

# OP2 Series

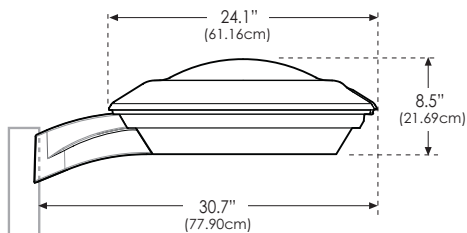
## Optra-2 Area Luminaire, 70-200W HID

|                       |        |            |              |          |                                |        |                                  |
|-----------------------|--------|------------|--------------|----------|--------------------------------|--------|----------------------------------|
| Type:                 | Job:   | Approvals: |              |          |                                |        |                                  |
| Catalog Number:       |        |            |              |          |                                | Date:  |                                  |
| Series/Source-Wattage | Optics | Voltage    | Ballast Type | Mounting | Options<br>(Factory Installed) | Finish | Accessories<br>(Field Installed) |

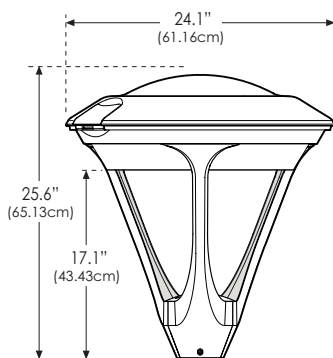
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### Overall Dimensions *For Reference Only*

OP2 arm mount SR3



OP2 post top mount PTTR



|        |                    |                    |
|--------|--------------------|--------------------|
| Weight | arm mount          | post top           |
|        | 40 lbs. (18.2 kgs) | 43 lbs. (19.5 kgs) |

EPA data shown on page 3.

### Specifications



#### Housing

Die-cast aluminum housing with corrosion resistant hardware. The 200W max Optra-2 is designed in a 24" optical housing that can incorporate either an electronic or magnetic ballast. Optic chamber constructed to IP65.

#### Full Cutoff Optical System

Revolutionary optics design incorporates the advantages of vertical lamping with an innovative inverse conical lens to provide compliance with IES Full Cutoff definition in addition to unrivaled photometric performance. Optical lens employs collimating lens technology to capture and focus uncontrolled lumens back into the main beam while masking arc tube glare. Multi-faceted segmented reflectors shall be made of high purity, anodized "Super Sheet" aluminum with an inorganic dielectric coating, producing a minimum reflectivity of 94% for optimum efficiency. The optical head is equipped with an electrical disconnect and is fully gasketed to ensure Dust-Tite construction for higher maintained light levels. Symmetric pattern provides excellent spacing to mounting height ratios with very low glare. Asymmetric pattern provides directional spill light control, useful for perimeter areas. Luminaire is Dark Sky Ordinance compliant.

#### Lamp Access

Spring loaded latch at side of upper optical housing allows toolless lamp access and assures proper resealing to maintain Dust-Tite construction.

#### Lamp / Socket

A porcelain medium base socket, 4KV pulse rated, maintains proper photometric alignment. Pulse Start lamps required with electronic ballast. Medium base lamps required.

#### Lens

Precision manufactured fully tempered inverse conical glass lens, in conjunction with the collimating optic lens, exceeds limitations of sag glass lens photometrics, which can provide no better than cutoff performance.

#### Ballast Specification Overview

Electronic Ballast units: High frequency electronic ballast operation provides constant wattage regulation and features THD in the range of <10% to <15% with a optional low voltage (0-10v) dimming capabilities and is suitable for Pulse Start Metal Halide operation in an ambient temperature range of -30°C (-22°F) to 40°C (104°F).

Magnetic Ballast units: Ballasts shall be high power factor with reliable starting at temperatures as low as -34°C (-30°F) for Pulse Start Metal Halide, and -40°C (-40°F) for High Pressure Sodium. Crest factor does not exceed 1.8. Ballast has Class H, 180°C (356°F) rated insulation system.

#### Mounting

Field installed surface arm mount shall be of die-cast aluminum for mounting to 3" to 5" O.D. round or square pole. Post top version mounts to a 2-3/8" O.D. x 4" vertical tenon.

#### Finish

Standard finish shall be Textured Satin Aluminum UltraClad polyester powder coating, 2.5 mil nominal thickness, electrostatically applied and oven cured to ensure extreme durability. Other colors may be specified.

