



INSTITUTIONAL-LEVEL ADAPTIVE CONTROL SYSTEM FOR EXTERIOR LIGHTING

Networking luminaires at the University of California, Davis

The Institutional-level Adaptive Control System incorporates exterior light points — pathways, building perimeters, parking lots, and roadways — into one smart, wireless system.

Originally launched as a pilot study, this system has since been installed for over 1,600 luminaires at the University of California, Davis.

CLTC and Lumewave, Inc. developed the Institutional-Level Adaptive Control System for Exterior Lighting, an easy-to-integrate RF network that offers streamlined control of a facility's various exterior luminaires, regardless of fixture type or application.

Each bi-level pathway fixture has a wireless controller and occupancy sensor that accurately determines an occupant's direction of travel, delivering full light output where and when it's needed, for only as long as it's needed. The result is a smart, dynamic lighting system that improves safety, energy savings and maintenance features.

UC Davis received a best-practice award for lighting at the 2013 California Higher Education Sustainability Conference (CHESC), recognizing UC Davis' innovative adaptive control system for exterior lighting.

FEATURES:

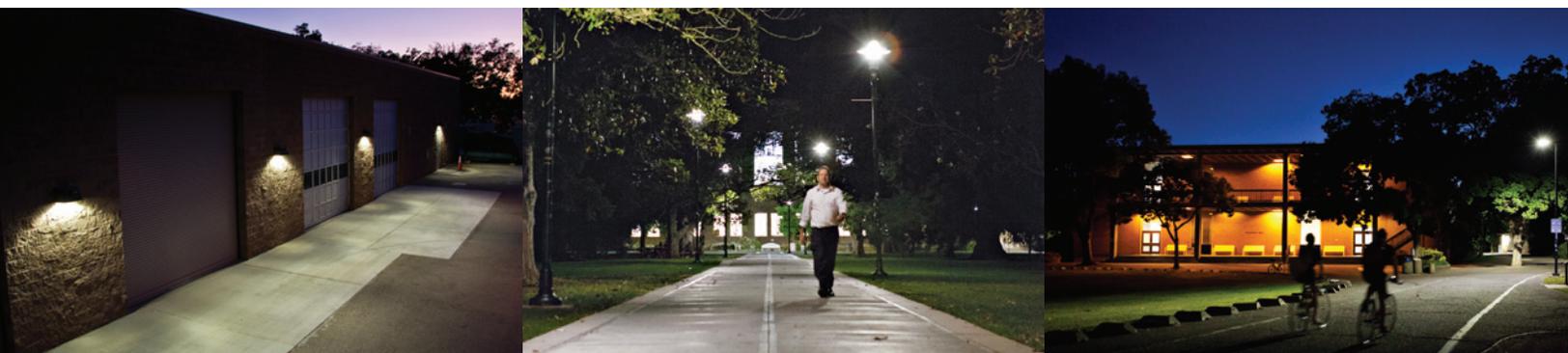
- Easy-to-integrate RF network
- Compatible with nearly all exterior light fixtures and applications
- Fixture-integrated occupancy sensors enable accurate network response to an occupant's path of travel
- Fixture-level diagnostics allow for enhanced maintenance strategies

UCDAVIS
UNIVERSITY OF CALIFORNIA

CLTC
CALIFORNIA LIGHTING TECHNOLOGY CENTER


Lumewave, Inc

CLTC.UCDAVIS.EDU • LUMEWAVE.COM



Parking Lot and Pathway Lighting



Exterior Lighting Benefits

The Lumewave TOP900 Series of wireless controls brings many benefits to exterior lighting:

- Energy savings
- Reduced light pollution
- Convenience to users
- Dynamic response
- Enhanced public safety
- Reduced maintenance costs

Application Overview

Parking lot, area, and pathway lighting that burns all night represents a significant source of energy waste and contributes to needless sky glow and light pollution.

Design Solution

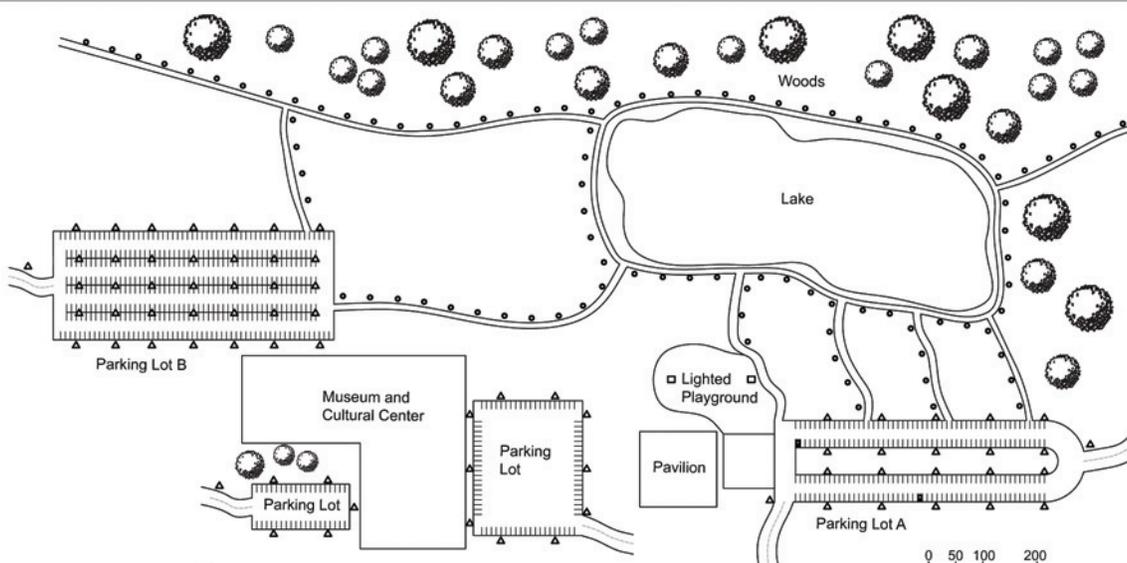
The Lumewave TOP900 module is mounted to each lighting fixture, minimizing energy usage by dimming lights down or turning lights off automatically. Fixtures are addressed and grouped for on/off, stepped dimming or 0-10V linear dimming.

Incorporating motion based control adds convenience, enhances public safety and provides additional energy savings. Lumewave's peer-to-peer communication eliminates issues with sensor coverage and pole spacing. Lighting can be progressively brought up ahead of pedestrians or bicyclists, safely illuminating the pathway.

In a parking lot, as motion detectors sense movement, this feature can communicate with the nearest devices surrounding that pole, bringing up group lighting to illuminate a bubble of light around an individual passing through the area.

User-friendly software, accessible anywhere, features simple set up and scheduling and provides demand response overrides for special events or emergencies.

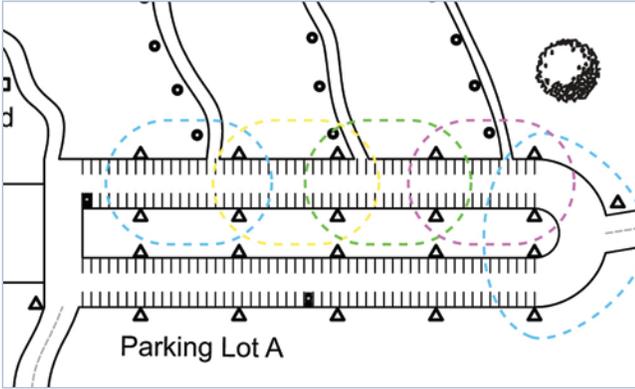
Revenue grade metering of energy usage and fixture health is reported on a time frame chosen by the user. Work orders for malfunctioning lights are generated automatically. Maintenance costs are reduced because users no longer need to send crews out looking for night time outages or day burners. Performance history can be used for predictive maintenance programs further reducing costs.



Group I

City Parking Lot A

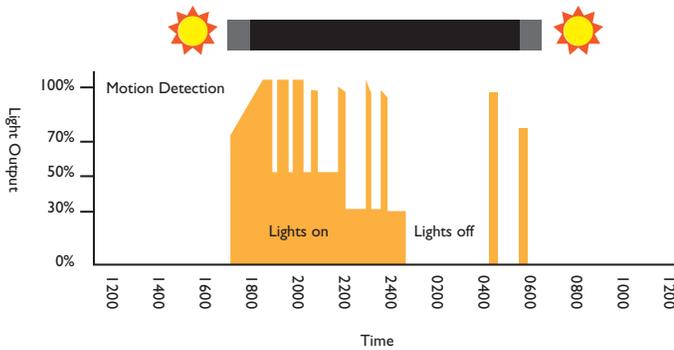
City parking lot A is near the lake, pathways, playground and pavilion. Parking lot A has two vehicle entries and three pedestrian pathways.



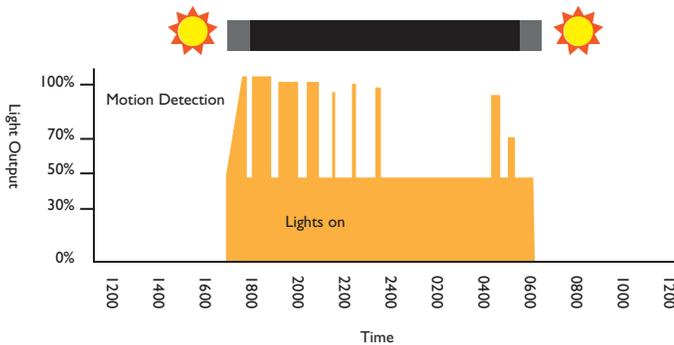
Lighting

- 80 watt dimming LED shoe box fixtures mounted on 20 foot poles spaced 100 feet apart
- Nighttime operation is high/low and on/off

TYPICAL PARKING LOT OPERATION



TYPICAL PATHWAY OPERATION



Control Solution

Lumewave 900 series modules mounted to each fixture automatically turn lighting on and off based on photocell settings:

- ON to 70% thirty minutes after sunset.
- Increases to 100% at dark. Motion detectors provide high/low operation of 100% to 50% based on the presence of people.
- At 2200 hours, high/low operation drops to 100% and 30%.
- OFF at midnight. Any motion detection brings up all lighting in that group. Lights go off after time delay.
- ON to 70% one hour before sunrise.
- Switches completely off when the photocell thresholds have been reached.

Motion detectors on each pole input the TOP900s. Peer-to-peer communication allows for proximity grouping and Direction of Travel features to bring up lighting progressively as one moves through the parking lot.

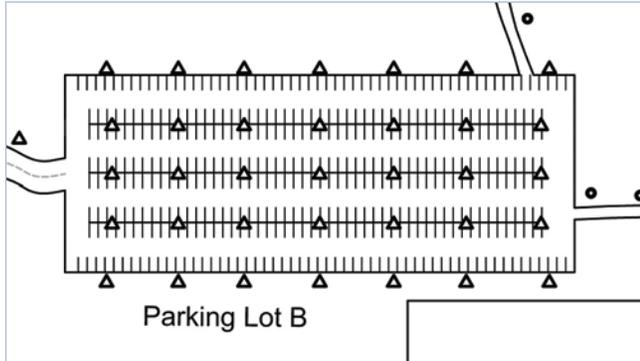
- For example, when a vehicle enters the parking lot at the entrance on the right, the last fixture from the street entrance and the two fixtures at each parking entrance come up to high. (Poles outlined in blue).
- If the vehicle enters the right hand parking section, when either of the motion detectors on the first two fixtures circled in pink detect movement, lighting on all poles in that group come up to high.
- If the vehicle proceeds into the detection zone of the first two fixtures circled in green, all lighting in that zone will come up to high. This continues throughout the lot on either side of the parking sections. Pedestrian traffic coming from the pathways or walking through the parking lot will activate the appropriate zoned lighting as well.

For nighttime special events, LumeStar software allows city officials to easily amend the lighting schedules to meet those needs.

Group 2

City Parking Lot B

City parking lot B feeds into the lake and pathways as well as the museum. Parking lot B has one vehicle entries and two pedestrian pathways.



Lighting

- 75 watt bi-level induction or LED shoebox fixtures mounted on 20 foot poles spaced 100 feet apart
- Nighttime operation is high/low and on/off

Control Solution

Lumewave 900 series modules mounted to each fixture automatically turn lighting on and off based on photocell settings:

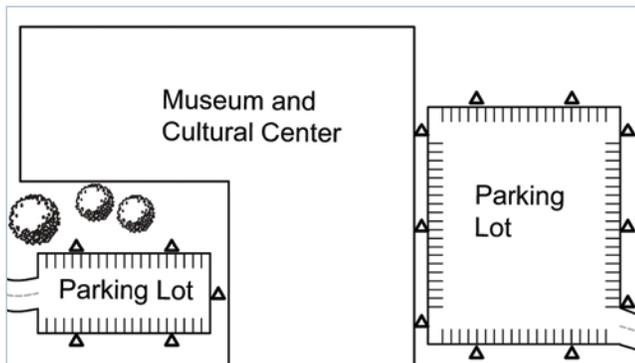
- ON to 70% thirty minutes after sunset.
- Increases to 100% at dark. Motion detectors provide high/low operation of 100% to 50% based on the presence of people.
- At 2200 hours, high/low operation drops to 100% and 30%.
- OFF at midnight. Any motion detection brings up all lighting in that group. Lights go off after time delay.
- ON to 70% one hour before sunrise.
- Switches completely off when the photocell thresholds have been reached.

Motion detectors mounted on each pole will input the TOP900s. Peer-to-peer communication allows for Geo-Proximity grouping and Direction of Travel features to bring up lighting progressively, surrounding the traveler in a sphere of light as one moves through the parking lot.

Group 3

Museum Parking Lots

Lighting for the museum parking lots are controlled to match the museum's hours of operation.



Lighting

- 75 watt bi-level induction fixtures, mounted on twenty foot poles spaced 100 feet apart
- Nighttime operation is high/low and on/off

Control Solution

Lumewave 900 series modules mounted to each fixture automatically turn lighting on and off based on photocell settings:

- ON to 70% thirty minutes after sunset.
- Increases to 100% at dark. Motion detectors provide high/low operation of 100% to 50% based on the presence of people.
- At 2200 hours, high/low operation drops to 100% and 30%.
- OFF at midnight. Any motion detection brings up all lighting in that group. Lights go off after time delay.
- ON to 70% one hour before sunrise.
- Switches completely off when the photocell thresholds have been reached.

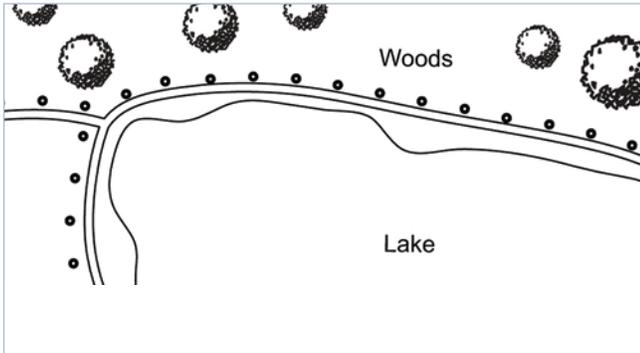
Motion detectors mounted on each pole will input the TOP900s. Fixtures are grouped so detection by any sensor brings up all lighting in the parking lot.

When the museum has special nighttime events, officials can use LumeStar software to amend the lighting schedule so lights are at suitable levels until the event ends.

Group 4

Pathways, Woods, Lake

Pathways lead from all the parking lots throughout the park and around the lake. The pavilion and nearby grass areas are utilized by the public and by the city for special events.



Lighting

- 40 watt induction type, bi-level Acorn fixtures mounted on 10 foot poles, spaced 50 feet apart
- Nighttime operation is high/low and on/off

Control Solution

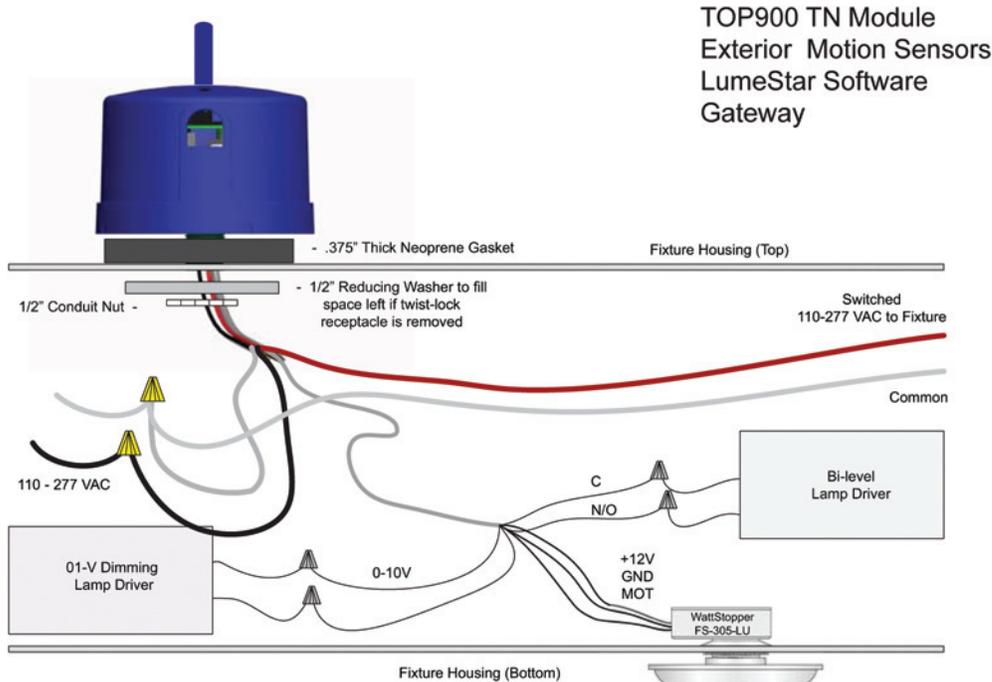
Lumewave 900 series modules mounted to each fixture automatically turn lighting on and off based on photocell settings:

- ON to 50% thirty minutes after sunset.
- Increases to 100% at dark. Motion detectors provide high/low operation of 100% to 50% based on the presence of people.
- Lumewave's Direction of Travel feature will determine the direction of movement and will bring up lighting on 1, 2 or 3 poles ahead.
- On to 70% one hour before sunrise.
- Switches completely off when the photocell thresholds have been reached

Motion sensors, pole-mounted throughout the pathways leading away from the lake, automatically bring lighting in that group back to 100% to illuminate the area for pedestrians and bicyclists.

