

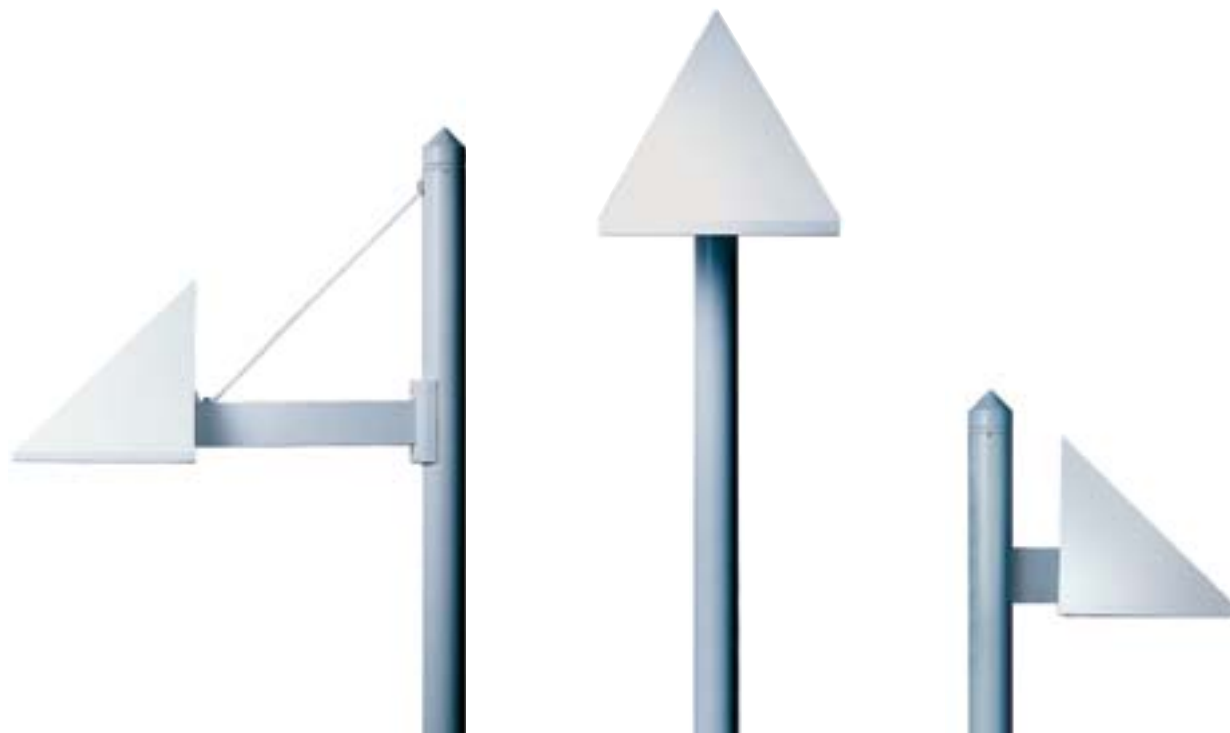
ARCHITECTURAL AREA LIGHTING



M I T R E

ARCHITECTURAL AREA LIGHTING

The Mitre is an expression of classic geometric form. Designed to compliment architectural expressions of precision, structure, and line. The simple elegance of the Mitre series belies its engineered strength and enduring quality. State of the art optical systems provide precise, energy efficient illumination. The Mitre series is offered in three sizes for proper scale and application where form is a prerequisite to function.



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Design Flexibility

Three sizes of Mitre for proper scaling and application of light.



M1 *Large Scale*

M1

- ▲ 150 to 400 watts HID
- ▲ Pole mount
- ▲ Wall mount
- Streets
- Parking area
- Building facades

M2 *Medium Scale*

M2

- ▲ 70 to 175 watts HID
- ▲ Pole mount
- ▲ Wall mount
- ▲ Up and down orientation
- Site lighting
- Streetscapes
- Building facades
- Emergency/Egress

M3 *Wall Sconce*

M3

- ▲ 32/42 watt compact fluorescent lamp
- ▲ Wall mount
- Emergency/Egress
- Interiors

M4 *Bollard*

M4

- ▲ 32/42 watt compact fluorescent lamp
- ▲ Single or double head
- Pedestrian areas
- Building entrances
- Emergency/Egress

Lighting Performance

AAL'S OPTICAL SYSTEMS OFFER:

- ▲ Uniform illumination for a sense of security
- ▲ Wide pole spacing for lower installation costs
- ▲ Glare control for better night vision
- ▲ Energy efficiency for lower operating costs
- ▲ Sealed optics for lasting performance



AAL reflectors are classified as IES full cutoff type which offer reduced glare and excellent lighting performance. The reflector module uses die formed specular Alzak panels for efficiency and uniformity. The Mitre is designed to use T-6 ceramic metal halide lamps to insure color accuracy and consistency.

Reflector Types

M1



- ▲ 150 TO 400 WATTS HID
- ▲ POLE MOUNT
- ▲ WALL MOUNT
- ▲ STREETS
- ▲ PARKING AREAS
- ▲ BUILDING FACADES
- ▲ EGRESS

M2



- ▲ 70 TO 175 WATTS HID
- ▲ POLE & WALL MOUNT
- ▲ UP & DOWN ORIENTATION
- ▲ SITE LIGHTING
- ▲ BUILDING FACADES
- ▲ STREETSCAPES
- ▲ EGRESS

M3



- ▲ 32 & 42 WATT CF
- ▲ WALL MOUNT-M3
- ▲ BOLLARD-M4
- ▲ EGRESS/EMERGENCY
- ▲ INTERIORS
- ▲ EMERGENCY
- ▲ PEDESTRIAN AREAS

M4

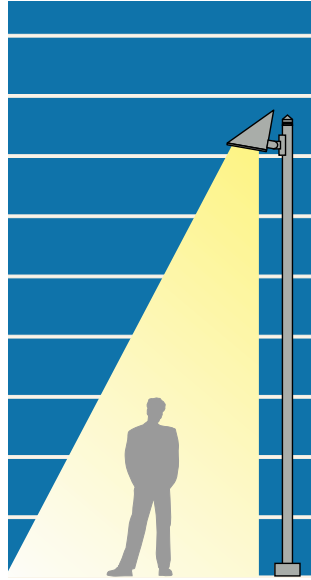
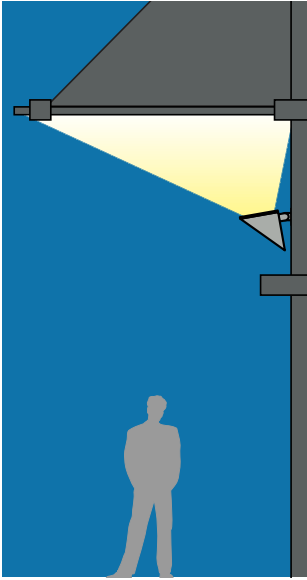




Options for Flexibility

Many options are available to increase the functionality of the Mitre series.

ARTICULATING ARM



The articulating arm is available for the M2. It allows adjustment of plus or minus 20° for fixture aiming. Aiming the fixture can provide control of light trespass or uplight-

ing a vaulted space. The rugged cast aluminum arm is fully gasketed and is available for wall or pole mounting.

XA ARM FOR THE M2



The extended arm is available for the M2 fixture. Wall or pole mounted versions add to the versatility of the design. The cast arm fits to the side of a four inch diameter pole and comes with a complimentary cast pole cap. The angled strap is brushed aluminum.

Egress

The Mitre has a full range of egress lighting options.

▲ M1 + M2

Three emergency lighting options are available with the M1 and M2.

1. RST–The instant restrike ballast uses a standard 150 watt (or less) high pressure sodium lamp that will reignite the lamp immediately after a momentary power failure.
2. QRS–The quartz restrike option uses an electronic controller to energize a quartz lamp, providing illumination until the HID lamp is started or restored to full brightness.
3. QL– An auxiliary quartz lamp that is wired to a separate emergency power circuit.



▲ M3 + M4

The M3 Sconce and M4 Bollard can be fitted with a back up power supply - BBU - that will power the fluorescent lamp to sixty percent of the lumen output for up ninety minutes.