#### Listings

ETL/cETL Listed luminaire, UL 1598, suitable for Wet Locations. The quality systems of this facility have been registered by UL to the ISO 9001 Series Standards.

#### Warranty / Terms and Conditions

Philips Gardco luminaires feature a 5 year limited warranty. See Warranty Information on [www.sitelighting.com](http://www.sitelighting.com) for complete details and exclusions. Polycarbonate lenses carry a 1 year warranty only.




Some luminaires use fluorescent or high intensity discharge (HID) lamps that contain small amounts of mercury. Such lamps are labeled 'Contain Mercury' and/or with the symbol 'Hg'. Lamps that contain mercury must be disposed of in accordance with local requirements. Information regarding lamp recycle and disposal can be found at [www.lamprecycle.org](http://www.lamprecycle.org).

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| Series/Source-Wattage <sup>1</sup>  | Optics (Distribution)   | Voltage <sup>4</sup>  | Ballast type  | Mounting   |
|---|---|---|---|--|
| <b>Pulse Start Metal Halide</b><br><input type="checkbox"/> <b>OP2P-70</b><br><input type="checkbox"/> <b>OP2P-100</b><br><input type="checkbox"/> <b>OP2P-150</b><br><input type="checkbox"/> <b>OP2P-175<sup>2</sup></b><br><input type="checkbox"/> <b>OP2P-200</b><br> | <input type="checkbox"/> <b>S</b><br>Symmetric<br><br><input type="checkbox"/> <b>A</b><br>Asymmetric | <b>magnetic ballast voltages</b><br><input type="checkbox"/> <b>120</b><br><input type="checkbox"/> <b>208</b><br><input type="checkbox"/> <b>240</b><br><input type="checkbox"/> <b>277</b><br><input type="checkbox"/> <b>347</b><br><input type="checkbox"/> <b>QV<sup>5</sup></b> | <input type="checkbox"/> <b>E</b><br>Electronic Ballast<br><i>Available for Pulse Start Metal Halide units only.</i><br><br><input type="checkbox"/> <b>C</b><br>Magnetic (core & coil) Ballast<br><i>Available for all sources and wattages except as noted.</i> | <input type="checkbox"/> <b>SR4<sup>7</sup></b><br>Arm mount to 4" - 5" O.D. round pole<br><br><input type="checkbox"/> <b>SR3<sup>7</sup></b><br>Arm mount to 3" - 3.9" O.D. round pole<br><br><input type="checkbox"/> <b>SS<sup>7</sup></b><br>Arm mount to 3" - 5" square pole<br><br><input type="checkbox"/> <b>PTTR<sup>8</sup></b><br>Post top mount to 4" O.D. round pole<br><br><input type="checkbox"/> <b>PTTR-3<sup>8</sup></b><br>Post top mount to 3" O.D. round pole |
| <b>High Pressure Sodium</b><br><input type="checkbox"/> <b>OP2S-70<sup>3</sup></b><br><input type="checkbox"/> <b>OP2S-100<sup>3</sup></b><br><input type="checkbox"/> <b>OP2S-150<sup>3</sup></b>  |   | <b>electronic ballast voltages</b><br><input type="checkbox"/> <b>120-277<sup>6</sup></b>   |   |  |

