available in (4) colors and are illuminated by the primer source. Luminaries provide full cutoff performance.

CP17L-P22-70LA-NW-UNIV-OCC-RA-LAL1038

Enter the order code into the appropriate box above. Note: Philips Gardco reserves the right to alter a configuration. Not all combinations and configurations are valid. Refer to notes below for exclusions and limitations. For questions or concerns, please consult the factory.

Available in 70LA and 85LA LED Wattages Only

| CP17L | 17" Cylindrical Luminaires - Constant Wattage |
| CP17L-DIM | 17" Cylindrical Luminaires - 0-10V Dimming |
| MP17L | 17" Semi-Spherical Luminaires - Constant Wattage |
| MP17L-DIM | 17" Semi-Spherical Luminaires - 0-10V Dimming |

Below part list for existing Form 10 Round 11" and 12" HID luminaries are available. See Legacy LED Retrofit Kit Standard Data Sheet (G0292) for Retrofit Kit information.

Mounting

<table>
<thead>
<tr>
<th>FOLES</th>
<th>TENONS</th>
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</thead>
<tbody>
<tr>
<td>SBS3</td>
<td>PIN OD: 3.88&quot; MAX: OD: 3.08&quot;</td>
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<td>SBS3</td>
<td>PIN OD: 3.13&quot; MAX: OD: 3.98&quot;</td>
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<td>SBS3</td>
<td>PIN OD: 3.50&quot; MAX: OD: 4.98&quot;</td>
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<td>SBS3</td>
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<td>PIN OD: 7.20&quot; MAX: OD: 12.98&quot;</td>
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LED WATTAGE AND LUMEN VALUES

<table>
<thead>
<tr>
<th>Ordering Code</th>
<th>Average System Watts¹</th>
<th>LED Current (mA)</th>
<th>LED Selection</th>
<th>Luminaire Initial Absolute Luminous*²</th>
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<tbody>
<tr>
<td>70LA</td>
<td>70</td>
<td>350</td>
<td>NW</td>
<td>4,617, 6,737, 5,158, 4,478</td>
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<td>85LA</td>
<td>75</td>
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<td>90LA</td>
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<td>160LA</td>
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<td>530</td>
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<td>10,738, 10,903, 10,240, 9,599</td>
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</table>

¹ Wattage may vary by ±5% due to LED manufacturer or forward with quality and ambient temperature. Wattage shown is average for 30V through 35V input. Actual wattage may vary by an additional ±10% due to actual input voltage.
² Luminaires shown are for luminaires without an HS external shield. Option tests are at pressure for luminaries with an HS external shield. Contact Philips application engineers for further detail.

Distributed Lumen Data: Photometric test performed in compliance with ENSA LA7/95, except where otherwise indicated.

Notes:
1. Warranty as noted when equipped with 355 mA, Lumen values below are tests performed in compliance with ENSA LA7/95.
2. Optional lens, glare rings at post tops are available in (4) colors and are illuminated by the primer source. Luminaries provide full cutoff performance.

1611 Clavis Barkar Road, San Marcos, TX 78666
(512) 237-4358 (512) 733-1000 FAX: (512) 733-7935 siteslighting.com
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G2009-02/0112

Exterior Lighting and Installation
Pedestrian Poles and Fixture Datasheets
Form 10 Round LED
CP / MP Post Top Mount

**LED SELECTION**

<table>
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<tr>
<th>Finish</th>
<th>Options</th>
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<td>BRP</td>
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<td>BLP</td>
<td>Non-Low-Voltage</td>
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<td>WP</td>
<td>Photocell and Receptacle</td>
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<td>NP</td>
<td>Photocell Receptacle only</td>
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<td>BRA</td>
<td>Surge Protection for 120V through 277V Input meeting ANSI C62.41.2</td>
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<tr>
<td>BMA</td>
<td>Surge Protection for 347V through 480V Input meeting ANSI C62.41.2</td>
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**DIMENSIONS AND EPA**

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<th>Weight Single</th>
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<td>22&quot;</td>
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<td>11&quot;</td>
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### MOUNTING ILLUSTRATIONS

Preferred Mounting Method

Refer to Table on page 1 for mounting ordering information.

1611 Clevis Barker Road, San Marcos, TX 78666
(800) 237-4738 (512) 753-1000 FAX: (512) 753-7855 sitallighting.com
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G200-023/1912
Luminaire [Z47A-065]-65W42LED4K-R-AC-RLE5-209-SFZ4-SCUS542M55SM

Description of Components:

Finial: Decorative cast 356 aluminum, mechanically assembled.

Hood: Cast 356 aluminum ring with one clear borosilicate glass upright diffuser installed on the lower part of the hood, also complete with a disk to block the upright coming out from the hood, mechanically assembled on the luminaire.

Access Mechanism: Rotomatic, die cast A360 aluminum quarter-turn mechanism with constant-pressure spring-loaded points. The mechanism shall offer tool-free access to the inside of the luminaire. An embedded memory-retainive gasket shall ensure weatherproofing. A red key on the unit shall indicate point of engagement.

Light Engine: EcoSwap Rotomatic tool-free system composed of 4 main components: LED lamp / Optical System / Heat Sink / Driver
Electrical components are RoHS compliant.

Globe: (AC), Made of one-piece seamless injected-moulded clear acrylic having a prismatic exterior surface. The globe is mechanically assembled on the access-mechanism.

Lamp: LED Module (Included), LED type Philips Lumileds LUXEON R. Composed of 42 high-performance white LEDs, 65w lamp wattage. Operating lifespan based on TM-21 extrapolation to get results after which 50% of LEDs still emit over 70% (L70) of its original lumen output. Use of metal core board ensures greater heat transfer and longer lifespan of the light engine.

Optical System: (RLE5), IES type V (symmetrical), Composed of high-performance acrylic refractor lenses to achieve optimized distribution and get maximum spacing; target luminaires will create a perfect lighting uniformity. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance. Painted color grey.
Heat Sink: Made of extruded aluminum optimising the LEDs efficiency and life. Product does not use any cooling device with moving parts (only passive cooling device).

Driver: High power factor of 90%. Electronic driver, operating range 50/60 Hz. Auto-adjusting to a voltage between 120 and 277 volt AC rated for both application line to line or line to neutral. Class II, THD of .20% max. Maximum ambient operating temperature from -40F(-40C) to 130F(55C) degrees. Certified in compliance to cULus requirement. Dry and damp location. Assembled on a unitized removable tray with Tyco quick disconnect plug resisting to 221F(105C) degrees.

The current supplying the LEDs will be reduced by the driver if the internal driver temperature exceeds 185F(85C), as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction.

Surge Protector: Surge protector tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with U.S. DOE (Department of Energy) MSSL (Municipal Solid-State Street Lighting Consortium) model specification for LED roadway luminaires electrical immunity requirements for High Test Level 10kV / 10kA.

Fitter: (SFZ4), Cast 356 aluminum c/w 8 set screws 3/8-16 UNC. Slip-fits on a 4” (102mm) outside diameter x 4” (102mm) long hexagon.

| Miscellaneous |
| Description of Components: |

Wiring: Gauge (#14) TEW/AWM 1015 or 1230 wires, 6” (152mm) minimum exceeding from luminaire.

Hardware: All exposed screws shall be stainless steel with Ceramic primer-seal basecoat to reduce seizing of the parts. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

Finish: (SCUS542M655) Special Color US542M655, smooth Protech U series Matt Smooth, Bronze "Roman". In accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with ± 1 mils24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard.

The surface treatment achieves a minimum of 2000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

Surface Finish: The above mentioned product has been specified in a smooth finish. We wish to inform you that we cannot guarantee a finish without imperfections (e.g. apparent grinding marks and porosity). We strongly recommend the use of a textured finish which provides better uniformity of surface finish. No return of merchandise showing above mentioned imperfection will be granted.

LED products manufacturing standard: The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Quality Control: The manufacturer must provide a written confirmation of its ISO 9001-2008 and ISO 14001-2004 International Quality Standards Certification.

Mechanical resistance: In order to ensure the mechanical resistance of the poles, the reflected area should be calculated according to AASHTO standards and resists to a wind of 140 km/hr.

Web site information details: Click on any specific information details you need:
### Exterior Lighting and Installation

#### Mediterranean (LED)

**Type:**
- Project Name:
- Notes:

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<thead>
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<th>T1</th>
<th>AC</th>
<th>C1</th>
<th>H1</th>
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<th>SK</th>
<th>UNV</th>
<th>DIRS</th>
<th>PEC</th>
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</table>

#### Details

- **A. MODEL**
  - T1 Mediterranean

- **B. LENS OPTIONS**
  - AC acrylic, clear
  - AF acrylic, frosted

- **C. CAGE**
  - C1 Mediterranean
  - C2 London
  - C3 Monaco
  - C4 Park Lane
  - C5 Brighton
  - NC no cage

- **D. HOUSING**
  - H1 Mediterranean
  - H2 London
  - H3 Monaco
  - H4 Park Lane
  - H5 Brighton

- **E. SOURCE**
  - 24NB-55 55 Watts - LED array
  - 30NB-69 80 Watts - LED array
  - 48NB-110 110 Watts - LED array

- **F. CCT - COLOR TEMP**
  - SK 3000K
  - 4K 4000K
  - SK 5000K

- **G. VOLTAGE**
  - UNV 120-277V
  - 347V
  - 480V

#### Ordering

- **H. OPTICS**
  - DR2 type II
  - DR3 type III
  - DR4 type IV
  - DR5 type V

- **I. ELECTRICAL OPTIONS**
  - PCR-TL photocell, twist-lock
  - PCR-SC photocell, shorting cap

- **J. COLOR**
  - BBT basic black textured
  - BMT black matte textured
  - WHT white textured
  - MBT metallic bronze textured
  - BZT bronze textured
  - DBT dark bronze textured
  - GYS gray smooth
  - DPS dark platinum smooth
  - GNT green textured
  - MST metallic silver textured
  - MTT metallic titanium textured
  - OWI old world iron
  - RAL ————

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Exterior Lighting and Installation

Pedestrian Poles and Fixture Datasheets
Exterior Lighting and Installation

Pedestrian Poles and Fixture Datasheets

**Housing:** All cast aluminum parts shall be low copper alloy A383. All extruded aluminum parts shall be alloy 6061-T6, 6063-T5 or equal.

**Construction:** The upper chamber will be topped by a decorative cast aluminum finial/cap and mechanically fastened to the optical chamber. The cast multi-sided cage shall accommodate UV stabilized acrylic or polycarbonate lenses (side panels) which shall be sealed for weather tight operation. The electrical chamber/fitter shall be aluminum, decorative fitter designed to accommodate the ballast assembly and shall mount to 3" OD x 3" H tenon and secured by three stainless steel set screws.

**Fasteners:** All fasteners shall be Corrosion Resistant. When temper resistant fasteners are required, spacers HD (make eye) style shall be provided (special tool required, available at additional cost).