Design



1

- ▲ Cast 356 aluminum construction
- ▲ One piece unitized castings (M2, M3, and M4) with integral reinforcing web for maximum impact resistance

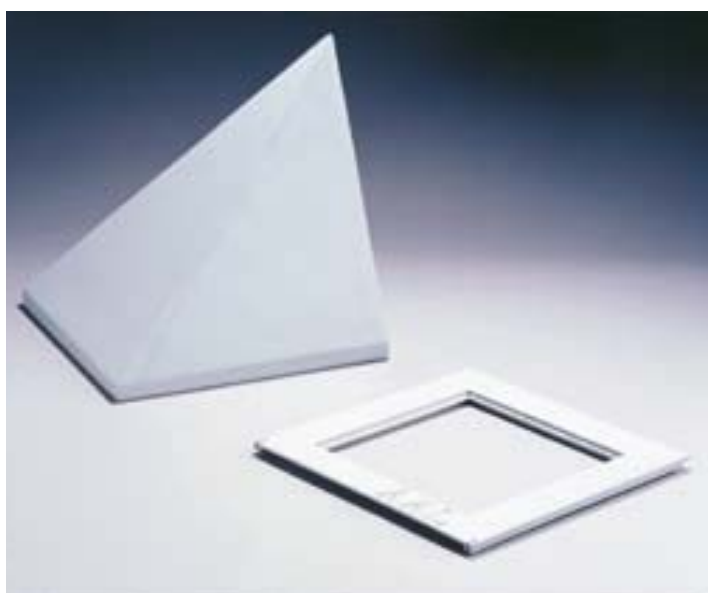
2

- ▲ Totally sealed optics for long term performance
- ▲ Molded memory retentive silicone gaskets
- ▲ Rigid cast door frame insures gasket seals
- ▲ Captive pressure lock fasteners
- ▲ Tempered glass lens

3

- ▲ Easy access to the lamp and ballast
- ▲ Stainless steel hardware and hinges
- ▲ Door hooks off for maintenance
- ▲ ETL listed for wet location use
- ▲ Electrical components are installed, wired, and tested before shipping

Corrosion Resistance



The Mitre is cast from corrosion resistant, 356 alloys used in marine and aircraft applications. These alloys offer the highest strength combined with the greatest resistance to corrosion.

Vandal Resistance



OTHERS' CASTINGS

- ▲ Brittle die castings
- ▲ Cosmetic covers



AAL CASTINGS

- ▲ High strength 356 alloy won't break
- ▲ Unitized structure

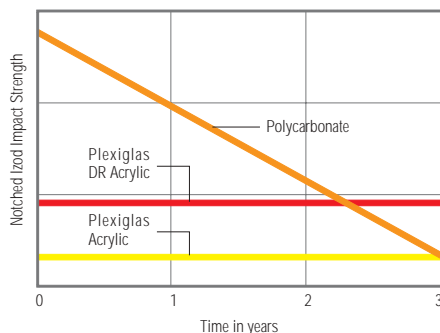
Vandal resistant lighting is no longer limited to a palette of ugly fixtures. The Mitre is designed with aesthetics and vandal resistance on an equal footing. The cast aluminum housing will not crack like a die casting when struck by an object. The integral reinforcing web keeps the housing rigid and resistant to damage.

The Mitre's high strength unitized design will take repeated abuse. The typical die cast fixture shown will shatter at first blow.

Vandal Resistant Lens

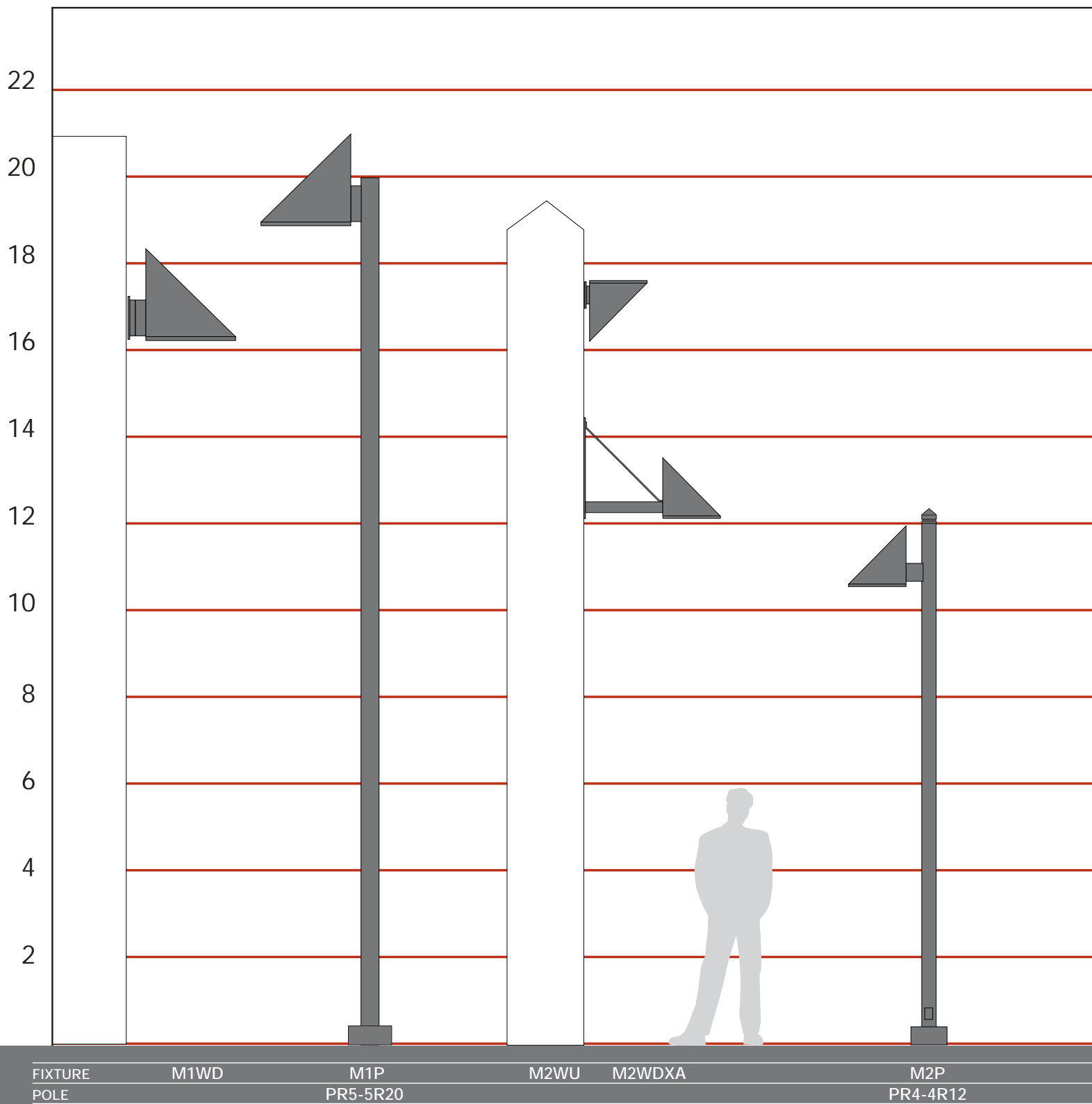
An optional impact resistant lens for the M2 of Plexiglas® DR® acrylic helps protect from vandalism. The DR® acrylic lens will remain optically clear, as it is unaffected by UV radiation from the sun or metal halide lamps. A "UV resistant" polycarbonate lens will become brittle and turn yellow from UV radiation which also destroys the optical efficiency of the fixture.

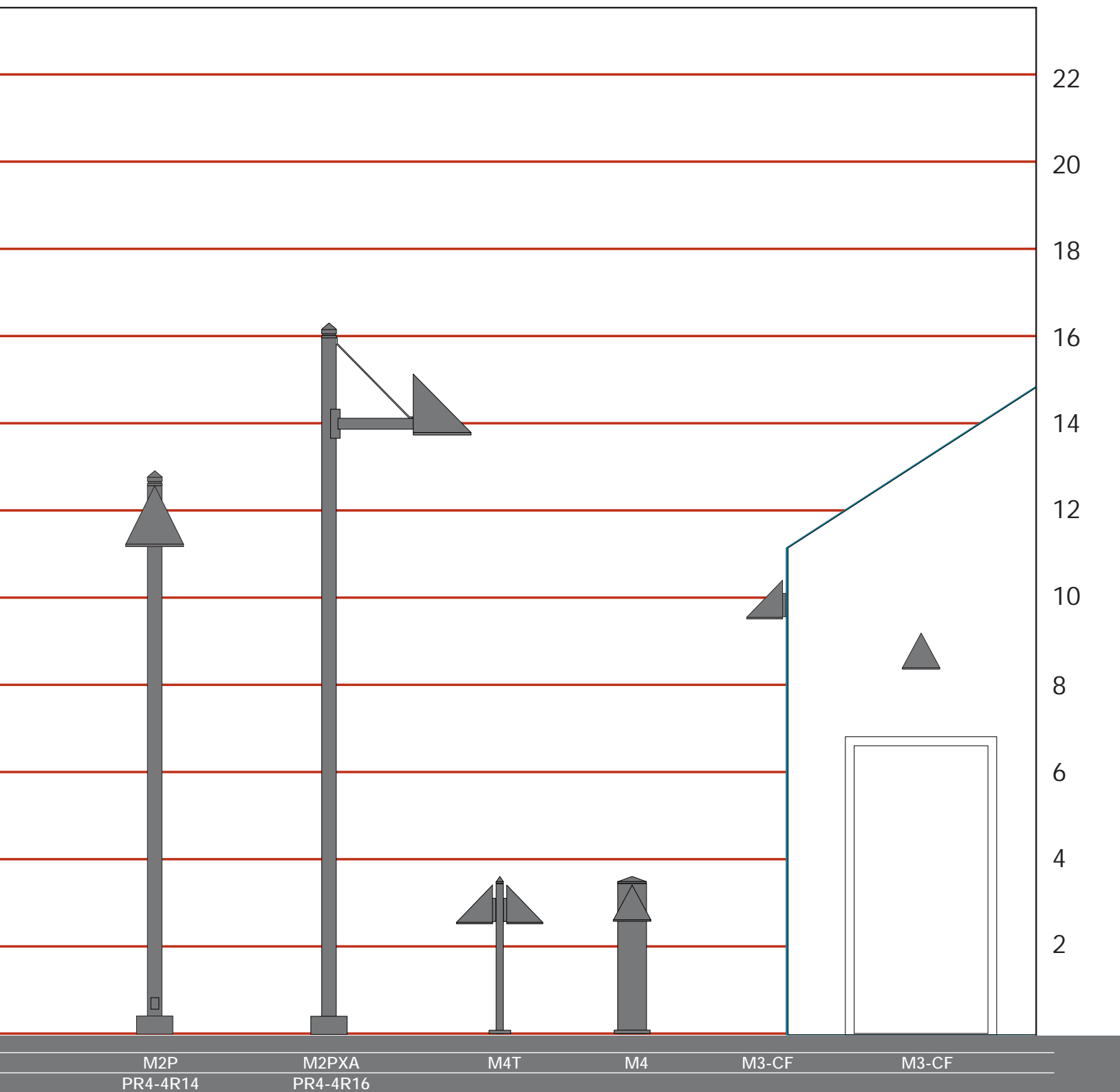
The lens is fully sealed to the fixture with a silicone gasket and a cast aluminum frame.



