Cistus Purpureus

Coprosma x kirkii

Myoporum 'Pacificum'

Myoporum parvifolium

Plumbago auriculata

Sollya heterophylla

Abelia x grandiflora

Cistus purpureus

Coprosma repens

Escallonia 'Fradesii'

Escallonia 'Newport Dwarf'

Escallonia rubra

Grevillea rosmarinifolia 'Scarlet Spire'

Phormium tenax

Acer circinatum

Acer palmatum

Callistemon rigidus

Cercis occidentalis

Crataegus laevigata 'Paul's Scarlet'

Grevillea 'Canberra Gem'

Myoporum laetum

Crataegus phaenopyrum

Grevillea robusta

St. Mary's College High School

Music Building

Design Review

LED Luminaire
Catalog Pages

Prepared By
O'Mahony & Myer
Electrical Engineering
and Lighting Design

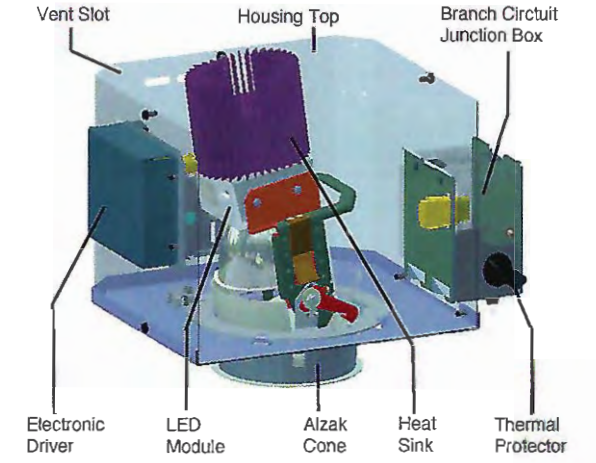
PRELIMINARY 11/8/2010

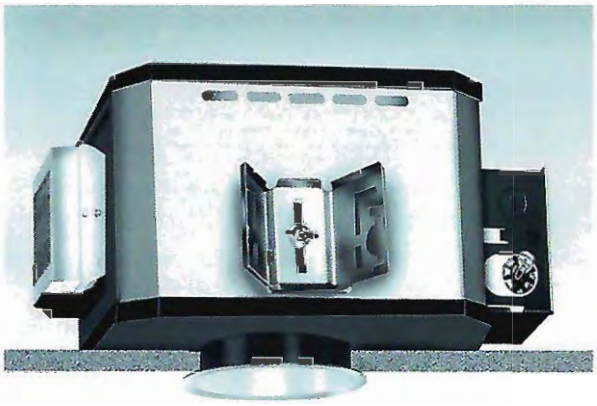
A4257 Lens, 1100 Lumen
A4258 Lens, 2000 Lumen

A24

Type LA1

4 3/8" Conoid Wall Washer
Fortimo Remote Phosphor
Flex Function
MutliSource Technology





Design Features - Flex Function
The fixtures can be functionally configured by changing out the optical assembly. All fixtures are capable of becoming downlights, directionals or wall washers. Thermal management acieved with proprietary heat sinking systems.

MultiSource Capable
Kurt Versen LED products are designed to accomodate any current or future technology changes. The flexible design allows for easy plug and play field replacements.

Driver
Drivers are selected which provide the most reliable and constant power to the LED module. Standard at 700mA.

Dimming
Fixtures are dimmable to 1%(estimated). Carefully selected vendors and products assure consistant performance. See accessories for details.

End of Life
LED modules can be field replaced or returned to the factory for relamping.

General
Fixtures are pre-wired, thermally protected, UL and C-UL listed for eight wire 75°C branch circuit wiring. All products are union made IBEW. Suitable for damp locations.

Dimensions

Number	A Depth	B Aperture	C Width	D Length	LED
A4257	10 ½" 267mm	4 ⅜" 111mm	15" 333mm	16 ⅜" 359mm	19W 1100 Lumen
A4258	10 ½" 267mm	4 ⅜" 111mm	15" 333mm	16 ⅜" 359mm	35W 2000 Lumen

LED Package Guide/Order Information

Lumen Package	Driver mA	Color K	CRI	Voltage
1000 2000	700	3000 3500 4000	80	120 277

kurt versen
Kurt Versen Company
Point Source Lighting
Westwood, New Jersey 07675

luxrail™

Type LB1

io

Application

ANSI and ADA compliant, **luxrail** is an indoor/outdoor LED-based handrail that delivers functional illumination. Two intensities may be specified: standard output and high output. The standard light output version delivers illuminance levels appropriate for exterior applications (2 footcandles at grade) as well as for dark interior environments with low ambient illumination levels, (e.g., theatres, themed environments). The high output version delivers illuminance levels applicable to interior environments – providing in excess of 10 footcandles along the path of egress (ANSI required for stair treads). Independent photometric test reports and IES Format data are available at **www.iolighting.com**.

luxrail's standard handrail gripping surfaces are circular in cross section and meet 2004 ADAAG (Americans with Disability Act Accessibility Guidelines). Patented optical assemblies deliver 10˚, 45˚ and 65˚ beam spreads. The 45˚ and 65˚ beam patterns are most suitable for illuminating pathways, while the 10˚ beam spread offers accent lighting to optional glass or stainless steel cable railing infills. Reference page 41 (**luxrail** brochure) for information regarding infill options. **io** ensures that each LED is driven with the proper current and voltage, which enables the average rated life to be 50,000 hours at 70% of lamp lumen output. Ambient temperature surrounding the fixture shall not exceed 120˚F *(48.9˚C).*

Light Output

Two luminous intensities are available for white light. IES format files may be obtained from the factory or downloaded from **www.iolighting.com**.

Standard Output:
3000K White: 34 lms/ft
5000K White: 40 lms/ft

High Output:
3000K White: 170 lms/ft
5000K White: 230 lms/ft

Construction

luxrail may be post mounted or wall mounted. Mounting hardware (post or wall) is typically required up to 5' O.C., depending on the handrail alloy. Final post and wall bracket spacing ***must be*** determined by a licensed architect or structural engineer. **luxrail** is available in stainless steel and aluminum. The lighting fixture component of the **luxrail** is a stand alone unit and is available in incremental nominal lengths that range from 6" to 60". Vandal resistant access chamber allows units to be removed for maintenance purposes.

All handrail component parts are engineered for quick installation. Field welding or cutting is typically not required. All parts are prefabricated to field dimensions and are assembled in the field with mechanical connection or epoxy.

The light fixture's housing is made of a light weight, yet durable aluminum, providing the recommended heat sink requirements for the LEDs. Housing, patented optical assembly and stainless steel end caps are bonded to prevent water infiltration.

Electrical

luxrail houses a low voltage LED-based light fixture that is integrated into the underside of the handrail. It comes complete with the linear light fixture installed in the handrail. 24 volt 100 watt power supplies are provided as a standard. See daisy chain and remote distance requirements in chart on the lower left corner of this specification sheet.

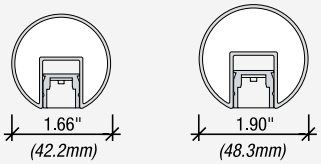
Power supply and dimming module must be specified separately. For detailed information, see **luxrail** brochure or download the power supply specification sheet from **www.iolighting.com**.

Power Consumption

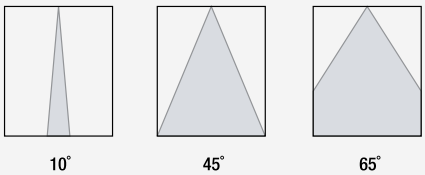
Standard Output: 2.1 w/ft **High Output: 7.6 w/ft**

Power consumption does not include power supply losses. Consult **io** driver specification sheets (at **www.iolighting.com**) for losses associated with each driver option.

Dimensions



Beam Spreads



Power Supply

Standard Output

TYPE	SUPPLIES	REMOTE DISTANCE	
24v100w	up to 35'-0"*(10.7m)*	7'-0" *(2.1m)*	w/22AWG
	(2) RUNS UP TO 49' *(14.9m)*	18'-0" *(5.5m)*	w/18AWG
	w/(1) RUN	46'-0" *(14m)*	w/14AWG
	NTE 35'-0"*(10.7m)*	71'-0" *(21.6m)*	w/12AWG

High Output

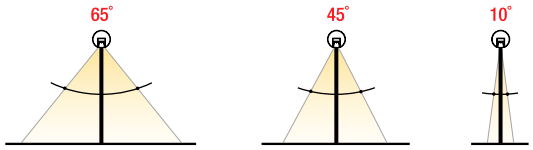
TYPE	SUPPLIES	REMOTE DISTANCE	
24v100w	up to 12'-0"*(3.6m)*	7'-0" *(2.1m)*	w/22AWG
		18'-0" *(5.5m)*	w/18AWG
		46'-0" *(14m)*	w/14AWG
		71'-0" *(21.6m)*	w/12AWG

io Lighting 370 Corporate Woods Parkway Vernon Hills, IL 60061-3107 T 847.735.7000 F 847.735.7001 E info@iolighting.com W iolighting.com

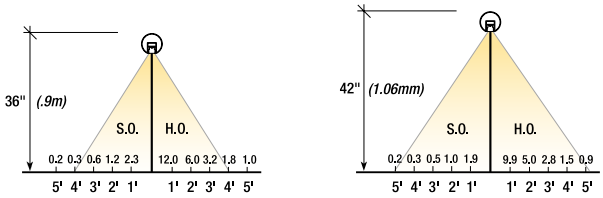
c UL us

Light Output / Distributions

BEAM SPREAD OPTIONS

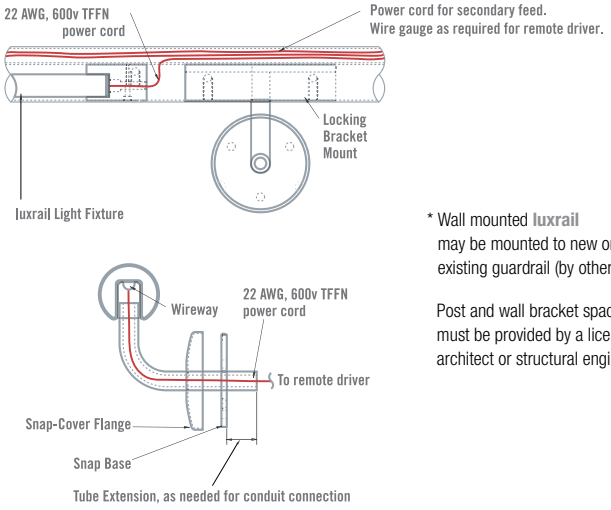


LIGHT OUTPUT - 65 DEGREE WARM WHITE



For Metric Conversion	1'	2'	3'	4'	5'
	.3m	.6m	.9m	1.2m	1.5m

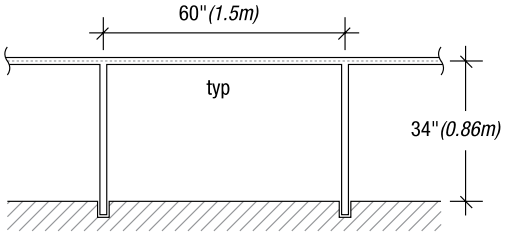
WALL MOUNT DETAILS*



* Wall mounted **luxrail** may be mounted to new or existing guardrail (by others).

Post and wall bracket spacing must be provided by a licensed architect or structural engineer.

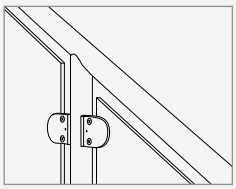
POST MOUNT APPLICATION



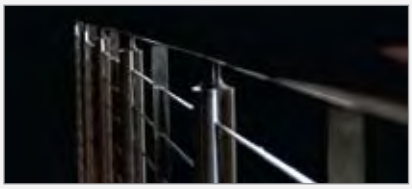
Mounting / Infill Options

PM (post mounted)

WM (wall mount intermediate)



Glass infill
(glass provided by others)



Stainless steel cable infill

Order Code

0	.	06	.		.		.		.		.		.		.		.		.	
io		1		2		3		4		5		6		7		8		9		10

1. PRODUCT FAMILY
06 luxrail

2. ALLOY / FINISH
SSS Stainless Steel Satin
SSP Stainless Steel Polished
CAA Clear Anodized Aluminum (7)

3. SIZE
1 1.66" O.D. (1¼" pipe size) (7) [available for SS & CAA]
2 1.90" O.D. (1½" pipe size) [available for SS & CAA]

4. MOUNTING
PM Post Mounted (7)
WM Wall or Guard Rail Mounted

5. INFILL
AC Aircraft Cable (5)
GL Glass (provided by others)
C Custom
NR Not Required

6. LIGHT DISTRIBUTION
10 10 Degree
45 45 Degree
65 65 Degree
NI Handrail only (not illuminated)

7. LIGHT COLOR
3k Warm White (3)
5k Cool White (3)
3kHO Warm White (3)
5kHO Cool White (3)
R Red (4)
G Green (4)
B Blue (4)

8. LENGTH
Provide overall length of each handrail section. Reference Footnote #2(6)

9. VOLTAGE / DIMMING
1 120v
2 277v
3 120v w/dim
4 277v w/dim
5 Other

10. SPECIFY DRIVER / DIMMING(1)
Note: If left blank, **io** will supply 100 watt drivers. Download Power Supply specification sheet from **www.iolighting.com**

Footnotes

Footnotes
1. ***Power Supply Specification Sheet*** *may be downloaded from* ***www.iolighting.com****.*
2. *Each handrail application will be somewhat custom to accommodate varying field conditions and design requirements. Shop drawings will be required to manage specifics of each handrail section.*
3. *White light variance between LEDs within a single fixture will not exceed +/- 200K.*
4. *High Output only - 7.6w/ft.*
5. *Aircraft cable available for flat surfaces only.*
6. *Elevation drawings required.*
7. *1.66" OD, post mounted railings are not available in aluminum. Stainless steel only.*

For Metric Conversion	1"	1"	1'
	25.4mm	2.54cm	0.3m

c UL us io Lighting 370 Corporate Woods Parkway Vernon Hills, IL 60061-3107 T 847.735.7000 F 847.735.7001 E info@iolighting.com W iolighting.com

winonaLED

V-Line GEN3
LINEAR LIGHTING SYSTEM

Type LC1

Project Name:

V-Line Gen3 is a high performance linear luminaire with a small profile suitable for illumination of displays, signage, cabinets, and other small areas.

Construction: Extruded aluminum body with molded endcaps. Extruded acrylic optic is UV resistant.

Finish: Black anodized only. This product is not available in a painted finish. Painting this product will void all warrantees.

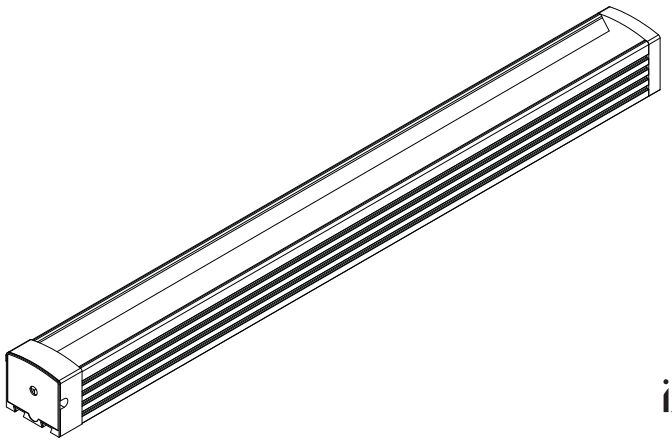
Internal Drivers: Built-In SmartDrivers by i2Systems ensure constant current to each LED enabling uniform brightness from LED to LED and fixture to fixture over a wide input voltage range. The internal drivers can be controlled by an external dimming module for true 0-100% dimming. Dimming module accepts standard 0V-10V signal.

