

EAL Series

Effex Area Luminaire, 200-1000W HID

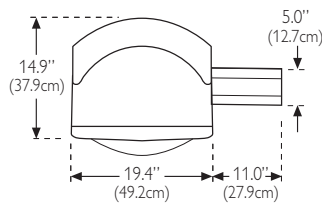
Type:	Job:	Approvals:				
Catalog Number:						Date: Page 1 of 6
Series/Source-Wattage	Optics (Distribution)	Voltage	Mounting	Options (Factory Installed)	Finish	Accessories (Field Installed)

Overall Dimensions

For Reference Only

EAL arm mount

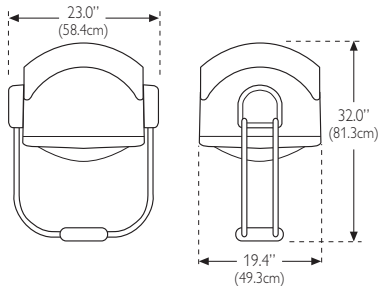
SS Surface Arm Mount to Square Pole (standard)



EPA Effective Projected Area in Ft²

	sag glass	Type F optics (vertical lamp / sag lens with cutoff shield)
1 @ 90°	1.8	2.65
2 @ 90°	3.7	5.31
2 @ 180°	3.2	4.27
3 @ 90°	4.3	5.77
3 @ 120°	4.4	5.81
4 @ 90°	4.6	6.31

EAL post top mount



EPA Effective Projected Area in Ft²

	sag glass	Type F optics (vertical lamp / sag with cutoff shield)
lens		
Head directed down	2.1	3.0
Head directed at 45° & 135° from nadir	2.5	3.3

Weight

(max.) 85 lbs. (38.56 kgs)

Specifications



Housing

Die-cast housing shall be of low copper (less than 0.4%) marine grade aluminum alloy. Housing shall be Dust-Tite and totally sealed from particulate entry. Housing shall not incorporate weep holes, filters, wicks or any route for direct exchange with outside air. Standard unit constructed to IP65.

Optical Module

Reflectors shall be multi-faceted segmented and made of high purity, anodized aluminum. Segmented reflectors for 200-1000W HID units shall be of "Super Sheet" aluminum with an inorganic dielectric coating, producing a minimum reflectivity of 94% for optimum efficiency. Optical assemblies shall be field-rotatable and exchangeable. Optics are available to meet IES definitions of Full Cutoff.

Lamp Access

Custom shaped silicon gasketed lens door shall be secured by four captive screws and hinges that open for lamp access. Mechanical stops in the housing shall ensure proper compression of gasket and relamping.

Lens

Lens shall be tempered glass to withstand thermal and physical shock. Sag glass lens standard in vertically lamped 200-1000W units.

Socket

HID sockets shall be porcelain, grip-type, mogul base, 4KV (5KV for 1000W HPS) pulse-rated for 200 through 1000 watts.

Ballast

Ballast shall be high power factor with reliable starting down to -29°C (-20°F) for Metal Halide, -34°C (-30°F) for Pulse Start Metal Halide, and -40°C (-40°F) for HPS. Crest factor does not exceed 1.8. Ballast has Class H, 180°C (356°F) rated insulation.

Mounting

Field installed surface arm mount shall be of heavy gauge extruded aluminum. Threaded tension rods shall be used to bolt to 3" and larger square poles. Round pole adapters shall be available for 3" to 5" O.D. round poles. Post top mounted luminaires shall be capable of 180° vertical rotation provided by internal swivel mechanism, and shall be supported at 4 points by 2 tubular U-shaped aluminum arms which connect to cast aluminum mounting plates on each side of the luminaire and are cradled in a cast aluminum hub. Fixture shall be capable of flush and tenon mounting to round or square poles, and direct mounting to round poles.

Finish

Standard finish shall be Textured Black 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 to the UL 1598 standard, suitable for Wet Locations at 25°C (77°F) ambient. QL unit suitable for 40°C (104°F) ambients. The quality systems of this facility have been registered by UL to the ISO 9000 Series Standards.