Courtesy AutoHaas North America Inc. Plexiglas is a registered trademark of Rohm and Haas Co.









M1WD-H2-BLK



M2P-H3 PR4-4R12 BLK

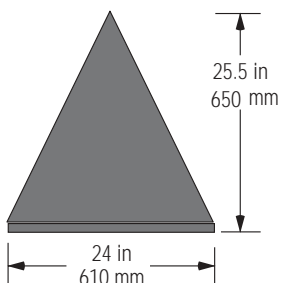


M4T BLK



4-M2P-H3 with Custom Pole

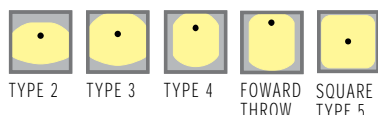
M1 Large Scale Pole and Wall Mounted (150 to 400 watt)



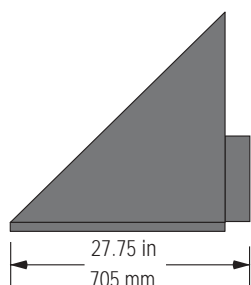
Ordering Examples

FIXTURE	LAMP	POLE	OPTIONS	COLOR
M1WD-H2	150HPS	•	RST	WHT
M1P-H3	175MH	PR5-5R16-188	•	BLK
M1P-H5	400HPS	PR5-5R20-250	•	GALV
M1WD-FT	250HPS	•	•	MAL

REFLECTOR TYPES



Pole Mounted

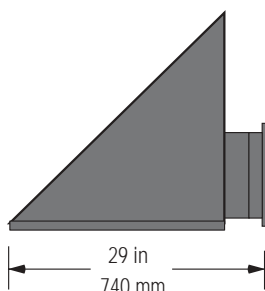


CAT NO.	REFLECTOR
M1P-H2	TYPE 2
M1P-H3	TYPE 3
M1P-H4	TYPE 4
M1P-FT	FWD THROW
M1P-H5	TYPE 5

WEIGHT: 46 POUNDS

EPA: 2.0; IP: 54

Wall Mounted



CAT NO.	REFLECTOR
M1WD-H2	TYPE 2
M1WD-H3	TYPE 3
M1WD-H4	TYPE 4
M1WD-FT	FWD THROW
M1WD-H5	TYPE 5

WEIGHT: 46 POUNDS

EPA: 2.0; IP: 54

Ballast

175MH

175 watt metal halide multitap ballast 120/208/240/277 volt. Use mogul base, clear ED-28 POMB lamps.

250MH

250 watt metal halide multitap ballast 120/208/240/277 volt. Use mogul base, clear ED-28 POMB lamps.

400MH

400 watt metal halide multitap ballast 120/208/240/277 volt. Use mogul base, clear ED-28 POMB lamps.

150HPS

150 watt high pressure sodium ballast 120/208/240/277 volt. Use mogul base, clear ED-23 1/2 lamps.

250HPS

250 watt high pressure sodium ballast 120/208/240/277 volt. Use mogul base, clear ED-18 lamps.

400HPS

400 watt high pressure sodium ballast 120/208/240/277 volt. Use mogul base, clear ED-18 lamps.

All fixtures prewired for 277 volts.

Lamps not included.

Colors

WHT White	BLK Black	DGN Dark Green	DBZ Dark Bronze
LGY Light Gray	CRT Corten	GALV Galvanized	MAL Matte Aluminum

Options for M1

RST	Instant restart ballast for a standard 150 watt HPS lamp (S55).
QL	Socket for a T-4 mini-cand halogen lamp, maximum 100 watts, field wired to a separate electrical circuit.
QRS	Restrike controller and socket for a T-4 mini-cand halogen lamp, maximum 100 watts.
LA	12" Long Arm extension, for a 5" o.d. Pole

M1 SPECIFICATIONS

The fixture housing shall be a one piece cast 356 aluminum back and integral arm, with a minimum wall thickness of .188". The housing shall have cast in place threaded inserts for mounting the electrical components. The door frame shall be cast of 356 aluminum. The door frame shall be attached to the housing with two stainless steel hinges and opened by loosening four captive stainless steel fasteners. The door frame shall seal to the housing with a molded memory retentive silicone gasket. The cast arm shall be contoured to fit a five inch diameter pole. The wall mounting plate shall be cast aluminum and fully gasketed.

The lens shall be clear tempered glass, sealed to the cast aluminum door frame with a silicone gasket and held in place with eight clips around the perimeter.

The optical assembly shall consist of a housing module with die formed, specular Alzak[®] reflector panels. The reflector module shall be removable for easy access to the ballast. The reflector system(s) shall be tested by an independent testing laboratory and classified as a IES full cutoff optics.

ELECTRICAL

The sockets are mogul base, pulse rated porcelain. All electrical components shall be U.L. recognized. Fixtures shall have the ballast assembly installed, wired and tested prior to shipment.

FINISH

Fixture finish shall consist of a five stage pre-treatment regimen with a polymer primer sealer, oven dry off and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance.

CERTIFICATION

Fixtures shall be listed with ETL for outdoor, wet location use, UL 1570 & 1572 and Canadian CSA C22.2 no.9. IP = 54

WARRANTY

Fixture shall be warranted for three years. Ballast components shall carry the ballast manufacturer's limited warranty.

OPTIONS

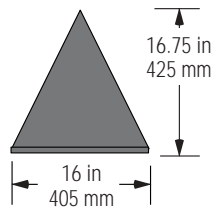
QL—The quartz socket shall be porcelain with a T-4 mini-can screw base. The socket shall be mounted to the reflector housing. Lamp by others, 100 watt maximum. The socket shall be field wired to a separate electrical circuit.

QRS—The restrike controller shall energize the quartz socket until the HID lamp illuminates to full brightness. The quartz socket shall be a porcelain with a T-4 mini-can screw base. The socket shall be mounted to the reflector housing. Lamp by others, 100 watt maximum. The socket shall be prewired to the restrike controller.

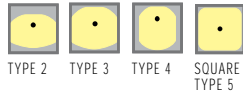
RST—The instant restrike ballast shall immediately restart the lamp after loss of power. For 150 HPS (S55) lamps only.



M2 Medium Scale Pole Mount (70 to 175 watt)



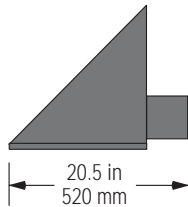
REFLECTOR TYPES



Ordering Examples

FIXTURE	LAMP	POLE	OPTIONS	COLOR
M2PXA-H2	150MHT6	PR4-4R12	VRL	BLK
M2PXA-H3	150HPS	PR4-4R16	RST	DGN
M2P-H3	100MH	PR4-4R12	•	WHT
M2P-H2	70MHT6	PR4-4R10	•	MAL

Pole Mounted

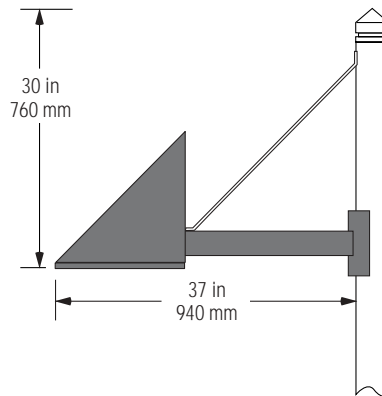


CAT NO.	REFLECTOR
M2P-H2	TYPE 2
M2P-H3	TYPE 3
M2P-H4	TYPE 4
M2P-H5	TYPE 5

WEIGHT: 32 POUNDS

EPA: .90; IP: 64

Extended Arm



CAT NO.	REFLECTOR
M2PXA-H2	TYPE 2
M2PXA-H3	TYPE 3
M2PXA-H4	TYPE 4
M2PXA-H5	TYPE 5

WEIGHT: 41 POUNDS

EPA: 1.55; IP: 64

Ballast

70MH

70 watt metal halide multitap ballast 120/208/240/277 volt. Use medium base, clear ED-17 lamps.