Available Mounts: Fixed and adjustable mounting hardware is available - see second page.

Power Requirements: V-Line Gen3 is powered by a non-magnetic 24V DC power supply sized according to the installation. Power consumption is approximately 8W per linear foot.

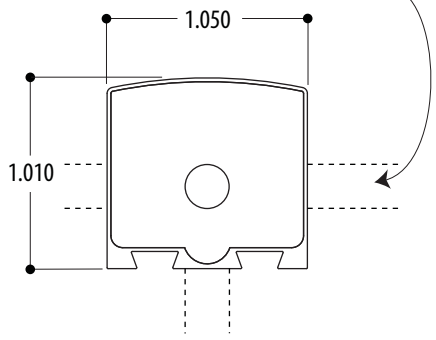
Wiring: V-Line Gen3 is supplied with an exclusive 4-way endcap which allows the installer to run wiring out the left, right, bottom, or end of the luminaire. A 72" long plenum-rated cable is standard. See third page for additional wiring information.

Dry, Damp, and Wet Locations



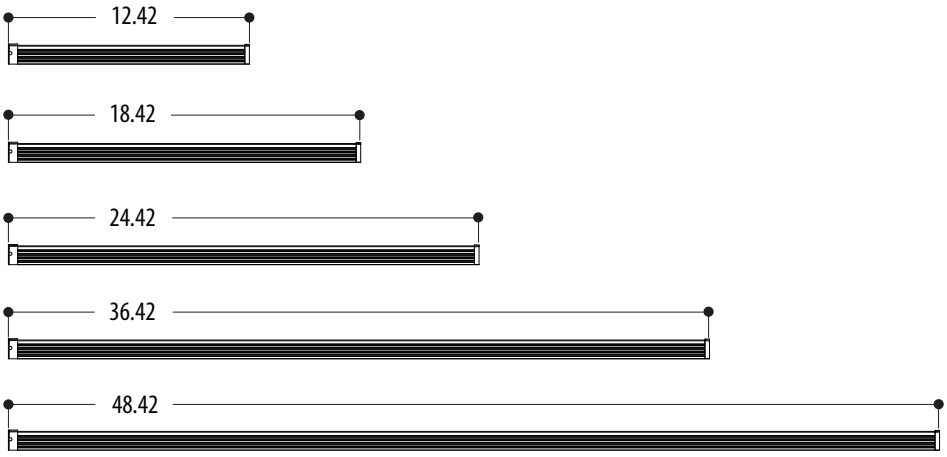
i2Systems enabLED.

Four possible wire locations - Left, Right, End and Bottom



Actual Size

Available Lengths: (12", 18", 24", 36", 48")



Wire Codes:

RED to power supply 24V positive
BLACK to power supply ground
WHITE to dimming module YELLOW (if applicable)
GREEN to dimming module BLACK (if applicable)

LED — **VL3** — ____ — ____ — ____ — ____ — ____ — **BLK** — ____ — ____

SOURCE	MODEL	UNIT LENGTH OR TOTAL RUN LENGTH (if known)	BEAM ANGLE	LED CODE	VOLTAGE SUPPLY	MOUNT	FINISH	OPTIONS	SPECIAL

VL3 = V-Line GEN3

UNIT LENGTH OR **TOTAL RUN LENGTH IN FEET**

12 = 12 INCH
18 = 18 INCH
24 = 24 INCH
36 = 36 INCH
48 = 48 INCH

NOTE: When building a run, standard length fixtures may be used in combination.

30 = 30˚ SYMMETRIC
45 = 45˚ SYMMETRIC
65 = 65˚ SYMMETRIC
82 = 82˚ SYMMETRIC

CODE	*COLOR*
001	WARM WHITE 3000K
002	COOL WHITE 6200K
003	AMBER
004	BLUE
005	CYAN
006	GREEN
007	RED-ORANGE
008	RED

NON-DIMMING
ND24V = 24V DC
DIMMING
DM24V = 24V DC
LightLink dimming system interface maximum 50 feet per LightLink, one LightLink per dimming zone.

ADJ = ADJUSTABLE
FIX = FIXED

BLK = BLACK ANODIZED
Product cannot be painted. Painting will void warranty.

X = NO OPTION
D = DEBRIS COVER
Required for all exterior uplight conditions.

STD = STANDARD
MOD = MODIFIED

Modifications: (if any) _____

Revision 3/29/10

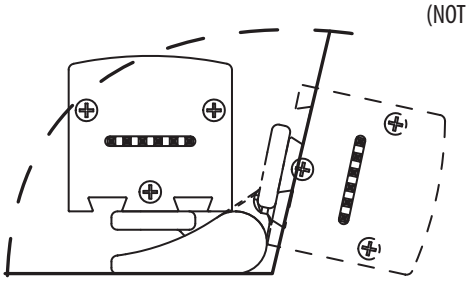
winonaLED

V-LINE GEN3 MOUNTING OPTIONS

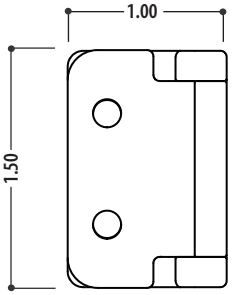
V-Line GEN3 is offered with either fixed or adjustable mounts. Both mounts have been engineered for maximum installation flexibility.

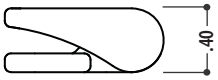
GEN3 ADJUSTABLE MOUNT

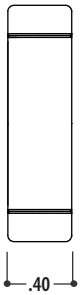
(NOT TO SCALE)

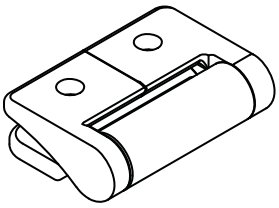


95 DEGREES OF ADJUSTMENT









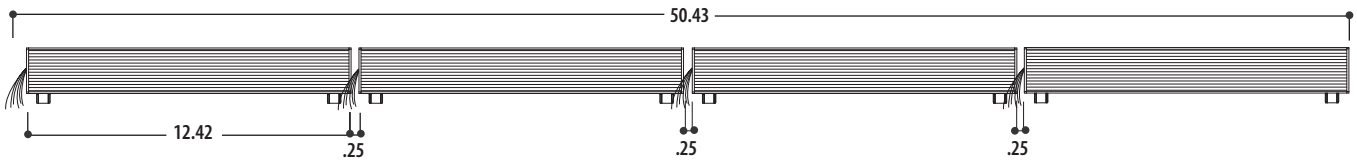
Adjustable mount allows easy installation and adjustment of individual GEN3 luminaires.

1. Die cast aluminum construction.
2. Each hinge rated at eight pounds force.
3. Fastens to GEN3 via 8-32 screws.
4. Mount holes located at six inch o.c. along back of luminaire.
5. Matte black finish.

How to determine headline: "*Run Lengths*"

1. Add length of all luminaires.

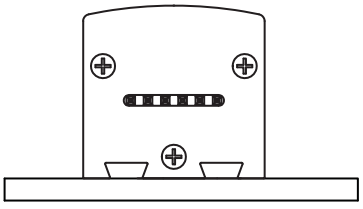
2. Add an equal number of gaps (.25" each) for wires.

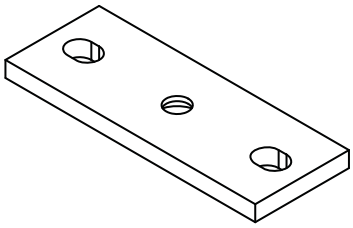


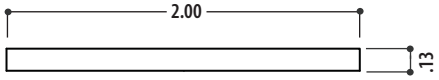
12.42 + .25 + 12.42 + .25 + 12.42 + .25 + 12.42 = 50.43

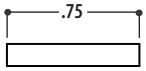
GEN3 FIXED MOUNT

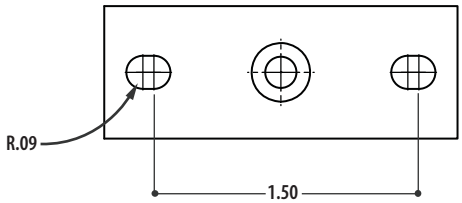
(NOT TO SCALE)











The fixed mount is a quick and easy method of mounting GEN3 to any surface when field adjustment is not required. Features include:

1. Solid aluminum construction.
2. Fastens to GEN3 via 8-32 screws.
3. Holes on back at six inch o.c.
4. Matte black finish.

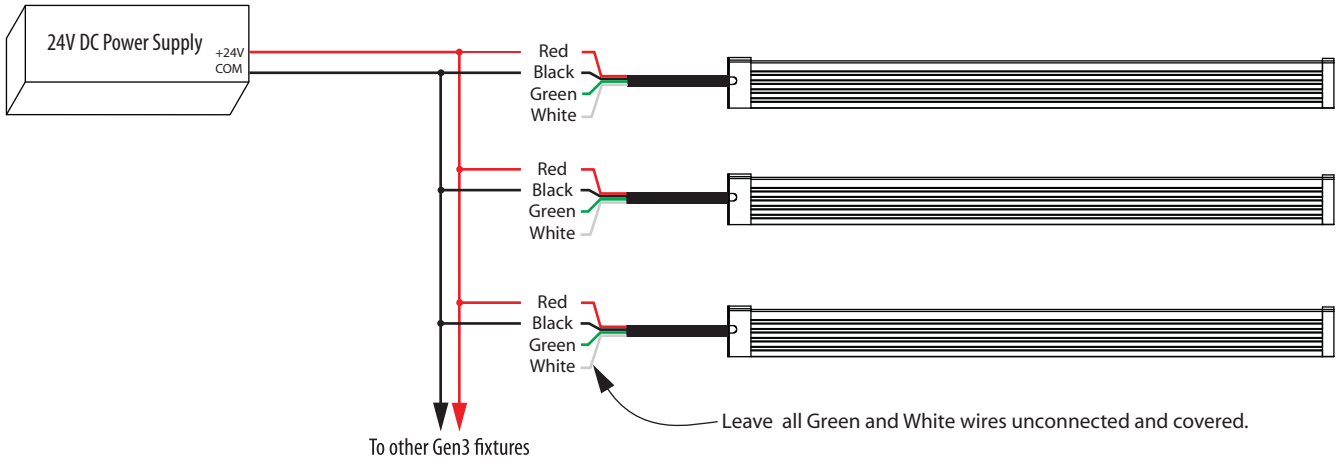
winonaLED

V-LINE GEN3 WIRING

V-line Gen3 can be powered by any non-magnetic 24V DC power supply - do not connect Gen3 directly to line voltage!
The 24V DC power supply must be capable of supplying adequate power to the quantity of Gen3 fixtures to avoid permanent damage to the power supply and Gen3 fixtures.
Each linear foot of Gen3 consumes 8W of power. Multiply total footage by 8W to determine size of power supply required.

NON-DIMMING INSTALLATIONS

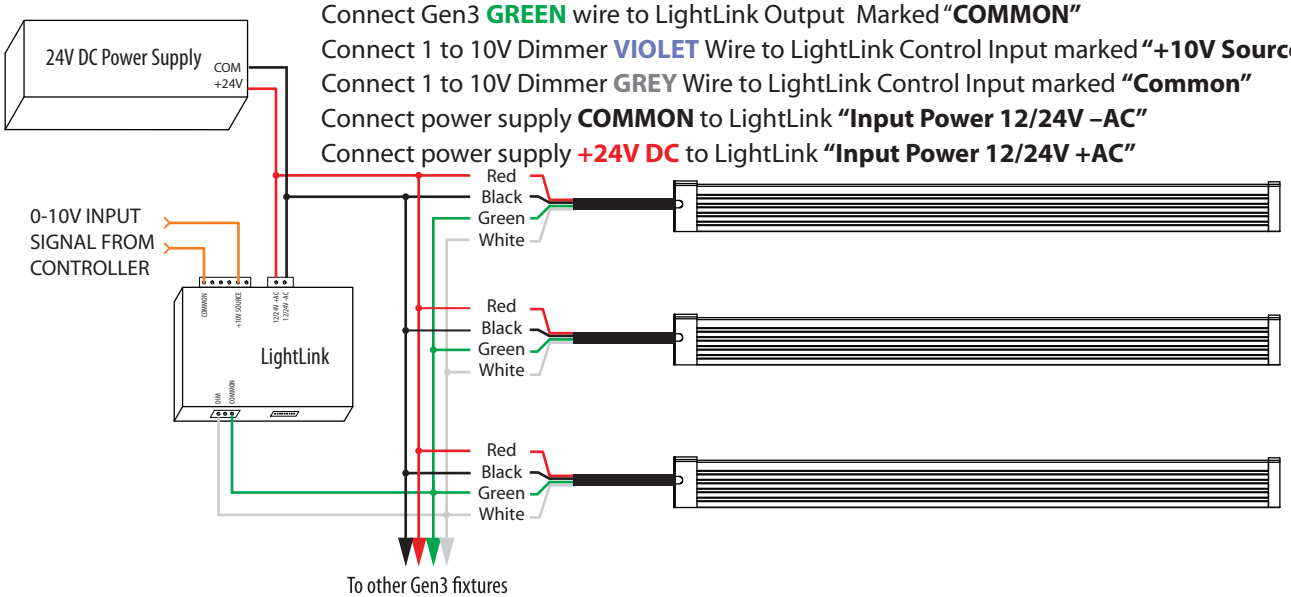
Non-dimming installations require wiring the Gen3 fixtures in parallel to a 24V DC power supply.
Create a pair of feed wires using 16 ga or larger wire. Use of 12 ga wire is reccommended for remote power supply installations.
Connect Gen3 **RED** wire to power supply **+24V DC**
Connect Gen3 **BLACK** wire to power supply **COMMON**
On non-dimming installations the **GREEN** and **WHITE** wires are not used and should be left unconnected but covered.



DIMMING INSTALLATIONS

All dimming installations require the use of the LightLink dimming module which is spliced inline with the control signal output from the dimming control system. The LightLink module will accept any 0-10V dimming signal input (source or sink) from any dimming control system as well as PWM input and analog input from room sensors or other devices. Refer to LightLink documentation for detailed installation and operating instructions. Mount the LightLink module close to and feed it power from the same 24V DC power supply used for the Gen3 fixtures. On installations requiring more than one transformer, a LightLink module must be used for each supply. Multiple LightLink modules may be connected to the same power supply. Use minimum of 12 gauge wire for remote power supply installations.