| Options (Factory Installed)   | Finish  | Accessories (Ordered Separately)  |
|---|---|---|
| <input type="checkbox"/> <b>BL<sup>9, 10</sup></b> Bi-Level (Hi-Low) dimming to 50% power<br><input type="checkbox"/> <b>AD<sup>9, 10</sup></b> Analog (full range) dimming to 50% power<br><input type="checkbox"/> <b>CSR</b> Hot Quartz Restrike<br><input type="checkbox"/> <b>LQ</b> Hot/Cold Quartz Restrike<br><input type="checkbox"/> <b>LQ1<sup>10</sup></b> Separately Wired (120V) Quartz Restrike<br><input type="checkbox"/> <b>F1</b> Single Fuse (120/277V)<br><input type="checkbox"/> <b>F2</b> Double Fuse (208/240V)<br><input type="checkbox"/> <b>PCB(***)V</b> Photocell Button<br><i>Specify voltage, 480V not available.</i> | <input type="checkbox"/> <b>TSA</b> Textured Satin Aluminum<br><input type="checkbox"/> <b>TDB</b> Textured Dark Bronze<br><input type="checkbox"/> <b>TBK</b> Textured Black<br><input type="checkbox"/> <b>TGR</b> Textured Gray<br><input type="checkbox"/> <b>TWHT</b> Textured White<br><input type="checkbox"/> <b>TGN</b> Textured Green<br><input type="checkbox"/> <b>RAL(*)</b><br>Special Tiger Drylac® powder coat finish<br>(*) Specify RAL color number from RAL color chart (Consult factory.)<br><br>Custom color matching is also available. Provide paint chip to assure accurate color matching. | <input type="checkbox"/> <b>F1-KIT</b> Single Fuse Kit (120/277V)<br><input type="checkbox"/> <b>F2-KIT</b> Double Fuse Kit (208/240V)<br><input type="checkbox"/> <b>RPTA-190-DT14</b> Round Pole Tenon Adapter - 1 @ 90<br><input type="checkbox"/> <b>RPTA-290-DT14</b> Round Pole Tenon Adapter - 2 @ 90<br><input type="checkbox"/> <b>RPTA-2180-DT14</b> Round Pole Tenon Adapter - 2 @ 180<br><input type="checkbox"/> <b>RPTA-390-DT14</b> Round Pole Tenon Adapter - 3 @ 90<br><input type="checkbox"/> <b>RPTA-3120-DT14</b> Round Pole Tenon Adapter - 3 @ 120<br><input type="checkbox"/> <b>RPTA-490-DT14</b> Round Pole Tenon Adapter - 4 @ 90<br><input type="checkbox"/> <b>SPTA-190-DT14</b> Square Pole Tenon Adapter - 1 @ 90<br><input type="checkbox"/> <b>SPTA-290-DT14</b> Square Pole Tenon Adapter - 2 @ 90<br><input type="checkbox"/> <b>SPTA-2180-DT14</b> Square Pole Tenon Adapter - 2 @ 180<br><input type="checkbox"/> <b>SPTA-390-DT14</b> Square Pole Tenon Adapter - 3 @ 90<br><input type="checkbox"/> <b>SPTA-490-DT14</b> Square Pole Tenon Adapter - 4 @ 90<br><input type="checkbox"/> <b>SW-OP2</b> Wall Mount Junction Box<br><input type="checkbox"/> <b>SK-OP2</b> External House Side Shield |

1) Electronic ballast operation standard for Pulse Start Metal Halide only at time of publication. Magnetic ballast operation available for all wattages except as noted.

2) 175W PSMH available with electronic ballast only.

3) Not available with electronic ballast.

4) Voltage must be specified. Luminaire provided with pre-wired disconnects. Not available in 480V.

5) Quad-voltage ballast available with magnetic ballasts only, for field selection of 120/208/240/277V. Options may require voltage selection.

6) Variable voltage 120-277V available with electronic ballasts only.

7) Refer to Optra-2 Arm Mount Drill Template #14.

8) Requires a 2-3/8" O.D. x 4" vertical tenon (by others).

9) See dimming option details on page 4. AD dimming option is available with electronic ballasts only.

10) LQ1 may not be combined with either BL or AD option.

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Distribution Guide & Ballast Data <sup>1</sup>

### Pulse Start Metal Halide with High Frequency Electronic Ballast

| Source Type | Catalog Number | Lamp Envelope <sup>(2)</sup> | Recommended Max. Spacing | Cutoff Level | .ies File Name <sup>(3)</sup> | ANSI Code   | electronic ballast data shown         |                                     |
|-------------|----------------|------------------------------|--------------------------|--------------|-------------------------------|-------------|---------------------------------------|-------------------------------------|
|             |                |                              |                          |              |                               |             | Line Current<br>120 / 208 / 240 / 277 | Line Watts<br>120 / 208 / 240 / 277 |
| PS          | OP2P-70        | E17                          | 5:1                      | Full         | op2p70(*).ies                 | M98 / M143  | 0.7 / 0.5 / 0.4 / 0.3                 | 83 / 83 / 83 / 80                   |
|             | OP2P-100       | E17                          | 5:1                      | Full         | op2p10(*).ies                 | M90 / M140  | 1.0 / 0.7 / 0.5 / 0.4                 | 117 / 116 / 116 / 114               |
|             | OP2P-150       | E17                          | 5:1                      | Full         | op2p15(*).ies                 | M107 / M142 | 1.4 / 1.0 / 0.9 / 0.7                 | 169 / 165 / 165 / 166               |
|             | OP2P-175       | E17                          | 5:1                      | Full         | op2p17(*).ies                 | M137 / M152 | 1.7 / 1.1 / 0.9 / 0.7                 | 194 / 192 / 192 / 191               |
|             | OP2P-200       | E17                          | 5:1                      | Full         | op2p20(*).ies                 | M136        | 1.8 / 1.0 / 0.9 / 0.8                 | 212 / 212 / 212 / 208               |

Distribution Guide and Electronic Ballast Data Notes:

(1) The Optra-2 area luminaire meets IES Full Cutoff specifications in all wattages.