70MHT6

70 watt metal halide multitap ballast 120/208/240/277 volt. Uses a G12 base, clear T-6 ceramic MH lamp.

100MH

100 watt metal halide multitap ballast 120/208/240/277 volt. Use medium base, clear ED-17 lamps.

150MH

150 watt metal halide multitap ballast 120/208/240/277 volt. Use medium base, clear ED-17 lamps.

150MHT6

150 watt metal halide ballast 120/208/240/277 volt. Uses a G12 base, clear T-6 ceramic MH lamp.

175MH

175 watt metal halide multitap ballast 120/208/240/277 volt. Use medium base, clear ED-17 lamps.

70HPS

70 watt high pressure sodium ballast 120/208/240/277 volt. Use medium base, clear ED-17 lamps.

100HPS

100 watt high pressure sodium ballast 120/208/240/277 volt. Use medium base, clear ED-17 lamps.

150HPS

150 watt high pressure sodium ballast 120/208/240/277 volt. Use medium base, clear ED-17 lamps.

All ballasts prewired for 277 volts.

Lamps not included.

Colors

WHT White	BLK Black	DGN Dark Green	DBZ Dark Bronze
LGY Light Gray	CRT Corten	GALV Galvanized	MAL Matte Aluminum

Custom and RAL colors are available at an extra cost. Please submit a color sample or RAL color number.

Options for M2P

PV	Articulating arm pivots 20 degrees, contoured to fit to a 4"/100mm pole
VRL	Vandal resistant, acrylic lens.
RST	Instant restart ballast for a standard 150 watt HPS (S55) lamp.
QL	Socket for a T-4 mini-cand halogen lamp, 100 watts maximum. Field wired to a separate electrical circuit.
QRS	Restrike controller and socket for a T-4 mini-halogen lamp, 100 watts.

M2 Pole Specifications

The fixture housing shall be one piece cast 356 aluminum with a minimum wall thickness of .188". The housing shall have cast in place threaded inserts for mounting the electrical components. The door frame shall be cast of 356 aluminum. The door frame shall be attached to the housing with two stainless steel hinges and be opened by loosening two captive fasteners. The door frame shall seal to the housing with a molded memory retentive silicone gasket.

The lens shall be clear tempered glass that is sealed to the cast aluminum door frame with a silicone gasket and held in place with eight clips around the perimeter.

The optical assembly shall consist of a housing module with die formed, specular Alzak® reflector panels. The reflector module shall be removable for easy access to the ballast. The reflector system(s) shall be tested by an independent testing laboratory and classified as a IES full cutoff optics.

ELECTRICAL

The sockets are medium base, pulse rated porcelain for E-17 or G12 base for T-6 ceramic metal halide lamps. All electrical components shall be U.L. recognized. Fixtures shall have the ballast assembly installed, wired and tested before shipment.

FINISH

Fixture finish shall consist of a five stage pre-treatment regimen with a polymer primer sealer, oven dry off and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance.

CERTIFICATION

Fixtures shall be listed with ETL for outdoor, wet location use, UL 1570 & 1572 and Canadian CSA C22.2 no.9. IP = 64

WARRANTY

Fixture shall be warranted for three years. Ballast components shall carry the ballast manufacturer's limited warranty.

OPTIONS

PV—The articulating arm shall allow for twenty degrees of adjustment from the horizontal position. The arm shall be cast 356 aluminum with an internal wireway and fully sealed with silicone gaskets. The arm shall be contoured to fit a four inch diameter pole.

VRL—The vandal resistant lens shall be molded, one piece DR® acrylic, sealed to a cast aluminum frame with a silicone gasket.

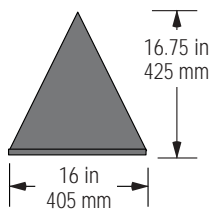
QL—The quartz socket shall be porcelain with a T-4 mini-can screw base. The socket shall be mounted to the reflector housing. Lamp by others, 100 watt maximum. The socket shall be field wired to a separate electrical circuit.

QRS—The restrike controller shall energize the quartz socket until the HID lamp illuminates to full brightness. The quartz socket shall be a porcelain with a T-4 mini-can screw base. The socket shall be mounted to the reflector housing. Lamp by others, 100 watt maximum. The socket shall be prewired to the restrike controller.

RST—The instant restrike ballast shall immediately restart the lamp after loss of power. For 150 watt HPS lamps only.



M2 Medium Scale Wall Mount (70 to 175 watt)



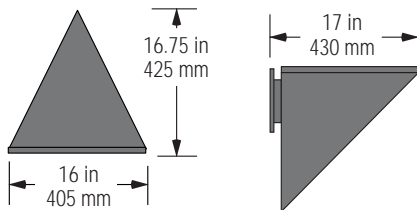
REFLECTOR TYPES



Ordering Examples

FIXTURE	LAMP	OPTIONS	COLOR
M2WD-H2	70MHT6	VRL	BLK
M2WDX-H3	150HPS	RST	DGN
M2WU-H3	100MH	•	WHT
M2WU-H2	70MH	•	MAL

Up Light

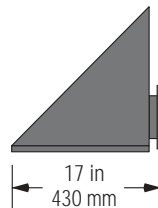


CAT NO.	REFLECTOR
M2WU-H2	TYPE 2
M2WU-H3	TYPE 3
M2WU-H4	TYPE 4

WEIGHT: 32 POUNDS

EPA: .90; IP: 64

Down Light

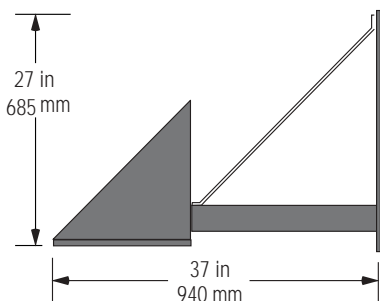


CAT NO.	REFLECTOR
M2WD-H2	TYPE 2
M2WD-H3	TYPE 3
M2WD-H4	TYPE 4

WEIGHT: 32 POUNDS

EPA: .90; IP: 64

Down Light with Extended Arm



CAT NO.	REFLECTOR
M2WDX-H2	TYPE 2
M2WDX-H3	TYPE 3
M2WDX-H4	TYPE 4

WEIGHT: 32 POUNDS

EPA: .90; IP: 64

Options for M2W

PVW	Articulating arm pivots 20 degrees, with cast aluminum wall plate.
VRL	Vandal resistant, acrylic lens
RST	Instant restart ballast for a standard 150 watt HPS (S55) lamp.
QL	Socket for a T-4 mini-cand halogen lamp, 100 watts maximum. Field wired to a separate electrical circuit.
QRS	Restrike controller and socket for a T-4 mini-halogen lamp, 100 watts.

Ballast

70MH

70 watt metal halide multitap ballast 120/208/240/277 volt. Use medium base, clear ED-17 lamps.

70MHT6

70 watt metal halide multitap ballast 120/208/240/277 volt. Uses a G12 base, clear T-6 ceramic MH lamp.

100MH

100 watt metal halide multitap ballast 120/208/240/277 volt. Use medium base, clear ED-17 lamps.

150MH

150 watt metal halide multitap ballast 120/208/240/277 volt. Use medium base, clear ED-17 lamps.

150MHT6

150 watt metal halide ballast 120/208/240/277 volt. Uses a G12 base, clear T-6 ceramic MH lamp.

175MH

175 watt metal halide multitap ballast 120/208/240/277 volt. Use medium base, clear ED-17 lamps.

70HPS

70 watt high pressure sodium ballast 120/208/240/277 volt. Use medium base, clear ED-17 lamps.

100HPS

100 watt high pressure sodium ballast 120/208/240/277 volt. Use medium base, clear ED-17 lamps.

150HPS

150 watt high pressure sodium ballast 120/208/240/277 volt. Use medium base, clear ED-17 lamps.

All ballasts prewired for 277 volts. Lamps not included.

M2 Wall Specifications

The fixture housing shall be a one piece cast 356 aluminum with a minimum wall thickness of .188". The housing shall have cast in place threaded inserts for mounting the electrical components. The door frame shall be cast of 356 aluminum. The door frame shall be attached to the housing with two stainless steel hinges and be opened by loosening two captive fasteners. The door frame shall seal to the housing with a molded memory retentive silicone gasket.

The lens shall be clear tempered glass that is sealed to the door frame with a silicone gasket and held in place with eight clips around the perimeter.

The optical assembly shall consist of a housing module with die formed, specular Alzak® reflector panels. The reflector module shall be removable for easy access to the ballast. The reflector system(s) shall be tested by an independent testing laboratory and classified as a IES full cutoff optics.