- When motion is detected by any one of the sensors, all lighting in that group switches back to 100%.
- Fifteen minutes after the last sensor detects motion, lighting drops back down to 50%.

Products



TOP900-TL: Wireless Control Lighting Module

Lumewave's TOP900-TL wireless grid-smart lighting control module brings a new level of savings and control to outdoor lighting.

The module mounts to the Lumewave supplied, twist-lock photocell type connector installed either by the fixture manufacturer, or during fixture retro-fit, that allows the control cable to pass through it into the housing for connection to the lamp driver within. The location of the pass-through is water-proof.

The module is versatile enough to operate with LED and eHID ballast, plasma and induction light sources. Lumewave modules also provide feedback to users regarding the condition of lamps and ballasts, energy usage, power quality, and exact location of the fixture.

Fixtures can be addressed and grouped for unified on/off, high-low stepped dimming with off, tri-level stepped dimming with off, or 0-10 volt linear dimming operation. The TOP900 modules provide adjustable photocell thresholds as well as an time of day and astronomical clock with up to 9 time-of-day actions for additional savings.

Through the use of LumeStar front-end software, grouping and operational parameters are simply set. In addition, high-value indicators regarding the health of the fixture, lamp/ballast failure, energy consumption, and power quality are relayed back to the user on whatever schedule the user chooses. No longer will crews have to drive from location to location looking for outages and day burners. Work orders are automatically generated for the customer.

The Lumewave's Gateway Modules automatically select network and channels to insure interference-free operation. Gateways are highly reliable with a range of 5 miles (base station, antenna dependent) and networks may have an unlimited number of devices on them. A minimum of one gateway is required per site.

Four Gateways Interfaces are available:

1. USB
2. Ethernet
3. Wi-Fi
4. Cellular



Control HID, LED, LEP & Induction Lamps

- Control Profiles and interfaces
 - Power to fixture on/off
 - Bi-level with OFF
 - 0-10V (sink) dimming control with 0V turning fixture power Off
 - Dimming control in 5% increments
- Control Events & Schedules
 - Weekday & weekend schedules
 - Special event schedule
 - Schedule up to 9 control events/day
 - Scheduled events based on time of day and/or astronomical time
 - Schedule use of motion sensors and photocell
 - Real-time commands and overrides
- Power Metering (Revenue Grade)
- Data Logging
- Failure detection and reporting
- Photocell thresholds synchronization
- Motion detector input
- Emergency call button input
- Over the air flashing (program updates)

Electrical Specifications

- Replaces existing photocell & receptacle
- No need to penetrate fixture to pull wires
- All wiring routed through threaded 1/2" nipple
- Operating Voltage: 90-305Vac 50/60Hz
- Operating Temperature: -40C to +70C
- Fixture Power Contact: 1000W/1800VA
- Dimming: 0-10V (Sink)
- Failsafe: Power ON, Lamp High, 0-10V = 100%
- Motion detector input
- Emergency Call Button Input
- Photocell daytime override
- Tilt sensor for knock-down alert (Optional)
- Real-time Clock w/battery backup
- Programmable Time of day and/or Astronomical time control events and schedules
- Distributed process – Event schedules executed at unit. No need for frontend to be on line
- Real-time overrides of all control functions
- Real-time (demand incident) overrides of all schedules
- IP66
- UL

Wireless Specifications

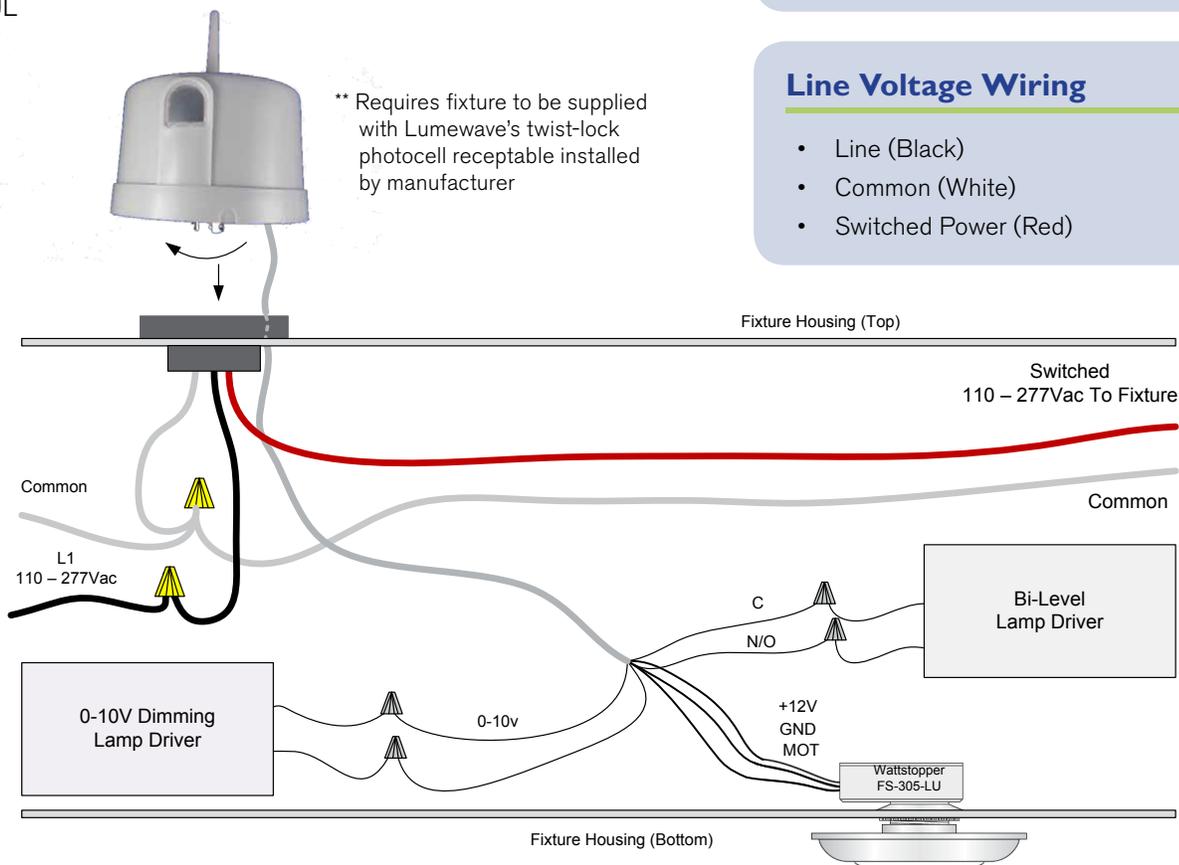
Wireless Standard: IEEE 802.15.4
Operating Frequency: 902–928Mhz
Spread Spectrum: DSS
Channels: 10
RF power: Adjustable to +24dbm (250mw)
Antenna: Internal/external 1/4 wave monopole
Range: Base to TOP module = 2-5 miles (LOS)
Range: TOP to TOP @ 25' AGL (LOS) 2 miles
Range Extender: TOP module can repeater

Low Voltage Control Wiring

1. Relay Driver Output (Ext 1)
2. N/O - Dry Relay Contact (Bi-level Control)
3. C - Dry Relay Contact (Bi-level Control)
4. 0-10V
5. Ground (DC)
6. +12V DC for Motion Sensor
7. Motion Detector Input
8. Call Button Input

Line Voltage Wiring

- Line (Black)
- Common (White)
- Switched Power (Red)



Lumewave's "LumeStar" wireless lighting control network is assembled from a number of building blocks:

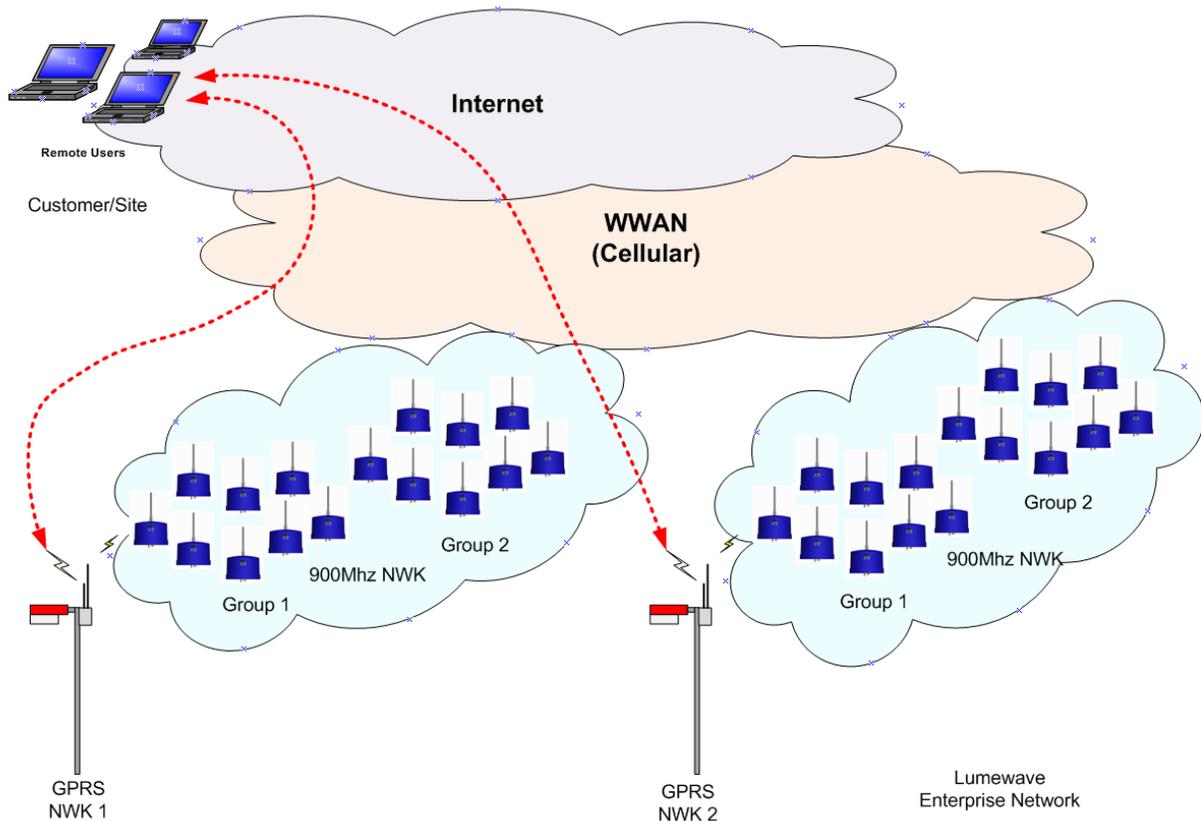
- A. Wireless control modules
- B. Gateway
- C. Control Software

There are a number of topologies that can be used:

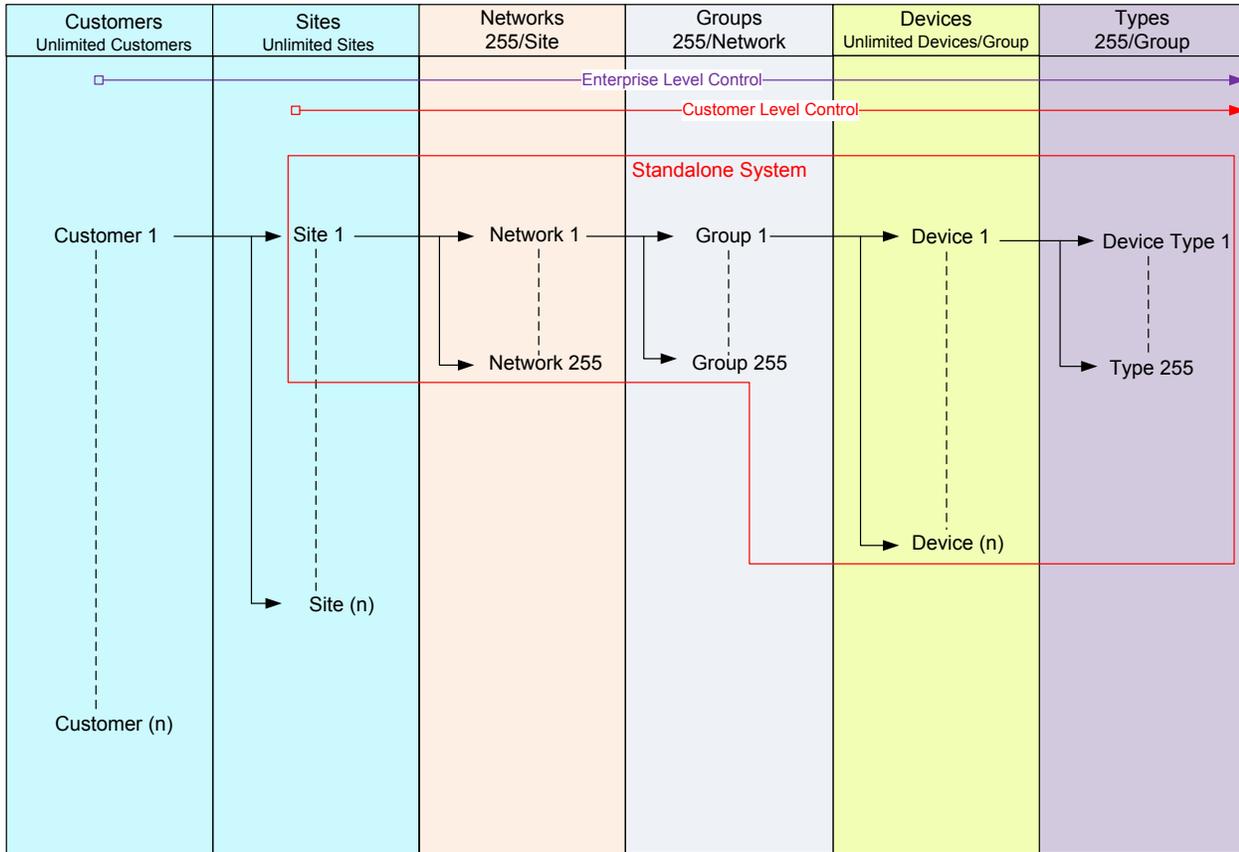
- 1. USB to gateway
- 2. Ethernet to gateway
- 3. Wi-Fi to gateway
- 4. Cellular to gateway



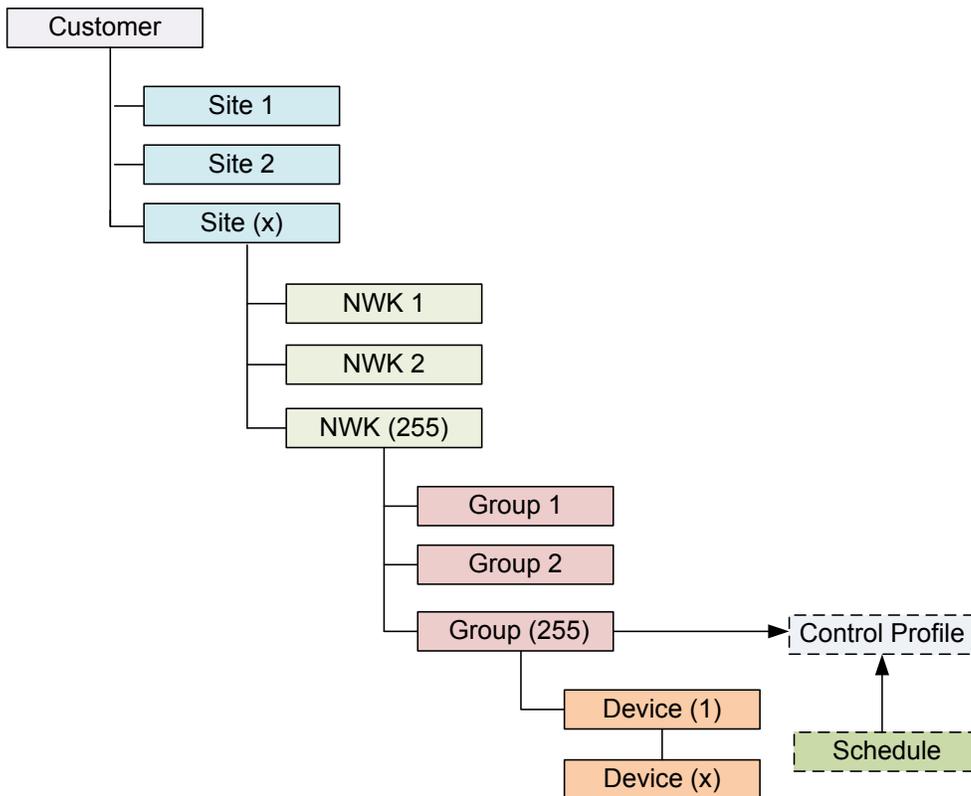
Example of Enterprise Level WWAN Network Using Cellular Gateways