(2) Medium base lamps required. Clear lamps are recommended for optimum photometric performance. Coated lamp photometry is available.

(3) Replace (\*) with Reflector type: S (symmetric) or A (asymmetric).

### HID with Magnetic Ballast <sup>(4)</sup>

| Source Type <sup>(5)</sup> | Catalog Number | Lamp Envelope <sup>(2)</sup> | Recommended Max. Spacing | Cutoff Level | .ies File Name <sup>(3)</sup> | Magnetic <sup>(4)</sup><br>Ballast Type | ANSI Code   | magnetic ballast data shown           |            |
|----------------------------|----------------|------------------------------|--------------------------|--------------|-------------------------------|---|-------------|---------------------------------------|------------|
|                            |                |                              |                          |              |                               |   |             | Line Current<br>120 / 208 / 240 / 277 | Line Watts |
| PS                         | OP2P-70        | E17                          | 5:1                      | Full         | op2p70(*).ies                 | HX-HPF                                  | M98 / M143  | 1.9 / 1.0 / 0.9 / 0.8                 | 95         |
|                            | OP2P-100       | E17                          | 5:1                      | Full         | op2p10(*).ies                 | HX-HPF                                  | M90 / M140  | 2.8 / 1.4 / 1.4 / 1.2                 | 130        |
|                            | OP2P-150       | E17                          | 5:1                      | Full         | op2p15(*).ies                 | HX-HPF                                  | M107 / M142 | 3.7 / 2.1 / 1.8 / 1.6                 | 185        |
|                            | OP2P-200       | E17                          | 5:1                      | Full         | op2p20(*).ies                 | CWA                                     | M136        | 2.2 / 1.3 / 1.1 / 1.0                 | 232        |
|                            |                |                              |                          |              |                               |   |             |                                       |            |
| S                          | OP2P-70        | E17                          | 5:1                      | Full         | op2s70(*).ies                 | HX-HPF                                  | S62         | 1.7 / 1.0 / 0.9 / 0.8                 | 94         |
|                            | OP2S-100       | E17                          | 5:1                      | Full         | op2s10(*).ies                 | HX-HPF                                  | S54         | 2.3 / 1.4 / 1.1 / 1.0                 | 130        |
|                            | OP2S-150       | E17                          | 5:1                      | Full         | op2s15(*).ies                 | HX-HPF                                  | S55         | 3.2 / 1.7 / 1.6 / 1.4                 | 195        |

Distribution Guide and Magnetic Ballast Data Notes:

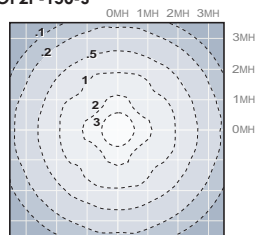
(4) Magnetic Ballast type: CWA = Constant Wattage Autotransformer; HX-HPF= High Reactance High Power Factor. Note: Ballast factor is .95. OP2 not available in 480V.

(5) PS = Pulse Start Metal Halide; S = High Pressure Sodium.

### Distribution Patterns

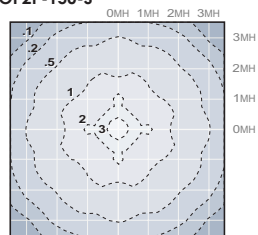
Photometric performance shown is typical of units with electronic ballasts. Magnetic ballast provides approximately 5% less efficiency.

#### OP2P-150-S



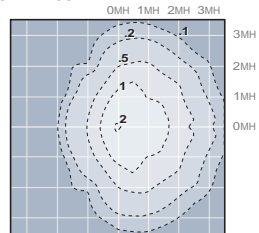
Photometric data calculated at 15' Mounting Ht with clear lamp.

#### OP2P-150-S



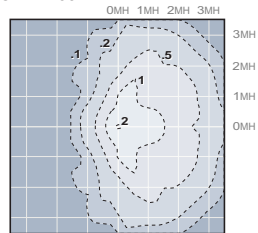
Photometric data calculated at 15' Mounting Ht with clear lamp.