**Finish:** Finish shall be a Beacoate V polyester powder-coat electrostatically applied and thermocured. Beacoate V finish shall consist of five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TSB polyester powder coat finish. The finish shall meet the AMMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists chipping or loss of adhesion per ASTM D652 and resists surface impacts of up to 190 inch-pound.

**Beaco Optical System:** Each luminaire is supplied with an optical one piece cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel. The cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system. Two-piece silicone and polycarbonate foam gasket ensures a weatherproof seal around each individual LED and allows the luminaire to be rated for high-pressure hose down applications. The optical cartridge is secured to the extruded housing with fasteners and a heat sink to ensure thermal conductivity. The optics are held in place without the use of adhesives and the complete assembly is gasketed for high pressure hose down cleaning. The cartridge assembly is available in various light distributions using a specially designed acrylic optical lens over each LED.

**Power Supply/Driver Requirements:** UL UL1510, Class 2 and UL48 compliant

**Color Rendering Index (CRI):** Luminaire shall have a minimum CRI of 57 at 5000K.

**Operating Environment:** Shall be able to operate normally in ambient temperatures from -40°C to 40°C

**Lifeshield™ Circuit:** Thermal circuit shall protect the luminaire from excessive temperature by interacting with its 0-10V dimmable drivers to reduce drive current as necessary. The factory-tested temperature limits shall be designed to ensure maximum hours of operation to assure L70 rated lumen maintenance. The device shall activate at a specific factory-set temperature, and progressively reduce power over a finite temperature range in recognition of the effect of reduced current on the internal temperature and longevity of the LEDs and other components. A luminaire equipped with the device may be reliably operated in any ambient temperature up to 59°C (139°F).

The thermal circuit will allow higher maximum Wattages than would be permissible on an unregulated luminaire (if some variation in light output is permissible), without risk of premature LED failure. Operation shall be smooth and undetectable to the eye. Thermal circuit shall directly measure the temperature at the LED solder point.

Thermal circuit shall consist of surface mounted components mounted on the LED engine (printed circuit board). For maximum simplicity and reliability, the device shall have no dedicated enclosure, circuit board, wiring harness, gaskets, or hardware. Device shall have no moving parts, and shall operate entirely at low voltage (NEC Class 2). The device shall be located in an area of the luminaire that is protected from the elements.

Thermal circuit shall be designed to "fail on," allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers.

Device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.). The device will effectively control the solid point temperature as needed; otherwise it will allow the other control device(s) to function unimpeded.

**Surge Protector:** The non-board surge protector shall be a UL recognized component for the United States and Canada and have a surge current rating of 20,000 Amps using the industry standard 8/20 µSec wave. The LSP shall have a clamping voltage of 1000V and surge rating of 4500. The case shall be a high-temperature, flame resistant plastic enclosure.

**Electric:** Luminaire are equipped with LED driver(s) that accept 90 through 365 VAC, 50 Hz to 60 Hz (UNIV). Power factor is .92 at full load. All electrical components are rated at 56,000 hours at full load and 25°C ambient conditions per ML-217F Notice 2. All driver components supplied are component-to-component wiring within the luminaire will carry no more than 99% of rated current and is listed by UL, for use at 600VAC at 50°C or higher. Plug disconnects are listed by UL for use at 600VAC, 15A or higher.

**Agency Certification:** The luminaire shall bear an NRTL label and be marked suitable for wet locations.

**Limited Warranty:** Beaco luminaires feature a 5-year limited warranty. Beaco LED luminaires with LED arrays feature a 5-year limited warranty covering the LED arrays. LED drivers are covered by a 5-year limited warranty. PM sensors carry a 5-year limited warranty from the manufacturer. See Warranty Information on www.beacolighting.com for complete details and exclusions.

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Due to our continued efforts to improve our products, product specifications are subject to change without notice.

2041 58th Avenue Circle East Bradenton, FL 34203 Phone: (800) 345-4928 Fax: (941) 751-5535 SPECIFICATION
Pole RTA500F-12-[FS2-004]-SCUS542M65SM

Description of Components:

Pole Shaft: Shall be made from a mandrel-formed aluminum tapered shaft, 12 fluted round, having a 0.125” (3.2mm) wall thickness, welded to both the bottom and top of the anchor plate.

Base Cover: Two piece round base cover made from cast 356 aluminum, mechanically fastened with stainless steel screws.

Pole Options: One HEY-AA double fuse holder to accept two KTKR1 fuses (provided by other).

Note: A tenon will be provided when the luminaire or bracket does not fit directly on pole shaft. Tenon not shown on the drawing.

IMPORTANT: Philips Lumelec strongly recommends the installation of the complete lighting assembly with all of its accessories upon the anchoring of the pole. This will ensure that the structural integrity of the product is maintained throughout its lifetime.

Pole Weight: 28 lbs (12.7 kg)
CC/CCS17
17" Arm Mounted, Curvilinear, PicoEmitter™ LED
revision 11/21/14 • kl_cc17eled_spec.pdf

**Specifications**

**17" Diameter**
60 Light Emitting Diodes
Total System Watts = 64W

**Housing:** Spun aluminum. (R)ollformed linear reveals, ½" wide, separated by ½" ribs, ¾" deep. **CC:** Three equally spaced reveals, ½" wide, separated by ½" ribs, ¾" deep.

**CCS:** One ¾" groove, ½" deep.) Sidewalls have a maximum of 1" of taper, and are free of welds or fasteners. A rollformed aluminum flange is hemmed into the bottom providing support for the reflector module. An internal aluminum casting provides mounting for the electrical module plus reinforcing for side-arm mounting of the fixture.

**Lens Frame Assembly:** One-piece cast aluminum lens frame is attached to the housing by a zinc plated cold rolled steel hinge with a stainless steel pin. Closure is by one self-retained stainless steel screw. A stainless steel self-locking stop arm is provided to hold the lens frame in the open position while servicing. A ¾" thick clear flat tempered glass lens is fully gasketed by a one-piece extruded and vulcanized silicone gasket. Lens is retained in the frame by removable zinc plated steel clips.

**Standard Arm Mounting:** Arm is one-piece extruded aluminum with internal bolt guides and fully radiused top and bottom. Luminaire-to-pole attachment is by internal draw bolts, and includes a pole reinforcing plate with wire strain relief. Arm is circular cut to mate with specified round pole.

**Electronic Module:** All electrical components are UL and CSA recognized, mounted on a single plate and factory prewired with quick-disconnect plugs. Module includes a driver, LifeShield™ temperature control device and surge protector. Electrical module attaches to housing with keyhole slots, accessible by opening the lens frame and removing optical module. Driver is rated for -40°F starting and has a 0-10V dimming interface for multi-level illumination options.

**Optical Module:** Precision, replaceable PicoEmitters are positioned to achieve directional control toward desired task. The entire PicoEmitter™ mounting assembly fastens to the housing as a one-piece module.

**Finish/Color:** TGIC thermost plastic powder coat paint. 2.5 mil nominal thickness. Standard colors are Black, Dark Bronze, Light Gray, Steal Gray™, Platinum Silver, or White. Custom colors are available.

**Listed To:** UL 1598 Standard for Luminaire - UL 8750 Standard for Safety for Light Emitting Diode (LED) Equipment for use in Lighting Products and CSA C22.2#250.0 Luminaire.

**Warranty:** Kim Lighting warrants Curvilinear LED products ("Products") sold by Kim Lighting to be free from defects in material and workmanship for (i) a period of five (5) years for metal parts, (ii) a period of ten (10) years for exterior housing paint finish(s), (iii) a period of six (6) years for LED Light Engines (PicoEmitter reflectors) and, (iv) a period of five (5) years for LED power components (LED Driver, LifeShield™ temperature control device, surge protector), from the date of sale of such goods to the buyer as specified in Kim Lighting shipment documents for each product.

**CAUTION:** Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious injury.

Kim Lighting reserves the right to change specifications without notice.

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Pedestrian Poles and Fixture Datasheets
## Standard Features

### Mounting
3Y configuration is available for round poles only.

### Fixture
Cat. No. designates CC/CCS fixture and light distribution.

<table>
<thead>
<tr>
<th>Plan View:</th>
<th>Wall Mount</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA:</td>
<td>□ 0.9 □ 1.8 □ 1.6 □ 2.5 □ 2.5 □ 2.8</td>
</tr>
<tr>
<td>Cat. No.:</td>
<td>□ 2B □ 2L □ 3T □ 3Y □ 4C □ 1W</td>
</tr>
</tbody>
</table>

**Size:**
- 17" = Small (60 LEDs)
- A = Arm Mount

**Distribution:**
- 1 = Type I Full Cut Off
- 2 = Type II Full Cut Off
- 3 = Type III Full Cut Off
- 4 = Type IV Full Cut Off
- 5 = Type V Square Full Cut Off
- L = Type L Left Full Cut Off
- K = Type R Right Full Cut Off

**Distribution:**
- E35 = 350mA

**Light Distribution:**
- Type I
- Type II
- Type III
- Type IV Forward Throw
- Type V Square
- Type R Right
- Type L Left

### Electrical Module
Cat. Nos. for Electrical Modules available:
- 60 LEDs

<table>
<thead>
<tr>
<th>Source: 60 = 60 LEDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color Temperature:</td>
</tr>
<tr>
<td>3K = 3000K</td>
</tr>
<tr>
<td>4K = 4200K</td>
</tr>
<tr>
<td>5K = 5100K</td>
</tr>
<tr>
<td>2K = 5000K - Amber</td>
</tr>
<tr>
<td>Voltage:</td>
</tr>
<tr>
<td>120 = 120V</td>
</tr>
<tr>
<td>208 = 208V</td>
</tr>
<tr>
<td>240 = 240V</td>
</tr>
<tr>
<td>277 = 277V</td>
</tr>
<tr>
<td>347 = 347V</td>
</tr>
<tr>
<td>480 = 480V</td>
</tr>
</tbody>
</table>

*Due to current unavailability of 347V and 480V drivers, specifications of these voltages may feature an integral step-down transformer.

### Finish
TGIC powder coat paint over a titanium zirconium conversion coating.

**Color:**
- Black
- Dark Bronze
- Light Gray
- Stealth Gray
- Platinum Silver
- White
- Custom Color

**Cat. No.:**
- BL
- DB
- LG
- SG
- PS
- WH
- MCC

*Custom colors subject to additional charges, minimum quantities, and extended lead times. Consult representative. Custom color description: RAL7048

### Optional Features
**Polycarbonate Lens**
Cat. No. □ L17F □ No Option

Clear UV stabilized polycarbonate replaces standard flat glass lens, gasketed and integral with lens frame.

CAUTION: Use only when vandalism is anticipated to be high. Useful life is limited by UV discoloration from sunlight.
The Philips Gardco wall mounted Round 10 LED products are cutoff luminaires featuring LED arrays. Round 10 LED luminaires provide performance excellence and advanced Philips Gardco LED thermal management technology. High performance, Class 1 LED systems offer the potential for energy savings up to 50% when compared to HID systems. Four units are one-piece steel or aluminum fabricated, with either Architectural Class 1 rating, with hardcoat, fade-resistant, electrostatically applied TGIC polyester, powdercoat or polyurethane. Luminaires provide full cutoff performance.