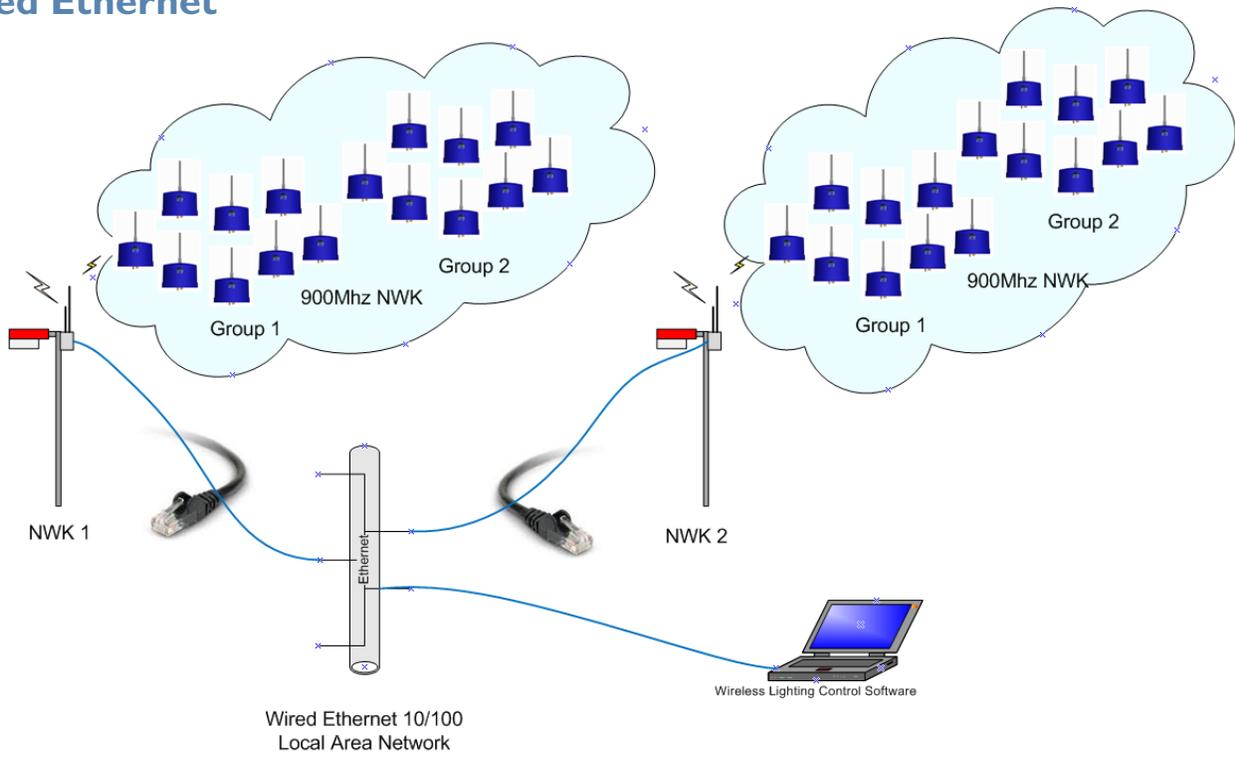
LumeStar Wireless Network Addressing Scheme



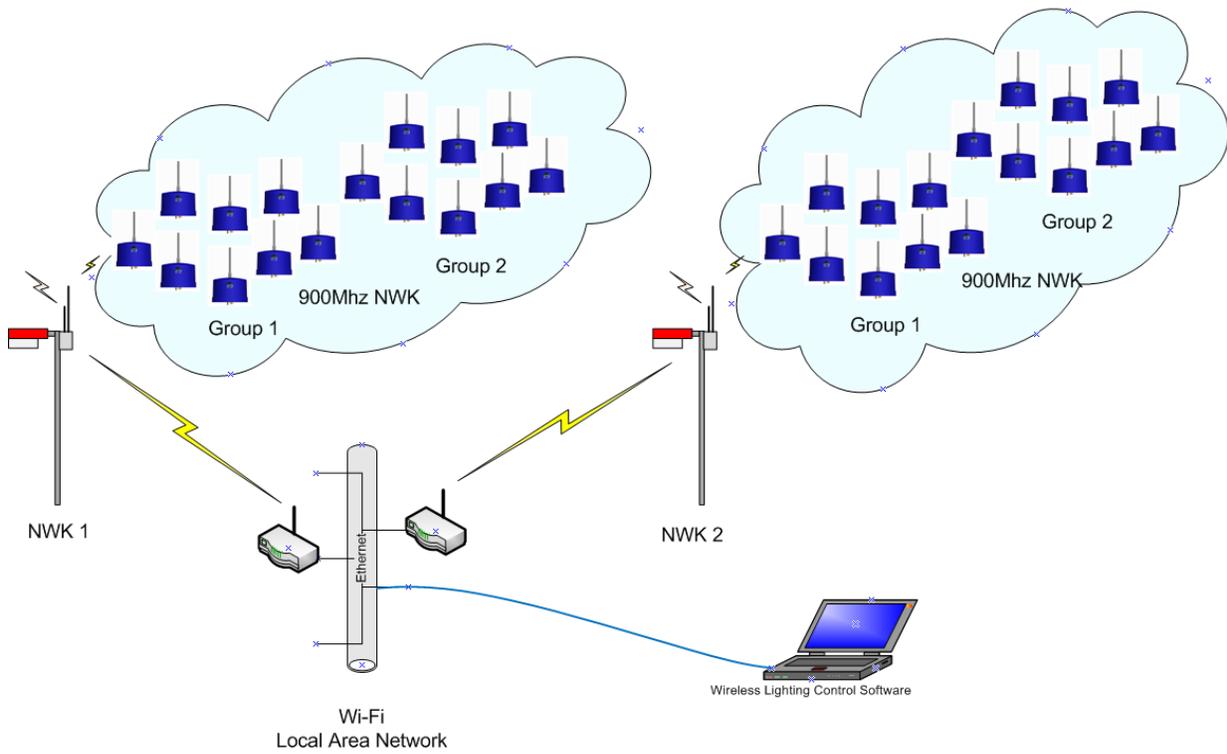
n = Unlimited



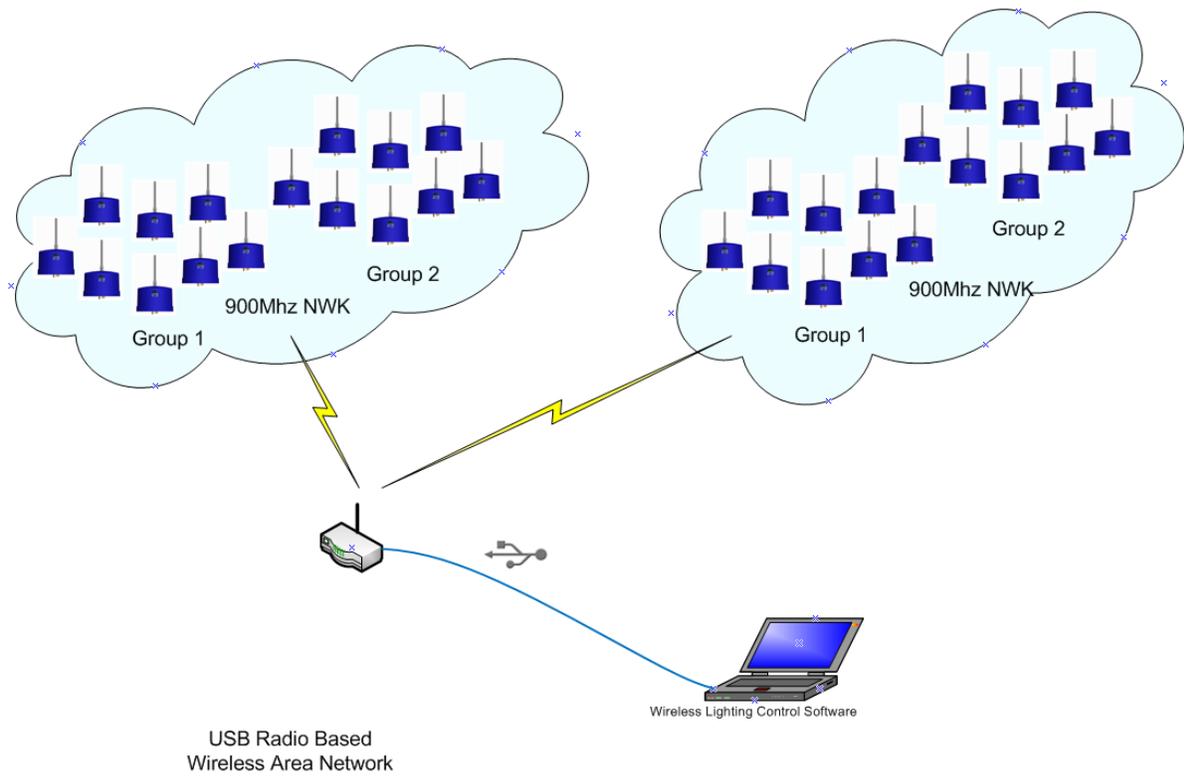
Wired Ethernet

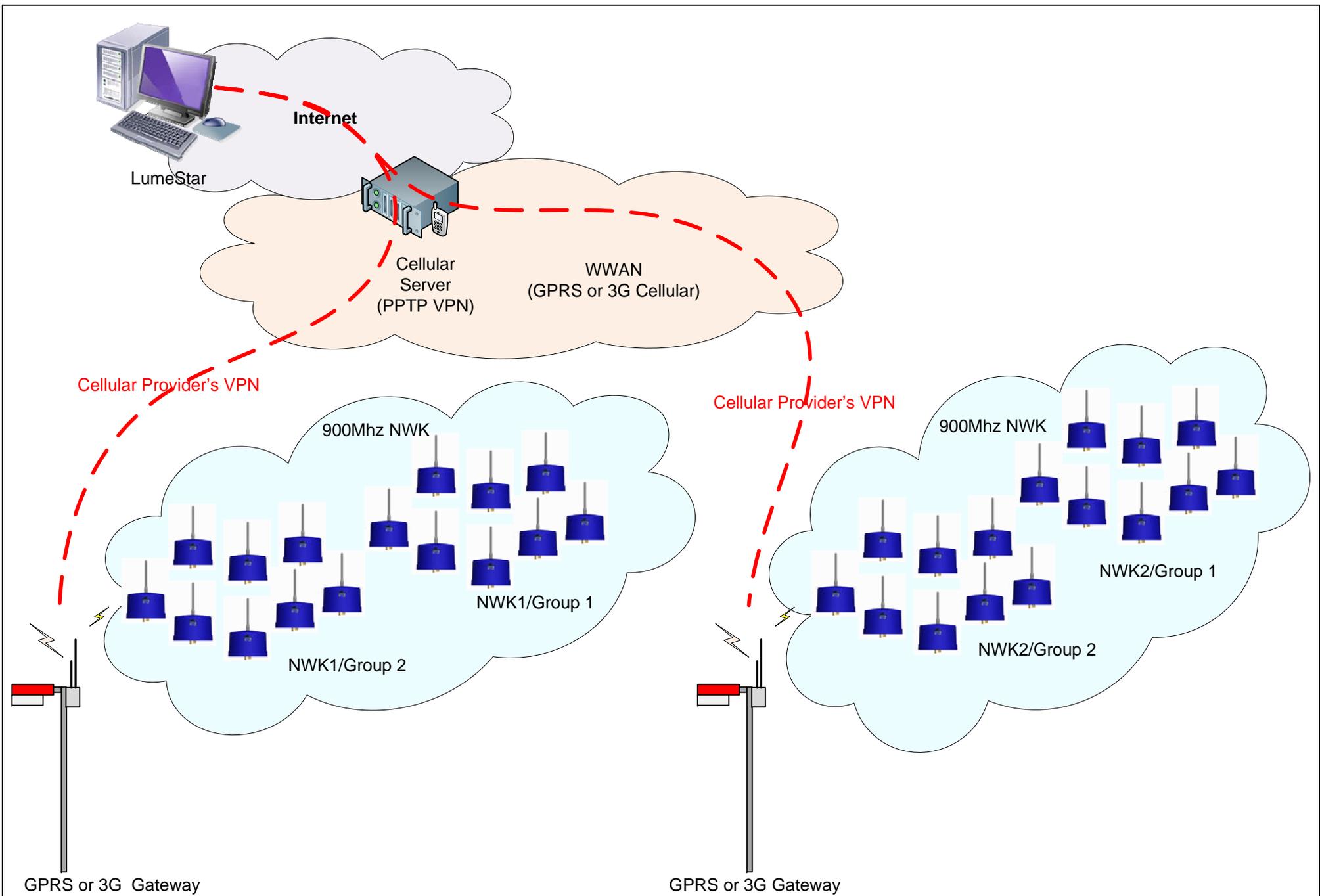


Wireless (Wi-Fi) Ethernet



USB Radio to Network





 Lumewave, Inc	VPN Based Cellular Network Com	
Drawn By: MKK	Date: 3-2-11	Rev: A

Features

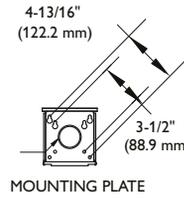
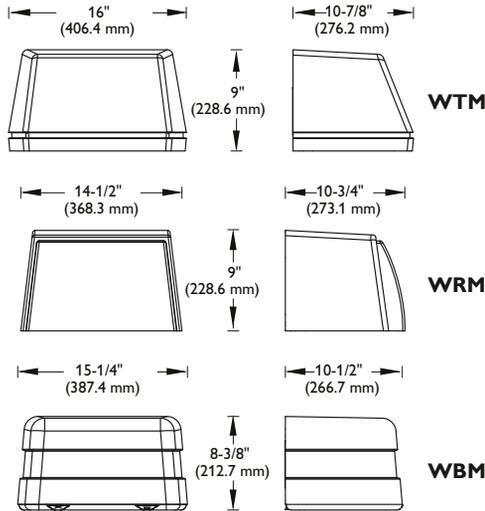
- Heavy duty, die cast aluminum housing.
- Die-cast aluminum heat sink designed for excellent thermal transfer to extend component life.
- Silicone gasketing provides protection against moisture.
- Quick mount wall plate mounts directly to 3-1/2" octagon or 4" square outlet box for easy installation.
- Polyester powder finish for impact, corrosion and UV resistance.
- Tempered glass lens.
- Furnished with surge protector.
- Components are RoHS compliant.
- LED light engine and driver are field replaceable.
- Certified to meet UL 1598 standards for wet location, and 40°C ambient.

WTM/WRM/WBM

LED Medium Full Cutoff Wall Light



Dimensions



The LED Medium Full Cutoff Wall Light offers a sleek design and cutoff performance with a wide range of uses. It delivers the lighting needed for the exteriors of retail buildings, businesses, walkways, underpasses or entrance doors.

Accessories (Order Separately)

- PC-MT** – Photo Control Twist Lock, Multi-volt (must have PCR Option)
 - PC-48** – Photo Control Twist Lock, 480 volt (must have PCR Option)
 - PCR-SC** – PCR Shorting Cap
- (For additional descriptions of Wall Light accessories refer to pages 861-862.)

Green Product Choice: WTM40WLU-MC3-AL

	L					
	<u>Wattage</u> 40W – 40W Neutral White (4100K) 60W – 60W Neutral White (4100K)	<u>Voltage</u> 34 – 347 U – Universal 120-277 volts 50Hz or 60Hz	<u>Lens</u> Blank – Clear Tempered Glass FGS – Flat Solite Diffusing Tempered Glass Lens	<u>Options</u> WDF – Wired Double Fuse ⁴⁵ WSF – Wired Single Fuse ⁴⁶ PE – Button Photo Control PCR – Photo Control Receptacle ¹³		
<u>Family</u> WTM WRM WBM	<u>Lamp Source</u> L – LED	<u>Optics</u> SC2 – Wide Distribution MC3 – Medium Distribution FWT – Forward Throw	<u>Paint Colors</u> BLANK – Dark Bronze Textured WT – White Textured BK – Black Textured AL – Silver Alum. Textured NP – Gray Alum. Textured GY – Industrial Gray Textured (consult factory for other colors)			

General Notes

All options are factory installed. All accessories are field installed.