Connect Gen3 **RED** wire to power supply **+24V DC**
Connect Gen3 **BLACK** wire to power supply **COMMON**
Connect Gen3 **WHITE** wire to LightLink Output Marked "**DIM**"
Connect Gen3 **GREEN** wire to LightLink Output Marked "**COMMON**"
Connect 1 to 10V Dimmer **VIOLET** Wire to LightLink Control Input marked **"+10V Source"**
Connect 1 to 10V Dimmer **GREY** Wire to LightLink Control Input marked **"Common"**
Connect power supply **COMMON** to LightLink **"Input Power 12/24V –AC"**
Connect power supply **+24V DC** to LightLink **"Input Power 12/24V +AC"**



3/30/09

EL CAPITAN™ EC 8 WATT

Type LD1

OPTICS

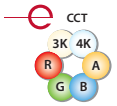

Narrow Spot


Spot


Medium Flood


Wide Flood

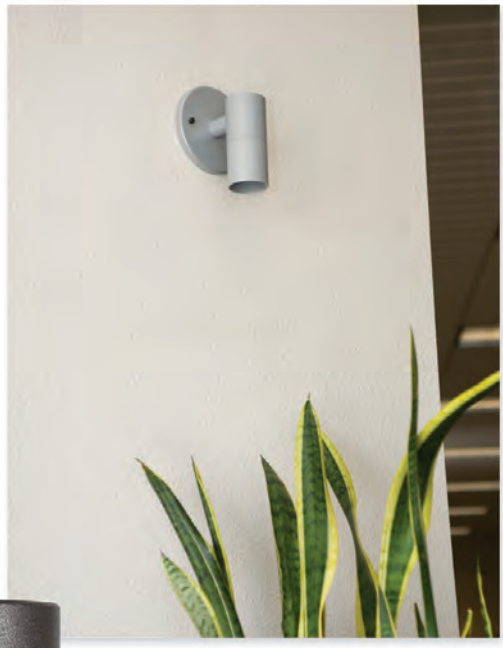

Rectilinear



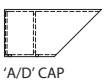
MATERIAL

VOLTAGE

El Capitan™ is designed as a clean and effective wall mounted fixture and is configurable as an uplight or downlight. Choose from three cap styles offering different cutoff options. El Capitan™ features a completely sealed optical compartment and is suitable for indoor and outdoor use. Meets A.D.A requirements. Keyword EC

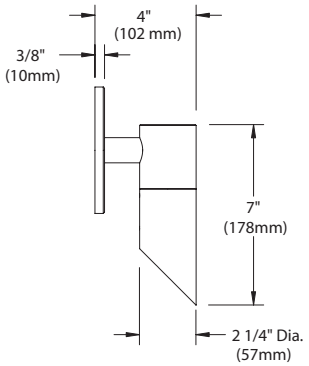


Shown in
Bronze Wrinkle (BZW) finish

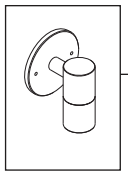

'A/D' CAP


'B/E' CAP


'C' CAP



ARCHITECTURAL SURFACE



BKSSL SOLID STATE LIGHTING

the power of e

EL CAPITAN™

PROJECT:	
TYPE:	
CATALOG NUMBER:	
NOTES:	

CATALOG NUMBER LOGIC

	[ ]	[EC]	[LED]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]		
Example	-	**EC**	- **LED**	- **e22**	- **SP**	- **BLW**	- **12**	- **11**	- **B**		

Material

Blank - Aluminum
B - Brass
S - Stainless Steel

Series

EC - El Capitan™ Series

Source

LED - **'e'** Technology with Integral Driver

LED Type

e22 - 8WLED/3K
e23 - 8WLED/4K
e24 - 8WLED/Red
e25 - 8WLED/Green
e26 - 8WLED/Blue
e27 - 8WLED/Amber

Optics*

NSP - Narrow Spot (Red Indicator)
SP - Spot (Green Indicator)
MFL - Medium Flood (Yellow Indicator)
WFL - Wide Flood (Blue Indicator)

Finish

Aluminum & Brass Finish

Powder Coat Color	Satin	Wrinkle
Bronze	**BZP**	**BZW**
Black	**BLP**	**BLW**
White (Gloss)	**WHP**	**WHW**
Aluminum	**SAP**	—
Verde	—	**VER**

Brass Finish

Machined	**MAC**
Polished	**POL**
Mitique™	**MIT**

Stainless Finish

Machined	**MAC**
Polished	**POL**
Brushed *Interior Use Only*	**BRU**

Also available in Premium Finishes See submittal SUB-1439-00

Lens Type

12 - Soft Focus Lens
13 - Rectilinear Lens

Shielding

11 - Honeycomb Baffle

Cap Style

A - 45°
B - 90°
C - Flush
D - 45° Less weephole
E - 90° Less weephole

LM79 DATA

BK No.	CCT (Typ.)	Input Watts (Typ.)	CRI (Typ.)
e22	3100K	8.4	80
e23	4100K	8.4	66
e24	Red (627nm)	7.9	~
e25	Green (530nm)	8.4	~
e26	Blue (470nm)	8.4	~
e27	Amber (590nm)	7.9	~

L70 DATA

Minimum Rated Life (hrs.) 70% of initial lumens (L_{70})
50,000
50,000
50,000
50,000
50,000
50,000

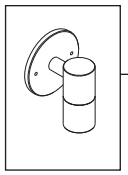
*OPTICAL DATA

Beam Type	Angle	Visual Indicator
Narrow Spot	14°	Red Dot
Spot	18°	Green Dot
Medium Flood	25°	Yellow Dot
Wide Flood	36°	Blue Dot

B-K LIGHTING
40429 Brickyard Drive • Madera, CA 93636 • USA
559.438.5800 • FAX 559.438.5900
www.bklighting.com • info@bklighting.com

SUBMITTAL DATE 1-11-10

DRAWING NUMBER SUB000942



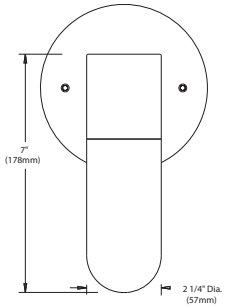
the power of e

EL CAPITAN™

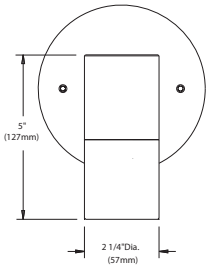
PROJECT:	
TYPE:	

FRONT VIEW

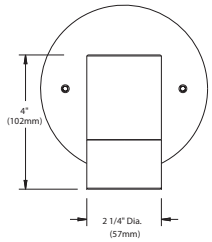
"A/D" CAP



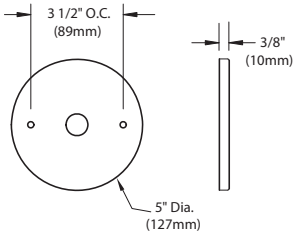
"B/E" CAP



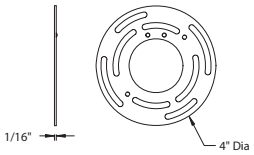
"C" CAP



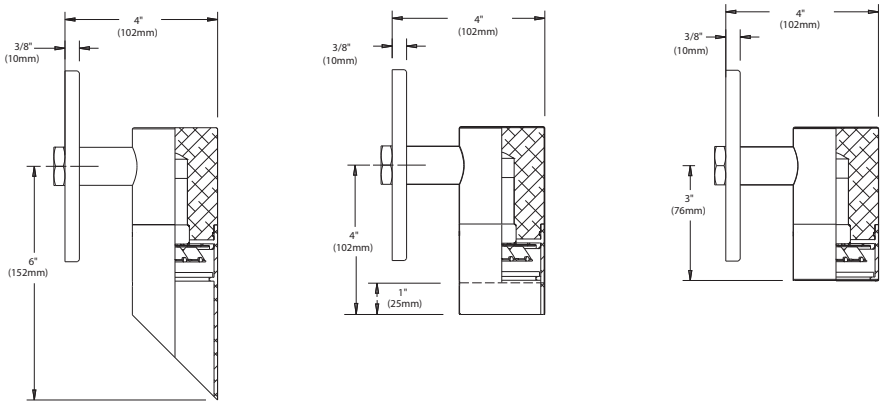
CANOPY DETAIL



UNIVERSAL RING

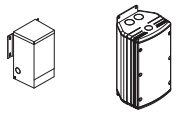


SIDE VIEW



Accessories *(Configure separately)*

Remote options:



TR Series PMRM™

SPECIFICATIONS

GreenSource Initiative™
Metal and packaging components are made from recycled materials. Manufactured using renewable solar energy, produced onsite. Returnable to manufacturer at end of life to ensure cradle-to-cradle handling. Packaging contains no chlorofluorocarbons (CFC's). Use of this product may qualify for GreenSource efficacy and recycling rebate(s). Consult www.bklighting.com/greensource for program requirements.

Materials
Furnished in Copper-Free Aluminum (Type 6061-T6), Brass (Type 360) or Stainless Steel (Type 316).

Body
Fully machined from solid billet. Unibody design provides enclosed, water-proof wireway and integral heat sink for maximum component life. High temperature, silicone 'O' Ring provides water-tight seal.

Cap
Fully machined. Accommodates [1] lens or louver media. Choose from 45° cutoff ('A' or 'D'), 1" deep bezel with 90° cutoff ('B' or 'E'), or flush lens ('C') cap styles. 'A' and 'B' caps include weep-hole for water and debris drainage. 'D' and 'E' caps exclude weep-hole and are for interior use only.

Lens
Shock resistant, tempered, glass lens is factory adhered to fixture cap and provides hermetically sealed optical compartment. Specify soft focus (#12) or rectilinear (#13) lens.

BKSSL™
Integrated solid state system with 'e' technology is scalable for field upgrade. Modular design with electrical quick disconnects permit field maintenance. High power, forward throw source complies with ANSI C78.377 binning requirements. Exceeds ENERGY STAR® lumen maintenance requirements.

LM-80 certified. Integral non-dimming driver. Minimum 50,000 hour rated life at 70% of initial lumens (L70). BKSSL technology provides long life, significant energy reduction and exceptional thermal management.

Optics
Interchangeable OPTIKIT™ modules permit field changes to optical distribution. Color-coded for easy reference: Narrow Spot (NSP) = Red. Spot (SP) = Green. Medium Flood (MFL) = Yellow. Wide Flood = Blue.

Installation
5" dia., machined canopy with stainless steel universal mounting ring permits mounting to 4" octagonal junction box (by others). Suitable for uplight or downlight installation.

Transformer
For use with 12VAC BKSSL remote transformer.

Wiring
Teflon® coated, 18AWG, 600V, 250° C rated and certified to UL 1659 standard.

Hardware
Tamper-resistant, stainless steel hardware. Canopy mounting screws are additionally black oxide treated for additional corrosion resistance.

Finish
StarGuard® (Pat. Pend.), a RoHs compliant, 15 stage chromate-free process cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating. Brass components are available in powder coat or handcrafted metal finish. Stainless steel components are available in handcrafted metal finish. (Brushed finish for interior use only).

Warranty
5 year limited warranty.

Certification and Listing
ITL tested to IESNA LM-79. Lighting Facts Registration per USDOE (www.lightingfacts.com). ETL Listed to ANSI/UL Standard 1838 and UL Subject 8750 and Certified to CAN/CSA Standard C22.2 No. 9. RoHs compliant. Suitable for indoor or outdoor use. Suitable for use in wet locations. Made in USA.

**Teflon is a registered trademark of DuPont Corporation.*
**Energy Star is a registered trademark of the United States Environmental Protection Agency.*

B-K LIGHTING
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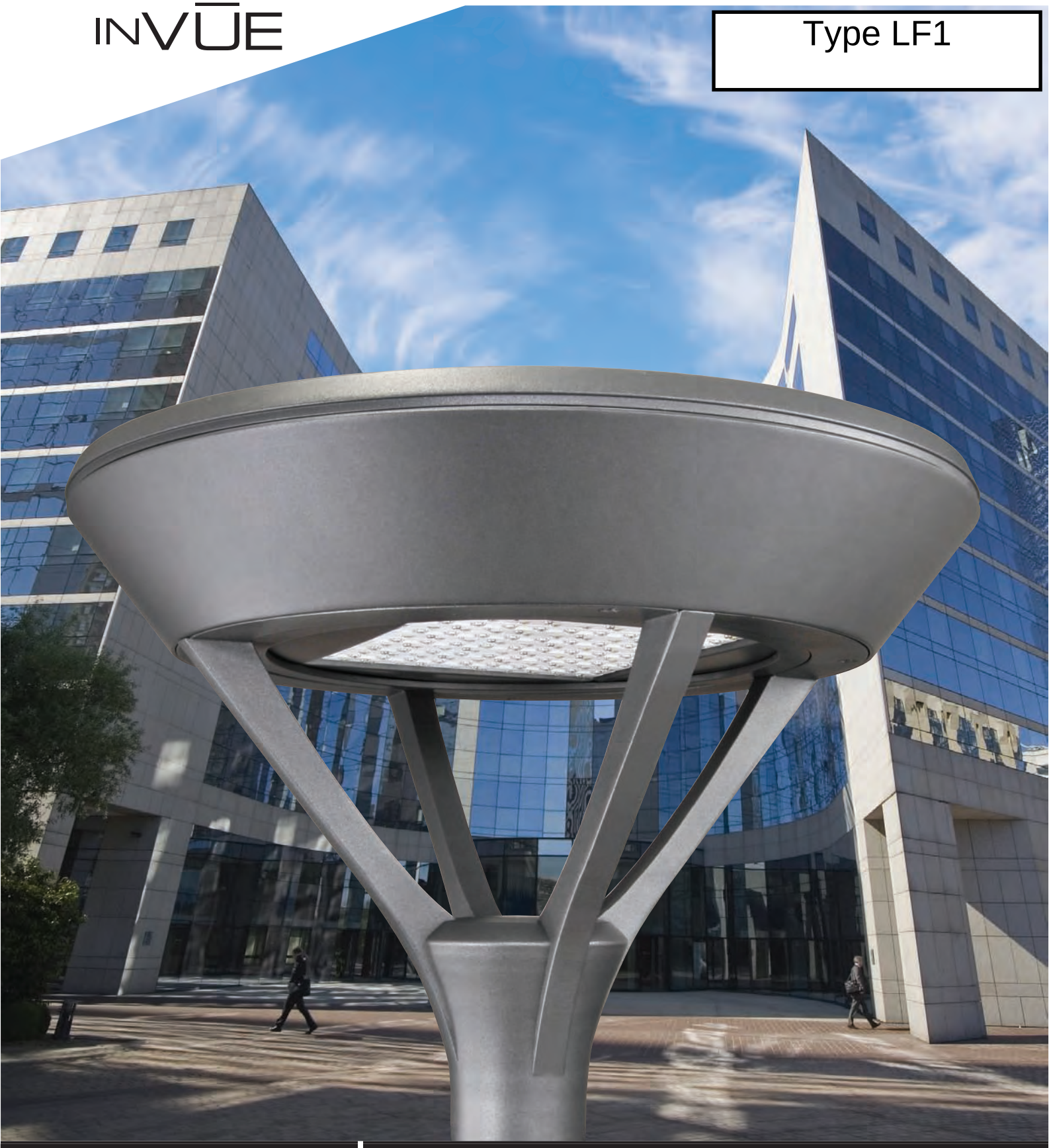
SUBMITTAL DATE	DRAWING NUMBER
1-11-10	SUB000942

INVUE

Type LF1



SustainabLEDesign™

Mesa LED

Decorative Area Luminaire

COOPER Lighting

INNOVATION CENTER

INNOVATION IN ACTION

The Cooper name has stood for innovation, service and expertise for over 175 years. Today, Cooper Lighting's LED Innovation Center is home to the design, validation and manufacturing of proprietary LED technologies. Through changing times and technologies, Cooper answers the call to provide relevant, industry-leading solutions to evolving market needs.

BEST IN CLASS DESIGN + RELIABILITY

Precision design practices and rigorous reliability testing result in dependable luminaries that thrive in outdoor environments. Mesa LED is rated for operation in -30°C to 40°C ambient environments, comes equipped with 10kV transient surge protection and is backed by a 5 year warranty from a world class manufacturer.