### FORM 10 ROUND LED

**CW / MW Wall Mount**

<table>
<thead>
<tr>
<th>PREFIX</th>
<th>MOUNTING</th>
<th>DISTRIBUTION</th>
<th>LED VATTAGE</th>
<th>LED SELECTION</th>
<th>VOLTAGE</th>
<th>FINISH</th>
<th>OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CW17L</td>
<td>1</td>
<td>70A</td>
<td>NW</td>
<td>UNIV</td>
<td>OC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Enter the order code into the appropriate box above. Note: Philips Gardco reserves the rights to require a configuration. Not all combinations and configurations are valid. Refer to notes below for exclusions and limitations. For questions or concerns, please consult the factory.

**PREFIX**

- **Available in 70A and 85LA LED Wattages Only**
  - CW17L 17" Cylindrical Luminaire LED - Constant Wattage
  - CW17L-DIM 17" Cylindrical Luminaire LED - 0-10V Dimming
  - MW17L 17" Semi-Spherical Luminaire LED - Constant Wattage
  - MW17L-DIM 17" Semi-Spherical Luminaire LED - 0-10V Dimming
- **Available in 110LA and 160LA LED Wattages Only**
  - CW22L 22" Cylindrical Luminaire LED - Constant Wattage
  - CW22L-DIM 22" Cylindrical Luminaire LED - 0-10V Dimming
  - MW22L 22" Semi-Spherical Luminaire LED - Constant Wattage
  - MW22L-DIM 22" Semi-Spherical Luminaire LED - 0-10V Dimming

### LED WATTAGE AND LUMEN VALUES

| Ordering Code | Average System Watts | LED Current (mA) | LED Selection | Luminaire Initial/Lumen (< 6%)
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>70A</td>
<td>70</td>
<td>350</td>
<td>CW (NW)</td>
<td>6517 / 6373 / 6175 / 6004 / 5904 / 5804</td>
</tr>
<tr>
<td>85LA</td>
<td>85</td>
<td>350</td>
<td>CW (NW)</td>
<td>5395 / 5214 / 5033 / 4852 / 4671 / 4590</td>
</tr>
<tr>
<td>110LA</td>
<td>110</td>
<td>350</td>
<td>CW (NW)</td>
<td>9,352(1) / 9,230(1) / 9,230(1) / 9,230(1) / 9,230(1) / 9,230(1)</td>
</tr>
<tr>
<td>160LA</td>
<td>160</td>
<td>350</td>
<td>CW (NW)</td>
<td>12,720(1) / 12,430(1) / 12,430(1) / 12,430(1) / 12,430(1) / 12,430(1)</td>
</tr>
</tbody>
</table>

**NOTES:**
- Luminaries are available with either 3000K or 3500K color temperature.
- LED arrays feature LEDs that provide from 150 to 330 lumens per watt when operated at 260K.
- Lumen values based on tests performed in compliance with IESNA LM-79.
- (1) Marked values are scaled from 120V tests on the same luminaire.

### LED SELECTION

- **CW** Cool White - 5000K - 75 CRI
- **NW** Neutral White - 4200K - 70 CRI
- **WW** Warm White - 3000K - 80 CRI

### VOLTAGE

- **UNIV** 120V through 277V, 50Hz or 60Hz
- **HVU** 347V through 480V, 50Hz or 60Hz (High Voltage Universal)
# Exterior Lighting and Installation

## Form 10 Round LED

**CW / MW Wall Mount**

<table>
<thead>
<tr>
<th>FINISH</th>
<th>OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRP</td>
<td>F</td>
</tr>
<tr>
<td>BLP</td>
<td>PC</td>
</tr>
<tr>
<td>WP</td>
<td>PCR</td>
</tr>
<tr>
<td>NP</td>
<td>SPR</td>
</tr>
<tr>
<td>BRA</td>
<td>SPRF</td>
</tr>
<tr>
<td>BLA</td>
<td>Natural Anodized</td>
</tr>
</tbody>
</table>

**SC**

Specify Must supply color chip.

4. In Head: Provide specific input voltage.
5. Available in C style only; not available in MA Style.
6. Not available in GB style.
7. Not available with housing (H) option.

## Dimensions and EPA

**CW**

<table>
<thead>
<tr>
<th>Size</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Weight Single</th>
</tr>
</thead>
<tbody>
<tr>
<td>17&quot;</td>
<td>43.18 cm</td>
<td>20.32 cm</td>
<td>19.36 cm</td>
<td>20 lbs</td>
</tr>
<tr>
<td>22&quot;</td>
<td>55.88 cm</td>
<td>27.94 cm</td>
<td>19.36 cm</td>
<td>19.94 kg</td>
</tr>
</tbody>
</table>

**MW**

<table>
<thead>
<tr>
<th>Size</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Weight Single</th>
</tr>
</thead>
<tbody>
<tr>
<td>17&quot;</td>
<td>43.18 cm</td>
<td>27.94 cm</td>
<td>19.36 cm</td>
<td>29 lbs</td>
</tr>
<tr>
<td>22&quot;</td>
<td>55.88 cm</td>
<td>30.56 cm</td>
<td>19.36 cm</td>
<td>20.41 kg</td>
</tr>
</tbody>
</table>

Wall Mounting Dimensions:

- 5" x 10.15 cm
- 2.14" x 5.72 cm
ROUND TAPERED ALUMINUM POLE

SHAFT
Shall be Tapered Straight Aluminum. Conforms to ASTM A500 Standards. Material ranges from .125 to .250 inches thick. Poles have ground bolt welded inside hand hole opposite side of the Tapered Pole. Tapered Pole is conjoined to Anchor Base by welding internal to pole shaft and external to pole shaft. Hand Hole reinforcement is constructed of 3"x 5" rectangular steel tubing which is welded to pole shaft for added strength.

FINISH
All poles have minimum 3 to 5 mils powder coat finish. All poles are sandblasted prior to powder coat application.

ANCHORAGE
All anchor bolts are fully hot dipped galvanized and come with two galvanized nuts and washer per bolt.

BASE COVER, HAND HOLE COVER AND POLE CAP
All poles come with removable polymer pole cap installed. All poles caps are black finish. All base covers are made of Aluminum and powder coated to match the pole. Hand Hole cover are provided with internal bridge support and also powder coated to match pole finish.

---

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Type:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Cat #</th>
<th>Length</th>
<th>Gauge</th>
<th>Pole Dia.</th>
<th>Orient.</th>
<th>Color</th>
<th>Bolts</th>
<th>Enhancements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round Tapered Aluminum Pole (RTAP)</td>
<td>10' (12)</td>
<td>.125 in (156)</td>
<td>Pole Top-Bottom Diameter</td>
<td>Single (SGL)</td>
<td>Bronze (BRZ)</td>
<td>3/4&quot; x 30&quot; (3430)</td>
<td>GFI at GF</td>
</tr>
<tr>
<td></td>
<td>1/4' (14)</td>
<td>.125 in (156)</td>
<td></td>
<td>Double (D-90)</td>
<td>White (WHT)</td>
<td>1&quot; x 36&quot; (1360)</td>
<td>GFI Prevision Only (PVD)</td>
</tr>
<tr>
<td></td>
<td>1/5' (15)</td>
<td>.168 in (180)</td>
<td></td>
<td></td>
<td>Silver (SVR)</td>
<td></td>
<td>Round Base Cover (RBC)</td>
</tr>
<tr>
<td></td>
<td>1/5' (16)</td>
<td>.188 in (180)</td>
<td></td>
<td></td>
<td>Green (GRN)</td>
<td></td>
<td>Anodized Hiawatha Metal #311 (AND)</td>
</tr>
<tr>
<td></td>
<td>20&quot; (20)</td>
<td>.250 in (200)</td>
<td></td>
<td></td>
<td>Hunter Green (HGN)</td>
<td></td>
<td>Tension</td>
</tr>
<tr>
<td></td>
<td>25&quot; (25)</td>
<td>.250 in (200)</td>
<td></td>
<td></td>
<td>Black (BLK)</td>
<td></td>
<td>2-3/4&quot; Round (T2R)</td>
</tr>
<tr>
<td></td>
<td>30&quot; (30)</td>
<td>.260 in (250)</td>
<td></td>
<td></td>
<td>Graphite (GPH)</td>
<td></td>
<td>3&quot; Round (T3R)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grey (GGR)</td>
<td></td>
<td>Tanged Base (HB)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Custom (CS)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NLS Lighting, Catalog Number VSR-1-T*-32L-7-40K-UNV-YM*T-CS(RAL7048)-PE7

FORM AND FUNCTION
- Sleek, low profile housing
- Engineered for optimum thermal management
- Low depreciation rate
- Optical system designed for:
  - Parking Lots
  - Commercial Applications

CONSTRUCTION
- Spun Aluminum
- Corrosion resistant external hardware
- One-piece silicone gasket ensures IP-65 seal for electronics compartment
- Two-piece silicone Micro Optic system ensures IP-67 level seal around each PCB

FINISH
- 8 mls electrostatic powder coat.
- NLS standard high-quality finishes prevent corrosion protects against extreme environmental conditions
- Yoke fitter and tenon fitter to be powder coated black unless (MF) Match Fixture Finish is selected.

WARRANTY
Five-year limited warranty for drivers and LEDs.

LISTINGS
- Certified to UL 1598
- CSA C22.2 No. 259.0
- DesignLights Consortium® (DLC)
- DesignLights Consortium Premium® (DLCP)
- IP65/ IP67 Rated

LED WATTAGE CHART

<table>
<thead>
<tr>
<th>Watts</th>
<th>32L</th>
<th>48L</th>
<th>64L</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 miliamps</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>350 miliamps</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>700 miliamps</td>
<td>71w</td>
<td>104w</td>
<td>136w</td>
</tr>
<tr>
<td>1050 miliamps</td>
<td>106w</td>
<td>156w</td>
<td>206w</td>
</tr>
</tbody>
</table>

---

**Project Name:**

**Type:**

<table>
<thead>
<tr>
<th>Cat #</th>
<th>Micro Optics</th>
<th>No. of LEDs</th>
<th>Milliamps</th>
<th>Kelvin</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value Series Round (VSR-1)</td>
<td>Type 2 (T2)</td>
<td>32L (2L)</td>
<td>48L (6L)</td>
<td>64L (64L)</td>
<td>700 (7)</td>
</tr>
<tr>
<td></td>
<td>Type 3 (T3)</td>
<td>1050 (1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type 4 (T4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type 5 (T5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nema 3</td>
<td>30° Narrow Beam (N3)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mounting**
- Yoke Mount (2-Bar)

**Color**
- Bronze (BRZ)
- White (WHT)
- Silver (SVR)
- Hunter Green (HGN)
- Black (BLK)
- Graphite (GRY)
  - Gray (GRA)
  - Custom (CS) (RAL7048)

**Options**
- Bird Spikes (BS)
- Mar re Grade F F-1 sh (MGF)
- Surge Protector (10K)
- Nema 7 Pin Receptacle (PE7)
- Universal Voltage 120-277
- Motion Sensor (MS)
- ESP-211 with Motion Sensor (ESP-211)
- ESP-211 with Motion Sensor (ESP-B)
- ESP-211 with Motion Sensor (ESP-2A)

---

Exterior Lighting and Installation
Pedestrian Poles and Fixture Datasheets
NLS Lighting, Catalog Number VSR-1-T*-32L-7-40K-UNV-YM*TCS(RAL7048)-PE7

**ELECTRICAL**
- 120-277 Volts (UNV) or 347-480 Volts (HV)
- 0-10V dimming driver by Philips Advance
- Driver power factor at maximum load is >.95, THD maximum load is 15%
- All internal wiring UL certified for 600 VAC and 105°C
- All drivers, controls, and sensors housed in enclosed IP-66 compartment
- Luminova Luxor MX LED's
- CRI >70
- Color temperatures: 3000K, 4000K, 5000K

**OPTIONS**
- **BIRD DETERRENT (BD)**—offers effective and humane deterrent for larger bird species and provides cost-effective long-term solution to nuisance bird infestations and protect your property.
- **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.
  - 1/2 feet inside pole coverage top and bottom.
  - Oven Baked
  - Finished Powder Coating of Super Durable Polyester Powder Coat 3-5 mil thickness.
- **SHIELDS (HSS, AHS)**—House Side Shield (HSS) is designed for full property line cut-off. Automotive House Side Shield (AHS) is a single-sided shield allowing partial cut-off on either side or front of luminaire.