Warranty / Terms and Conditions

Philips Gardco luminaires feature a 5 year limited warranty. See Warranty Information on 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.

PHILIPS



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arm mount



post top mount

Series/Source-Wattage ¹	Optics (See Distribution Guide)	Voltage	Mounting
Metal Halide <input type="checkbox"/> EALM-1000² Pulse Start Metal Halide <input type="checkbox"/> EALP-200 <input type="checkbox"/> EALP-250 <input type="checkbox"/> EALP-350 <input type="checkbox"/> EALP-400 <input type="checkbox"/> EALP-450³ <input type="checkbox"/> EALP-750 <input type="checkbox"/> EALP-1000 High Pressure Sodium <input type="checkbox"/> EALS-250 <input type="checkbox"/> EALS-400 <input type="checkbox"/> EALS-750	V optics 200-450W: 19" housing, Vertical lamp / Sag glass. Cutoff 750-1000W: 19" housing, Vertical lamp / Sag glass. Semi-Cutoff <input type="checkbox"/> 1V Availability of Pulse <input type="checkbox"/> 2V Start lamps may be limited for 2V, 3V and <input type="checkbox"/> 3V 4V optics which orient <input type="checkbox"/> 4V lamp at 30° off vertical. <input type="checkbox"/> 4VS w/external house side shield <input type="checkbox"/> 5V F optics available for 200-1000W only Vertical lamp / Sag glass w/Full Cutoff Shield. Full Cutoff <input type="checkbox"/> 1F <input type="checkbox"/> 2F <input type="checkbox"/> 3F <input type="checkbox"/> 4F <input type="checkbox"/> 5F H optics Horizontal lamp / Flat glass Full Cutoff <input type="checkbox"/> 2H⁴ <input type="checkbox"/> 3H <input type="checkbox"/> 4H <input type="checkbox"/> 4HS w/external house side shield <input type="checkbox"/> 5H <i>Consult factory for availability of the following specialty optics:</i> CO, W, HF, VF, and SP.	available HID voltages <input type="checkbox"/> 120 <input type="checkbox"/> 208 <input type="checkbox"/> 240 <input type="checkbox"/> 277 <input type="checkbox"/> 347 <input type="checkbox"/> 480 <input type="checkbox"/> QV⁵	<input type="checkbox"/> SS^{6,7} Surface arm mount to square pole (standard) <input type="checkbox"/> H HIBRED Arm System (HID/LED Night Ambient Series (HIB) See current HIBRED spec sheet WLS0278 to specify EAL HIBRED system. Not available in 480V. <i>See Mounting Details on page 4 for dimensions and illustrations of the following:</i> <input type="checkbox"/> MA2 Adjustable mastfitter mount to 2-3/8" O.D. x 5" tenon <input type="checkbox"/> PTSQ Post top mount to 4" square pole w/ 2-3/8" O.D. x 4-1/2" tenon <input type="checkbox"/> PTRD Post top mount to 4" round pole w/ 2-3/8" O.D. x 4-1/2" tenon <input type="checkbox"/> FMSQ4 Post top flush mount to 4" square pole <input type="checkbox"/> FMRD4 Post top flush mount to 4" O.D. round pole <input type="checkbox"/> FMRD3 Post top flush mount to 3" O.D. round pole <input type="checkbox"/> DMRD4 Post top direct mount to 3.5" - 4" O.D. round pole or 5-5/8" tenon <input type="checkbox"/> DMRD3.1 Post top direct mount to 3" - 3.1" O.D. round pole or 5-5/8" tenon <input type="checkbox"/> DMRD3 Post top direct mount to 3" O.D. round pole