LIGHTBAR™ TECHNOLOGY

ENERGY SAVINGS + ENVIRONMENTAL STEWARDSHIP

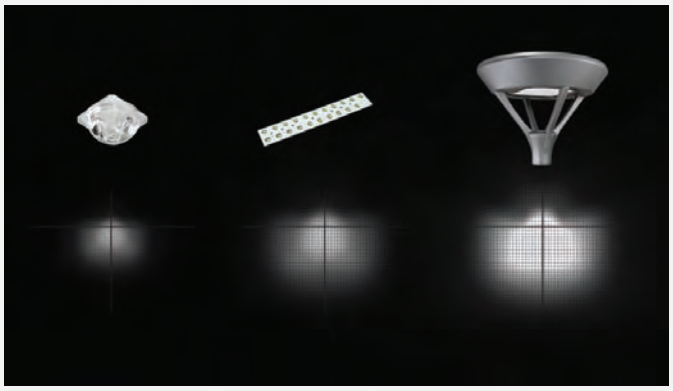
The simplest and most effective way to reduce a lighting fixture's impact on the environment is to minimize its energy consumption. By incorporating Cooper Lighting's patent pending LED LightBAR™ technology, Mesa LED provides energy savings between 40-72% over standard HID and CFL sources.

PATENTS PENDING

LONG LIFE

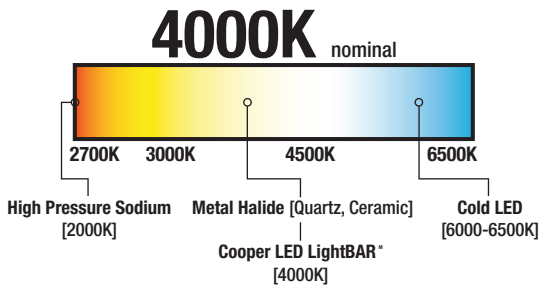
With a 50,000+ hour rated life at 70% lumen maintenance, Mesa LED operates six [6] times longer than traditional Metal Halide sources.

SCALABLE ILLUMINATION



Each patented LED LightBAR™ optic renders the entirety of the pattern. As the number of LightBAR™ elements increase so does the application illuminance, allowing lumen and energy output to be scaled and optimized per application. Obtrusive spill light and glare is replaced by uniform, application specific illumination.

WARM WHITE COLOR



Lighting Designers, Architects and Specifying Engineers have long preferred light sources which provide a balanced spectral power distribution and warm white light. Typical LED solutions standardize on a cold blue 6000-6500K correlated color temperature [CCT] to maximize lumen output. Mesa LED provides warm white light at a standard 4000K CCT with no sacrifice in lumen output.

AccuLED Optics™

SUPERIOR EFFICIENCY + CONTROL

With efficiencies as high as 95%, patented AccuLED Optics™ systems are as much as 30% more efficient than traditional HID optical systems. Available in fifteen [15] beam distributions, AccuLED Optics™ systems provide the flexibility and performance required for any outdoor application.

COOPER LIGHTING'S PATENT PENDING LED LIGHTBAR LIGHT ENGINE BRINGS NEW MEANING TO THE WORD SCALABILITY

FEATURES + BENEFITS

STANDARD PRODUCT FEATURES

[+] Durable Die-Cast Construction
[+] Extruded Aluminum Heat Sinks
[+] 10kV Circuit Protection
[+] Electronic Universal Drivers
[+] Quick Disconnect Wire Connections
[+] Replaceable Lightbars + Drivers
[+] Industry Leading Optics
[+] Easy Access Top Door
[+] Toolless Removable Powertray
[+] Removable + Rotatable Optic Tray

ARCHITECTURAL FORM

Mesa LED creates a powerful yet elegant statement in modern lighting design. Well suited for both contemporary and traditional architectural settings, Mesa LED transcends the industry norm with an appealing geometric form and bold transitional design features. Mesa LED is well suited for area lighting, pedestrian and egress applications.

ENERGY SAVING + CONTROL OPTIONS

Mesa LED provides up to 72% energy savings over traditional lamp sources. Additional energy savings is possible through bi-level switching [2L], allowing up to 50% additional energy savings with no compromise in distribution uniformity. Mesa LED is available with an optional button photocell [PC].

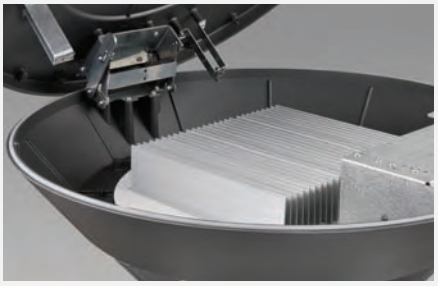
HID & CFL / LED CROSS REFERENCE CHART

LAMP SYSTEM	LAMP WATTAGE	LAMP LIFE [HRS] [1]	LED/ # OF BARS [2]	LED WATTAGE	LED LIFE [HRS] [3]	LED SAVINGS
70W Pulse Start MH	90	12,000	2	53	50,000	41%
100W Pulse Start MH	128	12,000	2	53	50,000	59%
150W Pulse Start MH	189	12,000	3	80	50,000	58%
250W Pulse Start MH	291	20,000	6	156	50,000	46%
70W HPS	91	24,000	2	53	50,000	42%
100W HPS	130	24,000	2	53	50,000	59%
150W HPS	180	24,000	4	103	50,000	43%
84W CFL	93	16,000	1	26	50,000	72%
114W CFL	128	16,000	2	53	50,000	59%
140W CFL	156	16,000	2	53	50,000	66%

NOTES: 1 Hours of life based on 50% mortality. 2 Actual number of LightBARS should be confirmed with site specific lighting calculations.
3 Hours of life based on 70% lumen maintenance.

FINISH

Finished in super durable TGIC polyester powder coat paint. Six [6] standard colors. RAL and custom colors available.



MAINTENANCE + SUSTAINABILITY

Mesa LED offers easy access through a top-access door, which features a concealed four-bar hinge that retains and locks the door in the opened position and offers full access to all internal components.

OPTICAL EXCELLENCE

Optical efficiency and control is provided through precision designed AccuLED Optics™ that focus light onto the application region. Mesa LED is available in one [1] to six [6] LightBAR™ configurations with a choice of fifteen [15] industry leading distributions including a family of spill light eliminator optics [SL] to drastically reduce spill light behind the luminaire. LightBARS™ feature an IP66 enclosure rating.

MOUNTING

Mesa LED mounts onto a 3" O.D. tenon in post top mount applications, blending seamlessly with 4" O.D. poles. Dual mount and wall mount arm accessories available.

MESA LED

ORDERING INFORMATION

SAMPLE NUMBER: MSA-A02-LED-E1-SL2-GM

PRODUCT FAMILY	NUMBER OF LIGHTBARS [1]	LAMP TYPE	VOLTAGE	DISTRIBUTION	FINISH [3]	OPTIONS + ACCESSORIES
MSA=Mesa	A01=1 Bar A02=2 Bars A03=3 Bars A04=4 Bars A05=5 Bars A06=6 Bars	LED=Solid State Light Emitting Diodes	E1=Electronic [120-277V] 347=347V [2] 480=480V [2]	T2=Type II T3=Type III T4=Type IV FT=Forward Throw 5MQ=Type V Square Medium 5WQ=Type V Square Wide 5XQ=Type V Square Extra Wide 5MR=Type V Square Round Medium 5WR=Type V Square Round Wide RW=Rectangular Wide SL2=Type II w/Spill Control SL3=Type III w/Spill Control SL4=Type IV w/Spill Control SLL=90° Spill Light Eliminator Left SLR=90° Spill Light Eliminator Right	AP=Grey BZ=Bronze BK=Black DP=Dark Platinum GM=Graphite Metallic WH=White	[see below]

OPTIONS + ACCESSORIES [Must be listed in the order shown and separated by a dash]

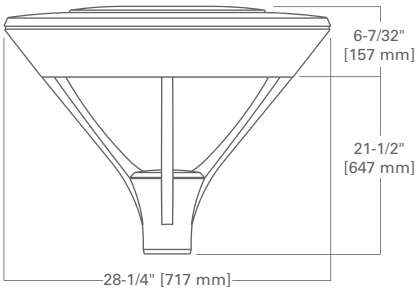
OPTIONS [add as suffix]
PC=Button Type Photocontrol [specify voltage]
R=NEMA Twistlock Photocontrol Receptacle
2L=Bi-Level Switching Capable [4]
IBP=Integral Battery Pack [specify 120 or 277V] [5]
ICP=Integral Cold Weather Battery Pack [specify 120 or 277V] [6]
LCF=LightBAR Cover Plate Matches Housing Finish
7060=70 CRI/6000K CCT [7]

ACCESSORIES [order separately/replace XX with color suffix]
OA/RA1016=NEMA Photocontrol—Multi-tap
OA/RA1027=NEMA Photocontrol—480V
OA/RA1201=NEMA Photocontrol—347V
MA1253=10kV Circuit Module Replacement
VA6028-XX=Dual Arm Mount
VA6029-XX=Wall Mount Arm

NOTES: 1 Standard 4000K CCT and >70 CRI. 2 Consult factory for availability. 3 Custom and RAL color matching available upon request. Contact your customer service representative for further information. 4 Low-level output varies by bar count. Requires quantity two [2] or more LightBARS. Consult factory. 5 LED standard integral battery pack is rated for minimum operating temperature 32° F [0°C]. Operates one [1] LightBAR for 90 minutes, 1500 initial lumens. Not available in all configurations, consult factory. Rated for use in 25°C ambient. 6 LED cold weather integral battery pack is rated for minimum operating temperature -4°F [-20°C]. Operates one [1] LightBAR for 90 minutes, 1500 initial lumens. Not available in all configurations, consult factory. Rated for use in 25°C ambient. 7 Consult factory for lead times and lumen multiplier. 8 Specifications and dimensions are subject to change without notice.

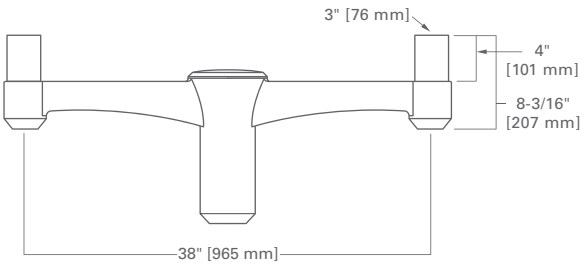
DIMENSIONS

Mesa [EPA 1.1]

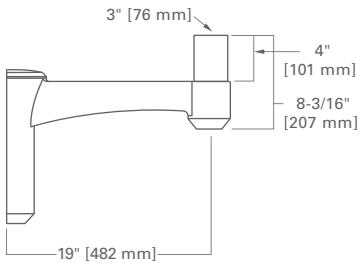


MOUNTING OPTIONS

Dual Mount Arm [EPA 1.36]



Wall Mount Arm



CERTIFICATIONS

40°C Ambient Temperature Rating
UL and cUL Listed
ISO 9001
IP66 LightBARS
ARRA Compliant

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60Hz, 347V/60Hz, 480V/60Hz
-30°C Minimum Temperature

POWER AND LUMENS BY BAR COUNT

# of Bars	System Watts	Type 5WQ Lumens	Type SL2 Lumens	Type SL3 Lumens	Type SL4 Lumens
1 Bar	26	1,868	1,626	1,724	1,677
2 Bars	53	3,735	3,252	3,447	3,354
3 Bars	80	5,602	4,878	5,170	5,031
4 Bars	103	7,469	6,504	6,894	6,708
5 Bars	129	9,337	8,130	8,617	8,385
6 Bars	156	11,228	9,837	10,426	10,146

NOTE: Lumen values based upon 4000K CCT, 350mA drive current, 25°C ambient operating temperature.

AMBIENT DATA

Ambient Temperature	Lumen Multiplier
10°C	1.04
15°C	1.03
25°C	1.00
40°C	0.96

SHIPPING DATA

Approximate Net Weight	
1-6 Bars	50 [22.73 kgs.]

Cooper Industries plc
600 Travis, Ste. 5600
Houston, TX 77002-1001
P: 713-209-8400
www.cooperindustries.com

INVUE

Type LG1

ENV

ENT

ENC

SustainabLEDesign™

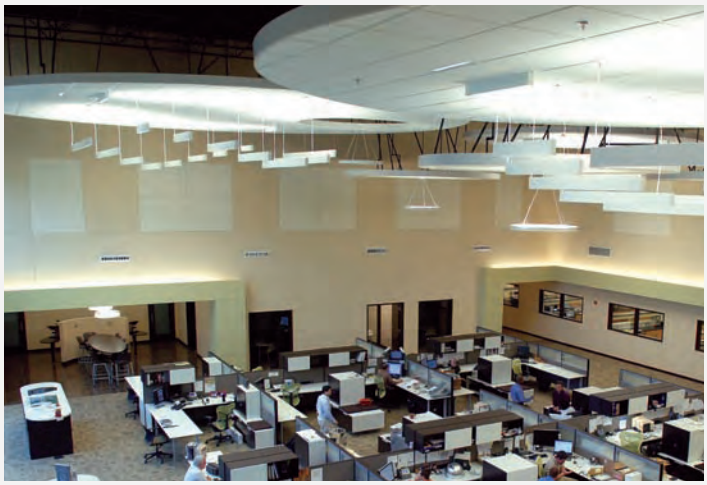
Entri LED

Architectural Wall Luminaire

COOPER Lighting

INNOVATION CENTER

INNOVATION IN ACTION



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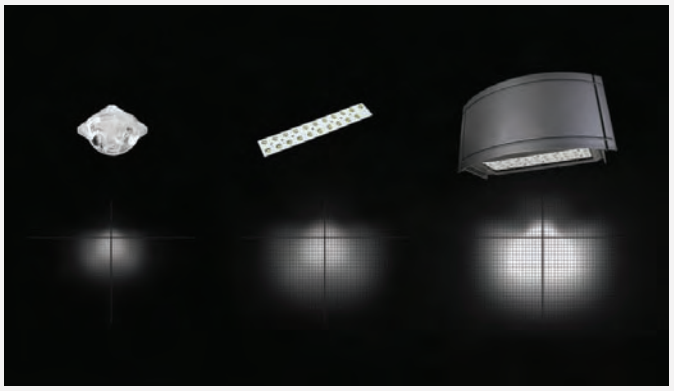

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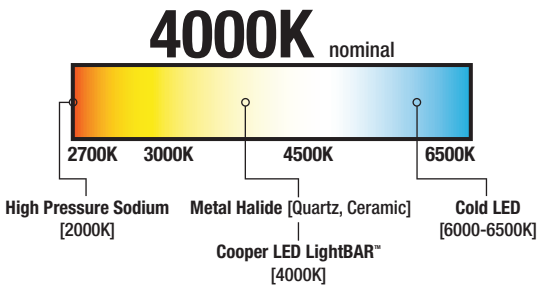
WARM WHITE COLOR



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FEATURES + BENEFITS

STANDARD PRODUCT FEATURES

[+] Durable Die-cast Construction
[+] Extruded Aluminum Heat Sinks
[+] 10kV Circuit Protection
[+] Electronic Universal Drivers
[+] Quick Disconnect Wire Connections
[+] Replaceable LightBARS + Drivers
[+] Industry Leading Optics
[+] Easy Access Toolless Door
[+] Hook-N-Lock Quick Mount

ARCHITECTURAL FORM

Entri LED offers clean, architectural styling which perfectly adorns any setting. Choice of three [3] faceplate designs and the ability to finish match LED cover plates to the housing exterior allows Entri LED to blend seamlessly with architecture.