#### OP2P-150-A



Photometric data calculated at 15' Mounting Ht with coated lamp.

#### OP2P-150-A

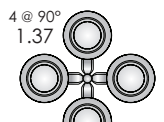
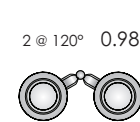
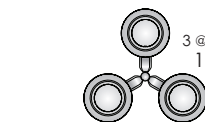
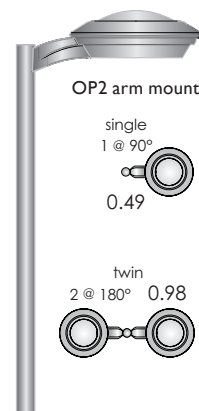


Photometric data calculated at 15' Mounting Ht with clear lamp.

### EPA data

#### Effective Projected Area in Ft <sup>2</sup>

Sturdy yet lightweight all aluminum construction and computer designed profile ensure low EPA's: only 0.49 sq. ft. for the single arm mount unit.



#### OP2 post top mount

0.74

Post top mount requires 2-3/8" O.D. x 4" vertical tenon (by others).

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### Option details (Factory Installed)

**The LQ1 option may not be combined with the BL or AD option**

#### BL Bi-Level (Hi/Low) Dimming to 50% power

**Available with magnetic or electronic ballasts**

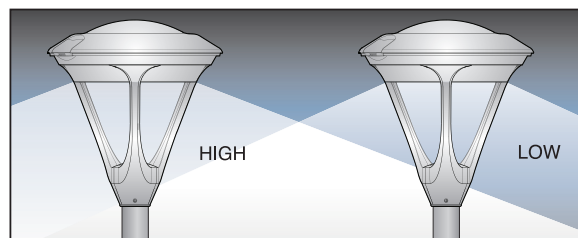
Units with CWA Magnetic ballasts may be specified with 120V or 277V Bi-Level (Hi/Low) dimming control only. (Consult factory to confirm availability). Suitable for HPS in 150W, 120V or 277V units only.

Pulse Start Metal Halide units with Electronic ballasts may be specified with either 0-10vdc dimming option:

- BL** Bi-Level (Hi/Low) dimming or
- AD** Analog (full range) dimming

#### AD Analog (full range) Dimming to 50% power

**Available with electronic ballasts only**



Note: Metal halide dimming below 100W is not recommended due to noticeable color shift. Consult factory.

### Auxiliary / Emergency Lighting (150 watt quartz lamp, standard)

Combined quartz wattage may not exceed HID lamp wattage. 120V double contact bayonet base.

#### CSR Hot Quartz Restrike using Current Sensing Relay (without time delay)



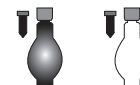
Extinguishes auxiliary quartz lamp when arc of the main HID lamp strikes.

**Activation:** At (initial) Cold Start or Restrike (after a momentary "Brown Out" or extended "Black Out" power interruption), through Run Down.

#### CSR Auxiliary Quartz Operation



**Normal Start:**  
Quartz lamp energized until main HID lamp strikes.



**HID Lamp Reaches Full Brightness:**  
Auxiliary quartz lamp automatically extinguished when main HID lamp strikes. (Takes approximately 3 minutes to reach approx. 40% brightness.)

#### LQ LiteMatic Hot / Cold Quartz Restrike (available with magnetic ballasts only)



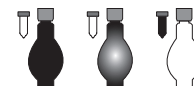
Provides LiteMatic quartz auxiliary operation for fixtures with 120V or multi-tap ballasts. 120V auxiliary LiteMatic quartz lamp power supplied by ballast (AC line voltage). Quartz lamp remains on for three minutes after main HID lamp strikes and reaches approximately 40% light output.

**Activation:** At (initial) Cold Start or Restrike (after a momentary "Brown Out" or extended "Black Out" power interruption), through Run Down, Restrike and Ramp Up.

#### LQ Auxiliary LiteMatic Quartz Operation

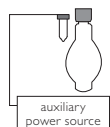


**Normal Start:**  
Quartz lamp energized at initial cold start or at restrike after a temporary power interruption.



**Quartz Lamp Remains on during Ramp Up:**  
Besides providing illumination while the main HID lamp reaches full brightness, the warmth provided by the quartz lamp helps to create a favorable restrike condition for the main HID lamp (useful in extreme cold temperatures).