ELECTRICAL

The sockets are medium base, pulse rated porcelain for E-17 or G12 base for T-6 ceramic metal halide lamps. All electrical components shall be U.L. recognized. Fixtures shall have the ballast assembly installed, wired and tested before shipment.

FINISH

Fixture finish shall consist of a five stage pre-treatment regimen with a polymer primer sealer, oven dry off and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance.

CERTIFICATION

Fixtures shall be listed with ETL for outdoor, wet location use, UL 1570 & 1572 and Canadian CSA C22.2 no.9. IP = 64

WARRANTY

Fixture shall be warranted for three years. Ballast components shall carry the ballast manufacturer's limited warranty.

OPTIONS

PVW -The articulating arm shall allow for twenty degrees of adjustment from the horizontal position. The arm shall be cast 356 aluminum with an internal wireway and fully sealed with silicone gaskets.

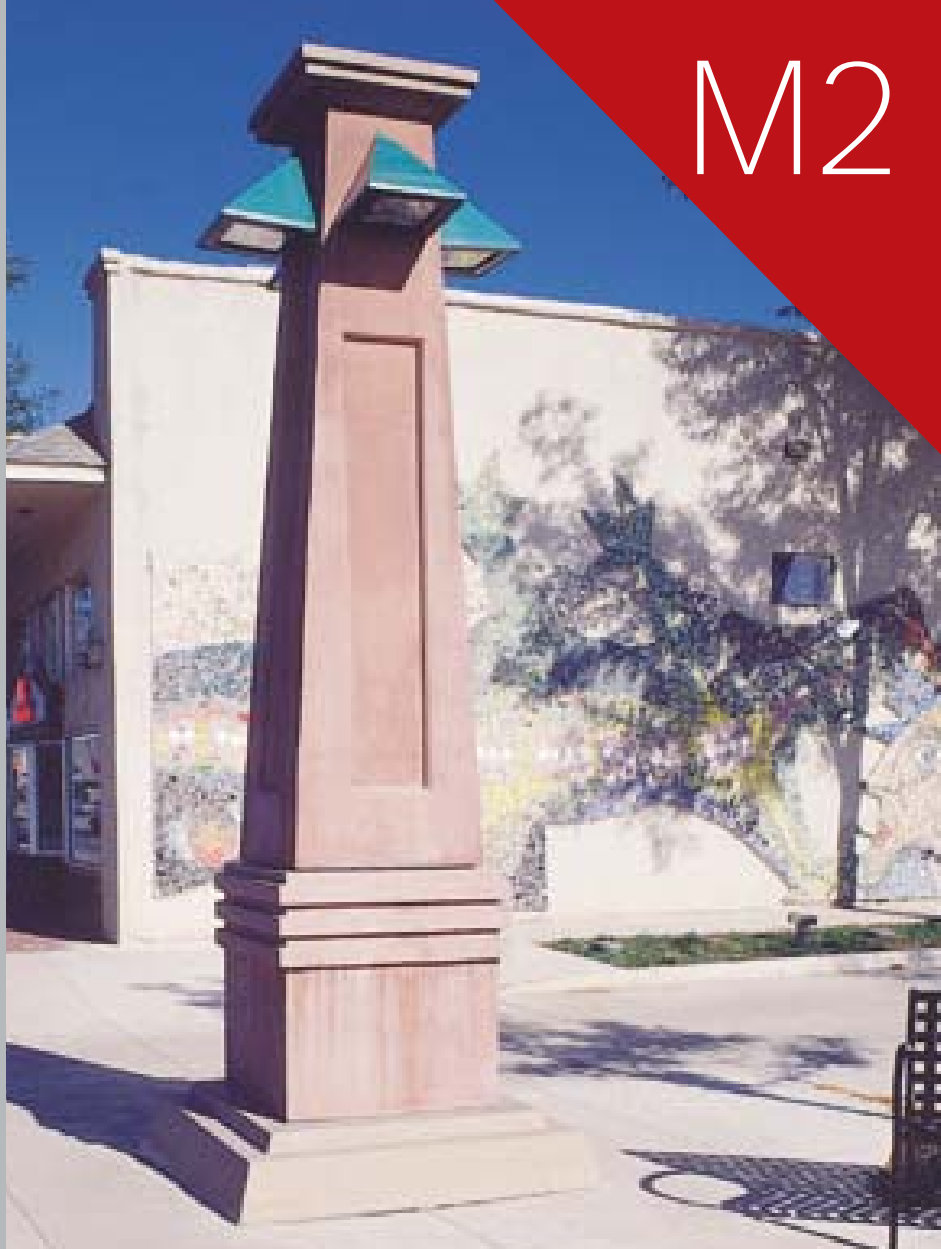
VRL-The vandal resistant lens shall be molded, one piece DR® acrylic, sealed to the door frame with a silicone gasket.

QL-The quartz socket shall be porcelain with a T-4 mini-can screw base. The socket shall be mounted to the reflector housing. Lamp by others, 100 watt maximum. The socket shall be field wired to a separate electrical circuit.

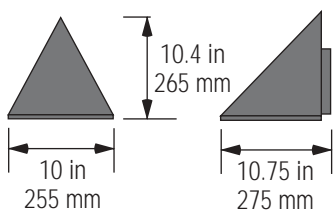
QRS-The restrike controller shall energize the quartz socket until the HID lamp illuminates to full brightness. The quartz socket shall be a porcelain with a T-4 mini-can screw base. The socket shall be mounted to the reflector housing. Lamp by others, 100 watt maximum. The socket shall be prewired to the restrike controller.

RST-The instant restrike ballast shall immediately restart the lamp after loss of power. For 150 watt HPS lamps only.

M2



M3 Wall Sconce



M3-CF WALL SCONCE FOR USE WITH A 26, 32 OR 42 WATT PL HEX LAMP, 120/277 VOLT ELECTRONIC BALLAST

WEIGHT: 10 POUNDS; IP: 64

OPTIONS FOR M3

BBU

Battery back up powers the lamp for up to ninety minutes during a power failure. Output of the 32 watt lamp will be 575 lumens. Output from the 42 watt lamp will be 750 lumens. Battery pack is 9.375" x 2.375" x 1.5". Test monitor plate with indicator light and test switch are included. Remote mounting within 50 feet of the fixture.

Colors

WHT White	BLK Black	DGN Dark Green	DBZ Dark Bronze
LGY Light Gray	CRT Corten	GALV Galvanized	MAL Matte Aluminum

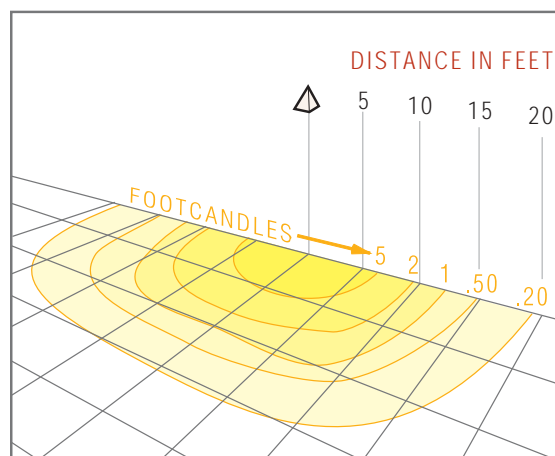
Custom and RAL colors are available at an extra cost. Please submit a color sample or RAL color number.

REFLECTOR DESIGN



The M3 wall sconce incorporates an efficient, forward throw reflector. The reflector is designed to effectively illuminate entrances, corridors and for egress applications using the optional standby battery. The reflector is matched to a high efficiency, triple tube compact fluorescent lamp that is available in three color temperatures.

PHOTOMETRY



The chart illustrates the footcandle values for an M3 wall sconce with a 42 watt (3200 lumen) lamp. The 32 watt (2400 lumen) lamp can be substituted by multiplying the footcandle (fc) values by .75.

Complete photometry is available on an IES formatted disk for use in a lighting layout software program.

All testing performed by a certified independent laboratory. Photometry is available in IES formatted files on CD rom and web site. Call your local AAL representative for a copy.

M3 Specifications

The fixture shall be one piece cast 356 aluminum with a minimum wall thickness of .188". The housing shall mount over a 3 3/4" octagonal wall box. The lens is clear DR acrylic, sealed to the housing with a silicone gasket. The fixture is relamped by loosening four captive stainless steel fasteners.

The optical assembly shall consist of a die formed, specular Alzak® reflector with forward throw optics. The reflector is easily removed for easy access to the ballast.

The ballast shall be electronic, rated for -5° starting with a 4 pin 32 watt or 42 watt lamp socket. The ballast is factory mounted and wired in the housing.

The fixture is attached with two stainless steel screws to an adapter ring that mounts to a 3 3/4" octagonal wall box. Adapter ring and hardware are included.

FINISH

Fixture finish shall consist of a five stage pre-treatment regimen with a polymer primer sealer, oven dry off and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance.