ENERGY SAVING + CONTROL OPTIONS

Entri LED provides up to 72% energy savings over traditional lamp sources. Additional energy savings is possible through bi-level switching [2L], allowing up to 50% additional energy savings with no compromise in distribution uniformity. Entri LED is available with an optional button photocontrol [PC].

HID & CFL / LED CROSS REFERENCE CHART

LAMP SYSTEM	LAMP WATTAGE	LAMP LIFE [HRS] [1]	LED/ # OF BARS [2]	LED WATTAGE	LED LIFE [HRS] [3]	LED SAVINGS
50W Pulse MH	72	12,000	1	26	50,000	64%
70W Pulse MH	90	12,000	1	26	50,000	71%
100W Pulse MH	128	12,000	2	53	50,000	59%
150W Pulse MH	190	12,000	2	55	50,000	72%
50W HPS	66	24,000	1	26	50,000	61%
70W HPS	91	24,000	1	26	50,000	71%
100W HPS	130	24,000	2	53	50,000	59%
42W CFL	46	16,000	1	26	50,000	43%
57W CFL	59	16,000	1	26	50,000	56%
70W CFL	75	16,000	1	26	50,000	65%
84W CFL	93	16,000	1	26	50,000	72%
114W CFL	128	16,000	2	53	50,000	59%
140W CFL	156	16,000	2	53	50,000	66%

NOTES: 1 Hours of life based on 50% mortality. 2 Actual number of LightBARS should be confirmed with site specific lighting calculations.
3 Hours of life based on 70% lumen maintenance.

FINISH

Finished in super durable TGIC polyester powder coat paint. Six [6] standard colors. RAL and custom colors available.

OPTICAL EXCELLENCE

Optical efficiency and control is provided through precision designed AccuLED Optics™ that focus light onto the application region. Entri LED is available in one [1] or two [2] LightBAR™ configurations with a choice of eight [8] industry leading downlight distributions. State-of-the-art distributions provide unmatched forward efficiency and superb brightness control on wall through back light control [BL] optics. All LightBARS™ feature an IP66 enclosure rating. Entri LED also features an upward soft glow option [ULG] for accent and uplighting applications.

EGRESS OPTIONS

Optional surface mount back box allows the use of an integral battery pack to power one [1] lightbar for 90 minutes providing 1500 initial lumens. Entri LED is available with a traditional or cold-weather battery pack. Entri LED is also capable of bi-level switching [2L] allowing independent control of two [2] lightbars for separate circuit applications.

VANDAL RESISTANT OPTIONS

Entri LED offers options to protect your LED investment. Available wire guard [WG] option offers complete coverage of the LED array. Tamper resistant [TP] option utilizes special tamper resistant hardware to inhibit unauthorized access to the luminaire.

ENTRI LED

ORDERING INFORMATION

SAMPLE NUMBER: ENC-A02-LED-E1-BL3-GM

PRODUCT FAMILY	NUMBER OF LIGHTBARS [1]	LAMP TYPE	VOLTAGE	DISTRIBUTION	FINISH [3]	OPTIONS + ACCESSORIES
ENC=Entri Round Clean	A01=1 Bar	LED=Solid State Light Emitting Diodes	E1=Electronic [120-277V]	BL2=Type II w/Back Light Control	AP=Grey	[see below]
ENT=Entri Triangle Reveals	A02=2 Bars		347=347V [2]	BL3=Type III w/Back Light Control	BZ=Bronze	
ENV=Entri Round Reveals			480=480V [2]	BL4=Type IV w/Back Light Control	BK=Black	
				BLF=Forward Throw w/Back Light Control	DP=Dark Platinum	
				GZM=Wall Grazer Medium	GM=Graphite Metallic	
				GZW=Wall Grazer Wide	WH=White	
				SLL=90° Spill Light Eliminator Left		
				SLR=90° Spill Light Eliminator Right		

OPTIONS + ACCESSORIES [Must be listed in the order shown and separated by a dash]

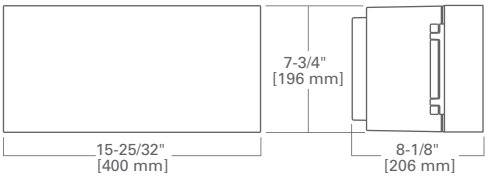
OPTIONS [add as suffix]
ULG=Uplight Glow
PC=Button Type Photocontrol [specify voltage]
WG=Wire Guard
2L=Bi-Level Switching Capable [4]
TP=Tamper Resistant Hardware
BBB=Battery Pack w/Back Box [specify 120 or 277V] [5]
CWB=Cold Weather Battery Pack w/Back Box [specify 120 or 277V] [6]
LCF=LightBAR Cover Plate Matches Housing Finish
7060=70 CRI/6000K CCT [7]

ACCESSORIES [order separately/replace XX with color suffix]
VA2001-XX=Thru-way Conduit Adaptor Box
MA1253=10kV Circuit Module Replacement
VA6172=Wire Guard
VA6173=Tamper Resistant Driver Bits

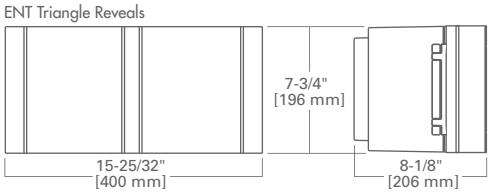
NOTES: 1 Standard 4000K CCT and >70 CRI. 2 Consult factory for availability. 3 Custom and RAL color matching available upon request. Contact customer service representative for further information. 4 Low-level output varies by bar count. Requires [2] LightBARS [A02]. Consult factory. Not available with 347 or 480V. 5 LED standard integral battery pack is rated for minimum operating temperature 32° F [0°C]. Operates one [1] LightBAR for 90 minutes, 1500 initial lumens. Not available in all configurations, consult factory. 6 LED cold weather integral battery pack is rated for minimum operating temperature -4°F [-20°C]. Operates one [1] LightBAR for 90 minutes, 1500 initial lumens. Not available in all configurations, consult factory. 7 Consult factory for lead times and lumen multiplier. 8 Specifications and dimensions are subject to change without notice.

DIMENSIONS

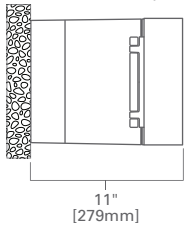
ENC Round Clean



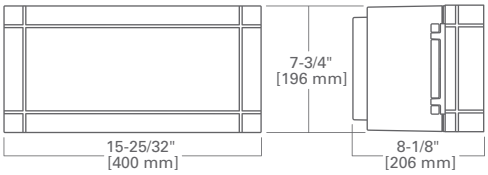
ENT Triangle Reveals



Conduit Mount/Battery Back Box



ENV Round Reveals



CERTIFICATIONS

40°C Ambient Temperature Rating
UL and cUL Listed
ISO 9001
IP66 LightBARS
ARRA Compliant

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60Hz,
347V/60Hz, 480V/60Hz
-30°C Minimum Temperature

POWER AND LUMENS BY BAR COUNT

# of Bars	System Watts	Type BL2 Lumens	Type BL3 Lumens	Type BL4 Lumens	Type GZM Lumens
1 Bar	26	1,626	1,724	1,677	1,868
2 Bars	53	3,252	3,447	3,354	3,735

Options	Input Power	Lumens
ULG	8	500

NOTE: Lumen values based upon 4000K CCT, 350mA drive current, 25°C ambient operating temperature.

AMBIENT DATA

Ambient Temperature	Lumen Multiplier
10°C	1.04
15°C	1.03
25°C	1.00
40°C	0.96

SHIPPING DATA

Approximate Net Weight	
1-2 Bars	16 [7.3 kgs.]

Cooper Industries plc
600 Travis, Ste. 5600
Houston, TX 77002-1001
P: 713-209-8400
www.cooperindustries.com

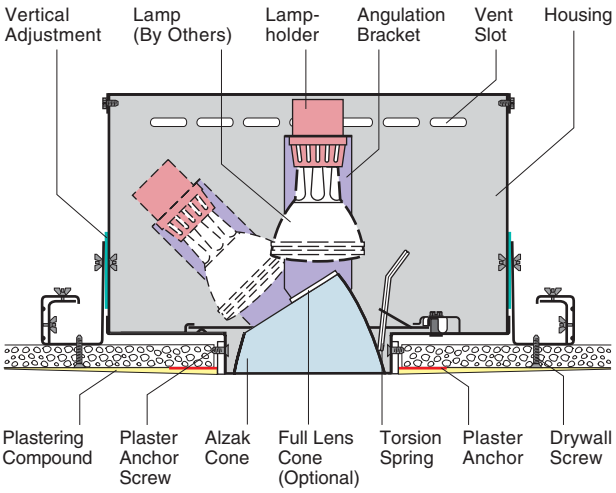
St. Mary's College High School

Music Building

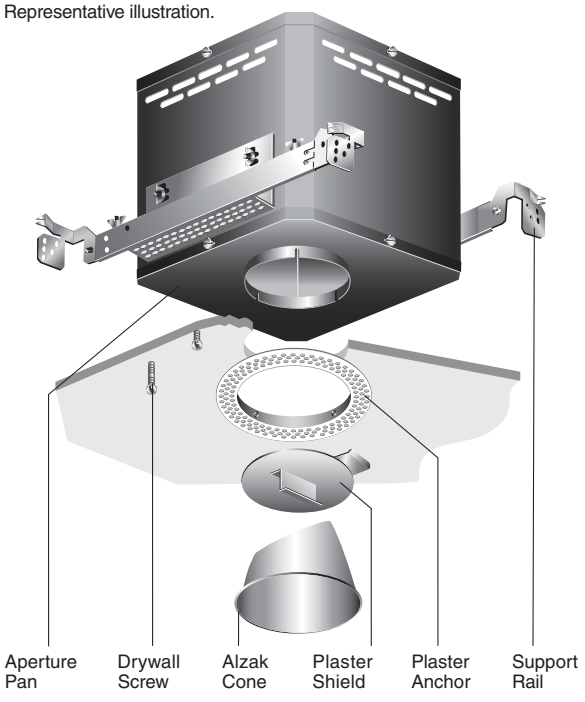
Design Review

Optional Metal Halide
Luminaire Catalog Pages

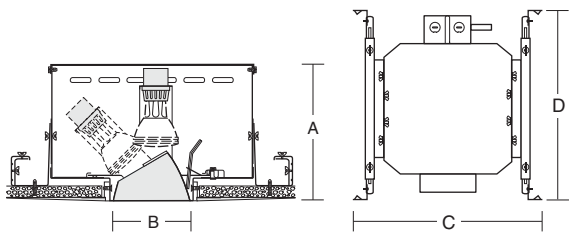
Prepared By
O'Mahony & Myer
Electrical Engineering
and Lighting Design



Representative illustration.



Dimensions and Lamps



Number	A Depth	B Aperture	C Width	D Length	Lamp*
R7408FM*	7½" 191mm	4⅛" 105mm	17½" 445mm	16½" 419mm	20-39W PAR-20 MH Spot or Flood

*To specify add wattage and voltage for proper ballast, e.g. R7408FM-39277.

Matching Units

Straight downlights — Section FM 1
Wall washers — Section FM 3

R7408FM

Type MA1
Option 1

FM 2-4

Flush Mount Directional
PAR-20 Metal Halide, 20-39W
4⅛" Round Conoid Aperture

Flush Mount
Kurt Versen's flush mount fixtures eliminate overlapping flanges and lock into the ceiling for a unique, finished appearance. A clean, uncluttered ceiling emphasizes the attention to detail. It is a factory installed option with a proven installation technique.

Optics and Applications
The shielding cone controls brightness from intense HID lamps through the complete range of aiming angles.

Design Features
The lampholder assembly rotates 360°, tilts 45° and locks into position. Flush mount design resists cracking and chipping by mechanically fastening fixture to drywall. To simplify installation, three adjustment mechanisms adapt the fixture to ceiling conditions. Adjustable mounting rails fit different support systems and accommodate ceiling thicknesses from ⅜" to ⅞". Maximum extension is 26". Top or bottom service.

Finish
A specular clear Alzak cone is standard. Optional colors and Softglow® finishes are available.

Ballast
Integral, encased, electronic ballast is standard. Features quiet operation, thermal protection, and lamp shutdown at end of life. Input voltage is 120V or 277V, power factor >.90.

General
Fixture is pre-wired and thermally protected, UL and C-UL listed for damp location and eight wire 75°C branch circuit wiring. Union made IBEW.

Accessories

B	Specular black cone.	HL	Hexcell louver.†
G	Specular gold cone.	LS	Lamp shield.†
H	Specular mocha cone.	LL	Linear lens.†
P	Specular graphite cone.	LP	Large prism lens.†
T	Specular titanium cone.	MP	Microprism lens.†
W	Specular wheat cone.	UV	Ultraviolet filter.†
Y	Specular pewter cone.	WR	White cone return.
Z	Specular bronze cone.	TLI	Emergency 60W lamp.
F	Ballast fuse.	WHT	White complete trim.

STC Straight top cone, restricts aiming angle to 10°.
S Softglow® finishes: add S before color letters. e.g. SW for Softglow® wheat cone, SC for Softglow® clear cone.
FF20-8 Accessory holder for two devices. Restricts tilt to 25° through 40°. Not available with EC or AO.
C40 Cone for 0° through 40° tilt with FF20-8.
FR Frosted lens. Example LLFR for linear lens frosted.†
EC Emergency circuit with mini-can socket and leads.*
FMW Flush mount wood, contact the factory.
V347 347 volt ballast, contact the factory.
AOE1 Electronic ballast Auto-On restrike system 120V.*
AOE2 Electronic ballast Auto-On restrike system 277V.*
FLC4 Full lens cone, specify lens type, e.g. R7408FM-FLC4LS
*Use open rated 60W max. auxiliary incandescent lamp.
†Requires accessory holder.

kurt versen
Kurt Versen Company Point Source Lighting
Westwood, New Jersey 07675

R7408FM

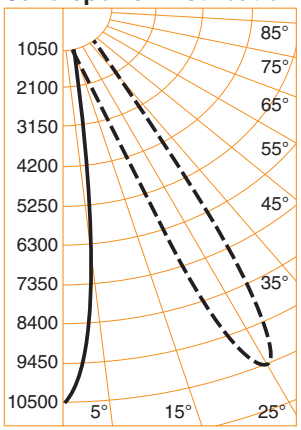
Footcandle Values at Nadir

Distance	10'					15'					20'					25'				
	Nadir	5°		10°		Nadir	5°		10°		Nadir	5°		10°		Nadir	5°		10°	
Lamps	FC	FC	Diam	FC	Diam	FC	FC	Diam	FC	Diam	FC	FC	Diam	FC	Diam	FC	FC	Diam	FC	Diam
R7408FM 20W PAR-20 FL MH	22	20	2'	18	4'	10	9	3'	8	5'	5	5	3'	4	7'	3	3	4'	3	9'
R7408FM 39W PAR-20 FL MH	50	47	2'	41	4'	22	21	3'	18	5'	13	12	3'	10	7'	8	7	4'	7	9'

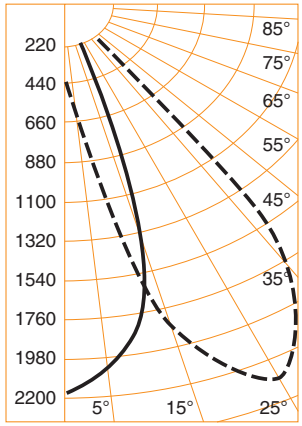
Distance	10'					15'					20'					25'				
	Nadir	5°		10°		Nadir	5°		10°		Nadir	5°		10°		Nadir	5°		10°	
Lamps	FC	FC	Diam	FC	Diam	FC	FC	Diam	FC	Diam	FC	FC	Diam	FC	Diam	FC	FC	Diam	FC	Diam
R7408FM 20W PAR-20 SP MH	105	67	2'	28	4'	47	30	3'	13	5'	26	17	3'	7	7'	17	11	4'	5	9'
R7408FM 39W PAR-20 SP MH	242	153	2'	66	4'	107	68	3'	29	5'	60	38	3'	16	7'	39	24	4'	10	9'

See note 4.