**CONTROLS**
- **FSP-211 (FSP-X)**—Passive infrared (PIR) sensor providing multi-level control based on motion/daylight contribution.
  - All control parameters adjustable via wireless configuration remote storing and transmitting sensor profiles.
  - FSP-8 mounting heights 8 feet and below.
  - Includes 5 dimming event cycles, 0-10V dimming with motion sensing, reprogrammable in the field.
- **NEMA 7-PIN RECEPTACLE (PE7)**—An ANSI C136.41:2013 receptacle provides electrical and mechanical interconnection between photo control coil and luminaire. Dimming receptacle available two or four dimming contacts supports 0-10 VDC dimming methods or Digital Addressable Lighting Interface (DALI), providing reliable power interconnect.
- **INTERNAL MICROWAVE MOTION SENSOR (IMMS)**—IMMS is an innovative motion sensor, switch on light on movement detection, switch off after hold time if no motion detected. Built-in daylight sensor reads brightness value, the sensor does not switch on if sufficient natural light.
  - **DETECTION AREA**—Detection area can be reduced by selecting DIP switches for each application precisely.
  - **HOLD TIME**—Time period lamp remains at 100% illumination after no motion detected.
  - **DAYLIGHT SENSOR**—Sensor can be set to restrict lamp illumination below specific ambient brightness threshold. When set to Disable Mode, daylight sensor switches lamp on, when motion detected regardless of ambient light levels.
  - **MODE**—When set to Disable, microwave sensor function is inactive, lights turn on or off manually. When set to Sensor, microwave sensor function is active.

**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 V (T5)**
  - **NEMA 3 (N3)**

---

**VSR-1**

**DIMENSION**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>VSR-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>17 in.</td>
</tr>
<tr>
<td>B</td>
<td>6 in.</td>
</tr>
<tr>
<td>Weight</td>
<td>20 lbs</td>
</tr>
</tbody>
</table>

**HOUSE SIDE SHIELD**

**AUTOMOTIVE HOUSE SIDE SHIELD**

---

NLS Lighting
701 Kinshill Place, Carson, CA 90746
Call Us Today (310) 541-2037
nlsighting.com

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Exterior Lighting and Installation
Pedestrian Poles and Fixture Datasheets
NLS Lighting, Catalog Number VSR-1-T*-32L-7-40K-UNV-YM*TCS(RAL7048)-PE7

OPTICAL CONFIGURATIONS

LUMENS

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>T2 LUMENS (LM)</th>
<th>T3 LUMENS (LM)</th>
<th>T4 LUMENS (LM)</th>
<th>DLC</th>
<th>BU9</th>
<th>BU9</th>
<th>T5 LUMENS (LM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSR-1-32L-7-30K</td>
<td>7477 (105)</td>
<td>2648 (58)</td>
<td>4047 (67)</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>2336 (116)</td>
</tr>
<tr>
<td>VSR-1-32L-7-40K</td>
<td>2931 (112)</td>
<td>2540 (118)</td>
<td>4301 (120)</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>2875 (126)</td>
</tr>
<tr>
<td>VSR-1-32L-7-50K</td>
<td>2899 (113)</td>
<td>2540 (118)</td>
<td>4201 (120)</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>2875 (126)</td>
</tr>
</tbody>
</table>

*Lumens values are approximate and subject to variation.

DLC S: Standard
P: Premium

EPA

L70/L90 DATA

<table>
<thead>
<tr>
<th>EPA</th>
<th>SGL</th>
<th>D90</th>
<th>D180</th>
<th>T90</th>
<th>T120</th>
<th>QD</th>
<th>TEMP</th>
<th>L70</th>
<th>L90</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSR-1</td>
<td>1.05</td>
<td>1.66</td>
<td>2.1</td>
<td>2.48</td>
<td>2.26</td>
<td>2.48</td>
<td>25°C</td>
<td>583,000</td>
<td>&gt;50,000</td>
</tr>
</tbody>
</table>

MOUNTING OPTIONS

SPIDER MOUNT (SPMX)

- Aluminum, 4-bar spider arm mounts over round tenon at two outer dimensions:
  - Over 2-3/8" (SPMX2)
  - Over 3" (SPMX3)

Exterior Lighting and Installation
Pedestrian Poles and Fixture Datasheets
Roadway / Parking Poles and Fixture Datasheets
# Exterior Lighting and Installation

## STERNER™ INFRA-NO™

### Exterior Lighting and Installation

#### Job Name: _______________________
#### Fixture Type: RTA30/8.0 x 4.5/0.188/A10/L/VD/LBZ/311
#### Job Number: _______________________
#### Distributor: _______________________
#### Distributor P.O.: _______________________

### Ordering Example

<table>
<thead>
<tr>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTA20</td>
<td>6.0 x 4.5</td>
<td>0.188</td>
<td>A28</td>
<td>B</td>
<td>DF</td>
<td>BK</td>
</tr>
</tbody>
</table>

### Ordering Sequence

<table>
<thead>
<tr>
<th>CAT. NO.</th>
<th>DESCRIPTION</th>
<th>FINISHES</th>
<th>DIMENSIONS</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
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</thead>
<tbody>
<tr>
<td>RTA10</td>
<td>See Pole Table</td>
<td>0.135&quot;</td>
<td>Below</td>
<td>8.00” x 4.5”</td>
<td>DF</td>
<td>Powder Coat</td>
<td>BK</td>
</tr>
<tr>
<td>RTA12.5</td>
<td>See Pole Table</td>
<td>0.165&quot;</td>
<td>Below</td>
<td>10.50” x 4.5”</td>
<td>DF</td>
<td>BZ</td>
<td>Dark Bronze</td>
</tr>
<tr>
<td>RTA15</td>
<td>See Pole Table</td>
<td>0.188&quot;</td>
<td>Below</td>
<td>12.00” x 4.5”</td>
<td>DF</td>
<td>WH</td>
<td>White</td>
</tr>
<tr>
<td>RTA20</td>
<td>See Pole Table</td>
<td>0.205&quot;</td>
<td>Below</td>
<td>15.00” x 4.5”</td>
<td>DF</td>
<td>AL</td>
<td>Natural Aluminum</td>
</tr>
<tr>
<td>RTA25</td>
<td>See Pole Table</td>
<td>0.245&quot;</td>
<td>Below</td>
<td>18.00” x 4.5”</td>
<td>DF</td>
<td>Anodized</td>
<td>BZ</td>
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<tr>
<td>RTA30</td>
<td>See Pole Table</td>
<td>0.300&quot;</td>
<td>Below</td>
<td>24.00” x 4.5”</td>
<td>DF</td>
<td>MBZ</td>
<td>Medium Bronze</td>
</tr>
</tbody>
</table>

### Notes:
1. All dimensions are approximate.
2. Finishes and powder coats are optional and will be noted on the order. Additional costs may apply.
3. All materials are subject to change without notice.

## POLE DATA

<table>
<thead>
<tr>
<th>Pole Cat. No.</th>
<th>Diameter</th>
<th>Wall Thickness</th>
<th>Height</th>
<th>Anchor Bolt</th>
<th>Base Plate</th>
<th>Base Drilling</th>
<th>Anchor Bolt Extension</th>
<th>Anchor Bolt Protection</th>
<th>Tolerances</th>
<th>Allowable Pole Eff. (dead load, wind, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTA10</td>
<td>6.0” x 0.050”</td>
<td>0.125”</td>
<td>10’-0”</td>
<td>5” x 0.200”</td>
<td>B</td>
<td>1” x 1/8”</td>
<td>0.135”</td>
<td>1.375”</td>
<td></td>
<td>150</td>
</tr>
<tr>
<td>RTA12.5</td>
<td>6.5” x 0.050”</td>
<td>0.150”</td>
<td>12’-0”</td>
<td>7” x 0.200”</td>
<td>B</td>
<td>1” x 1/8”</td>
<td>0.165”</td>
<td>1.575”</td>
<td></td>
<td>150</td>
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<tr>
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<td>0.150”</td>
<td>15’-0”</td>
<td>7” x 0.200”</td>
<td>B</td>
<td>1” x 1/8”</td>
<td>0.188”</td>
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<td></td>
<td>150</td>
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<tr>
<td>RTA20</td>
<td>8.0” x 0.050”</td>
<td>0.150”</td>
<td>20’-0”</td>
<td>8” x 0.200”</td>
<td>B</td>
<td>1” x 1/8”</td>
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<td>1.975”</td>
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<td>150</td>
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<tr>
<td>RTA25</td>
<td>9.0” x 0.050”</td>
<td>0.150”</td>
<td>24’-0”</td>
<td>9” x 0.200”</td>
<td>B</td>
<td>1” x 1/8”</td>
<td>0.245”</td>
<td>2.175”</td>
<td></td>
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<td>0.150”</td>
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<td>RTA32</td>
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<td>11” x 0.200”</td>
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<td>0.380”</td>
<td>2.575”</td>
<td></td>
<td>150</td>
</tr>
</tbody>
</table>

### Notes:
- Responsibility for all material selection and specifications is the contractor.
- All materials and specifications are subject to change without notice.

---

701 Millenium Blvd • Greenville, SC 29607 • TEL 864.678.1000 FAX 864.678.1417 • www.sterneralighting.com

In the interest of continuous product improvement, Sterner Lighting reserves the right to change specifications without notice.
**Specifications**

**Pole Construction:** Tapered by spinning and coldworking a seamless one-piece extruded tube of aluminum alloy 6063-T6. After tapering, shaft is welded to a cast aluminum anchor base of alloy A356, heat-treated to T6 temper, and rotary sand finished. Poles above 39' include a flush field joint approximately 26 1/2' above base, with both sections taper spun.