Options (Factory Installed)	Finish	Accessories (Ordered Separately)
<input type="checkbox"/> BL Bi-Level dimming <input type="checkbox"/> CSR Hot Quartz Restrike <input type="checkbox"/> LQ Hot/Cold Quartz Restrike <input type="checkbox"/> LQ1 Separately Wired (120V) Quartz Restrike <input type="checkbox"/> F1 Single Fuse (120/277V) <input type="checkbox"/> F2 Double Fuse (208/240/480V) <input type="checkbox"/> TLR Twist-Lock Photocell Receptacle <input type="checkbox"/> TLR-PC(***)V Twist-Lock Receptacle with Photocell Specify voltage, 480V not available. <input type="checkbox"/> PCB(***)V Photocell Button Specify voltage, 480V not available.	<input type="checkbox"/> FCO Full cutoff shield (for use with sag glass to provide full cutoff optics) <input type="checkbox"/> GSL Glass Sag Lens (non-yellowing protection for flat glass lens) <input type="checkbox"/> LB Less Ballast (remote mount or by others) <input type="checkbox"/> 50HZ 50 Hz Ballast (consult factory) <input type="checkbox"/> TBK Textured Black <input type="checkbox"/> TDB Textured Dark Bronze <input type="checkbox"/> TGR Textured Gray <input type="checkbox"/> TSA Textured Satin Aluminum <input type="checkbox"/> TWHT Textured White <input type="checkbox"/> TGN Textured Green <input type="checkbox"/> RAL(*) Special Tiger Drylac powder coat finish (*) Specify RAL color number from RAL color chart (Consult factory.)	<input type="checkbox"/> F1-KIT Single fuse kit (120/277/347V) <input type="checkbox"/> F2-KIT Double fuse kit (208/240/480V) <input type="checkbox"/> AL-10-EFX Clear poly auxiliary lens <input type="checkbox"/> AL-10-EFX-(COLOR) Colored poly lens <input type="checkbox"/> SK-10-EFX-(F) Glare shield Specify finish <input type="checkbox"/> FCO-EAL-(F) Full cutoff shield Specify finish <input type="checkbox"/> WG-10-EFX Wireguard <input type="checkbox"/> RPA(size)⁷ Round pole adapter (specify size) <input type="checkbox"/> RPTA-(X)DT4⁷ Round pole tenon adapter <input type="checkbox"/> SPTA-(X)DT4⁷ Square pole tenon adapter

Notes

- 1) 250-1000W HID units require 19" housing.
- 2) 1000W Metal Halide requires BT37 lamp. See Distribution Guide for other lamp envelope restrictions.
- 3) Available in vertical burn lamp only.

- 4) Not available in 450-1000W.

- 5) For field selection of 120/208/240/277 voltage.

- 6) One piece extruded aluminum support arm w/ internal bolt guides, field installed.

- 7) 19" units - S mount to round poles require RPA-EAL(XX)OD.

For mounting to pole top tenons, the following tenon adapters are required: Round poles with 2-3/8" OD x 4-1/2" tall tenons require the use of accessory RPTA-(X)DT(Y) with an RPA for each fixture. Square poles with 2-3/8" OD x 4-1/2" tall tenons require the use of accessory SPTA-(X)DT(Y). See accessory details for more information.

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Distribution Guide & HID Ballast Data¹