Footnotes

- ¹³Order Twist Lock Photo Control separately
- ⁴⁵Use with 208 and 240 volt.
- ⁴⁶Use with 120, 277, and 347 volt.

Predicted L₇₀ Lifetime

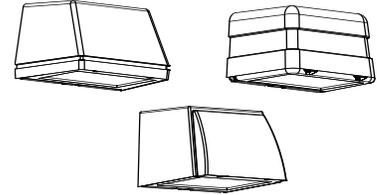
25°C Ambient - >60,000 hours
40°C Ambient - >60,000 hours
(based upon LED manufacturer's supplied LM-80 data and in-situ laboratory testing)

NITE BRITES

JOB NAME _____

TYPE _____

WTM/WRM/WBM- LED MEDIUM FULL CUTOFF WALL PACK 40 and 60 watt LED

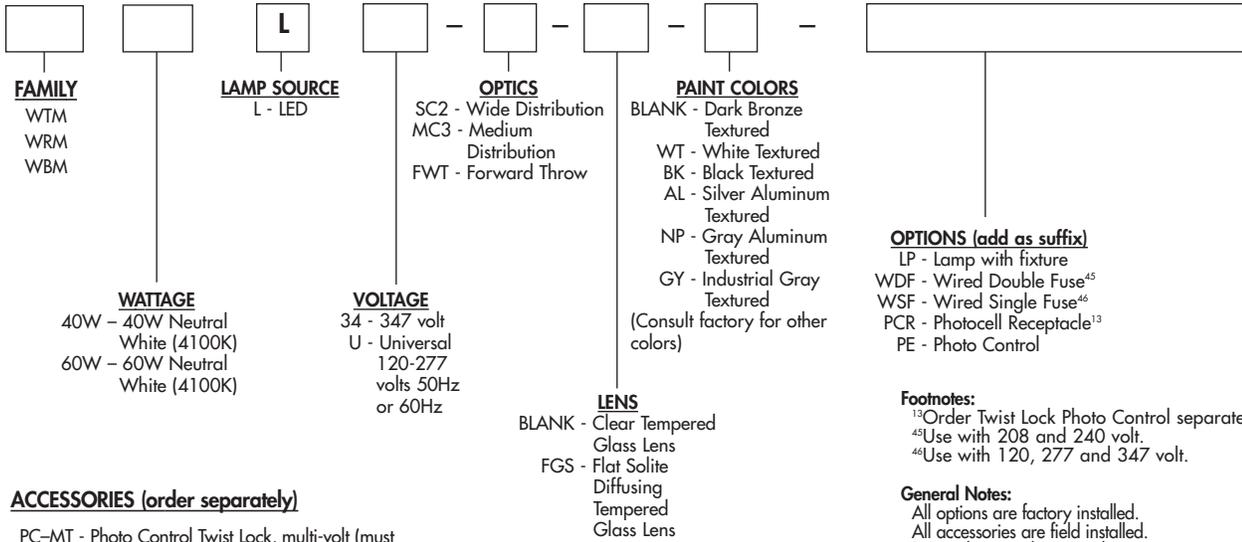


The LED Medium Full Cutoff Wall Pack offers a sleek design and cutoff performance with a wide range of uses. It delivers the lighting needed for the exteriors of retail buildings, businesses, walkways, underpasses or entrance doors.



ORDERING MATRIX

SAMPLE CATALOG NUMBER: WTM60WLU-FWT-BK



ACCESSORIES (order separately)

PC-MT - Photo Control Twist Lock, multi-volt (must use PCR option)
PCR-SC - PCR Shorting Cap
(For additional descriptions of Wall Light accessories refer to sheet number OA-50030.)

Footnotes:

¹³Order Twist Lock Photo Control separately.
⁴⁵Use with 208 and 240 volt.
⁴⁶Use with 120, 277 and 347 volt.

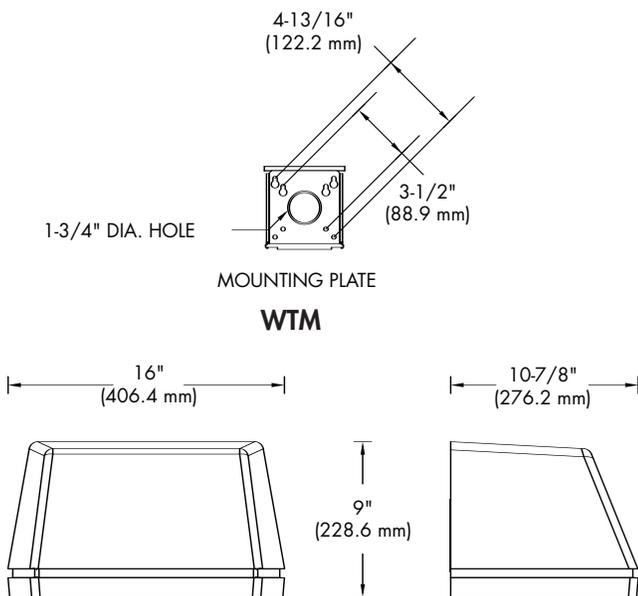
General Notes:

All options are factory installed.
All accessories are field installed.
Data subject to change without notice.

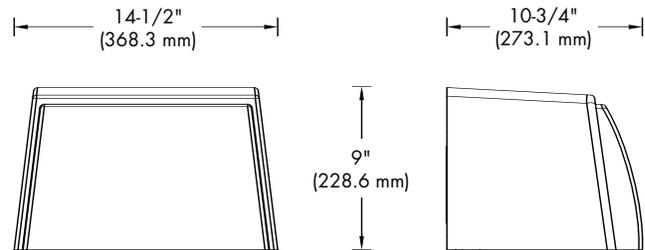
Predicted L70 Lifetime:

25°C Ambient - >60,000 hours
40°C Ambient - >60,000 hours
(based upon LED manufacturer's supplied LM-80 data and in-situ laboratory testing)

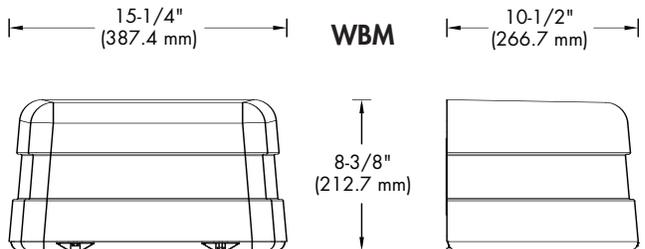
DIMENSIONS



WRM



WBM



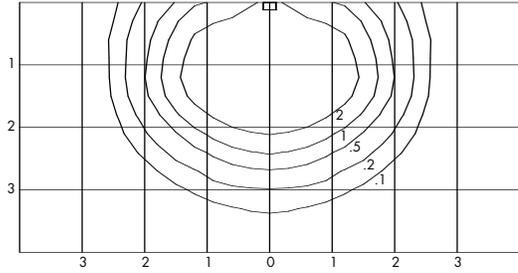
WEIGHT = 19 lbs. (max.)

WTM/WRM/WBM-LED MEDIUM FULL CUTOFF WALL PACK

WL-43171

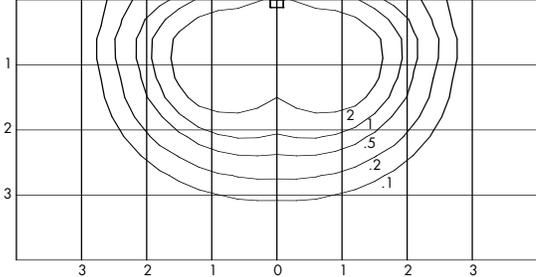
PHILIPS
Day-Brite

PHOTOMETRICS

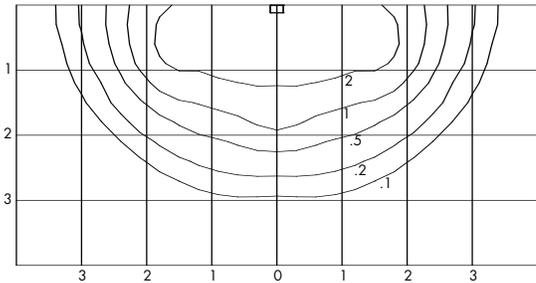


CATALOG NUMBER: WTM60WL-FWT
 TEST NUMBER: 28822
 LAMP: LED
 WATTAGE: 62
 LUMENS: 2634
 TILT ANGLE: 0°
 MOUNTING HEIGHT: 15 FEET

LIGHT LEVEL MULTIPLYING FACTORS	
MOUNTING HEIGHT	MULTIPLIER
25'	0.36
20'	0.56
15'	1.00
12'	1.56
10'	2.25
8'	3.52



CATALOG NUMBER: WTM60WL-MC3
 TEST NUMBER: 28830
 LAMP: LED
 WATTAGE: 62
 LUMENS: 2575
 TILT ANGLE: 0°
 MOUNTING HEIGHT: 15 FEET



CATALOG NUMBER: WTM60WL-SC2
 TEST NUMBER: 28826
 LAMP: LED
 WATTAGE: 62
 LUMENS: 2603
 TILT ANGLE: 0°
 MOUNTING HEIGHT: 15 FEET

Note: Photometric values based on tests performed in compliance with LM-79

UNITS SHOWN IN TERMS OF MOUNTING HEIGHT
 INITIAL FOOTCANDLES SHOWN

ADDITIONAL TEST NUMBERS

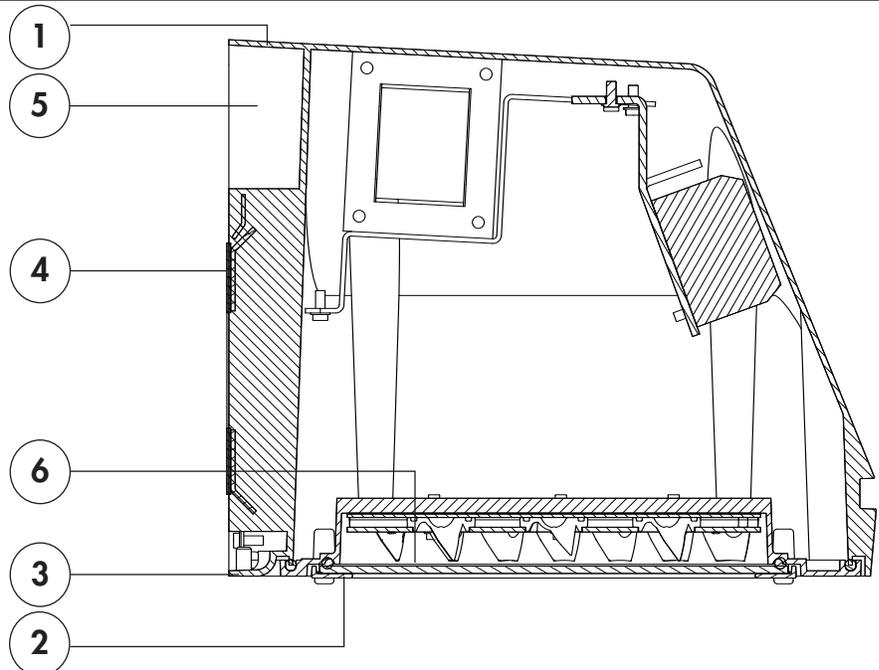
DESCRIPTION/CATALOG NUMBER	TEST NUMBER	WATTAGE	LUMENS
WTM60WL-SC2-FGS	28827	62	2283
WTM60WL-MC3-FGS	28831	62	2367
WTM60WL-FWT-FGS	28823	62	2421
WTM40WL-SC2	28835	42	2005
WTM40WL-MC3	28833	42	1957
WTM40WL-FWT	28840	42	1934
WTM40WL-SC2-FGS	28836	42	1556
WTM40WL-MC3-FGS	28832	42	1799
WTM40WL-FWT-FGS	28841	42	1801

PRODUCT FEATURES

Certified to meet UL 1589 standards for wet location, and 40°C ambient for all lamp wattages listed.

1. Heavy duty, die cast aluminum housing.
2. Die-cast aluminum heat sink designed for excellent thermal transfer to extend component life.
3. Silicone gasketing provides protection against moisture.
4. Quick mount wall plate mounts directly to 3-1/2" octagon or 4" square outlet box for easy installation.
5. Polyester powder finish for impact, corrosion and UV resistance.
6. Tempered glass lens is thermal and shock resistant.
7. Furnished with 10kV surge protector.
8. Components are RoHS compliant.
9. LED light engine and driver are field replaceable.

5 Year Limited Warranty



WL-43171

DAY-BRITE LIGHTING • www.daybritelighting.com
 776 South Green Street • Tupelo, Mississippi 38804 • PH: (662) 842-7212 • FAX: (662) 841-5501
CANADIAN DIVISION
 189 Bullock Drive • Markham, Ontario L3P 1W4 • PH: (905) 294-9570 • FAX: (905) 294-9811
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PHILIPS
Day-Brite

BSP3-120 / BSP3-208-240 / BSP3-277 BSP3-347 / BSP3-480 3-Pole LED Driver & Ballast Surge Protectors - Enhanced

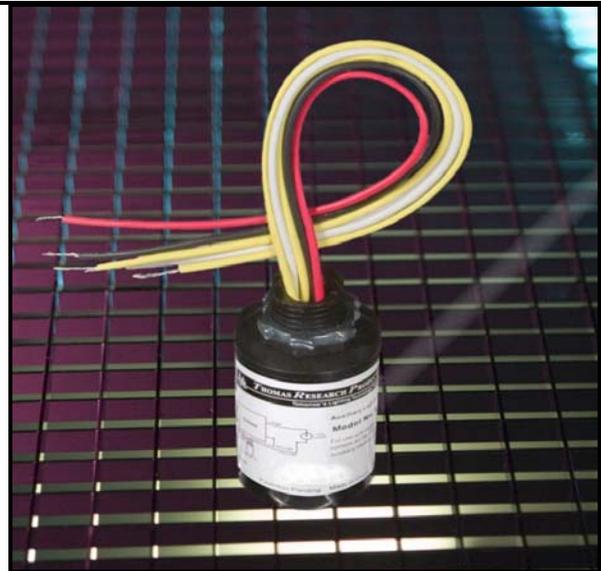
The BSP3 series of products are designed to be used in conjunction with electronic fluorescent and HID ballasts and LED Drivers to provide an additional level of surge and transient protection in industrial and commercial applications

Features

- The BSP3 Series are 3-leaded devices that protect Line-Ground, Line-Neutral, and Neutral-Ground in accordance with IEEE / ANSI C62.41.2 guidelines.

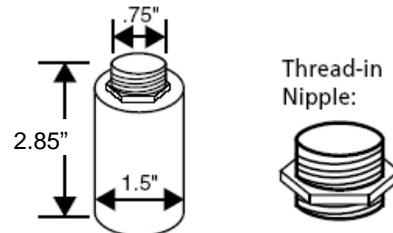
Model	Clamping Voltage	Surge Rating 2mS
BSP3-120	150	120 J
BSP3-208-240	275	190 J
BSP3-277	320	273 J
BSP3-347	420	320 J
BSP3-480	550	360 J

- BSP3-120 is for use on 120V ballasts/drivers
- BSP3-277 is for use on 277V or Universal Voltage ballasts/drivers
- BSP3-347 is for use on 347V ballasts/drivers
- BSP3-480 is for use on 480V ballasts/drivers
- Surge current rating = 10,000 Amps using industry standard 8/20 uSec wave
- High temperature, flameproof plastic enclosure, 85°C maximum surface temp rating
- Thermally Protected Transient Overvoltage Circuit

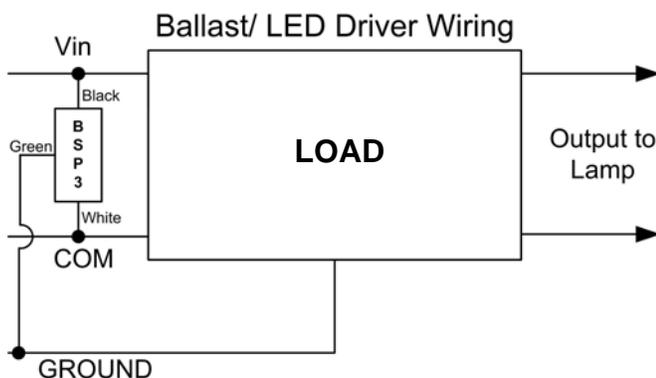


Dimensions

Body: 12" leads, stripped 0.63"



Wiring

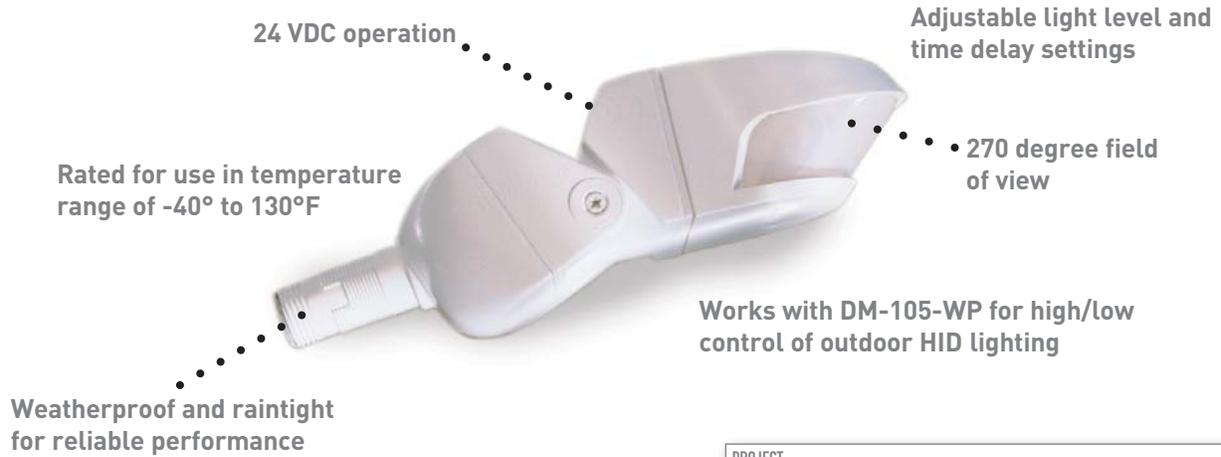


RoHS Compliant

04-28-11



EW Low Voltage Outdoor Motion Sensor



PROJECT
LOCATION/TYPE

Product Overview

Description

WattStopper's EW outdoor motion sensors provide occupancy based control of outdoor lighting. Raintight and rated for -40°F to 130°F, EW sensors perform reliably in all weather conditions.