Candlepower Distribution



R7408FM 20W PAR-20 SP MH
Eff. 77% S/M .24



R7408FM 20W PAR-20 FL MH
Eff. 64% S/M .55

Candelas at Nadir

	20W SP	20W FL
°	1000*	1000*
0	10507	2179
5	6738	2054
10	2981	1859
15	477	1329
20	108	469
25	36	187
30	3	78
35	0	14
40	0	4
45	0	0
50	0	0
55	0	0
60	0	0
65	0	0
70	0	0
75	0	0
80	0	0
85	0	0
90	0	0

° Vertical Angles
* Initial Lamp Lumens

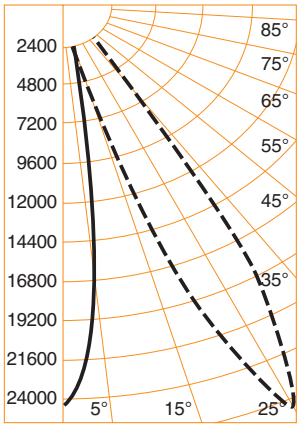
Notes

1 Data derived with a clear specular cone.

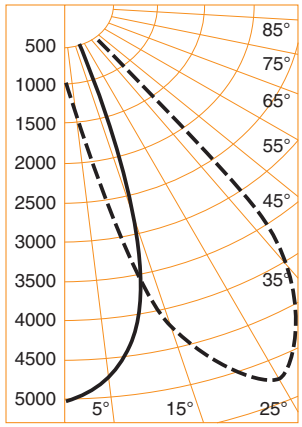
2 Colored cone multipliers vary with lamp source, beam orientation and degree of angulation. Contact the factory for specific data.

3 Candlepower distribution curves: solid lines show horizontal distribution at nadir, dotted lines show horizontal distribution at 25° lamp tilt.

4 Degree headings measure one side from nadir. Diameter data includes both sides. Therefore the 5° column describes a total 10° pattern diameter. Footcandle values are at the diameter edge. Values are determined with lamp tilt at 0°. Angulation changes all data.



R7408FM 39W PAR-20 SP MH
Eff. 76% S/M .24



R7408FM 39W PAR-20 FL MH
Eff. 64% S/M .55

	39W SP	39W FL
°	2300*	2300*
0	24170	5012
5	15481	4732
10	6859	4299
15	1085	3080
20	248	1074
25	75	432
30	9	184
35	0	39
40	0	8
45	0	0
50	0	0
55	0	0
60	0	0
65	0	0
70	0	0
75	0	0
80	0	0
85	0	0
90	0	0

° Vertical Angles
* Initial Lamp Lumens

Brightness

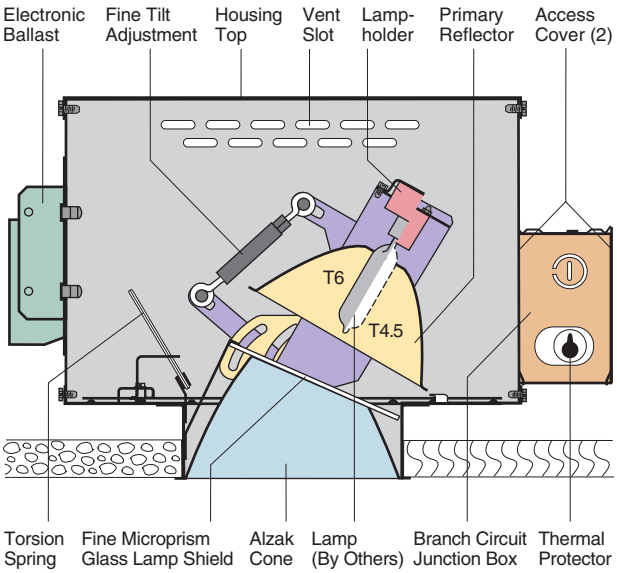
Number	Lamps	85°	75°	65°	55°	45°
R7408FM	20W PAR-20 SP MH	1	5	8	19	38
	20W PAR-20 FL MH	2	6	11	17	46
	39W PAR-20 SP MH	3	12	20	34	90
	39W PAR-20 FL MH	4	15	25	39	104

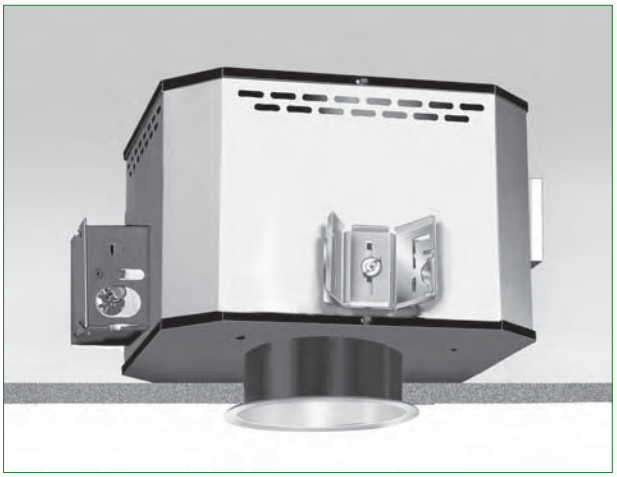
Data in footlamberts. Photometer readings, Maximum Brightness Method.
Data collected with lamps tilted 25°.

R6446 G8.5 Base, T4.5 Metal Halide
R6647 G12 Base, T4.5, T6, T7 Metal Halide
R6649 G12 Base, T6, T7 Metal Halide

Narrow Beam Directional, Slope Ceiling
20W to 150W
5⅞" Conoid Apertures

Type MA1
Option 2





Optics and Applications
This generation of directional equipment is designed to optimize output while controlling glare in both directional applications and the more complex sloped condition. A full line of downlights, wall washers, directionals and sloped ceiling products maximize design flexibility. Narrow beam patterns range from 14° to 30°. Companion fixtures on page R65 have medium beams (34° - 54°) and wide beams on page R66 (64° - 74°).

Design Features
Adjustable and slope fixtures are designed for easy installation to rotate 360°, angulate 0° to 30°, then lock into position. They produce smooth patterns with feathered edges and unparalleled control of brightness. A rigid steel housing protects and positions all internal components. The optical system is keyed for precise alignment. A fine microprism glass shield is standard on R6446, R6647. Clear glass on R6649. Ceiling thickness to 1½". Top or bottom service.

Finish
The back of the cone, housing and structural parts are painted matte black to suppress light leaks. The shielding cone is specular clear. Special finishes and colors available.

Ballasts
Electronic metal halide ballasts provide constant output. Thermal protection with auto reset, quiet operation and automatic shutdown at end of life. For emergency back-up system contact factory.

Bases
Product performance is maintained by using sockets with redundant spring systems for reliable contact to the lamp.

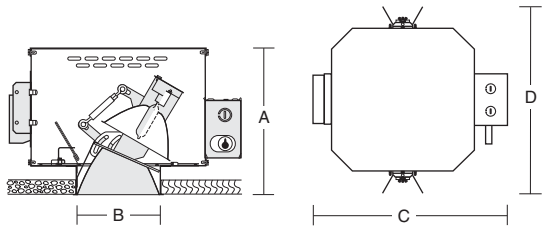
General
Fixtures are pre-wired, thermally protected, UL and C-UL listed for eight wire 75°C branch circuit wiring. All products are union made IBEW. Suitable for damp locations.

Accessories

B	Black cone.	GG	Upper gold reflector.
G	Gold cone.	R2	26" support rails.
H	Mocha cone.	R5	52" support rails.
P	Graphite cone.	LL	Linear spread lens.
T	Titanium cone.	UV	UV lens.
W	Wheat cone.	FR	Frosted lens.
Y	Pewter cone.	WT	White trim flange.
Z	Bronze cone.	WHT	White complete cone.

F Fuse.
S Softglow® add S to color, e.g. SC, Softglow® clear.
STC Straight top cone 0° to 15° angulation only.
GU For GU6.5 base, T4 MH lamp.
EC Emergency circuit, mini-can socket, 75W max.
AOE1 Ballast 120V, auto-on restrike system, 75W max.
AOE2 Ballast 277V, auto-on restrike system, 75W max.
FMR6 For flush mount construction contact factory.

Dimensions and Lamps



Number	A Depth	B Aperture	C Width	D Length	Lamps*
R6446	10⅞" 276mm	5⅞" 149mm	17⅛" 435mm	18¼" 464mm	20 to 70W MH T4.5 Lamp, G8.5 Base
R6647	10⅞" 276mm	5⅞" 149mm	17⅛" 435mm	18¼" 464mm	20 to 150W MH T4.5, T6, T7 Lamp, G12 Base
R6649	10⅞" 276mm	5⅞" 149mm	17⅛" 435mm	18¼" 464mm	39 to 150W MH T6, T7 Lamp, G12 Base

*To specify add watts and volts for proper ballast, e.g. R6446-20277.

Matching Units

Direct./Slope downlights Pages R7, R65, R66
Wall washers Pages R32, R73, R74
Downlights Pages R3, R4, R5, R6, R54, R55, R56

Brightness Data

kurt versen
Kurt Versen Company Point Source Lighting
Westwood, New Jersey 07675

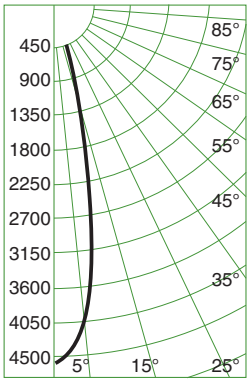
R64 R6446 R6647 R6649

Footcandle Values at Nadir

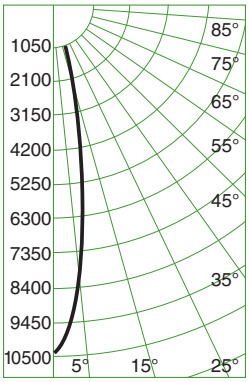
Distance	10'					15'					20'					25'				
	Nadir	10°		20°		Nadir	10°		20°		Nadir	10°		20°		Nadir	10°		20°	
Lamps	FC	FC	Diam	FC	Diam	FC	FC	Diam	FC	Diam	FC	FC	Diam	FC	Diam	FC	FC	Diam	FC	Diam
R6446 20W T4.5 G8.5 MH GE	46	24	4'	4	7'	20	11	5'	2	11'	11	6	7'	1	15'	7	4	9'	1	18'
R6446 39W T4.5 G8.5 MH SYL	103	45	4'	7	7'	46	20	5'	3	11'	26	11	7'	2	15'	17	7	9'	1	18'
R6446 70W T4.5 G8.5 MH PHIL	123	83	4'	24	7'	55	37	5'	11	11'	31	21	7'	6	15'	20	13	9'	4	18'

Distance	10'					15'					20'					25'				
	Nadir	10°		20°		Nadir	10°		20°		Nadir	10°		20°		Nadir	10°		20°	
Lamps	FC	FC	Diam	FC	Diam	FC	FC	Diam	FC	Diam	FC	FC	Diam	FC	Diam	FC	FC	Diam	FC	Diam
R6647 39W T6 G12 MH SYL	86	50	4'	11	7'	38	22	5'	5	11'	21	12	7'	3	15'	14	8	9'	2	18'
R6647 70W T6 G12 MH GE	110	81	4'	24	7'	49	36	5'	11	11'	27	20	7'	6	15'	18	13	9'	4	18'
R6647 150W T6 G12 MH GE	205	146	4'	56	7'	91	65	5'	25	11'	51	37	7'	14	15'	33	23	9'	9	23'

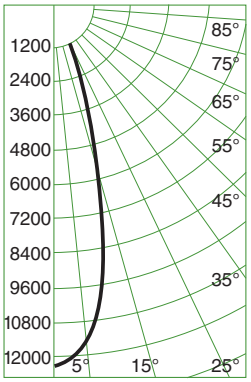
Candlepower Distribution



R6446 20W T4.5 G8.5 Clear GE
Eff. 50% S/M .36



R6446 39W T4.5 G8.5 Clear Syl
Eff. 45% S/M .32

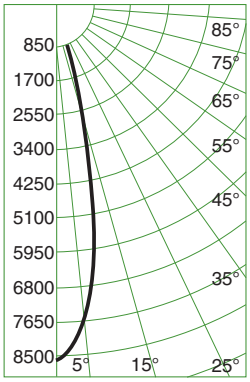


R6446 70W T4.5 G8.5 Clear Philips
Eff. 52% S/M .46

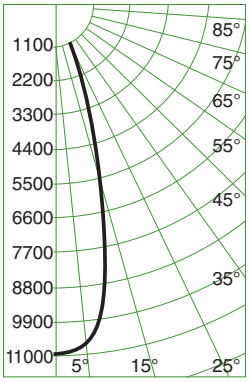
Candelas at Nadir

o	20W 1600*	39W 3400*	70W 6400*
0	4574	10314	12332
5	4044	8061	11540
10	2524	4717	8742
15	1162	2166	5454
20	462	870	2878
25	183	358	1288
30	81	158	508
35	40	80	208
40	22	45	104
45	8	17	37
50	4	9	17
55	0	6	10
60	0	0	0
65	0	0	0
70	0	0	0
75	0	0	0
80	0	0	0

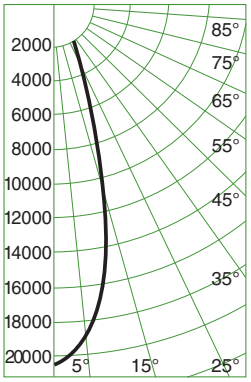
o Vertical Angles
* Initial Lamp Lumens



R6647 39W T6 G12 Clear Syl
Eff. 54% S/M .40



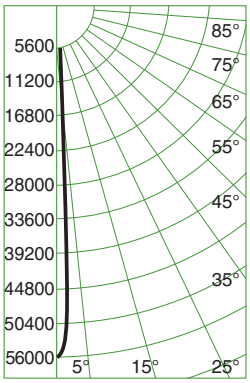
R6647 70W T6 G12 Clear GE
Eff. 55% S/M .49



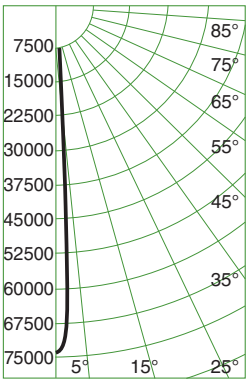
R6647 150W T6 G12 Clear GE
Eff. 53% S/M .51

o	39W 3400*	70W 6200*	150W 14000*
0	8557	10978	20476
5	7800	10709	18700
10	5222	8429	15322
15	2696	5282	10797
20	1269	2883	6787
25	588	1422	3882
30	285	672	1993
35	142	321	1002
40	72	157	495
45	29	66	218
50	14	29	92
55	8	14	38
60	0	0	0
65	0	0	0
70	0	0	0
75	0	0	0
80	0	0	0

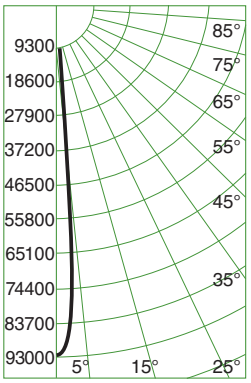
o Vertical Angles
* Initial Lamp Lumens



R6649 39W T6 G12 Clear Syl
Eff. 34% S/M .10



R6649 70W T6 G12 Clear Syl
Eff. 37% S/M .14



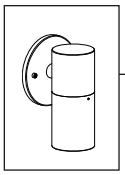
R6649 150W T6 G12 Clear Philips
Eff. 31% S/M .16

o	39W 3400*	70W 7000*	150W 13500*
0	56016	74514	92942
5	12274	30952	42098
10	1365	4668	10146
15	232	693	2674
20	161	400	671
25	45	122	308
30	24	51	118
35	17	34	69
40	15	31	53
45	0	11	19
50	0	0	0
55	0	0	0
60	0	0	0
65	0	0	0
70	0	0	0
75	0	0	0
80	0	0	0

o Vertical Angles
* Initial Lamp Lumens

Notes

1. Data with clear specular cones.
2. Colored cone multipliers vary with lamp source, beam orientation and degree of angulation. Contact the factory for specific details.
3. Candlepower distribution curves show average of 0° and 180° plane on a 15° slope. For more detailed information see catalog website.
4. Pattern diameters are determined from each side of nadir with 0° lamp tilt. The diameter includes both sides, so a 10° diameter represents a total 20° pattern width at the floor. Footcandles are measured at the diameter edge. Data shown is taken with the fixture on a 15° slope.
5. Additional photometry on website.