Source Type ²	Catalog Number	Lamp Envelope ³	Housing Size	Optics (Distribution) Reflector Type ⁴	Cutoff Level	Ballast Type ⁵	ANSI Code	Line Current 120 / 208 / 240 / 277 / 480	Line Watts
MH	EALM-1000	BT / ED37	19"	1V, 2V, 3V, 4V, 4VS, 5V 1F, 2F, 3F, 4F, 5F / 3H, 4H, 4HS, 5H	Semi Cutoff Full Cutoff	CWA	M47 / H36	9.2 / 5.6 / 4.7 / 4.1 / 2.4	1080
PS	EALP-200	BT / ED28	19"	1V, 2V, 3V, 4V, 4VS, 5V 1F, 2F, 3F, 4F, 5F / 2H, 3H, 4H, 4HS, 5H	Cutoff Full Cutoff	CWA	M136	2.2 / 1.3 / 1.1 / 1.0 / 0.5	240
PS	EALP-250	BT / ED28	19"	1V, 2V, 3V, 4V, 4VS, 5V 1F, 2F, 3F, 4F, 5F / 2H, 3H, 4H, 4HS, 5H	Cutoff Full Cutoff	CWA	M138 / M153	2.8 / 1.5 / 1.3 / 1.2 / 0.6	298
PS	EALP-350	BT/ED37 (vertical) BT/ED28 (horizontal)	19"	1V, 2V, 3V, 4V, 4VS, 5V 1F, 2F, 3F, 4F, 5F / 2H, 3H, 4H, 4HS, 5H	Cutoff Full Cutoff	CWA	M131	3.7 / 2.1 / 1.8 / 1.6 / 0.9	400
PS	EALP-400	BT/ED37 (vertical) BT/ED28 (horizontal)	19"	1V, 2V, 3V, 4V, 4VS, 5V 1F, 2F, 3F, 4F, 5F / 2H, 3H, 4H, 4HS, 5H	Cutoff Full Cutoff	CWA	M135 / M155	4.0 / 2.2 / 1.9 / 1.8 / 1.0	456
PS	EALP-450	BT / ED37	19"	1V, 5V 1F, 5F	Cutoff Full Cutoff	CWA	M144	4.4 / 2.6 / 2.2 / 1.9 / 1.1	514
PS	EALP-750	BT / ED37	19"	1V, 2V, 3V, 4V, 4VS, 5V 1F, 2F, 3F, 4F, 5F / 3H, 4H, 4HS, 5H	Semi Cutoff Full Cutoff	CWA	M149	7.0 / 4.0 / 3.5 / 3.0 / 1.7	820
PS	EALP-1000	BT / ED37	19"	1V, 2V, 3V, 4V, 4VS, 5V 1F, 2F, 3F, 4F, 5F / 3H, 4H, 4HS, 5H	Semi Cutoff Full Cutoff	CWA	M141	9.0 / 5.2 / 4.5 / 3.9 / 2.4	1080
HPS	EALS-250	E18	19"	1V, 2V, 3V, 4V, 4VS, 5V 1F, 2F, 3F, 4F, 5F / 2H, 3H, 4H, 4HS, 5H	Cutoff Full Cutoff	CWA	S50	2.7 / 1.5 / 1.3 / 1.2 / 0.7	310
HPS	EALS-400	E18	19"	1V, 2V, 3V, 4V, 4VS, 5V 1F, 2F, 3F, 4F, 5F / 2H, 3H, 4H, 4HS, 5H	Cutoff Full Cutoff	CWA	S51	4.1 / 2.5 / 2.1 / 1.9 / 1.1	467
HPS	EALS-750	BT37	19"	1V, 2V, 3V, 4V, 4VS, 5V 1F, 2F, 3F, 4F, 5F / 3H, 4H, 4HS, 5H	Semi Cutoff Full Cutoff	CWA	S111	6.8 / 4.0 / 3.5 / 3.1 / 1.8	840



Type II



Type III



Type IV
Forward Throw



Type V
Square

- (1) The EAL can accommodate a variety of other wattages and lamps. Please consult factory with specific requirements.
Photometry available online. IES file names reflect catalog logic.
- (2) MH = Metal Halide, PS = Pulse Start, HPS = High Pressure Sodium.
- (3) All HID lamps to be clear.
- (4) All Horizontal Lamp EAL reflectors (250-1000W MH and PS) are equipped with POMB sockets and can accommodate Standard or High Output Lamps.

Note that Pulse Start lamp position restrictions apply when specifying 2V, 3V, 4V Reflectors, which hold lamp at 30° off of vertical. Pulse Start lamp availability in these reflectors may be limited. Consult factory.

V optic lens and cutoff level is described on page 2 and is determined by wattage of the unit.

- (5) CWA = Constant Wattage Autotransformer, HX-HPF = High Reactance High Power Factor.