**Bolt Covers:** Cast aluminum anchor bolt covers included.

**Pole Cap:** A flush-sided cast aluminum pole cap is provided for side arm mounted luminaires.

**Handhole:** Reinforced handhole with a gasketed cover and grounding provisions provided. 18' up from base. Cover mounts flush.

**Anchor Bolts:** Four galvanized anchor bolts provided, complete with eight nuts, eight flat washers, and a presswood template.

**Vibration Dampener:** Poles 20' and above include a mechanically fastened internal pendulum vibration damper.

**Strength:** Poles will withstand wind loads as listed in chart (see page 2) when luminaires are mounted per fixture installation instructions.

**Finish:** Standard thermoset polyester powder coat paint over anodized zinc conversion coating. Standard colors are Black, Dark Bronze, Light Gray, Stealth Gray™, Platinum Silver, and White. Custom colors are available.

**CAUTION:** Installation of poles without luminaires will compromise pole strength. Any accessories attached to pole, or other modifications will compromise pole strength and may result in pole failure.

**Maintenance:** A regularly scheduled maintenance program must be established to ensure the protective paint coating is intact, corrosion or structural damage has not occurred, and anchor bolt nuts are tight. Failure to do so could lead to pole collapse and serious personal injury.
### Standard Features

NOTE: All allowable pole and fixture EPAs are derived from the AASHO standard. Responsibility lies with the specifier for correct pole selection based on local codes and standards for the job location. (See page 4.)

<table>
<thead>
<tr>
<th>Pole Number</th>
<th>Pole X</th>
<th>Pole Y</th>
<th>Pole Z</th>
<th>85</th>
<th>90</th>
<th>100</th>
<th>110</th>
<th>120</th>
<th>130</th>
<th>140</th>
<th>150</th>
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</thead>
<tbody>
<tr>
<td>LTRA30-8156</td>
<td>30' 8' x 156</td>
<td>4 1/2</td>
<td>17.06</td>
<td>15.09</td>
<td>13.96</td>
<td>11.00</td>
<td>8.75</td>
<td>6.99</td>
<td>5.60</td>
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<td>LTRA30-8188</td>
<td>30' 8' x 188</td>
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<td>21.03</td>
<td>18.62</td>
<td>17.31</td>
<td>13.69</td>
<td>11.01</td>
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<td>35' 8' x 250 1/2</td>
<td>28.43</td>
<td>25.23</td>
<td>23.30</td>
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<td>15.23</td>
<td>12.52</td>
<td>10.36</td>
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<td>11.45</td>
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<tr>
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<td>4 1/2</td>
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<td>14.38</td>
<td>13.33</td>
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<td>19.86</td>
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<tr>
<td>LTRA35-10188</td>
<td>35' 10' x 188</td>
<td>6</td>
<td>26.03</td>
<td>24.51</td>
<td>22.20</td>
<td>17.56</td>
<td>14.03</td>
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<td>6</td>
<td>23.51</td>
<td>20.43</td>
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<td>14.33</td>
<td>11.23</td>
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<td>6.91</td>
<td>5.37</td>
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<td>LTRA35-10250</td>
<td>35' 10' x 250 6</td>
<td>32.23</td>
<td>28.20</td>
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<td>20.25</td>
<td>16.20</td>
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<td>8.55</td>
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<tr>
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<td>22.78</td>
<td>19.65</td>
<td>17.59</td>
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<tr>
<th>Pole Height</th>
<th>Y Pole Diameter</th>
<th>Bolt Circle Dia</th>
<th>Anchor Bolt Projection</th>
<th>Anchor Bolt Size</th>
<th>Base Size</th>
<th>Conduit Opening</th>
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<tbody>
<tr>
<td>20'</td>
<td>5'</td>
<td>9/16</td>
<td>3/4</td>
<td>3/8 x 30' + 4&quot;</td>
<td>9.1/4 sq.</td>
<td>41/2 Dia</td>
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<tr>
<td>16' - 25'</td>
<td>6'</td>
<td>9/16</td>
<td>3/4</td>
<td>3/8 x 30' + 4&quot;</td>
<td>10 3/4 Dia</td>
<td>5 Dia</td>
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<tr>
<td>25' - 39'</td>
<td>7'</td>
<td>11/8</td>
<td>3 1/2</td>
<td>1 1/2 x 36' + 4&quot;</td>
<td>10 3/8 sq.</td>
<td>61/2 Dia</td>
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<tr>
<td>39' - 48'</td>
<td>8'</td>
<td>11/8</td>
<td>3 1/2</td>
<td>1 1/2 x 36' + 4&quot;</td>
<td>11 1/8 sq.</td>
<td>7 3/8 Dia</td>
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<tr>
<td>48' - 50'</td>
<td>10'</td>
<td>14 1/2</td>
<td>4 1/2</td>
<td>1 1/2 x 48' + 4&quot;</td>
<td>14 1/2 sq.</td>
<td>9 1/2 Dia</td>
</tr>
<tr>
<td>50'</td>
<td>10'</td>
<td>14 1/2</td>
<td>4 1/2</td>
<td>1 1/2 x 42' + 6&quot;</td>
<td>14 1/2 sq.</td>
<td>9 1/2 Dia</td>
</tr>
</tbody>
</table>

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Exterior Lighting and Installation
Roadway / Parking Poles and Fixture Datasheets
## Standard Features

<table>
<thead>
<tr>
<th>Mounting</th>
<th>Plan Views:</th>
<th>Flap Mount</th>
<th>Side Arm</th>
</tr>
</thead>
<tbody>
<tr>
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<td><img src="image1.png" alt="Flap Mount Diagram" /></td>
<td><img src="image2.png" alt="Side Arm Diagram" /></td>
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</tbody>
</table>

Mounting:
- □ FM
- □ A
- □ SA
- □ B
- □ SB
- □ L
- □ SL
- □ T
- □ ST
- □ Y
- □ SY
- □ C
- □ SC

*NOTE: Allowable Pole EPA for jobsite wind conditions must be equal to or greater than fixture mount EPA. Please refer to Kim luminaire catalog for specific fixture.*

*See luminaire drilling requirements in luminaire catalog.*

### Structural Luminares Only - Examples
- □ TS: Single Tension for small and large Structural - LTRA20-5156B-TS
- □ TD: Double Tension for small and large Structural - LTRA20-5156B-TD
- □ TR: Truss for small and large Structural - LTRA20-5156B-TR
- □ XTS: Single Tension for 1000W Structural - LTRA20-5156B-XTS
- □ XTD: Double Tension for 1000W Structural - LTRA20-5156B-XTD
- □ XTR: Truss for 1000W Structural - LTRA20-5156B-XTR

### Finish

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<thead>
<tr>
<th>Color</th>
<th>Black</th>
<th>Dark Bronze</th>
<th>Light Gray</th>
<th>Stealth Gray™</th>
<th>Platinum Silver</th>
<th>White</th>
<th>Custom Color*</th>
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<tbody>
<tr>
<td>Cat. No.:</td>
<td>BL</td>
<td>DB</td>
<td>LG</td>
<td>SG</td>
<td>PS</td>
<td>WH</td>
<td>CC</td>
</tr>
</tbody>
</table>

*Custom color subject to additional charges, minimum quantities and extended lead times. Consult representative. Custom color description: [DBA381](#)
**Exterior Lighting and Installation**

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**Page 1 of 4**

**Tapered Round Aluminum - Cast Base**

The Philips Gardco TRA tapered round aluminum pole consists of a one-piece design fabricated aluminum tubing circumferentially welded to a cast aluminum base. The poles are finished with either Architectural Class I anodizing or electrophoretically applied TOLC polyester powdercoat. All poles include anchor bolts, hand hole, ground lug and top cap.

**TRA-CB-30L-D1-BRA#311-VDA**

<table>
<thead>
<tr>
<th>PREFIX</th>
<th>BASE</th>
<th>HEIGHT</th>
<th>DRILLING</th>
<th>FINISH</th>
<th>OPTIONS</th>
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<tbody>
<tr>
<td>TRA</td>
<td>CB</td>
<td>Fixed Cast Base</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

**FINISH**

- BRP: Bronze Paint
- BLP: Black Paint
- WP: White Paint
- NP: Natural Aluminum Paint
- BRA: Bronze Anodized
- BLA: Black Anodized
- NA: Natural Anodized
- OC: Optional Color Paint

<table>
<thead>
<tr>
<th>OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR: Duplex Receptacle</td>
</tr>
<tr>
<td>GFCI: Ground Fault Receptacle</td>
</tr>
<tr>
<td>VDA: Vibration Damper</td>
</tr>
</tbody>
</table>

**Nipples and Couplings**

Indicate size (1/2", 3/4", 1", 1/4", 1 1/2", 2") plus connection type to hand hole. See Pole Orientation Information on Page 4.

<table>
<thead>
<tr>
<th>Single Mount Bellhorn Brackets</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Height</th>
<th>Single Mount Bellhorn Brackets</th>
</tr>
</thead>
<tbody>
<tr>
<td>25'</td>
<td>A15BH-19: Single - 1.9&quot; OD</td>
</tr>
<tr>
<td>10'</td>
<td>A15BH-24: Single - 2.4&quot; OD</td>
</tr>
<tr>
<td>20'</td>
<td>A215BH-19: 2-Tenon - 1.9&quot; OD</td>
</tr>
<tr>
<td>15'</td>
<td>A215BH-24: 2-Tenon - 2.4&quot; OD</td>
</tr>
</tbody>
</table>

**Motion Response Provisions**

- GMR: Provision for Gardco HID Motion Response System
- Minimum Pole Height is 10' includes a 1/2" coupling plugged/3/8" to the hand hole, 12" above the pole base.
- MSN: Motion Sensor Mounting Provision for LED Luminaire available with Motion Response
- Minimum Pole Height is 10' includes a special hand hole with 1/2" coupling plugged in the cover plate, 180° to the hand hole, 12" above the pole base.

---

1611 Clemis Barker Road, San Marcos, TX 78666
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Philips Gardco reserves the right to change materials or modify the design of its product without notification as part of the company's continuing product improvement program.

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**Roadway / Parking Poles and Fixture Datasheets**
Tapered Round Aluminum - Cast Base

POLE DATA

<table>
<thead>
<tr>
<th>CATALOG NUMBER</th>
<th>POLE SIZE</th>
<th>MAXIMUM LUMINARE LOADING</th>
<th>ANCHOR BOLT DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PRESENT - BASE - HEIGHT</td>
<td>POLE SHAFT SIZE (Top &amp; Base)</td>
<td>WALL THICKNESS (inches)</td>
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<tr>
<td>TRA-CB-8</td>
<td>8&quot; 6&quot;</td>
<td>3 x 4</td>
<td>.125</td>
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<tr>
<td>TRA-CB-10</td>
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<td>TRA-CB-12L</td>
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</tr>
<tr>
<td>TRA-CB-12M</td>
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<td>TRA-CB-39H</td>
<td>38&quot; 8&quot;</td>
<td>6 x 10</td>
<td>.188</td>
</tr>
</tbody>
</table>

2. Warning: Additional wind loading, in terms of EPA, from banners, cameras, floodlights and other accessories attached to the pole, must be added to the luminaire(s) EPA before selecting the pole with the appropriate wind load capability.