CATSKILL™

PAR20 Metal Halide - Remote Ballast

PROJECT:	
TYPE:	Type MD1
CATALOG NUMBER:	
LAMP(S):	
NOTES:	

CATALOG NUMBER LOGIC

	CK						
Example	**CK** -	**PAR2035** -	**59** -	**BZP** -	**10** -	**11** -	**RM-H35E-MT**

Series
- **CK** - Catskill Series™

Source
- **PAR2035** - PAR20 Metal Halide

Lamp
- **0** - By Others
- **58** - 35PAR20/MH/SP (35W) 10° Spot
- **59** - 35PAR20/MH/FL (35W) 30° Flood

Finish

Aluminum Finish

Powder Coat Color	Satin	Wrinkle
Bronze	**BZP**	**BZW**
Black	**BLP**	**BLW**
White (Gloss)	**WHP**	**WHW**
Aluminum	**SAP**	—
Verde	—	**VER**

Also available in Premium Finishes See submittal SUB-1439-00 for Premium Finishes

Lens Type
- **9** - Clear (Standard)
- **10** - Spread*
- **13** - Rectilinear*

Shielding
- **11** - Honeycomb Baffle*

Ballast Style and Input Voltage
- **RM-H35M-120 or 277** - (35W) Screw Cover Remote Wall Mount Magnetic
- **RM-H35E-MT**** - (35W) Screw Cover Remote Wall Mount Electronic

* Accommodates up to 2 Lens/Shielding media
** MT = 120/208/240/277 Multi Tap

LAMP DATA

BK No.	Lamp Watts	Description	Rated Life	Center Beam Candlepower	CRI	CCT(K)	Beam Angle	Beam Type
58	35	35PAR20/MH/SP	9,000	23,000	81	3,000	10°	Spot
59	35	35PAR20/MH/FL	9,000	5,000	81	3,000	30°	Flood

B-K LIGHTING
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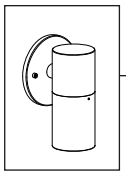
www.bklighting.com • info@bklighting.com

SUBMITTAL DATE 5-24-10

DRAWING NUMBER SUB-1816-00

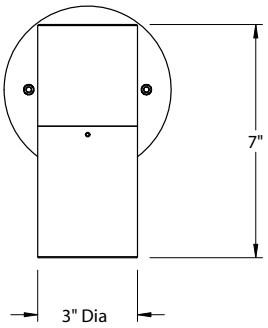


CATSKILL™

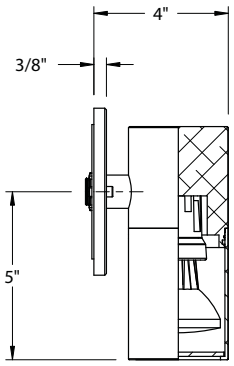
PAR20 Metal Halide - Remote Ballast

PROJECT:	
TYPE:	

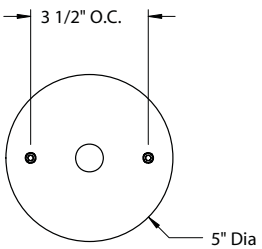
FRONT VIEW



SIDE VIEW



CANOPY DETAIL



SPECIFICATIONS

GreenSource Initiative™
Metal and packaging components are made from recycled materials. Manufactured using renewable solar energy, produced onsite. Returnable to manufacturer at end of life to ensure cradle-to-cradle handling. Packaging contains no chlorofluorocarbons (CFC's). Use of this product may qualify for GreenSource efficacy and recycling rebate(s). Consult www.bklighting.com/greensource for program requirements.

Materials
Furnished in Copper-Free Aluminum (Type 6061-T6).

Body
Fully machined from solid billet. Unibody design provides enclosed, water-proof wireway and integral heat sink for maximum component life. High temperature, silicone 'O' Ring provides water-tight seal.

Cap
Fully machined. Flush mounted lens. Accommodates up to (2) lens or louver media.

Lens
Shock resistant, tempered, clear glass lens is factory adhered to fixture cap and provides hermetically sealed optical compartment.

Lamp
For use with 35 watt maximum, PAR20 metal halide lamp.

Socket
Specification grade ceramic body lamp holder rated for 4kV starting pulse. Medium base, nickel-plated copper alloy lamp grip and screw shell. Corrosion resistant coil spring under center contact.

Installation
5" dia., machined canopy with stainless steel universal mounting ring permits mounting to 4'' octagonal junction box (by others). Suitable for uplight or downlight installation.

Remote Ballast
For use with remote metal halide ballast. See ballast technical data (SUB-1799) to determine lamp-to-ballast distance and wiring requirements prior to detailing field installation of any remote wiring.

Wiring
Teflon® coated wire, 18AWG, 600V, 250° C rated and certified to UL 1659 standard.

Hardware
Tamper-resistant, stainless steel hardware. Mounting screws are additionally black oxided.

Finish
StarGuard® (Pat. Pend.), a RoHs compliant, 15 stage chromate-free process cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating.

Warranty
5 year limited warranty.

Certification and listing
ETL Listed to ANSI/UL Standard 1598. Certified to CAN/CSA Standard C22.2 No. 250. RoHs compliant. Suitable for indoor or outdoor use. Suitable for use in wet locations. Made in USA.

**Teflon is a registered trademark of DuPont Corporation.*

B-K LIGHTING

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www.bklighting.com • info@bklighting.com

SUBMITTAL DATE	DRAWING NUMBER
5-24-10	SUB-1816-00

Type MF1

Emerging trends in light control and environmental preservation require innovative design solutions. MESA responds.

OPTICAL SYSTEMS

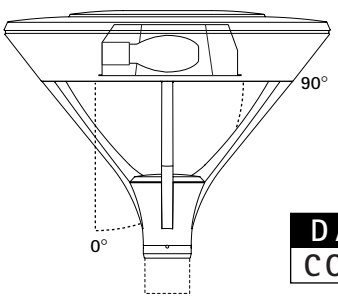
- Cutoff Performance

CUTOFF PERFORMANCE

As the Nations respected authority on lighting standards and design recommendations, the IESNA, Illuminating Engineering Society of North America defines four unique luminaire cutoff classifications to quantify the amount of light a fixture directs upward toward the sky.

ALLOWABLE CANDELA	@ 90°	@ 80°
Full Cutoff	0	10%
Cutoff	2.5%	10%
Semi-Cutoff	5%	20%
Non-Cutoff	No Limit	No Limit

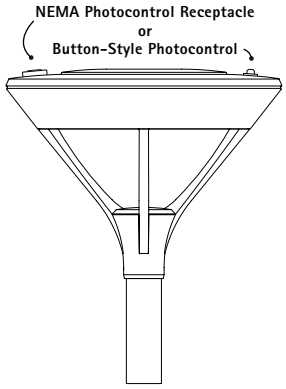
Each of the available MESA optical systems meets the strictest classification requirements when light exits the optical cavity. Due to MESA's spider mount aesthetics, a small amount of the secondary illumination is redirected upward off the lower casting, classifying the luminaire assembly as "Cutoff".



DARK SKY COMPLIANT CO Cutoff

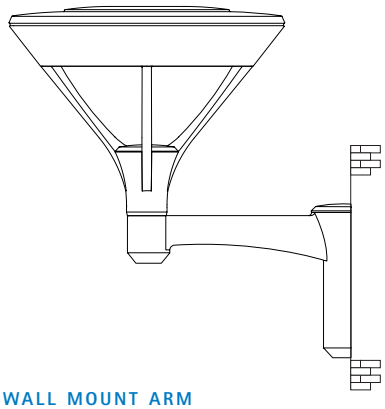
OPTIONS + ACCESSORIES

- Specifications + Dimensions



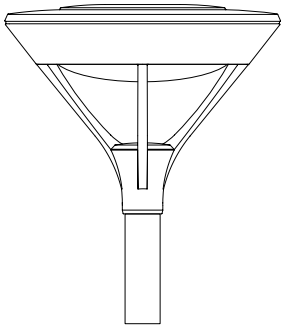
PHOTOCONTROL

Internal button-style photocontrol with sensor located on housing top panel. Optional gasketed photocontrol receptacle for mounting of a standard NEMA base photocontrol (order separately).



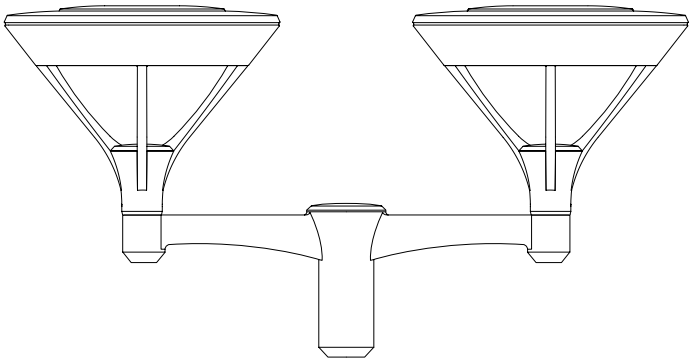
WALL MOUNT ARM

Cast aluminum arm supplied with cast mounting plate. Arm hooks over mounting plate and is secured via a flush mount stainless steel hex head fastener.



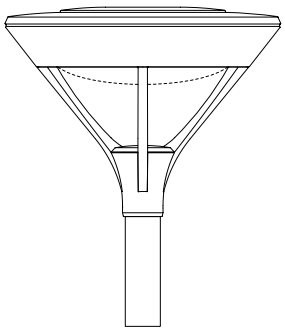
SAG GLASS

Optional tempered sag glass lens is offered in either clear or frosted finish for concealment of lamp image. Sag lens offers point of reference visibility while providing a subtle performance gain.



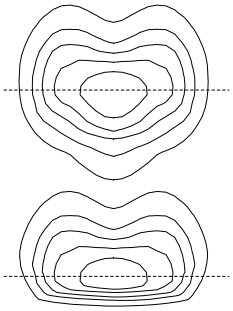
DUAL MOUNT ARM

Cast aluminum arm slips over a 3" O.D. tenon top. Arm base provides clean transition to 4" round pole (Dual Mount Arm EPA: 1.36).



VANDAL SHIELD

3/16" thick molded polycarbonate lens. Treated with UV inhibitor to discourage the gradual discoloration that results from exposure to sunlight and Metal Halide lamps. Maximum 250W Metal Halide.



HOUSE SIDE SHIELD

Internal house side shield is specially designed to reduce light concentration behind the pole while maintaining street side efficiency. Available on Type II, III, and IV distributions only.

ORDERING INFORMATION

Sample Number: MSA-400-MH-MT-3S-FG-BK-L

Product Family [1]
MSA=MESA

Lamp Wattage [2]
HID
50=50W
70=70W
100=100W
150=150W
175=175W
250=250W
320=320W [3]
350=350W [3]
400=400W [4]
Compact Fluorescent
42=42W [5]
57=57W [5, 6]
114=(2) 57W [7]
140=(2) 70W [7]
Electrodeless Fluorescent
85=85W [8]

Lamp Type
MH=Metal Halide
MP=Pulse Start Metal Halide
HPS=High Pressure Sodium
CF=Compact Fluorescent [9]
QL=Electrodeless Fluorescent

Voltage [10]
120=120V
208=208V
240=240V
277=277V
347=347V
480=480V
DT=Dual-Tap Wired 277V [11]
MT=Multi-Tap Wired 277V [11]
TT=Triple-Tap Wired 347V [11]

Distribution
2S=Type II
3S=Type III
4S=Type IV
5S=Type V
SL=Forward Throw Spill Light Eliminator

Lens Type
FG=Flat Glass
FR=Frosted Flat Glass
SG=Sag Glass
FRS=Frosted Sag Glass
VS=Polycarbonate Vandal Shield [12]

Colors
(add as suffix/must specify) [13]
BK=Black
AP=Grey
BZ=Bronze
WH=White
DP=Dark Platinum
GM=Graphite Metallic
GN=Hartford Green

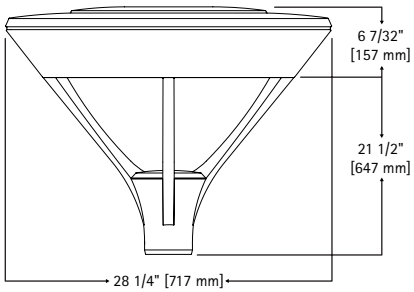
Options (add as suffix)
F=Single Fuse (120, 277, or 347V / Specify Voltage)
FF=Double Fuse (208, 240 or 480V / Specify Voltage)
Q=Quartz Restrike [14]
EM=Quartz Restrike with Delay (Also Strikes at Cold Start) [14]
EM/SC=Quartz Emergency Separate Circuit [14]
42CF/EM=Emergency Battery Backup [15]
R=NEMA Twistlock Photocontrol Receptacle
PC=Button Photocontrol
DS=Dual Fluorescent Switching Control [16]
HS=House Side Shield [17]
L=Lamp Included

Accessories (order separately/ replace XX with color suffix)
VA6028-XX=Dual Mount Arm
VA6029-XX=Wall Mount Arm
OA/RA1016=Photocontrol—Multi-tap
OA/RA1027=Photocontrol—480V
OA/RA1201=Photocontrol—Multi-tap 347V

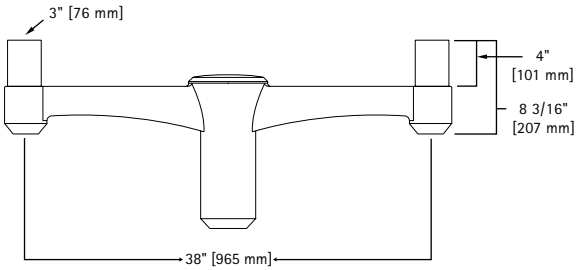
NOTES: **1** Slipfits over 3" O.D. tenon. **2** 50-175W HID lamps use medium-base lampholders. 250-400W HID lamps use mogul-base lampholders. **3** 320 and 350W Pulse Start Metal Halide only. **4** 400W Metal Halide requires reduced envelope ED-28 lamps. **5** Compact Fluorescent lamp only. Available in Type 3S, 4S and 5S distributions only. **6** Nominal M.O.L. lamp length of 57W CFL not to exceed 7". **7** Dual 57 and 70W Compact Fluorescent lamp available in Type 4S distribution only. **8** Electrodeless Fluorescent lamp option available in Type 3S and 5S distributions only. 120V only. **9** Compact Fluorescent ballasts contain internal fusing. No supplemental fusing is necessary. CF ballasts are 120 through 277V. **10** Products also available in non-US voltages and 50Hz for international markets. Consult factory for availability and ordering information. **11** Dual-Tap is 120/277V wired 277V. Multi-Tap is 120/208/240/277V wired 277V. Triple-Tap ballast is 120/277/347V wired 347V. **12** Maximum wattage of 250W HID. **13** RAL and custom color matches available. Consult your INVUE Lighting Systems Representative. **14** Quartz options not available with SL optic. **15** Battery backup provides 90 minutes of supplemental light at 60% of initial rated lamp lumens. Type 3S, 4S, 5S optics only. Must specify 42W Compact Fluorescent lamp. **16** Dual switching requires dual 57W or dual 70W Compact Fluorescent lamps, and allows independent switching control of each lamp through use of two (2) electronic ballasts. Allows 50% power reduction. **17** House side shield not available on 5S or SL optics.