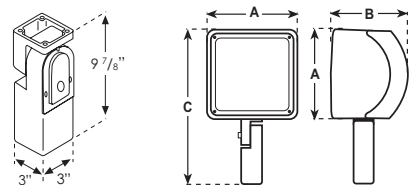
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Mounting details

MA2 Adjustable mastfitter



Dimensions	A	B	C
(200-1000W)	19.4" (49.3 cm)	14.9" (37.8 cm)	29.3" (74.4 cm)



PTSQ Post top mount to 4" square pole w/ 2-3/8" O.D. x 4-1/2" tenon



PTRD Post top mount to 4" O.D. round pole w/ 2-3/8" O.D. x 4-1/2" tenon



FMSQ4 Post top flush mount to 4" square pole



FMRD4 Post top flush mount to 4" O.D. round pole



FMRD3 Post top flush mount to 3" O.D. round pole



DMRD4 Post top direct mount to 3.5" - 4" O.D. round pole or 5-5/8" tenon



DMRD3.1 Post top direct mount to 3" - 3.1" O.D. round pole or 5-5/8" tenon



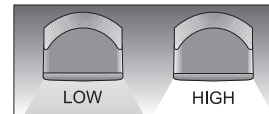
DMRD3 Post top direct mount to 3" O.D. round pole

Option details (Factory Installed)

BL Bi-Level

Note: Suitable for HPS in any aiming position. Consult factory when specifying dimming with Metal Halide.

Bi-Level provides high/low level of lamp output with up to 50% power consumption. Zero crossover network avoids strobing and lamp dropout.



Auxiliary / Emergency Lighting (150 watt quartz lamp, standard)
Combined quartz wattage may not exceed HID lamp wattage. 120V double contact bayonet base. LQ1 requires an interlock by others to ensure HID and quartz source are not operated together.

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



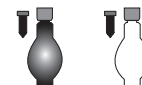
Extinguishes auxiliary quartz lamp when arc of the main HID lamp strikes.

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



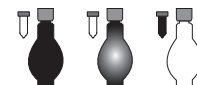
Provides LiteMatic quartz auxiliary operation for fixtures with 120V or multi-tap ballasts. 120V auxiliary LiteMatic quartz lamp power supplied by ballast (AC line voltage). Quartz lamp remains on for three minutes after main HID lamp strikes and reaches approximately 40% light output.

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

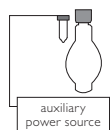


Normal Start:
Quartz lamp energized at initial cold start or at restrike after a temporary power interruption.



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.)

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Option details (continued)

Ballast Fusing

Voltage must be specified.

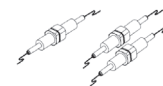
F1

Single Fuse, 120 / 277V

F2

Double Fuse, 208 / 240 / 480V

Standard unit consists of 1 or 2 KTK 30 amp fuses mounted internally on the ballast plate.



Photocontrol

Not available in 480V. Factory installed through side wall of luminaire.

TLR

Twist-Lock Receptacle

TLR-PC120V

Twist-Lock Receptacle with 120V Photocell

TLR-PC208V

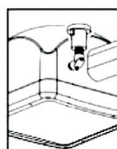
Twist-Lock Receptacle with 208V Photocell

TLR-PC240V

Twist-Lock Receptacle with 240V Photocell

TLR-PC277V

Twist-Lock Receptacle with 277V Photocell



PCB120V

120V Photocell Button

PCB208V

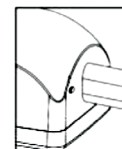
208V Photocell Button

PCB240V

240V Photocell Button

PCB277V

277V Photocell Button



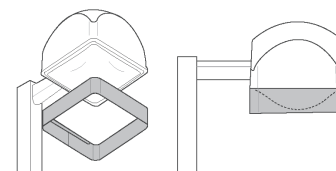
FCO

Full Cutoff Shield

Factory installed shield allows full cutoff capabilities with sag glass.

Also available as an accessory, however, finish must be specified in that instance.

Note: EAL standard F optics incorporate a sag glass lens with a full cutoff shield:



GSL

Glass Sag Lens (non-yellowing protective lens over flat glass lens)

A glass sag lens provides optical clarity over time, however does not provide the impact resistance that a polymer lens provides.