CERTIFICATION

Fixtures shall be listed with ETL for outdoor, wet location use, UL 1570 & 1572 and Canadian CSA C22.2 no.9. IP = 64

WARRANTY

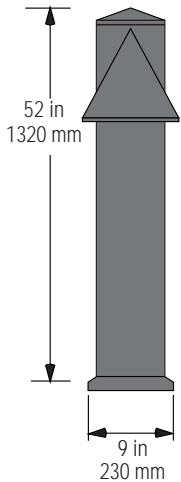
Fixture shall be warranted for three years. Ballast components shall carry the ballast manufacturer's limited warranty.

OPTIONS

The emergency ballast back up system shall operate one 32 watt or one 42 watt triple tube fluorescent lamp for a minimum of 90 minutes. The ballast backup shall be located within 50 feet of the fixture. Minimum operating temperature 50° C.



M4 Bollard



M4-CF SINGLE HEAD FOR USE WITH A 32 OR 42 WATT PL HEX LAMP

M4T-CF TWIN HEADS FOR USE WITH A 32 OR 42 WATT PL LAMP

120/277 ELECTRONIC VOLT BALLAST

OPTIONS FOR M4

BBU

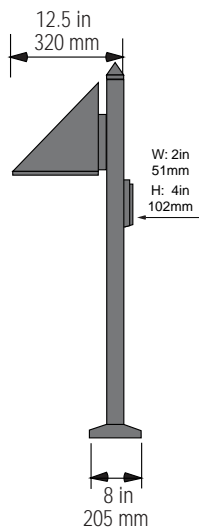
Battery back up powers one lamp for up to ninety minutes during a power failure. Output of the 32 watt lamp will be 575 lumens. Output from the 42 watt lamp will be 750 lumens. Battery pack is 9.375" x 2.375" x 1.5". Test monitor plate with indicator light and test switch are mounted to the shaft with a clear cover. Not recommended for climates with temperatures below 50 degrees Fahrenheit.

Colors

WHT White **BLK** Black **DGN** Dark Green **DBZ** Dark Bronze

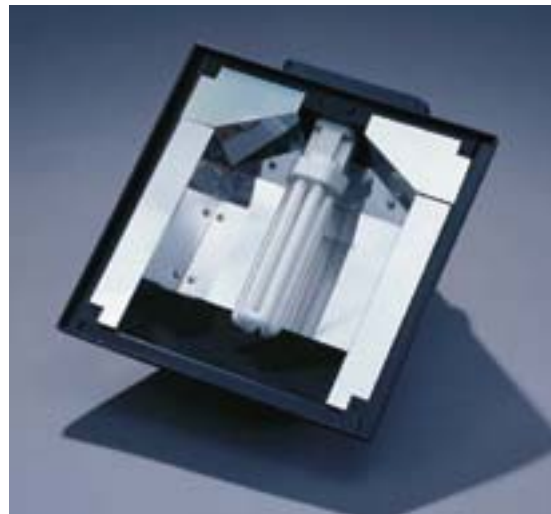
LGY Light Gray **CRT** Corten **GALV** Galvanized **MAL** Matte Aluminum

Custom and RAL colors are available at an extra cost. Please submit a color sample or RAL color number.

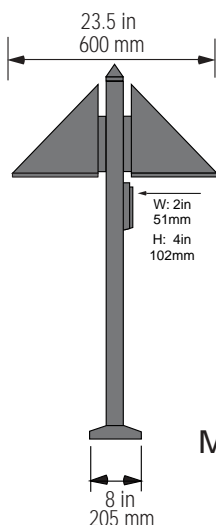


M4

REFLECTOR DESIGN

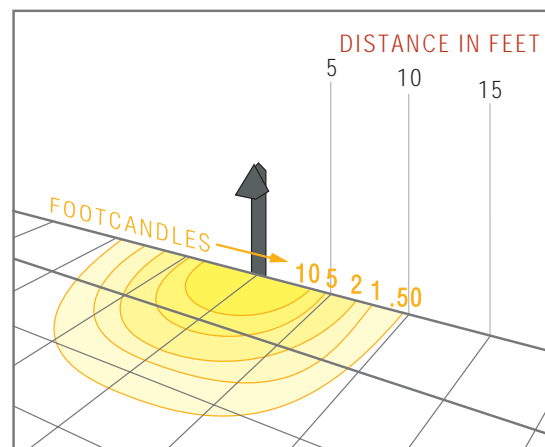


The M4 reflector is designed to illuminate pathways and pedestrian areas with its wide distribution. The reflector is matched to a high efficiency, triple tube compact fluorescent lamp that is available in three color temperatures.



M4T

PHOTOMETRY



Shown on the drawing to the right are the footcandle values for a M4 bollard with a 42 watt (3200 lumen) lamp. The 32 watt (2400 lumen) lamp can be substituted by multiplying the footcandle (fc) values by .75

Complete photometry is available on an IES formatted disk for use in a lighting layout software program.

All testing performed by a certified independent laboratory. Photometry is available in IES formatted files on CD rom and web site. Call your local AAL representative for a copy.

M4 Specifications

The fixture shall be one piece cast 356 aluminum with a minimum wall thickness of .188". The lens is clear DR acrylic, sealed to the housing with a silicone gasket. The fixture is relamped by loosening four captive stainless steel fasteners. The base is heavy cast 356 aluminum with a minimum .250" wall thickness. The column is extruded 6061 T-6 aluminum internally welded to the base. The top cap shall be cast 356 aluminum. The fixture is mounted to the column with three stainless steel 1/4-20 fasteners and is fully gasketed.

The optical assembly shall consist of a die formed, specular Alzak® reflector with wide throw type 2 optics. The reflector is easily removed for easy access to the ballast.

The ballast shall be electronic, rated for -5° starting with a 4 pin 32 watt or 42 watt lamp socket. The ballast is factory mounted and wired in the housing.

FINISH

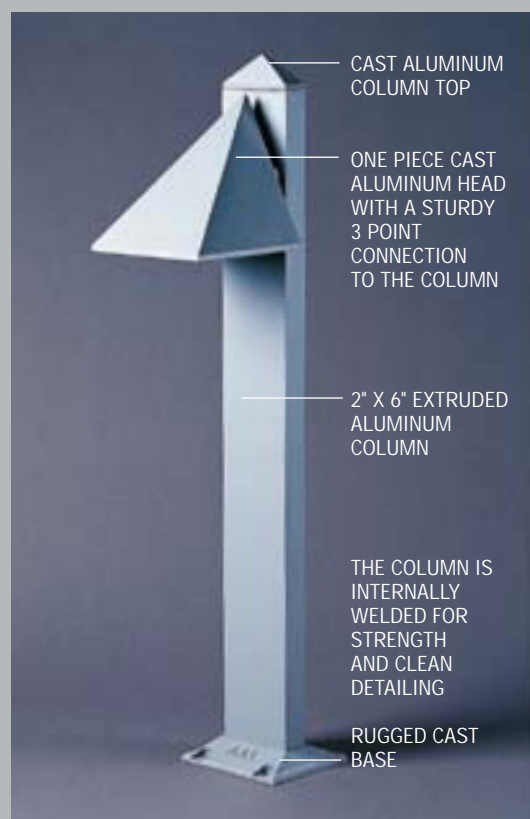
Fixture finish shall consist of a five stage pre-treatment regimen with a polymer primer sealer, oven dry off and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance.

CERTIFICATION

Fixtures shall be listed with ETL for outdoor, wet location use, UL 1570 & 1572 and Canadian CSA C22.2 no.9. IP = 64

WARRANTY

Fixture shall be warranted for three years. Ballast components shall carry the ballast manufacturer's limited warranty.



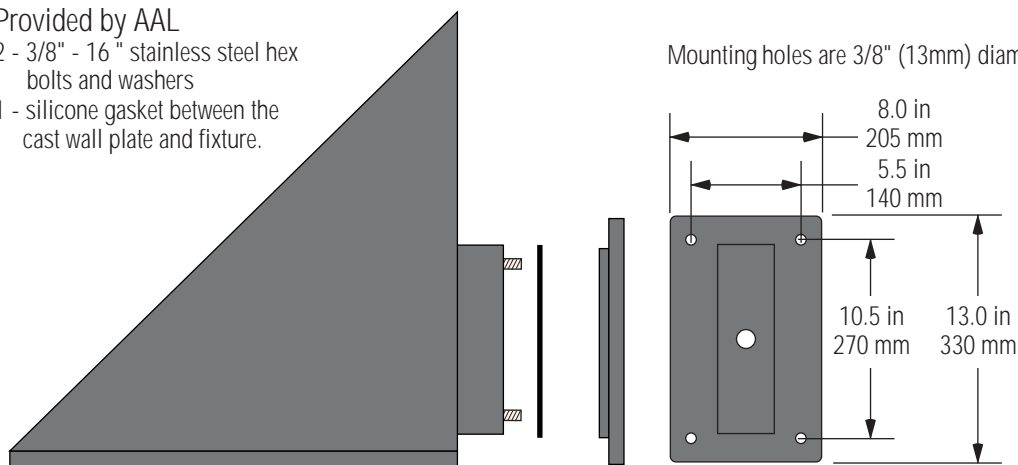
Installation Details

M1WD Large Scale Wall Mount

Provided by AAL

2 - 3/8" - 16" stainless steel hex bolts and washers

1 - silicone gasket between the cast wall plate and fixture.