Operation

EW sensors operate at 24 VDC and are mounted onto a standard, outdoor junction box. Utilizing advanced passive infrared (PIR) technology, the sensors detect the difference between infrared energy in motion and the background space to turn lighting on when a person or vehicle enters the coverage area. After the area is vacated and the time delay elapses, lighting automatically turns off. The EW's dual PIR detectors and three level lens increase the detection density as well as the accuracy of motion detection.

Applications

The low voltage EW sensors are ideal to use in conjunction with WattStopper DM-105-WP outdoor HID control module. Here, the EW allows the outdoor HID lighting to switch between high and low based on motion detection. Applications include walkways, parking lots, dock lighting and warehouses. When used with a power pack, the low voltage EW also provides an outdoor lighting control solution for areas where line voltage is not available or where the load is too large for a single line voltage sensor to handle.

Features

- Sensors can be mounted on walls, eaves, or ceilings for installation convenience
- 270° coverage pattern
- Front rotates for easy coverage adjustment
- Precision, double-shot tooling with internal silicon gaskets prevents water and dust contamination
- Optional override-ON to turn lights on remotely for the length of the time delay
- User-adjustable time delay from 12 seconds to 16 minutes
- Adjustable light level setting allows users to set the level at which lighting will turn on upon occupancy
- ASIC enhances reliability and helps to eliminate false triggers
- Pulse Count Processing eliminates false triggers and provide RFI and EMI immunity
- Includes hardware for mounting sensor to standard 4" round outdoor junction box

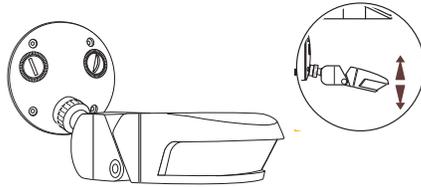


Specifications

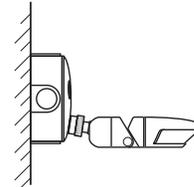
- Operating temperature range -40°F to +130°F
- UL 773A rated raintight
- 24 VDC operation
- 270° coverage
- Adjustable light level of 0.5 to 200 footcandles (5.4 - 2,152.8 lux)
- 1/2" threaded nipple fits standard NEMA weatherproof fixture fitting
- Sensor dimensions: 6.7" x 3.2" x 2.2" (170mm x 80mm x 55mm)
- Five year warranty

Wiring & Installation

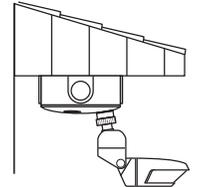
Installation & Positioning



Mounting Diagrams

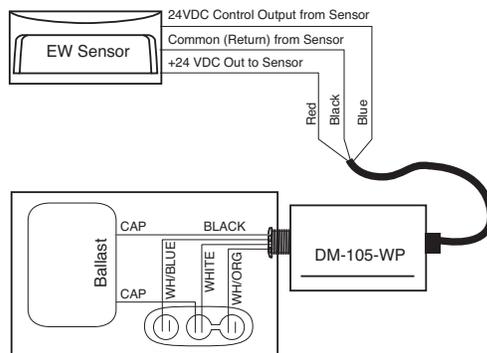


Wall or pole mounting

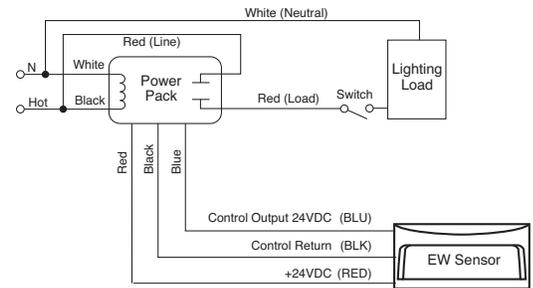


Ceiling/eave mounting

EW Wiring with DM-105-WP HID Control

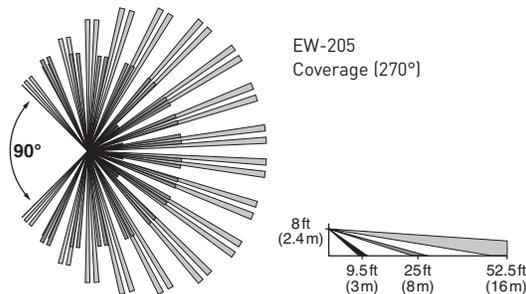


EW and Power Pack Wiring



Coverage

Coverage Pattern



Ordering Information

Catalog No.	Color	Voltage	Current	Coverage
<input type="checkbox"/> EW-205-24-W	Arctic white	24 VDC	8 mA	270°
<input type="checkbox"/> EW-205-24-G	Arch. grey	24 VDC	8 mA	270°



RoadStar

Beautifully efficient

Philips Roadstar Series with customizable LED light control

PHILIPS

Innovative solutions, sustainable performance.

Pure performance

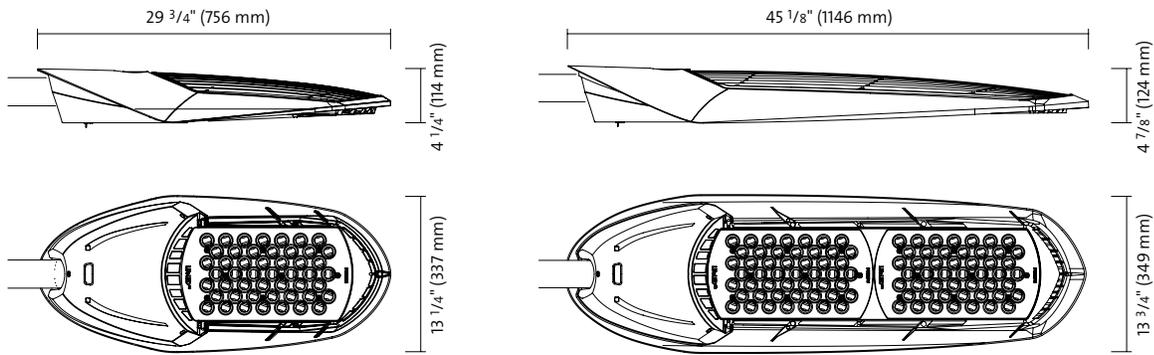
All LED luminaires are not created equal. The Roadstar was created to help those responsible for lighting our world succeed in their energy conservation goals. Through affordable optimal photometric performance the Roadstar gives all project owners from those at Department of Transportations, utilities, transit authorities and municipals the opportunity to meet their energy conservation goals without sacrificing performance, beauty or safety.

Built to last

This versatile lighting solution was designed to last. The Roadstar, with it's over 70,000 hour lifespan, pushed that concept to the maximum. Not having to deploy maintenance personnel to replace lamps and electrical components can save any user considerable time and money. The durable IP66 sealed construction, excellent thermal management and resistance to the elements, makes the Roadstar an extremely tough, lumen generating power house that simply cannot be outperformed.



Physical characteristics

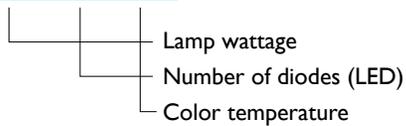


GPLS
 EPA: 0.76 sq. ft.
 Weight: 20 lbs (9.1 kg)

GPLM
 EPA: 1.10 sq. ft.
 Weight: 31 lbs (14.1 kg)

Lamps / LED

Lamp code definition / 40W 49LED 4K



Lamp	Luminaires availability	Rated life hrs.	Color temperature	Lamp wattage	System wattage
40W30LED4K	GPLS	70,000	4000K	40W	45W
40W49LED4K	GPLS	70,000	4000K	42W	47W
60W30LED4K	GPLS	70,000	4000K	60W	68W
65W49LED4K	GPLS	70,000	4000K	65W	73W
90W49LED4K	GPLS	70,000	4000K	90W	102W
105W79LED4K	GPLM	70,000	4000K	105W	119W
130W98LED4K	GPLM	70,000	4000K	130W	147W
150W79LED4K	GPLM	70,000	4000K	150W	170W
180W98LED4K	GPLM	70,000	4000K	180W	204W

Voltage

120 / 208 / 240 / 277

Includes surge protector | 10KV

Cross reference Roadstar vs. cobrahead luminaire

Typical cobrahead HID	Roadstar wattage	Energy saving
70HPS	60W30LED4K	24%
	40W49LED4K	47%
100HPS	65W49LED4K	43%
	90W49LED4K	21%
150HPS	105W79LED4K	36%
	130W98LED4K	21%
250HPS	180W98LED4K	35%
70MH	40W30LED4K	49%
	60W30LED4K	24%
100MH	40W49LED4K	62%
	65W49LED4K	41%
150MH	105W79LED4K	35%
	160W79LED4K	8%
250MH	150W79LED4K	42%
	180W98LED4K	30%

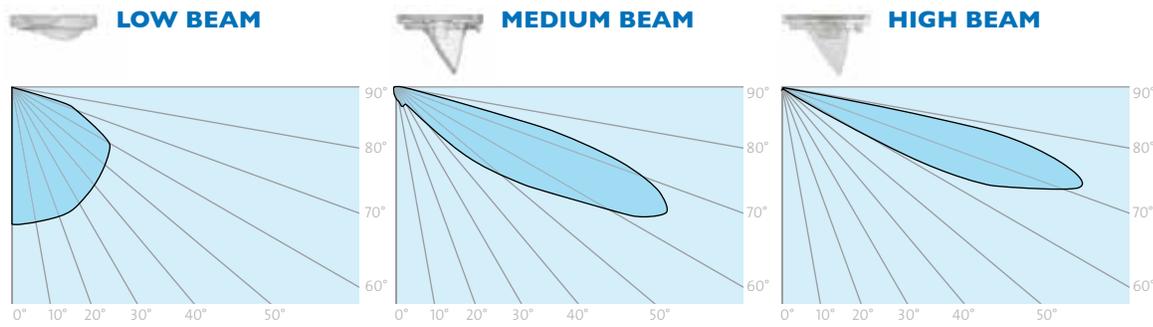


Optical systems / LED

Optical systems	Distribution
Full cut-off	
LE2	TYPE II / Asymmetrical distribution
LE3	TYPE III / Asymmetrical distribution
LE4	TYPE IV / Asymmetrical distribution
LE5	TYPE V / Asymmetrical distribution

Light control

To obtain a better light control, the technology employs a mix of low beam, medium beam, and high beam lens control, generating more lumens in the target lighting zone, increasing pole spacing up to 8 times greater than the mounting height, and reducing glare.



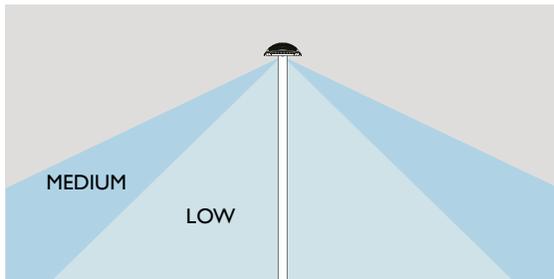
High beam, medium beam, and low beam light management gives the Roadstar better light control and better lumen targeting.

EXAMPLE:

LE2

FULL CUT-OFF OPTICAL SYSTEM

SPACING UP TO 6-8 TIMES MOUNTING HEIGHT



More lumens / Less glare



Superior performance

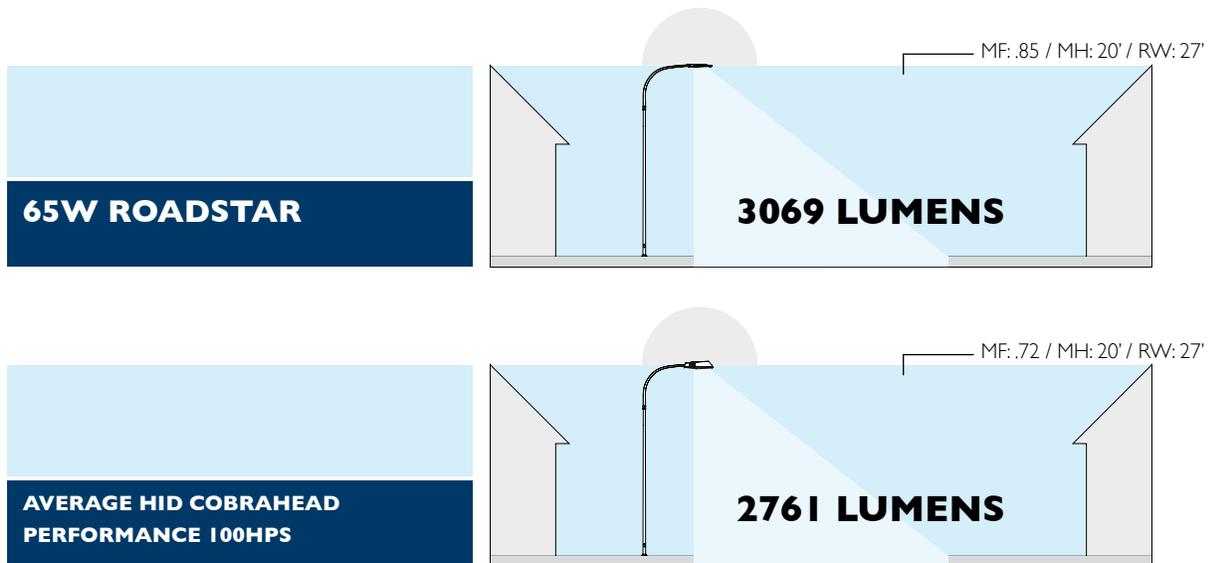
Customize this luminaire with stunning precision to cast light only where you want light to be cast. It uses up to 50% less energy than traditional cobraheads but 100% pure dark-sky compliant performance. The Roadstar's LifeLED light engine generates light that is uniform in intensity, and Philips patented light stretching technology inside the LifeLED engine provides the widest possible pole spacing for a luminaire of its kind. The Roadstar incredible light control provides pole spacing up to 8 times its mounting height. This reduces the quantity of poles (thus luminaires) needed to illuminate any given project and allows any site to keep its existing infrastructure and simply upgrade its cobraheads to the Roadstar. To counter glare, the Roadstar provides unparalleled uniformity and intensity. This assures security on the road by not interfering with the vision of drivers, cyclists, and pedestrians.



Less luminaires are needed to achieve the same uniformity and intensity of light.

Target lumen

The results of a controlled test comparing a typical 100HPS cobrahead with a 65W Roadstar clearly demonstrate the light control that is possible to achieve with this luminaire: same lumens in the target area using less power.



* The amount of lumens on the targeted lighting zone.

Same light levels for a fraction of the energy usage.



LifeLED lifespan

With a light source that lasts well over 70,000 hours (over 16 years) and with extremely low maintenance needs, the Roadstar will deliver whatever is required of it, while asking very little in return.

LM80 tests performed on the Roadstar clearly demonstrate that it not only meets criteria, it greatly surpasses them, giving it a lifespan that well exceeds the 70,000 hour mark thanks to better thermal management and lower current needs.