3. Factory supplied template must be used when setting anchor bolts. Philips Gardco will not honor any claim for incorrect anchorage placement resulting from failure to use factory supplied templates.

4. Includes (VDA) Vibration Dampener standard.

DIMENSIONS

NOTE: Factory supplied template must be used when setting anchor bolts. Philips Gardco will not honor any claim for incorrect anchorage placement from failure to use factory supplied templates.

1611 Clovis Barker Road, San Marco, TX 78666
(800) 227-0758  (512) 753-1000  FAX: (512) 753-7855 siteslighting.com
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79455.24064/3

Exterior Lighting and Installation
Roadway / Parking Poles and Fixture Datasheets
EcoForm combines economy with performance in an LED area luminaire. Capable of delivering up to 20,000 lumens or more in a compact, low profile housing, EcoForm offers a new level of customer value. EcoForm features an innovative retrofit arm kit, simplifying site conversions to LED by eliminating the need to drill additional holes in most existing poles. Integral control systems, including motion response and wireless controls are available for further energy savings during off peak hours.

### Ordering guide

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Controls</th>
<th>Mounting</th>
<th>Optics</th>
<th>LED Wattage</th>
<th>Color Temp</th>
<th>Voltage</th>
<th>Finish</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECF</td>
<td>EcoForm</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Standard</td>
<td></td>
<td>2</td>
<td>Type 2</td>
<td>CW - Cool White</td>
<td>120V</td>
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<td></td>
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<tr>
<td></td>
<td>DIM</td>
<td>D-10V Dimming</td>
<td>3</td>
<td>Type 3</td>
<td>4000K-7000K</td>
<td>277V</td>
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<td></td>
<td>APD</td>
<td>Auto Profile Dimming</td>
<td>4</td>
<td>Type 4</td>
<td>WW - Warm White</td>
<td>347V</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>APD-MRO</td>
<td>Auto Profile Dimming and Motion Response Override pole mounted motion sensor</td>
<td>5</td>
<td>Type 5</td>
<td></td>
<td>480V</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>APD-MR1,2</td>
<td>APD with Motion Response Override luminaire sensor</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR1</td>
<td>Motion Response at 50% low luminaire sensor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR2</td>
<td>Motion Response at 50% low, pole mounted sensor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LimeLight Wireless Controls</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LLC2</td>
<td>2 lines for 8-19 mounted heights</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LLC3</td>
<td>3 lines for 15-27 mounted heights</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LLC4</td>
<td>4 lines for 25-40 mounted heights</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Available in 120V - 277V Voltages only (UNV. 120, 208, 240 & 277).
2. MR50 and APD-MRO luminaires require one motion sensor per pole, ordered separately. See page 2 for Accessories.
3. ECF-MRI requires outfitted sensor when used with Terminal Block (TBD) Option.
4. Contact factory for lead times on warm white.
5. LLC/LLC/LCC4/LC4 Wireless Controls are not compatible with PC/PC/PC/PC/PC/PCR4 Options. See page 7-8 for more info.
6. Not compatible with Type B (5) Optics.
7. Not compatible with 120-277V (UNV) Voltage. Voltage must be specified.
10. No adapter required for 4 round poles.
11. Requires a 5-pin or 7-pin NEMA photocell/dimming device and auxiliary connections are not connected (for future use only).
12. Works with 3-pin or 5-pin NEMA photocell/dimming device and auxiliary connections are not connected (for future use only).
13. If ordered with APD, MR, APD-MR, APD-MR, APD-MRI, dimming will not be connected to NEMA receptacle.

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ECF 02/15 page 1 of 8

Roadway / Parking Poles and Fixture Datasheets
**ECF EcoForm**

**Site & Area**

**EcoForm Accessories** (order separately)

- **FSIR-100**
  - MR hand held programmer
  - For use with "MR" motion response when field programming is required. If desired, only one is needed per job.

- **MS-A-120V**
  - MS-A-277V
  - 120V input Area Motion Sensor
  - 277V input Area Motion Sensor
  - For MR50 (Motion Response) or APD-MRO (Automatic Profile Dimming with Motion Response Override)

- **MS-A-225V**
  - 277V input Area Motion Sensor
  - For MR50 (Motion Response) or APD-MRO (Automatic Profile Dimming with Motion Response Override)

**Note:** Motion Sensors are ordered separately, with one (1) motion sensor required per pole location for MR50 or APD-MRO luminaires. See Luminaire Configuration Information on page 5 for more details. As a motion sensor color is Arctic White. MR1 and APD-MRO luminaires include an integral motion sensor.

**EcoForm Drill Template** (standard arm mount)

![Drill Template Diagram]

**LED Wattage and Lumen Values** (standard EcoForm luminaire)

<table>
<thead>
<tr>
<th>Order Code (standard units)</th>
<th>Array Quantity</th>
<th>Total LEDs</th>
<th>LED Current (mA)</th>
<th>Average System Watts</th>
<th>LED Selection</th>
<th>Initial Lumens²</th>
</tr>
</thead>
<tbody>
<tr>
<td>55LA-3253</td>
<td>2</td>
<td>32</td>
<td>530</td>
<td>52</td>
<td>NW</td>
<td>5,994 (s)</td>
</tr>
<tr>
<td>75LA-4853</td>
<td>3</td>
<td>48</td>
<td>530</td>
<td>77</td>
<td>NW</td>
<td>8,899 (s)</td>
</tr>
<tr>
<td>100LA-6453</td>
<td>4</td>
<td>64</td>
<td>530</td>
<td>103</td>
<td>NW</td>
<td>11,896 (s)</td>
</tr>
<tr>
<td>70LA-3270</td>
<td>2</td>
<td>32</td>
<td>700</td>
<td>69</td>
<td>NW</td>
<td>7,385 (s)</td>
</tr>
<tr>
<td>105LA-4870</td>
<td>3</td>
<td>48</td>
<td>700</td>
<td>104</td>
<td>NW</td>
<td>10,965 (s)</td>
</tr>
<tr>
<td>125LA-6470</td>
<td>4</td>
<td>64</td>
<td>700</td>
<td>139</td>
<td>NW</td>
<td>14,657 (s)</td>
</tr>
<tr>
<td>105LA-321A</td>
<td>2</td>
<td>32</td>
<td>1050</td>
<td>107</td>
<td>NW</td>
<td>19,999 (s)</td>
</tr>
<tr>
<td><strong>160LA-481A</strong></td>
<td>3</td>
<td>48</td>
<td>1050</td>
<td>158</td>
<td>NW</td>
<td>15,144 (s)</td>
</tr>
<tr>
<td>215LA-641A</td>
<td>4</td>
<td>64</td>
<td>1050</td>
<td>211</td>
<td>NW</td>
<td>20,243 (s)</td>
</tr>
</tbody>
</table>

¹ System input wattage may vary based on input voltage, by up to +/- 10%, and based on manufacturer forward voltage, by up to +/- 8%.

² Lumen values based on photometric tests performed in compliance with IESNA LM-79.

(s) Data is scaled based on tests of similar, but not identical, luminaires.

**Dimensions** – Standard EcoForm luminaire

- **Top View**
- **Side View**
- **End View**

**EPA (ft²/μm)**

<table>
<thead>
<tr>
<th>Single</th>
<th>Twin (2x180)</th>
<th>3/4@90</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2 / 0.019</td>
<td>0.5 / 0.046</td>
<td>0.5 / 0.046</td>
</tr>
</tbody>
</table>

**Approximate Luminaire Weight:** 20 Lbs (9.07 Kg)
ECF  EcoForm

Site & Area

**Dimensions** – EcoForm with Retrofit Arm Mount (RAM)

Top View

Side View

End View

EPA (Tl/m²)

<table>
<thead>
<tr>
<th>Single</th>
<th>Twin (2x180)</th>
<th>3/4x90</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3 / 0.028</td>
<td>0.6 / 0.056</td>
<td>0.7 / 0.065</td>
</tr>
</tbody>
</table>

Approximate Luminaire Weight: 21 Lbs (9.53 Kg)

**Dimensions** – EcoForm with Mast Arm Fitter (MA)

Top View

Side View

End View

EPA (Tl/m²)

| Single  | 0.51 / 0.047 |

Approximate Luminaire Weight: 21.5 Lbs (9.77 Kg)

**Dimensions** – EcoForm with Wall Mount (WS)

Top View

Side View

End View

Approximate Luminaire Weight: 23.36 Lbs (10.6 Kg)

**Dimensions** – EcoForm with LimeLight Luminaire mounted controller

Top View

Side View

End View
NLS Lighting, Catalog Number RTAP-30-.188-8.0"-4.5"-SGL-1360-ANO-VB

ROUND TAPERED ALUMINUM POLE

SHAFT
Shall be Tapered Straight Aluminum. Conforms to ASTM A500 Standards. Material ranges from .125 to .250 inches thick. Poles have ground bolt welded inside hand hole opposite side of the Tapered Pole. Tapered Pole is conjoined to Anchor Base by welding internal to pole shaft and external to pole shaft. Hand Hole reinforcement is constructed of 3” x 5” rectangular steel tubing which is welded to pole shaft for added strength.

FINISH
All poles have minimum 3 to 5 mils powder coat finish. All poles are sandblasted prior to powder coat application.

ANCHORAGE
All anchor bolts are fully hot dipped galvanized and come with two galvanized nuts and washer per bolt.

BASE COVER, HAND HOLE COVER AND POLE CAP
All poles come with removable polymer pole cap installed. All poles caps are black finish. All base covers are made of Aluminum and powder coated to match the pole. Hand Hole cover are provided with internal bridge support and also powder coated to match pole finish.