#### LQ1 Separately Wired (120V) Hot / Cold Quartz Restrike



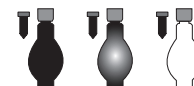
Externally controlled emergency lighting from a separate power source. Quartz lamp is extinguished once power is restored. To ensure integrity of the emergency lighting system, LQ1 leads should be hardwired.

**Activation:** At "Black Out" conditions only. Normal HID operation will occur at all other times.

#### LQ1 Emergency Quartz Operation



**At AC Power Interruption:**  
During AC line voltage power interruption, auxiliary quartz lamp is automatically energized by separately wired power source.



**Once Power is Restored, Quartz Lamp Automatically Extinguishes:**  
Used specifically for emergency lighting during "Black Out" periods, or times of extended power interruption. (Takes approximately 3 minutes for HID lamp to reach full brightness.)

**LQ1 may not be combined with BL or AD dimming options.**

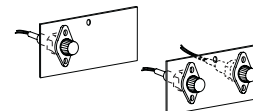
LQ1 requires an interlock (by others) to ensure HID and quartz source are not operated together.

### Ballast Fusing

Voltage must be specified.

- F1** Single Fuse, 120 / 277V
- F2** Double Fuse, 208 / 240V

Standard unit consists of 1 or 2 fuses mounted internally.

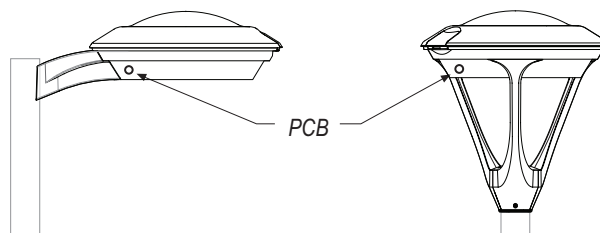


### Photocontrol

**Not available in 480V.**

Factory installed through side wall of luminaire.

- PCB120V** 120V Photocell Button
- PCB208V** 208V Photocell Button
- PCB240V** 240V Photocell Button
- PCB277V** 277V Photocell Button



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Accessory details (Field Installed - Shipped Separately)

### F1-KIT

Single Fuse Kit, 120 / 277V

Kit consists of 1 or 2 fuse holders and 1 or 2 fuses for field installation.

### F2-KIT

Double Fuse Kit, 208 / 240V

**Voltage must be specified.**

### RPTA-190-DT14

Round Pole Tenon Adapter - 1 @ 90°

### RPTA-290-DT14

Round Pole Tenon Adapter - 2 @ 90°

### RPTA-2180-DT14

Round Pole Tenon Adapter - 2 @ 180°

### RPTA-390-DT14

Round Pole Tenon Adapter - 3 @ 90°

### RPTA-3120-DT14

Round Pole Tenon Adapter - 3 @ 120°

### RPTA-490-DT14

Round Pole Tenon Adapter - 4 @ 90°

Round Pole Tenon Adapter allows mounting of Optra 2 SR4 arm mount unit to round pole with 2-3/8" O.D. X 4" tall pole top tenon.



### SPTA-190-DT14

Square Pole Tenon Adapter - 1 @ 90°

### SPTA-290-DT14

Square Pole Tenon Adapter - 2 @ 90°

### SPTA-2180-DT14

Square Pole Tenon Adapter - 2 @ 180°

### SPTA-390-DT14

Square Pole Tenon Adapter - 3 @ 90°

### SPTA-490-DT14

Square Pole Tenon Adapter - 4 @ 90°

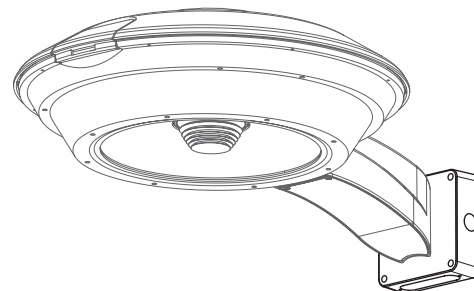
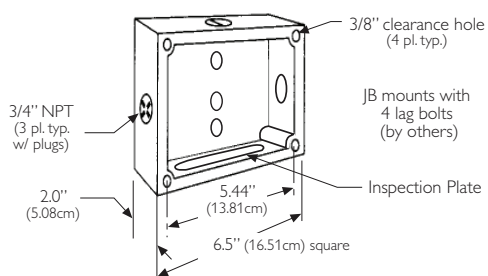
Square Pole Tenon Adapter allows mounting of Optra 2 SS arm mount unit to square pole with 2-3/8" O.D. X 4" tall pole top tenon.