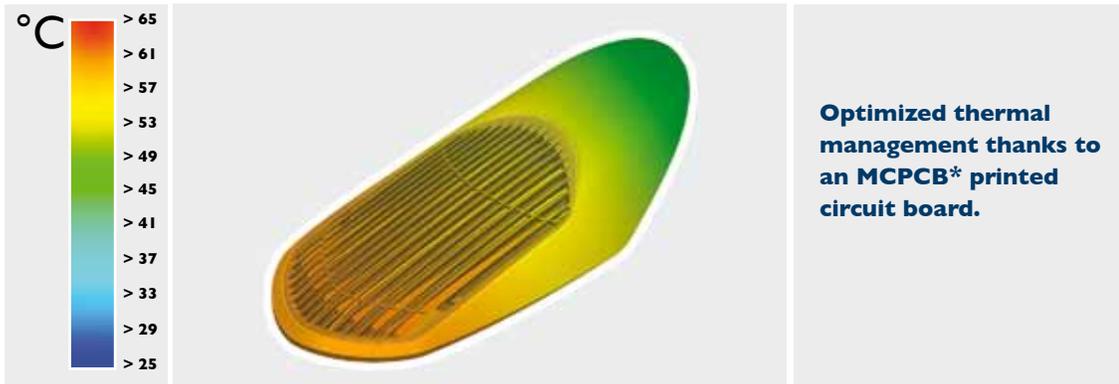
The lifespan of an LED luminaire is measured using lumen depreciation. When the LEDs in an LED light engine reach 30% lumen depreciation, they should be replaced. However, since the lumen depreciation in the LifeLED engine happens slower thanks to better thermal management (65°C), better junction temperature management (82°C), and lower current usage (570mA), when the Roadstar reaches 70,000 hours of use, its lumen depreciation will still be well under 30%.

	Ambient at LED	Junction at LED	Current	Lifespan
LED MANUFACTURER LM80 REPORT	85°C	112°C	700mA	70000
ROADSTAR VALUES (these values represent the 90W49LED results)	65°C	82°C	570mA	+ 70000

Rigorous testing has proven that the advanced system configuration of the Roadstar assures over 70,000 hours of life.

Reliability

The technology of the Roadstar can take anything the environment can throw at it, from extreme temperatures that range from -40°C/-40°F to 50°C/122°F, to intense weather conditions. The Roadstar's IP66 sealed optics protect its light source, and its robust, 3G (ANSI C136.31 Table 2—Vibration test levels—Bridge/overpass applications) vibration resistant construction protects the rest of this reliable lighting solution. Heat is managed through a built-in external heat-sink as well as an aluminium MCPCB* printed circuit board, far superior to the typical FR4 fiberglass boards, and considerably more recyclable.



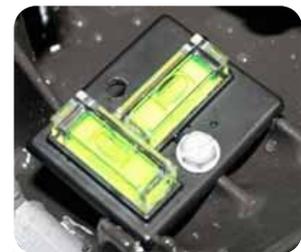
* MCPCB Metal core printed circuit board

Luminaire options

- BL** Bubble level
- CDMG** Dynadimmer control
- DMG** 0-10 volt dimming-ready power supply
- PH8** Photoelectric cell, twistlock type includes receptacle
- RC** Receptacle for a twist-lock photoelectric cell or a shorting cap
- WPG** Without protective grid



Photoelectric cell



Bubble level

Mountings

- 4 Bolt connection
- Horizontal tenon 1.9" to 2 3/8" OD
- Adjust tilt +/- 5 degrees
- Contact factory for additional mounting options

Philips Dynadimmer dimming control

- **Intelligent/autonomous self setting module**
- **Requires 3 full nights to adjust (Full power otherwise)**
- **Install and forget**
- **Choose between 3 different scenarios (8, 6 and 4 hours of dimming)**
- **Choose between 3 different dimming level (75%, 50% and 25%)**
- **Customized programming available**



Dynadimmer Software

Dynadimmer software

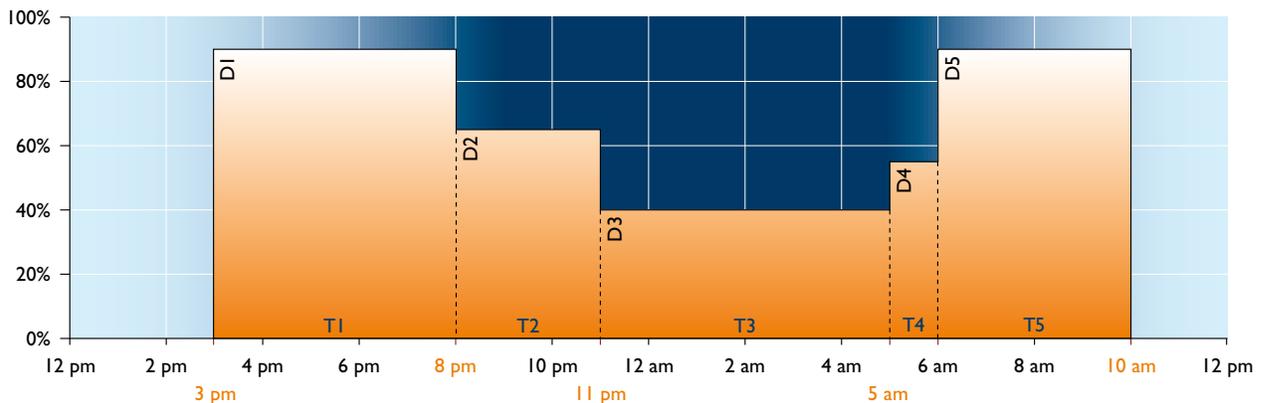
A dimming schedule is created in the Dynadimmer software. There are several variables that allow the configuration of a dimming schedule. Light levels D1 to D5 can be chosen within the range that the selected driver allows. The time frames T1 to T5 can be chosen freely to accommodate any requirement.



Dynadimmer Programmer (optional)

Dynadimmer Programming Kit (Optional)

The dimming shape can also be easily downloaded into the optional Dynadimmer programmer. The Dynadimmer programmer then enables the user to program the individual Dynadimmers either on or off-site.



Example dimming schedule using Dynadimmer

General Operation

A dimming schedule is easily created within the Dynadimmer software. This easy-to-use software enables the user to obtain not only a quick dimming shape configuration, but also a forecast of energy savings. The dimming schedule may be fine-tuned and, by means of the Programmer or the USB PC cable, programmed into each individual Dynadimmer 0-10V.

Finishes

The specially formulated Lumital powder coat finish is available in white, grey, black and bare. Additional colors are available. Consult factory for complete specifications.

Maintenance

With the Roadstar, it is finally possible to replace existing cobraheads without changing the parameters of an existing infrastructure. It comes in two sizes that adapt to any project or setting, from city roads, highways, bridges and interstates. The Roadstar requires no special tooling, making it the perfect choice for Departments of Transportation, Utilities, transit authorities and municipalities that want to take advantage of the simplest yet most efficient way to change their existing power hungry HID cobrahead lighting for the advantages of energy efficient LED lighting. With the Roadstar, the possibilities are endless, the results are unique, and making the change is extremely simple.



HID



LED

**Easily replaces cobraheads. No special tooling required.
Keep your existing infrastructure.**



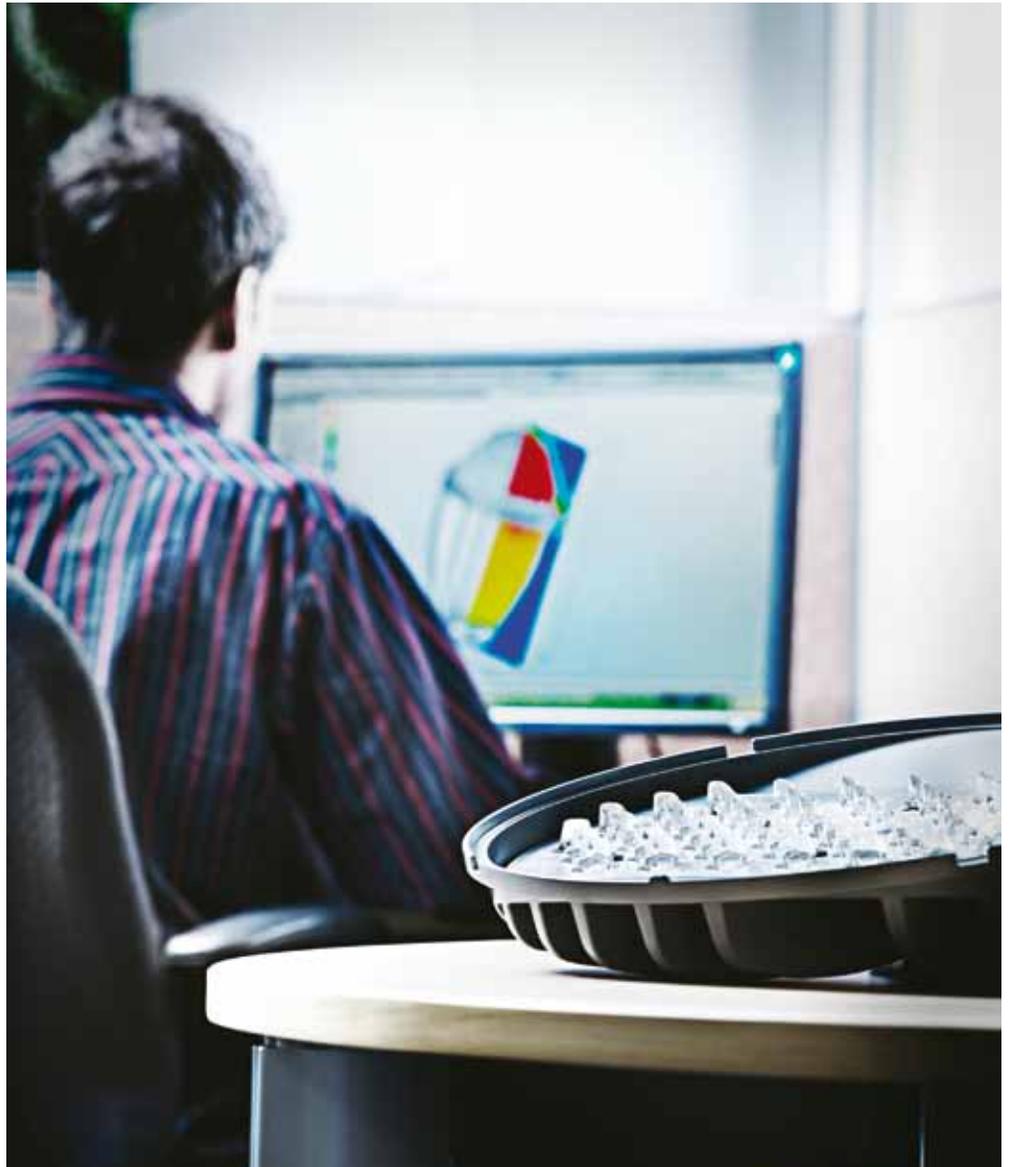
- **Tool free access**
- **Quick access to remove components**
- **No weight on the door for better performance in vibration testing (3G)**
- **Light engine is fixed by using self retaining screws for a firm and efficient heat transfer**
- **Light engine is easy to remove with quick disconnect**

Wise / safe investment

The Roadstar is covered by a 5-year warranty from defects in material and workmanship in its intended use. The Roadstar is one of the most affordable state-of-the-art solutions available on the market for cities, states, provinces, private projects, institutions and all other energy conscious entities.

One Philips

Philips is a global company of leading businesses creating value with meaningful innovations that improve the visibility of our roads and highways. With our collective passion, expertise, depth and reach, we open up new possibilities powered by advanced technologies. We are determined to innovate, collaborate and provide unsurpassed value to our customers. The Philips Roadstar luminaire is a combination of our knowledge in LED design, optics, electronics and controls that brings all of these together into one unique and powerful luminaire designed around your needs. We don't simply manufacture luminaires, we design solutions.





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A Division of Genlyte Thomas Group LLC



CANDELA

SERIES

Product Overview and Technical information >>



>>
LUMINAIRE > CANDI
BRACKET > CN1-1A
POLE > APR4



CANDS1-RMS-M

CAND1-CN1

CANDS1-CN1S

CAND3-SM

CANDS3-SMS

CAND2

CANDS2

CANDELA

SERIES

Traditional Evolution / Attention to detail is perhaps the most important aspect of the Candela Series. From the European inspired nautical design to the wide range of optical systems available, to the wide assortment of complementary products that harmonize with this luminaire, no stone has been left unturned to give decision makers unprecedented flexibility and design options. >>





>>

LUMINAIRE > CAND1
BRACKET > PC-1A
POLE > APR4-LBC4

GIVING YOU OPTIONS

With a wide range of optical systems, the Candela Series assures photometric efficiency across a variety of applications. Our optics also guarantee an appropriate and reliable lighting solution for nautical environments, roads, parks and other urban applications. The Candela Series is a sure choice for a harmonious integration of any architectural site or urban setting.

ENHANCING YOUR PROJECTS

Traditional style and European inspiration set the tone for the Candela Series. Truly versatile, these luminaires are well suited to nautical environments, as well as to roadways, parks and other urban developments. Whatever the project, be it town or country, the presence of Candela luminaires will bring architectural and landscaped developments to new heights. Functional and with their own unique style, the Candela Series illuminate the creation of an evolving world. >>

BENEFITS

- › Wide selection of options, optics, and styles for greater design freedom.
 - › Durable and easy to maintain construction.
 - › Various heights and sizes for pedestrian scale application.
 - › Available in wall mount versions.
 - › Exceptional photometric performance.
-



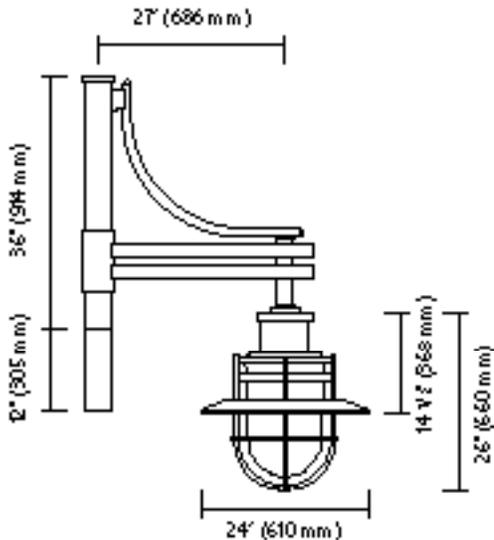
CAND1-CN1

CANDELA SERIES



LUMINAIRES

Conform to the **UL 1598** and **CSA C22.2 No. 250.0-08** standards



These globes are available in the following finishes:

PCC: Clear Polycarbonate
PCO: Opal Polycarbonate
PCCPD: POND Polycarbonate

CAND1-CN1, CANDS1-CN1S and CANDS1-CNS-M luminaires are UL and CSA approved

s_cand1_cn_eng.ep
CAND1-CN1
E.P.A.: 4.67 sq. ft.
Weight: 58 lbs (26.3kg)

SPECIFICATIONS

Housing

Made from round shaped die cast aluminum (356), c/w a watertight grommet, mechanically assembled to the bracket with four bolts 3/8 16 UNC. This suspension system permits for a full rotation of the luminaire in 90 degrees increments.

Guard

Made from round shaped aluminum (6063T5) with 1/2" (13 mm) rods and is mechanically assembled to the access mechanism.

Arm

Twin arms made from welded rectangular aluminum tubing (6061T6) of 2" x 3" (51 mm x 76 mm), with a 1/8" (3 mm) wall thickness, complete with an access door covering a 2 1/4" x 2 7/8" (57 mm x 73 mm) opening.

Decorative Element

Made from welded die cast aluminum (356), with a 1 5/8" (42 mm) outside diameter.

Central Tubing

Made from aluminum (6063T6), with a 4" (102 mm) outside diameter, complete with a tenon that slips 12" (305 mm) inside the pole. The tenon is mechanically fastened to the pole by two sets of three setscrews at 120 degrees around the pole.

Wiring

Gauge (#14) TEW wires, 6" (152 mm) minimum exceeding top of the bracket.

Hardware

All exposed hardware is stainless steel. All seals and sealing devices are made of and/or lined with EPDM and/or silicone.

Finish

"Hot dip" chemical etching preparation. Lumital™ polyester powder coat finish. Excellent color retention as per #ASTM D2244, and outstanding salt-spray resistance according to #ASTM B117 testing procedures.

ORDERING INFORMATION

PRODUCT	LAMP	REFLECTOR	VOLTAGE	LUMINAIRE OPTION	FINISH ¹
CAND1-CN1-1A	50 MH, medium	RR3	120	DR ²	BE2/TX
CAND1-CN1-2	70 MH, medium	RR3MD	208	GFI ³	BE6/TX
	100 MH, medium	RR5	240		BE8/TX
	150 MH ¹ , medium		277		BK/TX
	200 MH ¹ , mogul		347		BR/TX
	250 MH ¹ , mogul	SE3		HS ⁴	BR/TX
		SE5			GN/TX
	35 HPS, medium				GN4/TX
	50 HPS, mogul	RACE3			GN6/TX
	70 HPS, mogul	RACE3D			GN8/TX
	150 HPS ¹ , mogul	RACE5			GN8/TX
	200 HPS ¹ , mogul				GY3/TX
	250 HPS ¹ , mogul				RD2/TX
					RD4/TX
	18 CF ⁵				WH/TX
	26 CF ⁵				NP
	32 CF ⁵				TG
	42 CF ⁵				TS
	40W42LED4K-R				
	65W42LED4K-R				

¹ Remote ballast (pole with an enlarge base)

² DR: Duplex receptacle (120 V only)

³ GFI: Duplex receptacle with ground fault interruptor on mounting (120 V only)

⁴ HS: House shield

⁵ Socket: GX24Q-2 (18W), GX24Q-3 (26 or 32W), GX24Q-4 (42W), triple tube compact fluorescent (lamp not included)

> See end of document for details on line of poles available.