LB

Less Ballast

Specified for remote mounting of ballast and/or ballast supplied by others.

50 HZ

50 Hz Ballast Operation

Specified for applications (outside the United States) where 50 Hertz operation is standard. (consult factory)

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Accessory details (Field Installed - Shipped Separately)

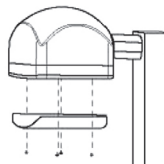
F1-KIT	Single Fuse Kit, 120 / 277V	Kit consists of 1 or 2 fuse holders and 1 or 2 KTK 30 amp fuses for field installation. (Voltage must be specified.)
F2-KIT	Double Fuse Kit, 208 / 240 / 480V	

AL-10-EFX

Clear polycarbonate auxiliary lens

Clear lens provides additional protection of the glass lens.

Consult factory for assistance in color selection of colored auxiliary lens.



AL-10-EFX-(COLOR)

Colored polycarbonate auxiliary lens

Note: Efficiency of the luminaire is reduced significantly with the addition of a colored lens and varies with color saturation. Useful life is limited by UV discoloration from sunlight or metal halide lamps. **1 year warranty.**

SK-10-EFX-(F)

Glare shield

F = Specify finish.

Recommended finish is TBK (Textured Black).

Fixed cutoff shield for additional glare control. Shield may be mounted on any side of fixture.



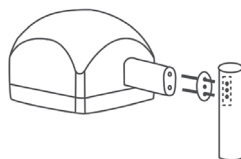
RPA-EAL(XX)OD

Round pole adapter for "S" surface arm mount

Specify **(XX)** pole O.D. as follows:

3/4 = 3"-4" Round Pole;

4/5 = 4"-5" Round Pole



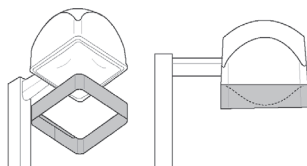
For mounting EAL with standard "S" surface arm to round pole.

Note: Necessary for mounting each fixture when ordering RPTA-(X)DT4, Round Pole Tenon Adapter.

FCO-EAL-(F)

F = Specify finish.

Shield allows full cutoff capabilities with sag glass and also functions as a snoot, providing additional glare control.



RPTA-(X)DT4

Round pole tenon adapter

X = Specify configuration:

1 @ 90°, 2 @ 90°, 3 @ 90°, 4 @ 90°, 2 @ 180°, 2 @ 120°, 3 @ 120°.



Round Pole Tenon Adapter allows mounting of EAL with standard "S" arm mount to round pole with 2-3/8" OD x 4-1/2" pole top tenon.

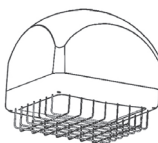
Note: RPA (Round Pole Adapter accessory shown above) also required for mounting each fixture.

WG-10-EFX

Wireguard for 19" housing

Polished stainless steel wireguard for use with flat lens.

Note: Consult factory when considering multiple externally mounted accessories. Mounting limitations may apply.

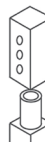


SPTA-(X)DT4

Square pole tenon adapter

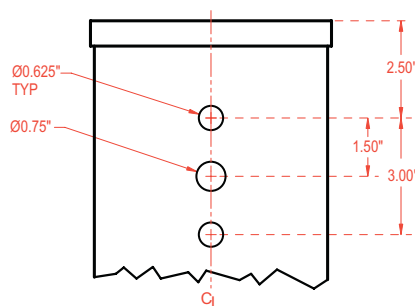
X = Specify configuration:

1 @ 90°, 2 @ 90°, 3 @ 90°, 4 @ 90°, 2 @ 180°



Square Pole Tenon Adapter allows mounting of EAL with standard "S" arm mount to square pole with 2-3/8" OD x 4-1/2" pole top tenon.

Drill Template No. 4 (NTS)



EAL 19" housing

S Arm Mount to 4" - 6" Square Pole or 3" - 5" Round Pole

Notes



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