DIMENSIONS

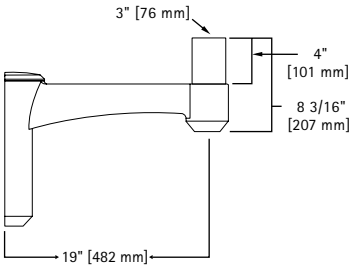
MESA [EPA 1.1]



Dual Mount Arm [EPA 1.36]



Wall Mount Arm



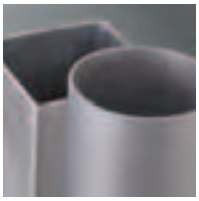
WATTAGE TABLE

	MSA
Metal Halide	50, 70, 100, 175, 250, 400W
Pulse Start Metal Halide	250, 320, 350, 400W
High Pressure Sodium	50, 70, 100, 150, 250, 400W
Compact Fluorescent	42, 57, (2) 57, (2) 70W
Electrodeless Fluorescent	85W

SHIPPING DATA

	MSA
Net. Weight (lbs.)	50
E.P.A.	1.1

NOTE: The above are approximate weights and volumes.

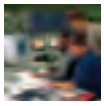


POLES

INVUE Lighting Systems offers a comprehensive package of steel, aluminum and decorative poles to suit any site lighting application. Consult the INVUE Poles brochure for ordering information and product specifications.

STANDARD COLORS

BK Black
AP Grey
BZ Bronze
WH White
DP Dark Platinum
GM Graphite Metallic
GN Hartford Green



APPLICATIONS DEPARTMENT

Let the application experts at Cooper Lighting design your next lighting layout. Aided by the latest computer simulation software and a comprehensive lighting background, our Application Engineers can design, analyze, and provide statistical layouts for any lighting application. Whether the design criteria calls for Illuminance, Luminance, or Small Target Visibility (STV) compliance, Cooper Lighting can provide the fixture layout and supporting documentation necessary to help secure your next project.

INVUE WEBSITE

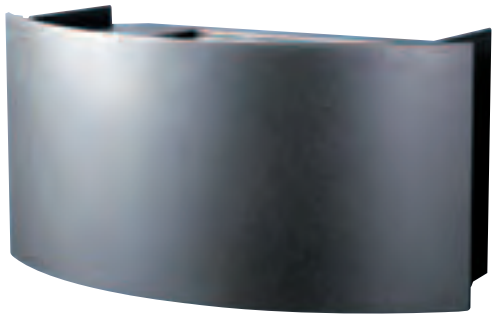
Visit invuelighting.com for the latest product information from INVUE Lighting Systems. With instant access to IES photometric files, PDF product specification sheets, new product announcements, and other helpful specification tools, the INVUE Lighting website is an invaluable resource for getting information to customers-quickly.

MODULAR FORM

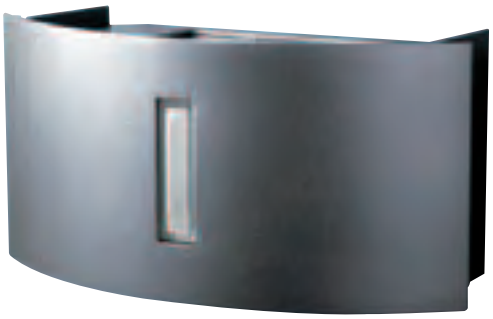
Type MG1

FACEPLATES

A choice of six (6) architectural faceplate designs allows the matching of fixture style to surrounding environment.



ENC

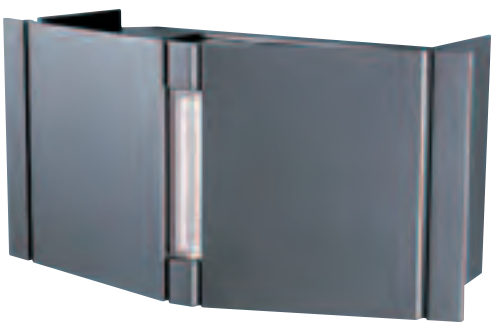


ENC-LG

ENV

ENV-LG

ENT



ENT-LG

ORDERING INFORMATION

Sample Number: ENC-150-MH-120-EB-3S-BK-LG-L

Product Family
ENC=ENTRI Round Clean
ENV=ENTRI Round Reveals
ENT=ENTRI Triangle Reveals

Lamp Wattage [1]
HID
39=39W
70=70W
100=100W
150=150W
Compact Fluorescent [2]
26=26W
32=32W
42=42W
52=(2)26W [3]
57=57W [4]
64=(2)32W [3]
84=(2)42W [3]
Quartz Halogen [5]
100=100W
150=150W
250=250W

Lamp Type
MH=Metal Halide
WS=WhiteSON HPS [6]
CF=Compact Fluorescent [7]
HL=Quartz Halogen

Voltage [8]
120=120V
208=208V
240=240V
277=277V
347=347V
DT=Dual-Tap Wired 277V [9]
MT=Multi-Tap Wired 277V [9]
TT=Triple-Tap Wired 347V [9]

Ballast
MB=Magnetic (MH only)
EB=Electronic [10]
X=None (for Halogen Lamp)

Distribution
Up or Down HID and Quartz Halogen
3S=Type III
FT=Forward Throw
FX=Wall Grazing Optic
TS=Tight Spot
Up/Down HID and Quartz Halogen
3SG=Type III, 90% Main/10% Secondary Glow
3SP=Type III Main/ Pencil Secondary
FTG=Forward Throw, 90% Main/ 10% Secondary Glow
FTP=Forward Throw Main/ Pencil Secondary
FXF=Wall Grazing Optic, 50% Up/50% Down
TSF=Tight Spot, 50% Up/50% Down
Compact Fluorescent
CFM=100% Main, Up or Downlighitng
CFG=90% Main/10% Secondary Glow

Colors
(add as suffix/must specify) [11]
BK=Black
AP=Grey
BZ=Bronze
WH=White
DP=Dark Platinum
GM=Graphite Metallic

Optional Luminous Faceplate Insert (add as suffix)
LG=Luminous Glass Insert
LGO=Luminous Glass Insert with Warm Orange Gel
LGR=Luminous Glass Insert with Red Gel
LGB=Luminous Glass Insert with Bright Blue Gel
LGG=Luminous Glass Insert with Deep Green Gel

Options (add as suffix)
F=Single Fuse (120, 277, or 347V) Specify Voltage
FF=Double Fused (208V, 240V or 480V) Specify Voltage
DSAB=Dual Fluorescent Switching Control Adapter Box [12]
QAB=Quartz Restrike Adapter Box
EMAB=Quartz Restrike with Delay Adapter Box (Also Strikes at Cold Start)
EM/SCAB=Quartz Emergency Separate Circuit Adapter Box
CF/EMAB=Emergency Battery Backup Adapter Box [13]
PC=Button Type Photocontrol (Specify Voltage)
WG=Wire Guard
FRM=Frosted Main Flat Glass
FRS=Frosted Secondary Flat Glass [14]
L=Lamp Included (Standard for all Quartz Halogen lamps)

Accessories (order separately/add color suffix)
VA2001-XX=Thru-way Box

WATTAGE TABLE

	ENC | ENV | ENT
Metal Halide	39, 70, 100, 150W
White Son HPS	100W
Compact Fluorescent	26, 32, 42, 57W
Dual Compact Fluorescent	(2) 26, (2) 32, (2) 42W
Quartz Halogen	100, 150, 250W

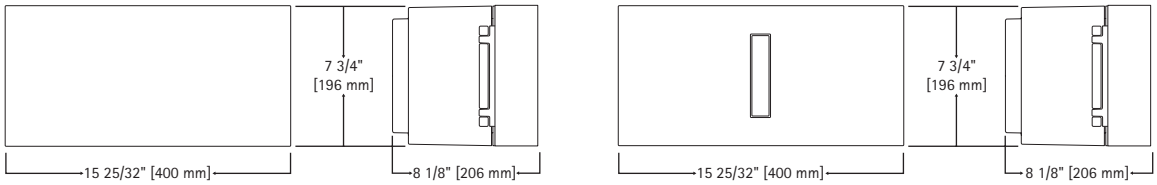
SHIPPING DATA

	ENC | ENV | ENT
Net. Weight (lbs.)	17
Volume (cu. ft.)	1.64

NOTE: The above are approximate weights and volumes.

NOTES: **1** All MH lamps are T6 envelope with G12 lamp base. White SON HPS lamp is T6 envelope with GX12 lamp base. **2** All 26/32/42/57W CF lamps feature a 4-pin lamp base. Available in CFM and CFG distributions only. **3** Dual compact fluorescent lamps. **4** Nominal M.O.L lamp length of 57W CFL not to exceed 7". **5** All Halogen lamps are T4 envelope with mini-can screw base. **6** White SON HPS lamp available in 100W only. Requires electronic ballast. 120 through 277V only. Requires use of VA2001 accessory Thru-way Box. **7** Compact Fluorescent ballasts contain internal fusing. No supplemental fusing is necessary. CF ballasts are 120 through 277V. **8** Products also available in non-US voltages and 50Hz for international markets. Consult factory for availability and ordering information. **9** Dual-tap is 120/277V wired 277V. Multi-tap is 120/208/240/277V wired 277V. Triple-tap is 120/277/347V wired 347V. **10** 120 through 277V only. Electronic ballast available with all CF lamps, and 39/70/100W MH lamps. Available with 150W MH lamp with use of VA2001 accessory Thru-way Box. **11** RAL and custom color matches available upon request. Consult your INVUE Lighting Systems Representative for more information. **12** Dual switching requires dual 26, 32 or 42W CF lamps. Allows independent switching control of each lamp through use of two (2) electronic ballasts. Allows 50% power reduction when dual ballasts are independently wired and controlled. **13** Battery backup provides 90 minutes of supplemental light at 60% of initial rated lamp lumens. Must specify 26/32/42W Compact Fluorescent lamps. **14** Frosted secondary lens standard on 3SG, FTG, and CFG distributions.

DIMENSIONS [ENC | ENV | ENT]



STANDARD COLORS

BK
Black

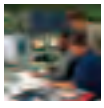
AP
Grey

BZ
Bronze

WH
White

DP
Dark Platinum

GM
Graphite Metallic



APPLICATIONS DEPARTMENT

Let the application experts at Cooper Lighting design your next lighting layout. Aided by the latest computer simulation software and a comprehensive lighting background, our Application Engineers can design, analyze, and provide statistical layouts for any lighting application. Whether the design criteria calls for Illuminance, Luminance, or Small Target Visibility (STV) compliance, Cooper Lighting can provide the fixture layout and supporting documentation necessary to help secure your next project.

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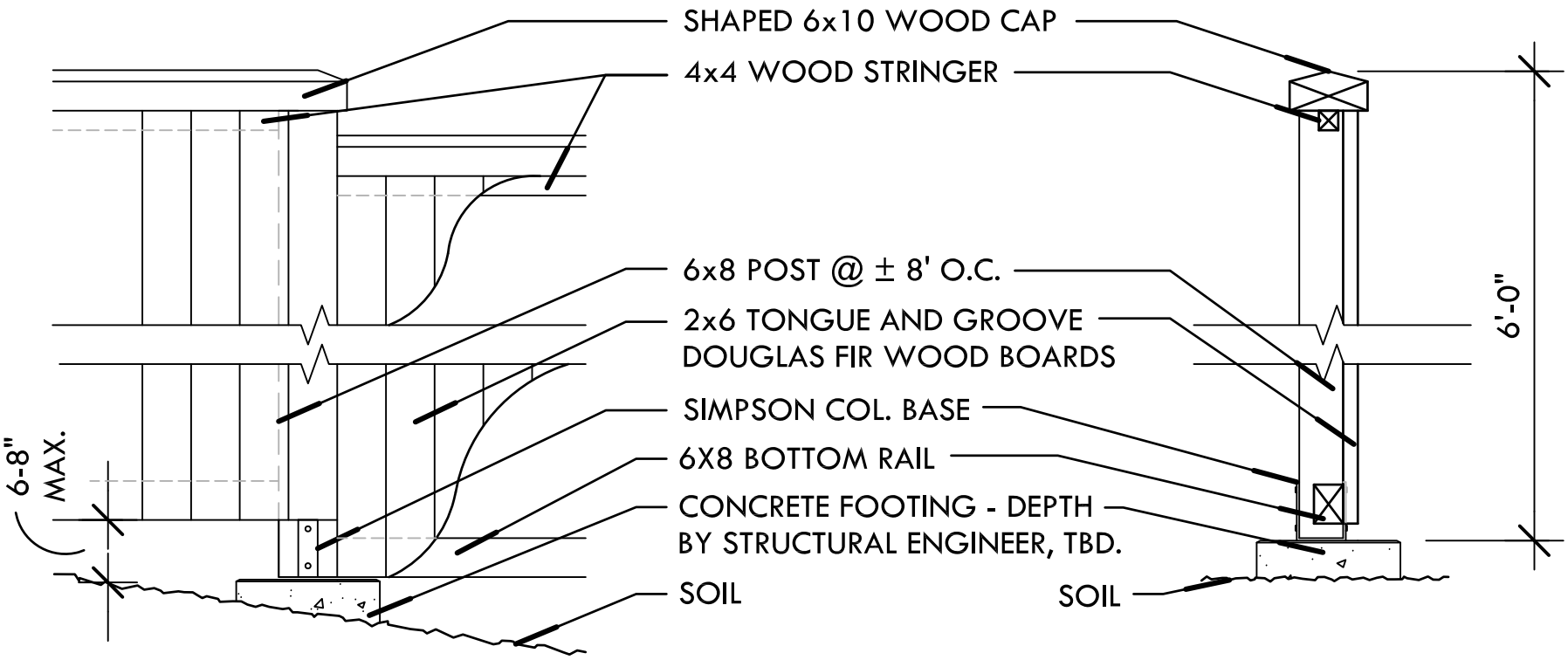

WOOD PROPERTY LINE FENCE

NTS