---

<table>
<thead>
<tr>
<th>Cat #</th>
<th>Length</th>
<th>Gauge</th>
<th>Pole Dia.</th>
<th>Orient.</th>
<th>Color</th>
<th>Bolts</th>
<th>Enhancements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round Tapered Aluminum Pole (RTAP)</td>
<td>16&quot; (10)</td>
<td>.125 in (125)</td>
<td>Pole Top-Bottom Diameter: 8.6&quot; x 4.5&quot;</td>
<td>Single (SGL)</td>
<td>Bronze (BRZ)</td>
<td>3/4&quot; x 30&quot; (3430)</td>
<td>GFI gt (GFI) GFI Provision Only (PROV) Round Base Cover (RBC) Amoritized Hawaiathe Metal #3313 (ANO) Aemoritized Hawaiathe Metal #3313 (ANO) Teson 2-36&quot; Round (TZR) 3&quot; Round (T3R) Vibration Dampner (VB)</td>
</tr>
<tr>
<td></td>
<td>12&quot; (12)</td>
<td>.156 in (156)</td>
<td>188 in (188)</td>
<td>Double (D-90)</td>
<td>White (WHT)</td>
<td>1&quot; x 36&quot; (1360)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14&quot; (14)</td>
<td>.156 in (156)</td>
<td>200 in (200)</td>
<td>Triple (T-90)</td>
<td>Silver (SIL)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16&quot; (16)</td>
<td>.156 in (156)</td>
<td>210 in (210)</td>
<td>Quad (QD)</td>
<td>Hunter Green (HGN)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>18&quot; (18)</td>
<td>.156 in (156)</td>
<td>220 in (220)</td>
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<td>Black (BKL)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>20&quot; (20)</td>
<td>.156 in (156)</td>
<td>230 in (230)</td>
<td></td>
<td>Graphite (GPH)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>22&quot; (22)</td>
<td>.156 in (156)</td>
<td>240 in (240)</td>
<td></td>
<td>Grey (GVR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>25&quot; (25)</td>
<td>.156 in (156)</td>
<td>250 in (250)</td>
<td></td>
<td>Custom (CS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30&quot; (30)</td>
<td>.156 in (156)</td>
<td>260 in (260)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NLS Lighting, Catalog Number NV-1-T*48L-1-40K-UNV-ASACS(RAL7048)-PE7-10K

**FORM AND FUNCTION**
- Sleek, low profile housing
- Spec grade performance
- Engineered for optimum thermal management
- Low depreciation rate
- Reduces energy consumption and costs up to 66%
- Exceeds IES foot candle levels utilizing the least number of poles and fixtures per project
- Optical system designed for:
  - Parking Lots
  - Auto Dealerships
  - General Area Lighting

**CONSTRUCTION**
- Die Cast Aluminum
- External cooling fins, Finite Element Analysis (FEA) designed
- Corrosion resistant external hardware
- One-piece silicone gasket ensures IP-65 seal for electronics compartment
- One-piece Optics Plate™ mounting silicone Micro Optics
- Two-piece silicone Micro Optic system ensures IP-67 level seal around each PCB
- Grade 2 Clear Anodized Optics Plate™ standard

**FINISH**
- 3-5 mls electrostatic powder coat
- NLS® standard high-quality finishes prevent corrosion protects against and extreme environmental conditions

**WARRANTY**
Five-year limited warranty for drives and LEDs.

---

**LED WATTAGE CHART**

<table>
<thead>
<tr>
<th>360 milliamps</th>
<th>18L</th>
<th>32L</th>
<th>48L</th>
<th>64L</th>
</tr>
</thead>
<tbody>
<tr>
<td>530 milliamps</td>
<td>28w</td>
<td>18w</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>700 milliamps</td>
<td>38w</td>
<td>28w</td>
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<td>-</td>
</tr>
<tr>
<td>1090 milliamps</td>
<td>58w</td>
<td>58w</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

---

**LISTINGS**
- Certified to UL 3998
- UL 8750
- CSA C22.2 No. 250.0
- DesignLights Consortium® (DLC)
- DesignLights Consortium Premium® (DLC)
- IP65/ IP67 Rated
- 3G Vibration Rated per ANSI C136.31-2010

---

**Project Name:**

<table>
<thead>
<tr>
<th>Cat #</th>
<th>Light Dist.</th>
<th>No. of LEDs</th>
<th>Milliamps</th>
<th>Kelvin</th>
<th>Volts</th>
<th>Mounting</th>
<th>Color</th>
<th>Options</th>
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<tbody>
<tr>
<td>NV-1</td>
<td>Type 2 (T2)</td>
<td>12 (16L)</td>
<td>350</td>
<td>5000K</td>
<td>120-270 (UNV)</td>
<td>Architectural Sweep Arm (ASA)</td>
<td>Bronze (BRZ)</td>
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<tr>
<td></td>
<td>Type 3 (T3)</td>
<td>20 (48L)</td>
<td>350</td>
<td>5000K</td>
<td>120-270 (UNV)</td>
<td>Architectural Sweep Arm (ASA)</td>
<td>White (WHT)</td>
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<td></td>
<td>Type 4 (T4)</td>
<td>70 (7)</td>
<td>5000K</td>
<td>120-270 (UNV)</td>
<td>Architectural Sweep Arm (ASA)</td>
<td>Silver (SVR)</td>
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<td></td>
<td>Type 5 (T5)</td>
<td>1050</td>
<td>5000K</td>
<td>120-270 (UNV)</td>
<td>Architectural Sweep Arm (ASA)</td>
<td>Black (BLK)</td>
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<td>Nema 2 24° Narrow Beam (N2)</td>
<td>1050</td>
<td>5000K</td>
<td>120-270 (UNV)</td>
<td>Architectural Sweep Arm (ASA)</td>
<td>Graphite (GPH)</td>
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<td>Nema 2 30° Narrow Beam (N3)</td>
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<td>5000K</td>
<td>120-270 (UNV)</td>
<td>Architectural Sweep Arm (ASA)</td>
<td>Grey (GRY)</td>
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<td></td>
<td>Custom (C6)</td>
<td>1050</td>
<td>5000K</td>
<td>120-270 (UNV)</td>
<td>Architectural Sweep Arm (ASA)</td>
<td>RAL7048</td>
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</table>

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**Exterior Lighting and Installation**
Roadway / Parking Poles and Fixture Datasheets
NLS Lighting, Catalog Number NV-1-T*-48L-1-40K-UNV-ASACS(RAL7048)-PE7-10K

**ELECTRICAL**
- 120-277 Volts (UNV) or 347-480 Volts (HV)
- 0-10V dimming driver by Philips Advance
- Driver power factor at maximum load is > 0.95, THD maximum load is 15%
- All internal wiring UL certified for 600 VAC and 105°C
- All drivers, controls, and sensors housed in enclosed IP-65 compartment
- Lumileds Luxeon MX LED’s
- CRI >70
- Color temperatures: 3000K, 4000K, 5000K

**OPTIONS**
- BIRD DETERRENT (BD) – offers effective and humane deterrent for larger bird species and provides cost-effective long-term solution to nuisance bird infestations and protect your property.
- MARINE GRADE FINISH (MGR) – 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.
  - 1-2 feet inside pole coverage top and bottom.
  - Oven Baked.
  - Finished Powder Coating of Super Durable Polyester Powder Coat 3-5 mil thickness.
- SHIELDS (HSS, AHS) – House Side Shield (HSS) is designed for full property line cut-off. Automotive House Side Shield (AHS) is a single-sided shield allowing partial cut-off on either side or front of luminaire.
- ROUND POLE ADAPTER (RPA) – When using round poles, specify Round Pole Adapter (RPA). Specify RPA4 when installing on 3”-4” round poles, and RPA5 when installing on 5”-6” round poles.

**CONTROLS**
- FSP-211 (FSP-X) – Passive infrared (PIR) sensor providing multi-level control based on motion/daylight contribution.
  - All control parameters adjustable via wireless configuration remote storing and transmitting sensor profiles.
  - FSP-20 mounting heights 9-20 feet
  - FSP-40 mounting heights 21-40 feet.
  - Includes 5 dimming event cycles, 0-10V dimming with motion sensing, reprogrammable in the field.
- NEMA 7-PIN RECEPTACLE (PET) – An ANSI C12.6-41-2013 receptacle provides electrical and mechanical interconnection between photo control cell and luminaire. Dimming receptacle available two or four dimming contacts supports 0-10 VDC dimming methods or Digital Addressable Lighting Interface (DALI), providing reliable power interconnect.

**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

---

Exterior Lighting and Installation
Roadway / Parking Poles and Fixture Datasheets
NLS Lighting, Catalog Number NV-1-T*48L-1-40K-UNV-ASACS(RAL7048)-PE7-10K

**OPTICAL CONFIGURATIONS**

Rotatable Optics (ROR) Rotated Right, (ROL) Rotated Left options available. Optics field and factory rotatable.

![Image of optical configurations](image)

* OPTIC PLATE PAINTED TO MATCH FIXTURE FINISH (OPP) - Optic Plate standard clear anodized, Grade 2. When (OPP) specified, Optic Plate finish will match fixture finish.

| LUMENs | PART NUMBER | N2 | LMWH | BUG | N3 | LMW | T2 | LMW | DUC | T3 | LMW | DUC | T4 | LMW | DUC | T5 | LMW | DUC | W |
| NV-1 T*48L - 01-388 | 334 | 120 | 62.04 | 0.75 | 378 | 158 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 02-468 | 337 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 03-818 | 293 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 04-018 | 269 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 05-018 | 269 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 06-018 | 269 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 07-018 | 269 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 08-018 | 269 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 09-018 | 269 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 10-018 | 269 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 11-018 | 269 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 12-018 | 269 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 13-018 | 269 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 14-018 | 269 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 15-018 | 269 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 16-018 | 269 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 17-018 | 269 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |
| NV-1 T*48L - 18-018 | 269 | 183 | 52.34 | 0.75 | 390 | 166 | 189 | 66 | 16.05 | 156 | 117 | P | 04.55 | 3116 | 105 | 05.60 | 3412 | 176 | P | 0.02 | 4 | 16 |

**EPA**

<table>
<thead>
<tr>
<th>EPA</th>
<th>SGL</th>
<th>D90</th>
<th>D180</th>
<th>T90</th>
<th>T120</th>
<th>QD</th>
</tr>
</thead>
<tbody>
<tr>
<td>NV-1-ASA</td>
<td>0.75</td>
<td>1.29</td>
<td>1.50</td>
<td>1.99</td>
<td>2.05</td>
<td>1.99</td>
</tr>
</tbody>
</table>

**L70/L90 DATA**

<table>
<thead>
<tr>
<th>TEMP.</th>
<th>L70 (64L-1050mA)</th>
<th>L90 (64L-1050mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25°C</td>
<td>L70</td>
<td>L90</td>
</tr>
<tr>
<td>450,000</td>
<td>160,000</td>
<td></td>
</tr>
</tbody>
</table>

**MOUNTING OPTIONS**

[Image of mounting options]

**SWEEP ARM (SA)**

Cast Sweep Arm includes (as standard) Internal Quick Mount Bracket

NLS Lighting

701 Kingshill Place, Carson, CA 90746

Call Us Today (310) 345-2007

nlslighting.com

Exterior Lighting and Installation

Roadway / Parking Poles and Fixture Datasheets
600 Volt In-Line Fuse Holders

FEB, FEC, FEX, FEY
600 Volt In-Line Fuse Holders

Mersen’s complete line of single and dual pole in-line fuse holders accommodate either 1-1/2” x 13/32” (10x38mm) midget or Class CC fuses. The fuse holders are designed for quick installation. Securing nuts or screws are captive thus speeding installation by reducing the need to locate and assemble loose components in the field. Three internal O-rings per pole seal the fuse holder providing a water-resistant compartment for the fuse. The captive O-rings are colored (blue for single pole and red for dual pole) for quick detection. Optional cone shaped insulator boots can be slipped on to provide a watertight seal (breakaway versions come with boots standard). Both single and dual pole versions have an optional breakaway feature which safely disconnects the load in case of a pole knockdown. Fuses remain safely encapsulated within the watertight fuse holder on the load side. Once the pole has been reinstalled the fuse holder can be easily reconnected.