LED LAMP DETAILS

These LED lamp details are showing typical delivered lumens relative to the complete luminaire with EcoSwap.

LED = Philips Lumileds Luxeon R, CRI = 70, CCT = 4000K (+/- 350K)

LED rated life = 70,000 hrs¹ - Driver rated life = 100,000 hrs

LAMP	TYPICAL DELIVERED LUMENS ²	TYPICAL LAMP WATTAGE (W)	TYPICAL SYSTEM WATTAGE ³	TYPICAL CURRENT @ 120 V (A)	TYPICAL CURRENT @ 240 V (A)	TYPICAL CURRENT @ 277 V (A)	LED CURRENT (MA)	HPS EQUIVALENT ⁴	LUMINAIRE EFFICACY RATING (LM/W)
40W42LED4K-R	4093	40	45	0.48	0.24	0.22	333	70	91
65W42LED4K-R	6020	65	70	0.72	0.36	0.32	500	100	86

¹ L70 = 70,000 hrs (at ambient temperature = 25°C and forward current = 500 mA).

² May vary depending on the optical distribution used.

³ System wattage includes the lamp and the LED driver.

⁴ Equivalence should always be confirmed by a photometric layout.

Note: Due to rapid and continuous advances in LED technology, LED luminaire data is subject to change without notice and at the discretion of Philips.

ORDERING SAMPLE

PRODUCT	LAMP	REFLECTOR	VOLTAGE	LUMINAIRE OPTION	FINISH
CAND1-CN1-1A	100 MH	SE3	240	DR-HS	GN6/TX

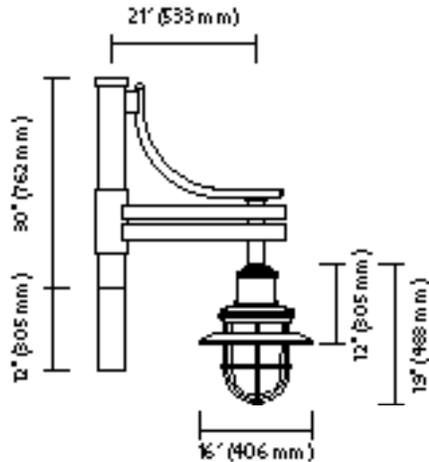
CANDS1-CNS

CANDELA SERIES

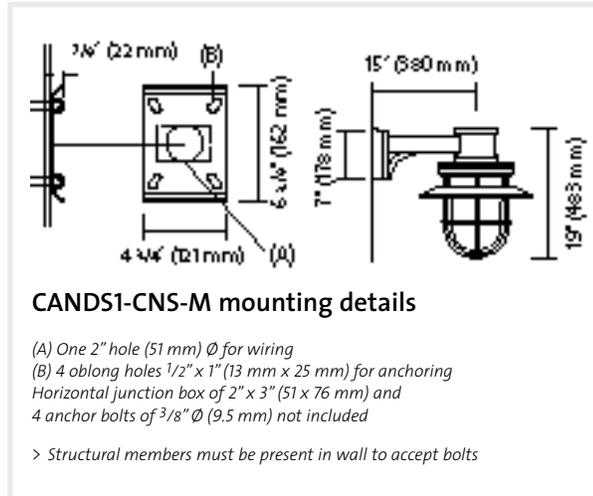


LUMINAIRES

Conform to the **UL 1598** and **CSA C22.2 No. 250.0-08** standards



CANDS1-CN1S
E.P.A.: 3.33 sq. ft.
Weight: 40.5 lbs (18.37 kg)



CANDS1-CNS-M mounting details

(A) One 2" hole (51 mm) \varnothing for wiring
(B) 4 oblong holes 1/2" x 1" (13 mm x 25 mm) for anchoring
Horizontal junction box of 2" x 3" (51 x 76 mm) and
4 anchor bolts of 3/8" \varnothing (9.5 mm) not included

> Structural members must be present in wall to accept bolts

SPECIFICATIONS

Housing

Made from round shaped die cast aluminum (356), c/w a watertight grommet, mechanically assembled to the bracket with four bolts 3/8 16 UNC. This suspension system permits for a full rotation of the luminaire in 90 degrees increments.

Guard

Made from round shaped aluminum (6063T5) with 3/8" (10 mm) rods and is mechanically assembled to the access mechanism.

Hardware

All exposed hardware is stainless steel. All seals and sealing devices are made of and/or lined with EPDM and/or silicone.

Finish

"Hot dip" chemical etching preparation. Lumital™ polyester powder coat finish. Excellent color retention as per #ASTM D2244, and outstanding salt-spray resistance according to #ASTM B117 testing procedures.

CANDS1-CNS-1A and CANDS1-CNS-2

Arm

Made from aluminium tubing (6063-T6) of 2" x 3" (51 mm x 76 mm), mechanically assembled.

Decorative Element

Made from welded die cast aluminum (356), with a 1 5/8" (42 mm) outside diameter.

Central Tubing

Made from aluminum (6063T6), with a 4" (102 mm) outside diameter, complete with a tenon that slips 12" (305 mm) inside the pole. The tenon is mechanically fastened to the pole by two sets of three setscrews at 120 degrees around the pole.

Wiring

Gauge (#14) TEW wires, 6" (152 mm) minimum exceeding top of the bracket.

CANDS1-CNS-M

Arm

Twin arms made from welded rectangular aluminum tubing (6061T6) of 2" x 3" (51 mm x 76 mm), mechanically assembled.

Decorative Element

Bent aluminum rod (6063-T5) of 5/8" (16 mm) exterior diameter, welded to the arm.

ORDERING INFORMATION

PRODUCT	LAMP	OPTICAL SYSTEM	VOLTAGE	LUMINAIRE OPTION ⁴	FINISH
CANDS1-CN1-1A	50 MH, medium	SR5	120	DR ²	BE2/TX
CANDS1-CN1-2	70 MH ¹ , medium	SR5D	208	GFI ³	BE6/TX
CANDS1-CNS-M ⁶	100 MH ¹ , medium		240		BE8/TX
			277		BK/TX
	347		BR/TX		
	35 HPS, medium		GN/TX		
	50 HPS, medium		GN4/TX		
	70 HPS, medium		GN6/TX		
	150 HPS, medium		GN8/TX		
	18 CF ⁵		GY3/TX		
	26 CF ⁵		RD2/TX		
	32 CF ⁵		RD4/TX		
42 CF ⁵	WH/TX				
	NP				
	TG				
	TS				

¹ Remote ballast (pole with an enlarge base)

² DR: Duplex receptacle (120 V only)

³ GFI: Duplex receptacle with ground fault interruptor on mounting (120 V only)

⁴ Options not available for wall mount CANDS1-CNS-M

⁵ Socket: GX24Q-2 (18W), GX24Q-3 (26 or 32W), GX24Q-4 (42W), triple tube compact fluorescent (lamp not included)

⁶ 50 watt maximum. (70 watt and more, consult Philips Lumec)

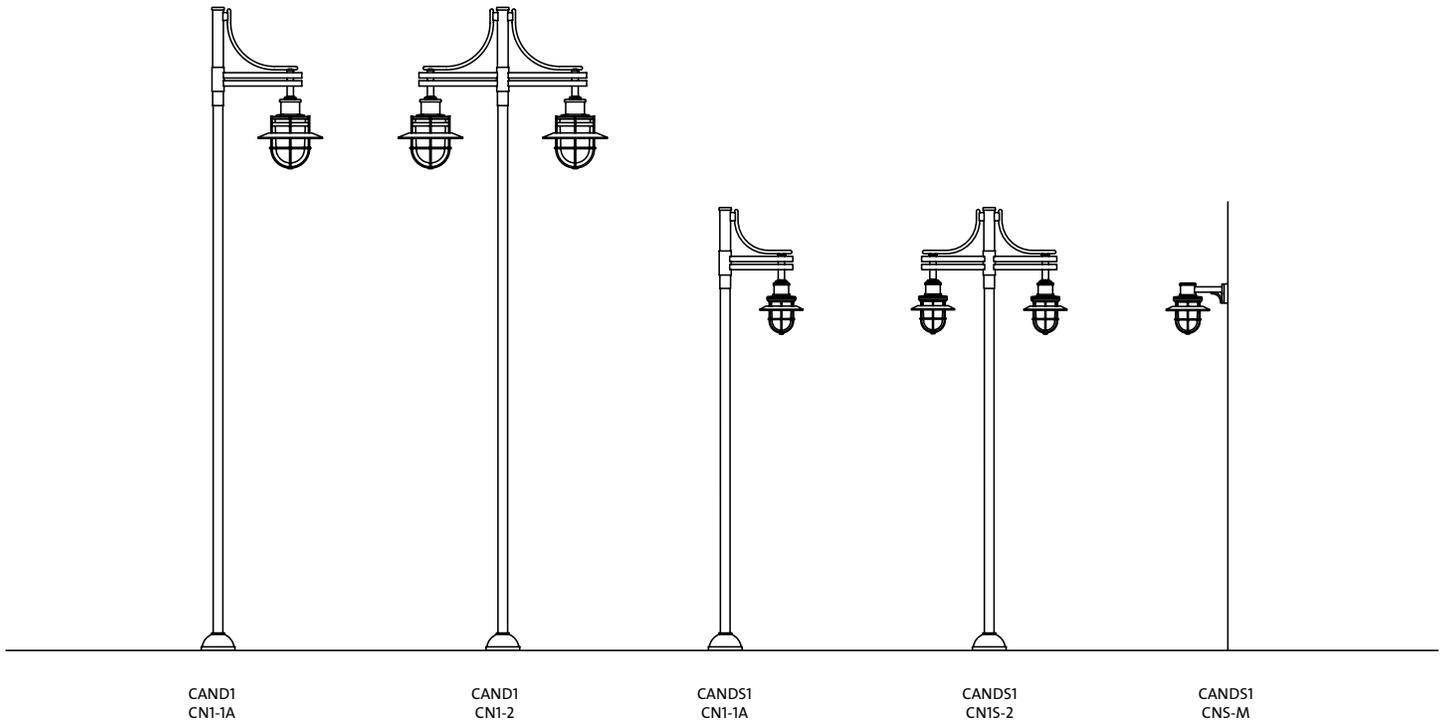
> See end of document for details on line of poles available.

ORDERING SAMPLE

PRODUCT	LAMP	OPTICAL SYSTEM	VOLTAGE	LUMINAIRE OPTION	FINISH
CANDS1-CNS-M	100 MH	SR5	240	—	GN6/TX



ASSEMBLY EXAMPLES



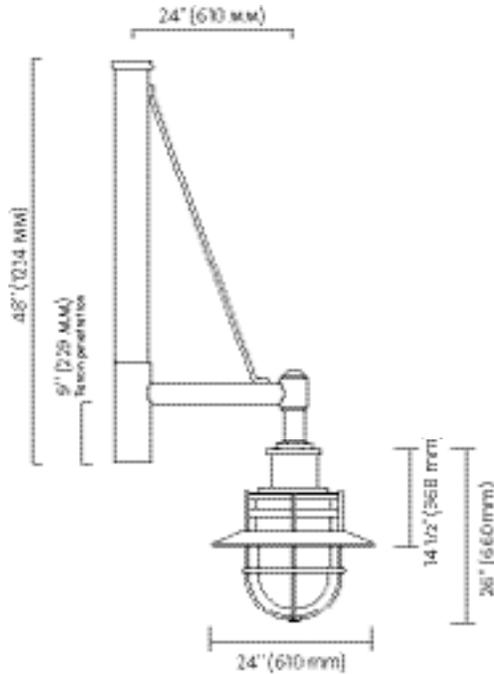
CAND1-PC

CANDELA SERIES



LUMINAIRES

Conform to the **UL 1598** and **CSA C22.2 No. 250.0-08** standards



CAND1-PC
E.P.A.: 4.67 sq. ft.
Weight: 58 lbs (26.3kg)

These globes are available in the following finishes:

PCC: Clear Polycarbonate
PCO: Opal Polycarbonate
PCCPD: POND Polycarbonate

CAND1-CN1, CANDS1-CN1S and CANDS1-CNS-M luminaires are UL and CSA approved

SPECIFICATIONS

Housing

Made from round shaped die cast aluminum (356), c/w a watertight grommet, mechanically assembled to the bracket with four bolts 3/8 16 UNC. This suspension system permits for a full rotation of the luminaire in 90 degrees increments.

Guard

Made from round shaped aluminum (6063T5) with 1/2" (13 mm) rods and is mechanically assembled to the access mechanism.

Arm

Made from welded aluminum tubing (6061T6) of 2 3/8" (60 mm) outside diameter.

Decorative Element

Bent decorative aluminum rod alloy (6063T5), with 1/2" (13 mm) outside diameter, welded assembly.

Central Adaptor

Made of aluminum. Slip fits 9" (229mm) over a 4" (102mm) outside diameter pole or tenon. Mechanically fastened to the pole or tenon by two sets of three set screws at 120 degrees around the bracket.

Wiring

Gauge (#14) TEW wires, 6" (152 mm) minimum exceeding top of the bracket.

Hardware

All exposed hardware is stainless steel. All seals and sealing devices are made of and/or lined with EPDM and/or silicone.

Finish

"Hot dip" chemical etching preparation. Lumital™ polyester powder coat finish. Excellent color retention as per #ASTM D2244, and outstanding salt-spray resistance according to #ASTM B117 testing procedures.

ORDERING INFORMATION

PRODUCT	LAMP	OPTICAL SYSTEM	VOLTAGE	LUMINAIRE OPTION	FINISH ¹	
CAND1-PC-1A	50 MH, medium	RR3	120		BE2/TX	
CAND1-PC-2	70 MH, medium	RR3MD	208		BE6/TX	
	100 MH, medium	RR5	240		BE8/TX	
	150 MH ¹ , medium		277		BK/TX	
	200 MH ¹ , mogul		347		BR/TX	
	250 MH ¹ , mogul	SE3		HS ⁴	GN/TX	
	250 PSMH ¹ , mogul	SE5			GN4/TX	
	35 HPS, medium	RACE3			GN6/TX	
	50 HPS, mogul	RACE3D			GN8/TX	
	70 HPS, mogul	RACE5			GY3/TX	
	150 HPS, mogul				RD2/TX	
	200 HPS, mogul				RD4/TX	
	250 HPS, mogul				WH/TX	
	18 CF ²				NP	
	26 CF ²				TG	
	32 CF ²				TS	
	42 CF ²					
		40W42LED4K-R				
		65W42LED4K-R				

¹ Remote ballast
² HS: House shield

³ Socket: GX24Q-2 (18W), GX24Q-3 (26 or 32W), GX24Q-4 (42W),
triple tube compact fluorescent (lamp not included)
> See end of document for details on line of poles available.

LED LAMP DETAILS

These LED lamp details are showing typical delivered lumens relative to the complete luminaire with EcoSwap.

LED = Philips Lumileds Luxeon R, CRI = 70, CCT = 4000K (+/- 350K)

LED rated life = 70,000 hrs¹ - Driver rated life = 100,000 hrs

LAMP	TYPICAL DELIVERED LUMENS ²	TYPICAL LAMP WATTAGE (W)	TYPICAL SYSTEM WATTAGE ³ (W)	TYPICAL CURRENT @ 120 V (A)	TYPICAL CURRENT @ 240 V (A)	TYPICAL CURRENT @ 277 V (A)	LED CURRENT (MA)	HPS EQUIVALENT ⁴	LUMINAIRE EFFICACY RATING (LM/W)
40W42LED4K-R	4093	40	45	0.48	0.24	0.22	333	70	91
65W42LED4K-R	6020	65	70	0.72	0.36	0.32	500	100	86

¹ L70 = 70,000 hrs (at ambient temperature = 25°C and forward current = 500 mA).

² May vary depending on the optical distribution used.

³ System wattage includes the lamp and the LED driver.