### SW-OP2

Wall Mount Junction Box

Thru-Wire junction box allows wall mounting using standard surface arms.



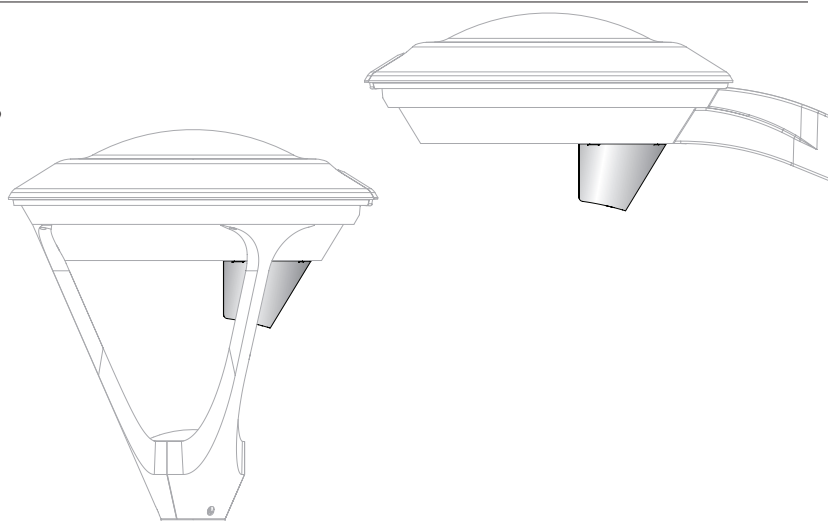
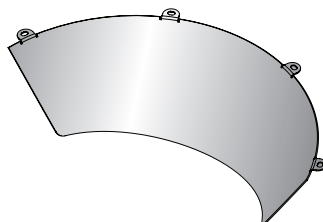
### External Glare Shield

#### SK-OP2

External House Side Shield

additional EPA per shield: 0.49

Field installed accessory provides supplemental spill light control.



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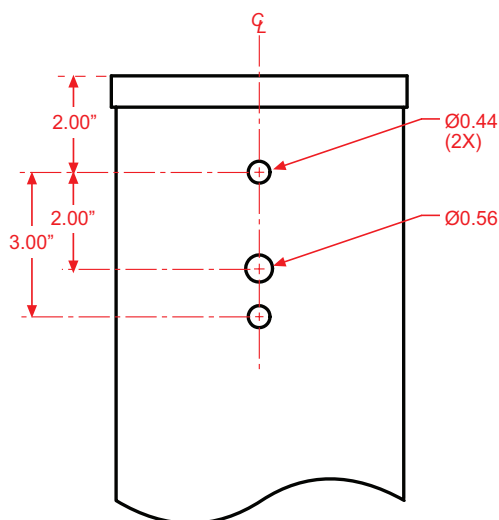
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Job:

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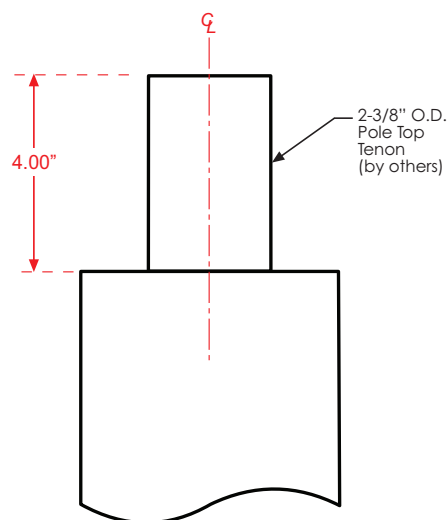
Arm Mount Drill Template (NTS)



- SR4** . . . Arm mount to 4" - 5" Round Pole  
**SR3** . . . Arm mount to 3" - 3.9" Round Pole  
**SS** . . . Arm mount to 3" - 5" Square Pole

**DRILL TEMPLATE NO. 14**

Post Top Detail (NTS)



- PTTR** . . . 4" Round Pole with Post Top Tenon  
**PTTR-3** . . . 3" Round Pole with Post Top Tenon  
**standard post top mount configurations**

Notes



ISO 9001  
Certified



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