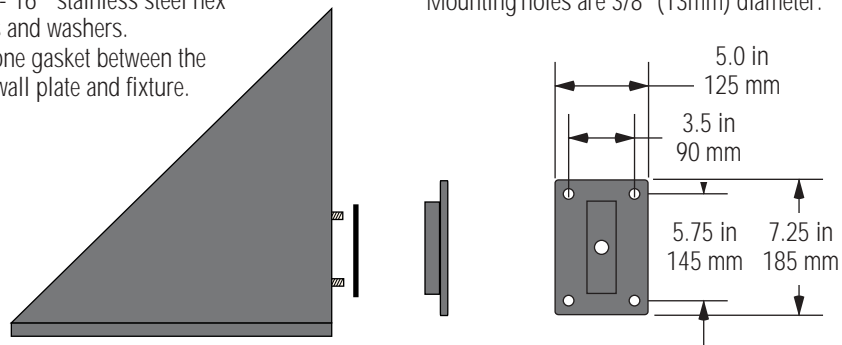
M2WU Medium Scale Wall Mount, Up Light

M2WD Medium Scale Wall Mount, Down Light

Provided by AAL:

2 - 3/8" - 16" stainless steel hex bolts and washers.

1 - silicone gasket between the cast wall plate and fixture.

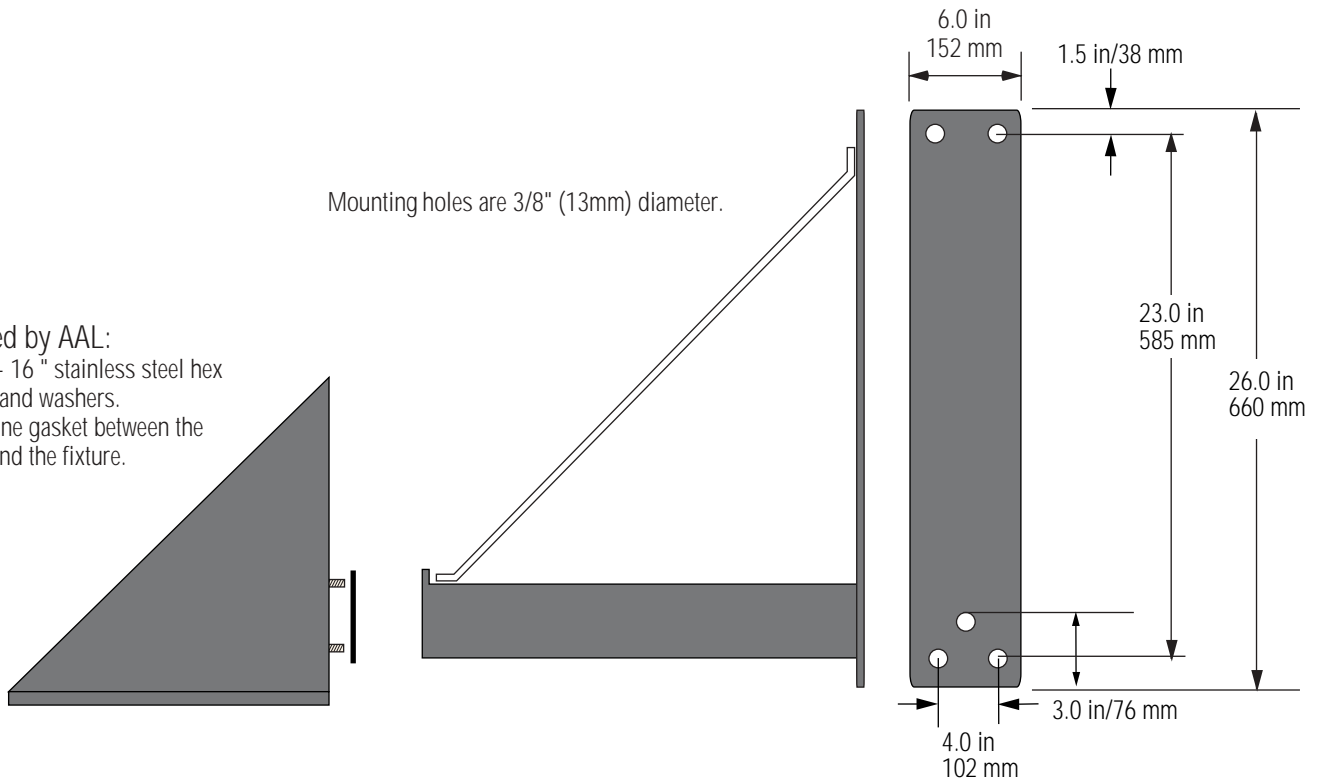


Installation Details

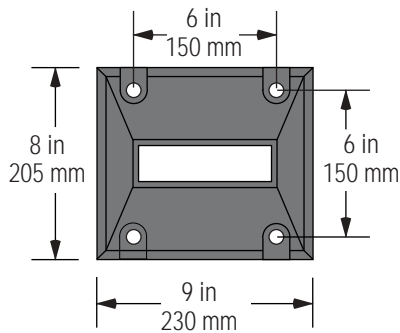
M2WD-XA Medium Scale Wall Mount, Down Light, Extended Arm

Provided by AAL:

- 2 - 3/8" - 16" stainless steel hex bolts and washers.
- 1 - silicone gasket between the arm and the fixture.

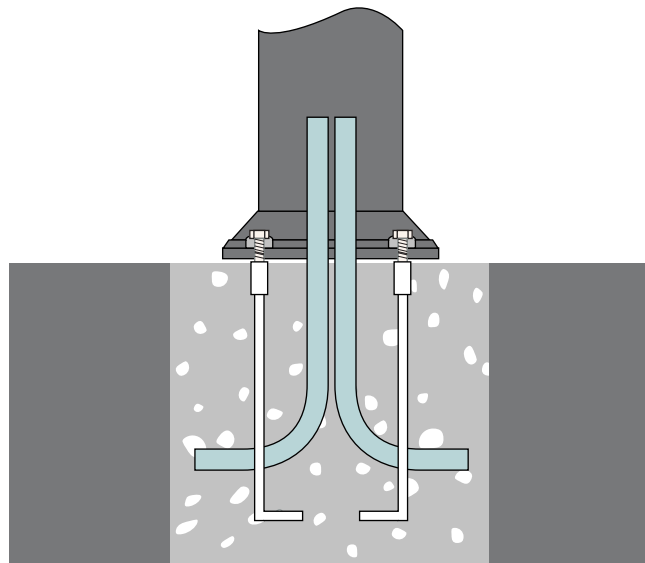


M4 Bollard



Provided by AAL:

- 4 - 3/8" x 10" galvanized anchor bolts with threaded sleeves.
- 4 - 3/8-16 stainless steel attachment bolts and washers.
- 1 - template for setting anchor bolts.

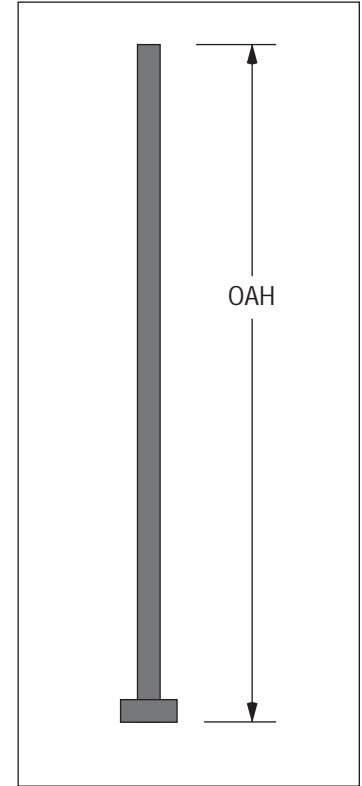


Pole Information

4" ROUND Catalog Numbers

BASE	POLE-WALL	WT	OAH	STEADY WIND				GUST FACTOR (1.3)			
				70/91	80/104	90/117	100/130	70/91	80/104	90/117	100/130
PR4	4R8-125	19	8'/2.4M	14.3	12.0	9.6	7.4				
PR4	4R10-125	22	10'/3.1M	11.8	8.6	6.5	5.2				
PR4	4R12-125	26	12'/3.7M	9.8	8.2	6.6	5.0				
PR4	4R14-125	30	14'/4.3M	7.9	6.6	5.2	3.9				
PR4	4R16-125	33	16'/4.9M	6.4	5.3	4.1	3.0				
PR4	4R10-226	36	10'/3.1M	22.2	18.5	15.0	12.0				
PR4	4R12-226	42	12'/3.7M	18.2	15.4	12.7	9.9				
PR4	4R14-226	49	14'/4.3M	14.7	12.4	10.2	8.0				
PR4	4R16-226	55	16'/4.9M	12.5	10.4	8.3	6.3				