Applications:
- Street lighting
- Parking lot lighting
- Traffic signaling
- Sports lighting
- Boats and marinas
- Humid or corrosive environments

Highlights:
- Breakaway version quickly disconnects line side during pole knockdown in compliance with state and federal highway commission standards
- 3 O-rings per pole for water tight applications
- Colored O-rings for quick detection
- Single and dual poles
- Accepts midget or Class CC fuses
- Wide assortment of terminal variations
- High heat, impact resistant insulator
- Captive nut or screw for quick installations
- Polarized dual pole provides simultaneous disconnection
- Permanently installed neutral versions quickly identified by white nuts
- Tulip fuse clip for improved contact and low losses
- Environmentally friendly-no lead solder used
- Highly visible catalog number even with insulation boots installed
- Wire gauge size identified on insulation boots for quick, accurate trimming
- Time delay for motor starting and transformer inrush

Recommended Fuse Usage:
FEB and FEX holders use with:
Midget (1-1/2” x 13/32”, 10 x 38mm): ATQ, ATM, TRM, OTM, GGU, GFN, A13X-2, A25Z-2, A600-2, A6Y-2B
FEC and FEY holders use with:
Class CC: ATDR, ATMR, ATOR

Ratings:
Volts: 600VAC / DC
Amps: 30A Maximum
SCCR: 200kA (Class CC Fuses)
: 100kA (Midget Fuses)
Temperature Rating 155° C

Approvals:
- UL Listed Class CC Guide IZLT, File E52283
- UL Recognized Component Midget Guide IZLT2, File E52283
- CSA Certified Class CC and Midget Class 6225, File 32169
# FEB, FEC, FEX, FEY 600 Volt In-Line Fuse Holders

## Catalog Numbering System

<table>
<thead>
<tr>
<th>Family</th>
<th>Load Terminal</th>
<th>Line Terminal</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEB</td>
<td>1</td>
<td>1</td>
<td>1-BA</td>
</tr>
<tr>
<td>FEC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEBN</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

## Nomenclature Legend

### Terminal End View

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Load or Line Terminal Type</th>
<th>Wire</th>
<th>No. Per</th>
<th>Solid</th>
<th>Stranded</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Cu Crimp</td>
<td>#12</td>
<td>1</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>21</td>
<td>Cu Crimp</td>
<td>#10</td>
<td>2</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>31</td>
<td>Cu Crimp</td>
<td>#10</td>
<td>2</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>41</td>
<td>Cu Crimp</td>
<td>#6</td>
<td>2</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>51</td>
<td>Cu Single Set Screw</td>
<td>#6-#12</td>
<td>1</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>81</td>
<td>Cu Double Set Screw</td>
<td>#6-#12</td>
<td>1</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>92</td>
<td>Cu Stud</td>
<td>N/A</td>
<td>1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Option Description

- BA: Breakaway version equipped with breakaway stud breakaway boot, and insulating boots for both line and load sides.

### Notes:

1. Non-breakaway units do not include insulator boots. These optional cone shaped boots are available to provide a watertight installation. The insulator boots are designed to form a watertight seal over conductors, but due to varying wire insulation sizes it is suggested that tape wrap be utilized for best results.

2. Tightening torque for single and double set screw terminals: 35 lbs.-in.


4. FEBN versions have a permanently mounted dummy fuse for neutral applications.

For the most current product performance data visit [ep.mersen.com](http://ep.mersen.com) and use catalog search.

H39
# Mersen In-Line Fuse Holder Family - Typical Combination Chart

<table>
<thead>
<tr>
<th>Midget 10x38mm</th>
<th>Midget 10x38mm Breakaway</th>
<th>Class CC</th>
<th>Class CC Breakaway</th>
<th>Midget 10x38mm Dual Pole Breakaway</th>
<th>Class CC Dual Pole</th>
<th>Class CC Dual Pole Breakaway</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEB-11-N1-3</td>
<td>FEB-11-N1-3A</td>
<td>FEB-11-31</td>
<td>FEB-11-31-BA</td>
<td>FEB-11-31</td>
<td>FEB-11-31-BA</td>
<td>FEB-11-31-BA</td>
</tr>
<tr>
<td>FEB-11-N2</td>
<td>FEB-11-N2-1A</td>
<td>FEB-11-11</td>
<td>FEB-11-11-BA</td>
<td>FEB-11-11</td>
<td>FEB-11-11-BA</td>
<td>FEB-11-11-BA</td>
</tr>
<tr>
<td>FEB-11-N2-2</td>
<td>FEB-11-N2-2A</td>
<td>FEB-11-21</td>
<td>FEB-11-21-BA</td>
<td>FEB-11-21</td>
<td>FEB-11-21-BA</td>
<td>FEB-11-21-BA</td>
</tr>
<tr>
<td>FEB-11-S</td>
<td>FEB-11-S-1A</td>
<td>FEB-11-11</td>
<td>FEB-11-11-BA</td>
<td>FEB-11-11</td>
<td>FEB-11-11-BA</td>
<td>FEB-11-11-BA</td>
</tr>
</tbody>
</table>

Note: Consult factory for other configurations.

## Crimping Tools Reference Chart, the following crimping tools (or equivalent) are recommended:

<table>
<thead>
<tr>
<th>Terminal Type</th>
<th>PCI-Burney</th>
<th>T&amp;S</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Y2-Min1</td>
<td>RT-111M</td>
</tr>
<tr>
<td>2</td>
<td>Y2-VR</td>
<td>TIM-111S BLUE RIV, IMT-11-A</td>
</tr>
<tr>
<td>3</td>
<td>Y2-VR</td>
<td>TIM-111S GRAY RIV, IMT-11-A</td>
</tr>
<tr>
<td>4</td>
<td>Y2-VR</td>
<td>TIM-111S BRONZE RIV, IMT-11-A</td>
</tr>
</tbody>
</table>
FEB, FEC, FEX, FEY 600 Volt In-Line Fuse Holders

FEB and FEC, Non-Breakaway and Breakaway Assembly Drawings

FEX and FEY, Non-Breakaway and Breakaway Assembly Drawings

For the most current product performance data visit ep.mersen.com and use catalog search.
Gel Tap Splice Kit – 1000V (GTAP)

GEL TAP SPLICE - 1000V (GTAP)
FAST, SIMPLE, EXCELLENT LONG LASTING SEAL

KEY FEATURES

- PowerGel sealant filled splice for buried, underground, and overhead applications
- Fast and simple to install, requires just a 5/16" Allen wrench or a torque wrench and a knife
- Range taking connector reduces inventory
- Re-enterable: Silicone gel easily peels away leaving a clean connection
- UV resistant, qualified for temperatures from -40°C to 90°C

Our GTAP gel tap splice kit provides a fast and simple method for connecting, insulating, and environmentally sealing low-voltage splices. The GTAP splice kit is designed for underground as well as overhead environments. It is especially useful for street lighting applications.

The GTAP splice kit utilizes TE’s innovative PowerGel sealing gel to protect the connection from moisture ingress, corrosion, and pollution. PowerGel sealing gel also provides additional insulation and it is qualified for temperatures from -40°C to 90°C.

The hinged closure allows for one-step installation. The GTAP splice cover can be installed over the connector in seconds by simply snapping the cover shut.

The GTAP splice kit’s range-taking mechanical connectors splice a wide range of cables, including copper and aluminum. The connector’s four port design allows maximum inventory flexibility.

Customers can count on consistent, high quality products, driven by TE’s proven innovation and backed by our extraordinary customer support.
Gel Tap Splice - 1000V (GTAP)

TE’s PowerGel sealing gel is a combination of crosslinked silicone rubber and silicone oil. PowerGel sealing gel has been in use in other applications for over 10 years. TE gels are ideal for sealing electrical connections from moisture, dirt and other contaminants.

Silicone gel is high dielectric insulation and provides constant pressure on cable and connector to provide waterproof. PowerGel sealing gel is specially formulated for high temperature environments.

Molded cover of UV stable, impact resistant polypropylene provides rugged protection for underground or overhead applications.

Frangible fingers provide wide cable range.

Range-taking mechanical connector made of aluminum. Accepts both copper and aluminum conductors.

Snap-lock ensures that cover remains closed.

INSTALLATION

PRODUCT SELECTION INFORMATION

<table>
<thead>
<tr>
<th>Description</th>
<th>AWG (mm²)</th>
<th>Standard Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTAP-1</td>
<td>#14 - #2 (2 - 35)</td>
<td>18 or 72</td>
</tr>
<tr>
<td>GTAP-2</td>
<td>#14 - #2/0 (2 - 70)</td>
<td>18 or 72</td>
</tr>
</tbody>
</table>

Selections are based on typical dimensions for low voltage, insulated cable.

INSTALLED DIMENSIONS: INCHES (mm)

<table>
<thead>
<tr>
<th>Description</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTAP-1</td>
<td>2 - 3/4 (70)</td>
<td>1 - 5/8 (41)</td>
<td>1 - 1/6 (27)</td>
</tr>
<tr>
<td>GTAP-2</td>
<td>4 - 1/4 (108)</td>
<td>2 (51)</td>
<td>1 - 3/16 (30)</td>
</tr>
</tbody>
</table>

For information on other connectors or applications, please contact your local TE representative.

te.com/energy

FOR MORE INFORMATION:
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USA: +1 800 327 6996
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UK: +44 0870 870 7500
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Spain: +34 918 630 400
Italy: +39 333 250 0915
Benelux: +32 16 508 685
Canada: +1 (905) 478-6222
Mexico: +52 (0) 15-706-0800
Latin/S. America: +54 (0) 11-4753-2200
China: +86 (0) 400-820-6015

Exterior Lighting and Installation

Gel Tap Splice Kit
NOTES

1. CAST-IN-PLACE CONCRETE SHALL HAVE MINIMUM COMpressive STRENGTH OF 4000 PSI AT 28 DAYS.

2. ALL REINFORCING SHALL MEET ASTM A615. GRADE 60. BAR LAY DETAILS AND SUPPORTS SHALL BE IN ACCORDANCE WITH A3C DETAILING MANUAL AND BUILDING CODE.

3. LIGHT POLE BASE DEPTHS WERE DESIGNED BASED ON THE TAMU UTILITIES & ENERGY SERVICES DESIGN STANDARDS DATED NOVEMBER 28, 2018. NOTIFY THE ENGINEER IF DIFFERENT DESIGN STANDARDS FOR LIGHT POLES AND/OR FIXTURES ARE USED.

<table>
<thead>
<tr>
<th>POLE HEIGHT</th>
<th>&quot;A&quot;</th>
<th>&quot;B&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>10'-0&quot;</td>
<td>0'-4&quot;</td>
<td>3'-0&quot;</td>
</tr>
<tr>
<td>15'-0&quot;</td>
<td>0'-4&quot;</td>
<td>4'-0&quot;</td>
</tr>
<tr>
<td>20'-0&quot;</td>
<td>0'-4&quot;</td>
<td>4'-6&quot;</td>
</tr>
<tr>
<td>30'-0&quot;</td>
<td>3'-0&quot;</td>
<td>7'-0&quot;</td>
</tr>
</tbody>
</table>