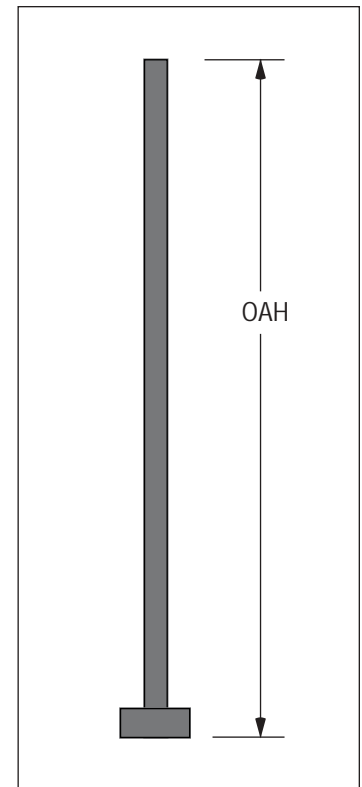
BOLT CIRCLE: 7"/180MM
BASE DIAMETER: 9"/230MM



5" ROUND Catalog Numbers

BASE	POLE-WALL	WT	OAH	STEADY WIND				GUST FACTOR (1.3)			
				70/91	80/104	90/117	100/130	70/91	80/104	90/117	100/130
PR5	5R10-188	48	10'/3.1M	26.0	20.8	16.0	12.6				
PR5	5R12-188	55	12'/3.7M	22.5	17.2	13.2	10.5				
PR5	5R14-188	61	14'/4.3M	18.2	13.5	10.5	8.2				
PR5	5R16-188	68	16'/4.9M	14.5	11.0	8.5	6.6				
PR5	5R18-188	75	18'/5.5M	12.0	9.0	6.8	5.2				
PR5	5R20-188	81	20'/6.1M	9.8	7.4	5.5	4.0				
PR5	5R12-250	67	12'/3.7M	27.0	22.7	18.8	15.5				
PR5	5R14-250	76	14'/4.3M	24.5	20.4	16.7	13.7				
PR5	5R16-250	85	16'/4.9M	21.8	18.0	14.8	11.5				
PR5	5R18-250	93	18'/5.5M	18.9	15.5	12.2	9.7				
PR5	5R20-250	102	20'/6.1M	16.4	13.6	10.9	8.2				

BOLT CIRCLE: 10"/255MM
BASE DIAMETER: 15"/320MM



Consult the pole section of your AAL Catalog for a complete range of decorative poles and accessories.

Photometry

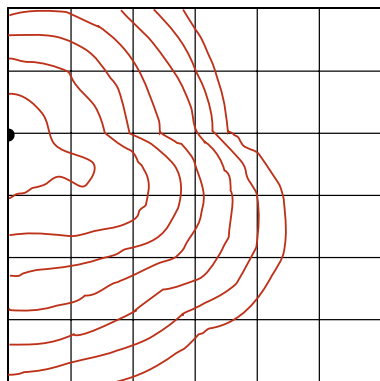
LAMP TYPE	LUMENS	CONVERSION FACTOR	
		M1	M2
70 MH, CLEAR E-17	5200		.33
100 MH, CLEAR E-17	8500		.53
175 MH, CLEAR E-17(M1: E28)	12000	.44	.75
250 MH, CLEAR BT-28	23000	.71	PIN ORIENTED LAMP
400 MH, CLEAR BT-28	40000	1.38	PIN ORIENTED LAMP
70 HPS, CLEAR BT-28	6400		.40
100 HPS, CLEAR E-17	9500		.59
150 HPS, CLEAR E-17(M1: E28)	16000	.55	1.00
250 HPS, CLEAR ED-18	28000	1.00	
400 HPS, CLEAR ED-18	50000	1.72	

NOTE: If using a lamp with different lumen output than listed above, consult AAL for conversion factor.

M1 H3 250HPS ED-18

16' MOUNTING HEIGHT
ONE GRID SQUARE EQUALS
ONE MOUNTING HEIGHT

	14'	16'	18'	20'
STREET SIDE	6.55	5.00	3.95	3.20
	2.62	2.00	1.58	1.24
	1.31	1.00	.79	.64
	.66	.50	.40	.32
	.26	.20	.16	.13



The values below are in initial footcandles. Discount values to account for light losses due to voltage, temperature and atmospheric variations which affect light output.

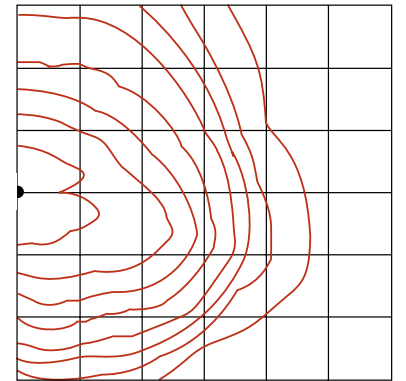
To substitute another lamp in the isocandle charts below, multiply the chart values by the lamp conversion factor on the left. Mounting height is to the lamp center.

All testing performed by a certified independent laboratory. Photometry is available in IES formatted files on CD-Rom and our website at www.aal.net or call your local AAL representative.

M2 H2 150HPS E-17

14' MOUNTING HEIGHT
ONE GRID SQUARE EQUALS
ONE MOUNTING HEIGHT

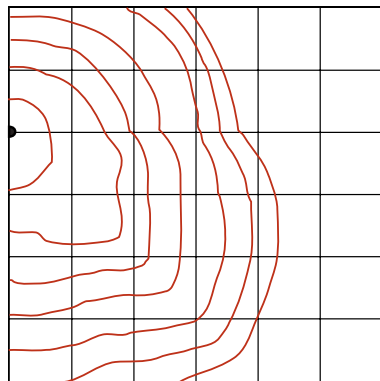
	12'	14'	16'	18'
STREET SIDE	6.80	5.00	3.85	3.00
	2.72	2.00	1.54	1.20
	1.36	1.00	.77	.60
	.68	.50	.39	.30
	.27	.20	.15	.12



M1 H4 250HPS ED-18

16' MOUNTING HEIGHT
ONE GRID SQUARE EQUALS
ONE MOUNTING HEIGHT

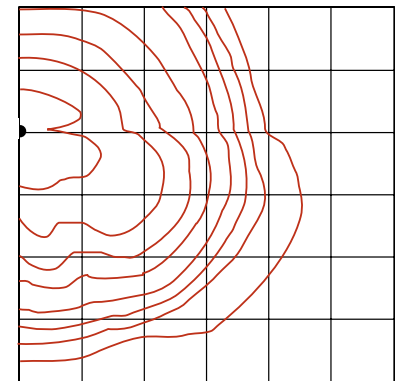
	14'	16'	18'	20'
STREET SIDE	6.55	5.00	3.95	3.20
	2.62	2.00	1.58	1.24
	1.31	1.00	.79	.64
	.66	.50	.40	.32
	.26	.20	.16	.13



M2 H3 150HPS E-17

14' MOUNTING HEIGHT
ONE GRID SQUARE EQUALS
ONE MOUNTING HEIGHT

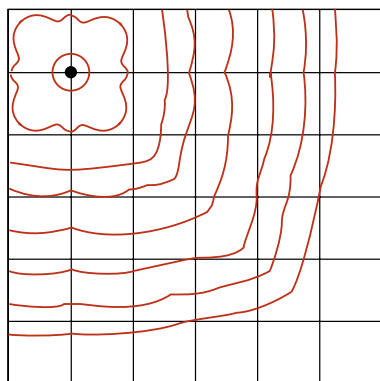
	12'	14'	16'	18'
STREET SIDE	6.80	5.00	3.85	3.00
	2.72	2.00	1.54	1.20
	1.36	1.00	.77	.60
	.68	.50	.39	.30
	.27	.20	.15	.12



M1 H5 250HPS ED-18

16' MOUNTING HEIGHT

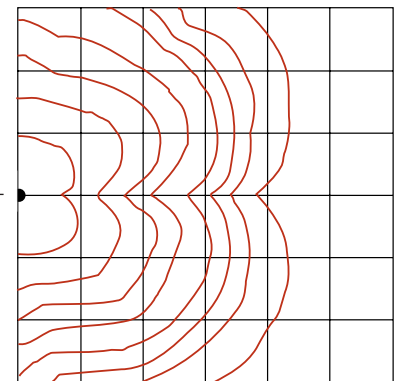
	14'	16'	18'	20'
STREET SIDE	6.55	5.00	3.95	3.20
	2.62	2.00	1.58	1.24
	1.31	1.00	.79	.64
	.66	.50	.40	.32
	.26	.20	.16	.13



M2 H5 150HPS E-17

14' MOUNTING HEIGHT
ONE GRID SQUARE EQUALS
ONE MOUNTING HEIGHT

	12'	14'	16'	18'
STREET SIDE	6.80	5.00	3.85	3.00
	2.72	2.00	1.54	1.20
	1.36	1.00	.77	.60
	.68	.50	.39	.30
	.27	.20	.15	.12





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