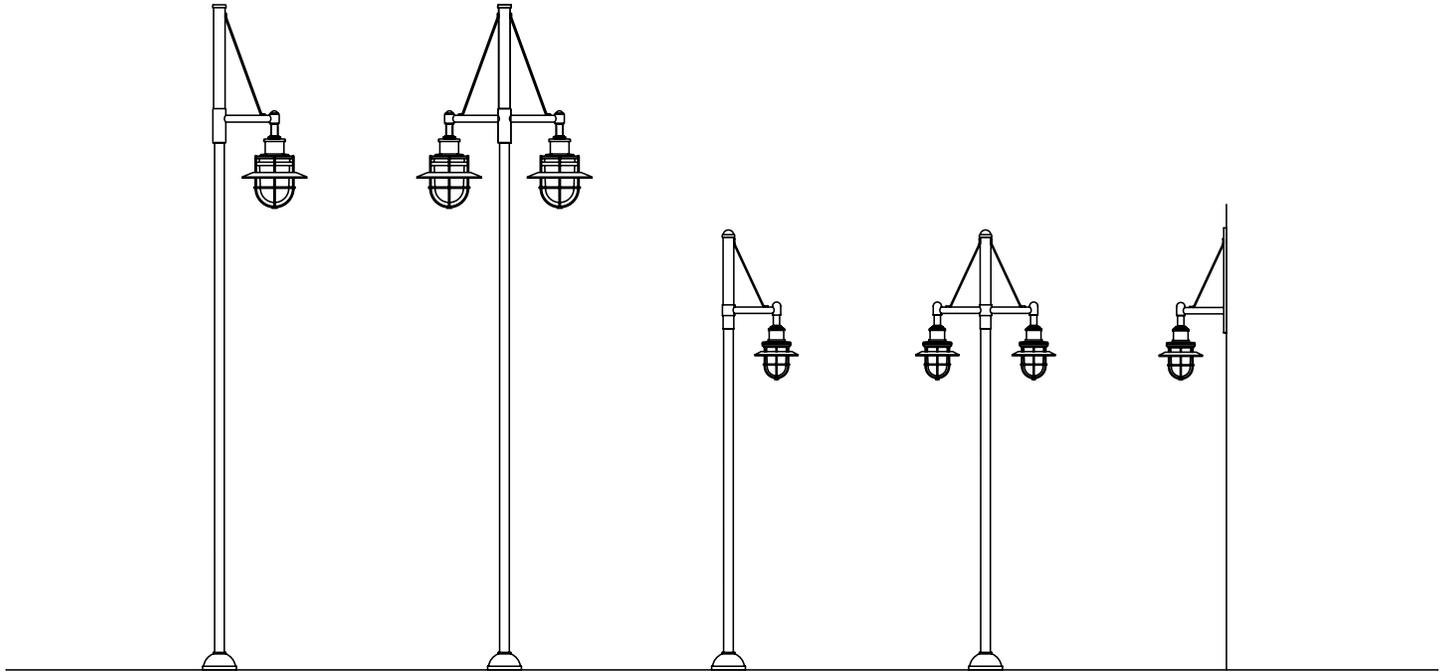
⁴ Equivalence should always be confirmed by a photometric layout.

Note: Due to rapid and continuous advances in LED technology, LED luminaire data is subject to change without notice and at the discretion of Philips.

ORDERING SAMPLE

PRODUCT	LAMP	OPTICAL SYSTEM	VOLTAGE	LUMINAIRE OPTION	FINISH
CAND1-PC-2	150 HPS	RACE3	208	—	NP

ASSEMBLY EXAMPLES



CAND1
PC-1A

CAND1
PC-2

CANDS1
RMS-1A

CANDS1
RMS-2

CANDS1
RMS-M

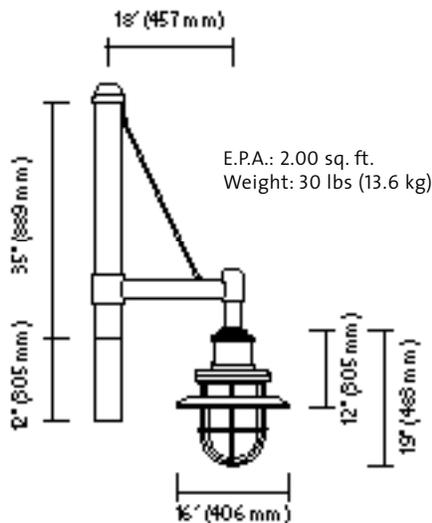
CANDS1-RMS

CANDELA SERIES

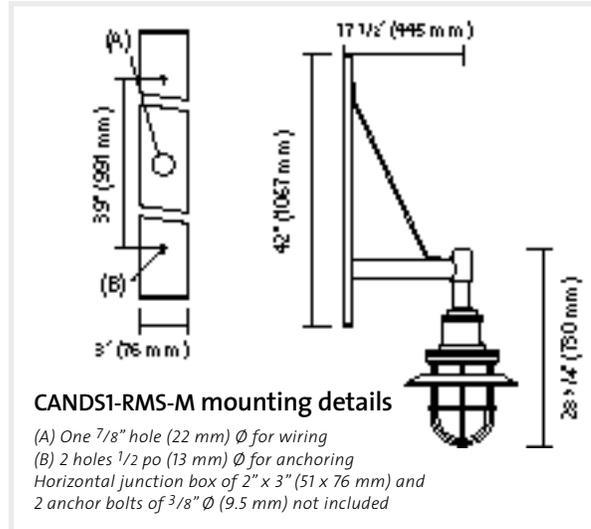


LUMINAIRES

Conform to the **UL 1598** and **CSA C22.2 No. 250.0-08** standards



CANDS1-RMS
S.E.P.: 2,00 pi²
Poids : 30 lbs (13,6 kg)



SPECIFICATIONS

Housing

Made from round shaped die cast aluminum (356), c/w a watertight grommet, mechanically assembled to the bracket with four bolts 3/8 16 UNC. This suspension system permits for a full rotation of the luminaire in 90 degrees increments.

Guard

Made from round shaped bent aluminum rods (6063T5) of 3/8" (10 mm), mechanically assembled to the access mechanism.

Arm

Made from welded aluminum tubing (6061T6) of 2 3/8" (60 mm).

Decorative Element

Made from bent decorative aluminum rod (6063T5) alloy, of 1/2" (13 mm) outside diameter, welded assembly.

Hardware

All exposed hardware is stainless steel. All seals and sealing devices are made of and/or lined with EPDM and/or silicone.

Finish

"Hot dip" chemical etching preparation. Lumital™ polyester powder coat finish. Excellent color retention as per #ASTM D2244, and outstanding salt-spray resistance according to #ASTM B117 testing procedures.

CANDS1-RMS-1A and CANDS1-RMS-2

Central Tubing

Made from aluminum (6063T6), with a 4" (102 mm) outside diameter, complete with a tenon that slips 12" (305 mm) inside the pole. The tenon is mechanically fastened to the pole by two sets of three setscrews at 120 degrees around the pole.

Wiring

Gauge (#14) TEW wires, 6" (152 mm) minimum exceeding top of the bracket.

CANDS1-RMS-M

Anchor plate

Made from aluminum (6061-T6) with a ground fault interruptor. For a 3" x 2" (76 mm x 51 mm) vertical junction box. (Junction box not included)

ORDERING INFORMATION

PRODUCT	LAMP	OPTICAL SYSTEM	VOLTAGE	FINISH ¹
CANDS1-RMS-1A	50 MH, medium	SR5	120	BE2/TX
CANDS1-RMS-2	70 MH ² , medium	SR5D	208	BE6/TX
CANDS1-RMS-M ³	100 MH ² , medium		240	BE8/TX
			277	BK/TX
	35 HPS, medium		347	BR/TX
	50 HPS, mogul			GN/TX
	70 HPS ² , mogul			GN4/TX
	100 HPS ² , mogul			GN6/TX
	150 HPS, mogul			GN8/TX
	18 CF ²			CY3/TX
	26 CF ²			RD2/TX
	32 CF ²			RD4/TX
	42 CF ²			WH/TX
				NP
				TG
				TS

¹ Remote ballast

² Socket: GX24Q-2 (18W), GX24Q-3 (26 or 32W), GX24Q-4 (42W), triple tube compact fluorescent (lamp not included)

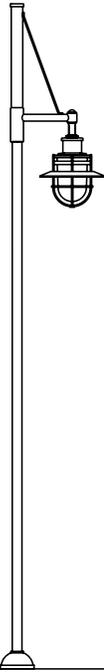
³ 50 watt maximum. (70 watt and more, consult Philips Lumec) triple tube compact fluorescent (lamp not included)
> See end of document for details on line of poles available.

ORDERING SAMPLE

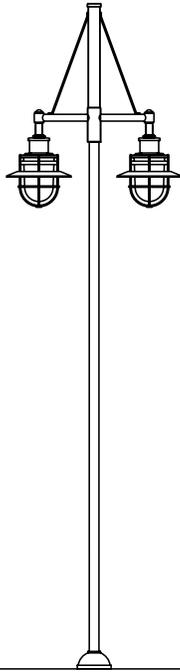
PRODUCT	LAMP	OPTICAL SYSTEM	VOLTAGE	FINISH ¹
CANDS1-RMS-M	100 MH	SR5	240	GN6/TX



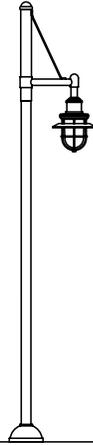
ASSEMBLY EXAMPLES



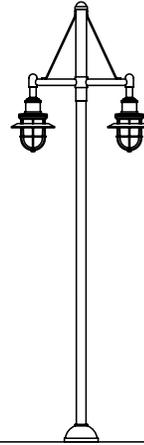
CAND1
PC-1A



CAND1
PC-2



CANDS1
RMS-1A



CANDS1
RMS-2



CANDS1
RMS-M

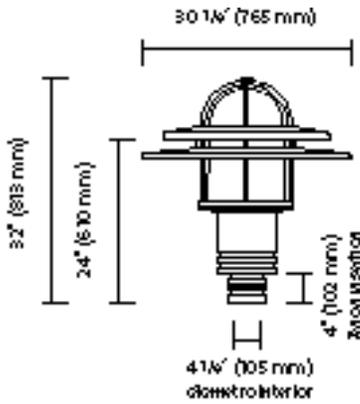
CAND2

CANDELA SERIES



LUMINAIRES

Conform to the **UL 1598** and **CSA C22.2 No. 250.0-08** standards



CAND2
E.P.A.: 2.43 sq. ft.
Weight: 44 lbs (20.0 kg)

These globes are available in the following finishes:

PCC: Clear Polycarbonate
PCO: Opal Polycarbonate
PCCPD: POND Polycarbonate

CAND1-CN1, CANDS1-CN1S and CANDS1-CNS-M luminaires are UL and CSA approved

Horizontal junction box of 2" x 3" (51 x 76 mm) and 4 anchor bolts of 3/8" Ø (9.5 mm) not included

- > 4" (102 mm) Octagonal junction box not recommended
- > 4" (102 mm) junction box is suitable
- > Structural members must be present in wall to accept bolts

SPECIFICATIONS

Guard

Made from round shaped bent aluminum(6063T5) of 1/2" (13 mm) rods, mechanically assembled to the access mechanism.

Fitter

made from die cast aluminum (356) c/w 4 set screws 3/8 16 UNC. Fits on a 4" (102 mm) outside diameter by 4" (102 mm) long tenon.

Wiring

Gauge (#14) TEW wires, 6" (152 mm) minimum exceeding from luminaire.

Hardware

All exposed hardware is stainless steel. All seals and sealing devices are made of and/or lined with EPDM and/or silicone.

Finish

"Hot dip" chemical etching preparation. Lumital™ polyester powder coat finish. Excellent color retention as per #ASTM D2244, and outstanding salt-spray resistance according to #ASTM B117 testing procedures.



ORDERING INFORMATION

PRODUCT	LAMP	OPTICAL SYSTEM	VOLTAGE	FINISH ¹	
CAND2	50 MH, medium	RR3	120	BE2/TX	
	70 MH, medium	RR3MD	208	BE6/TX	
	100 MH, medium	RR5	240	BE8/TX	
	150 MH, medium		277	BK/TX	
	200 MH, mogul		347	BR/TX	
	250 MH, mogul			GN/TX	
	250 PSMH ¹ , mogul			GN4/TX	
				GN6/TX	
	35 HPS, medium			GN8/TX	
	50 HPS, mogul			CY3/TX	
	70 HPS, mogul			RD2/TX	
	150 HPS, mogul			RD4/TX	
	200 HPS ¹ , mogul			WH/TX	
	250 HPS ¹ , mogul			NP	
	18 CF ²			TG	
	26 CF ²			TS	
	32 CF ²				
	42 CF ²				
		40W42LED4K-R : 65W42LED4K-R :			

¹ Remote ballast

> See end of document for details on line of poles available.

² Socket: GX24Q-2 (18W), GX24Q-3 (26 or 32W), GX24Q-4 (42W), triple tube compact fluorescent (lamp not included)

LED LAMP DETAILS

These LED lamp details are showing typical delivered lumens relative to the complete luminaire with EcoSwap.

LED = Philips Lumileds Luxeon R, CRI = 70, CCT = 4000K (+/- 350K)

LED rated life = 70,000 hrs¹ - Driver rated life = 100,000 hrs

LAMP	TYPICAL DELIVERED LUMENS ²	TYPICAL LAMP WATTAGE (W)	TYPICAL SYSTEM WATTAGE ³ (W)	TYPICAL CURRENT @ 120 V (A)	TYPICAL CURRENT @ 240 V (A)	TYPICAL CURRENT @ 277 V (A)	LED CURRENT (MA)	HPS EQUIVALENT ⁴	LUMINAIRE EFFICACY RATING (LM/W)
40W42LED4K-R	3030	40	45	0.48	0.24	0.22	333	70	67
65W42LED4K-R	4460	65	70	0.72	0.36	0.32	500	100	64

¹ L70 = 70,000 hrs (at ambient temperature = 25°C and forward current = 500 mA).

² May vary depending on the optical distribution used.

³ System wattage includes the lamp and the LED driver.

⁴ Equivalence should always be confirmed by a photometric layout.

Note : Due to rapid and continuous advances in LED technology, LED luminaire data is subject to change without notice and at the discretion of Philips.

ORDERING SAMPLE

PRODUCT	LAMP	OPTICAL SYSTEM	VOLTAGE	FINISH
CAND2	250 MH	RR5	277	GN8TX

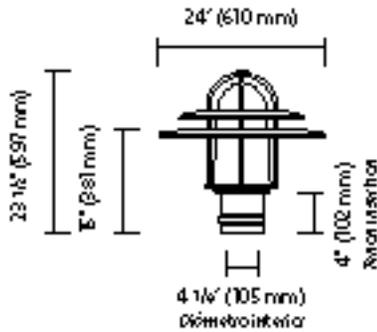
CANDS2

CANDELA SERIES

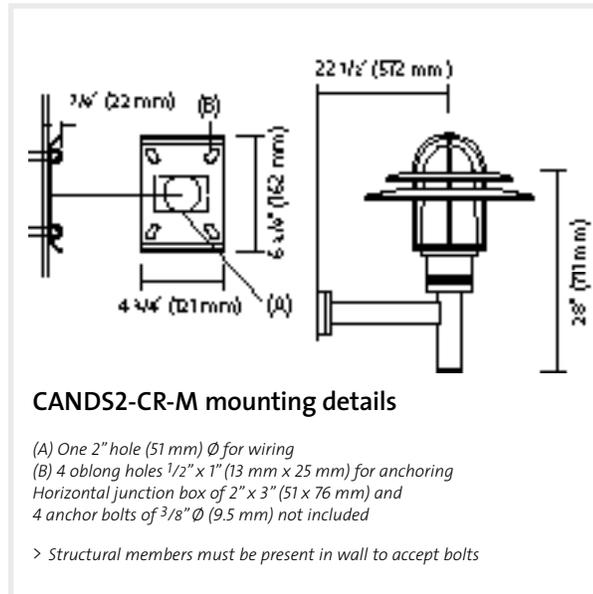


LUMINAIRES

Conform to the **UL 1598** and **CSA C22.2 No. 250.0-08** standards



CANDS2
E.P.A.: 1.36 sq. ft.
Weight: 44 lbs (20.0 kg)



SPECIFICATIONS

- Hood**
Made from die cast aluminum (356) dome, mechanically assembled on the luminaire.
- Guard**
Made from round shaped, bent aluminum (6063T5) of 3/8" (10 mm) rods, mechanically assembled to the access mechanism.
- Fitter**
made from die cast aluminum (356) c/w 4 set screws 1/4 20 UNC. Fits on a 4" (102 mm) outside diameter by 4" (102 mm) long tenon.
- Wiring**
Gauge (#14) TEW wires, 6" (152 mm) minimum exceeding from luminaire.
- Hardware**
All exposed hardware is stainless steel. All seals and sealing devices are made of and/or lined with EPDM and/or silicone.
- Finish**
"Hot dip" chemical etching preparation. Lumital™ polyester powder coat finish. Excellent color retention as per #ASTM D2244, and outstanding salt-spray resistance according to #ASTM B117 testing procedures.

ORDERING INFORMATION

PRODUCT	LAMP	OPTICAL SYSTEM	VOLTAGE	FINISH ¹
CANDS2	50 MH, medium	SR5	120	BE2/TX
CANDS2-CR-M	70 MH, medium	SR5D	208	BE6/TX
	100 MH, medium		240	BE8/TX
			277	BK/TX
	35 HPS, medium		347	BR/TX
	50 HPS, mogul			GN/TX
	70 HPS, mogul			GN4/TX
	100 HPS, mogul			GN6/TX
	18 CF ¹			GN8/TX
	26 CF ¹			CY3/TX
	32 CF ¹			RD2/TX
	42 CF ¹			RD4/TX
				WH/TX
				NP
				TG
		TS		

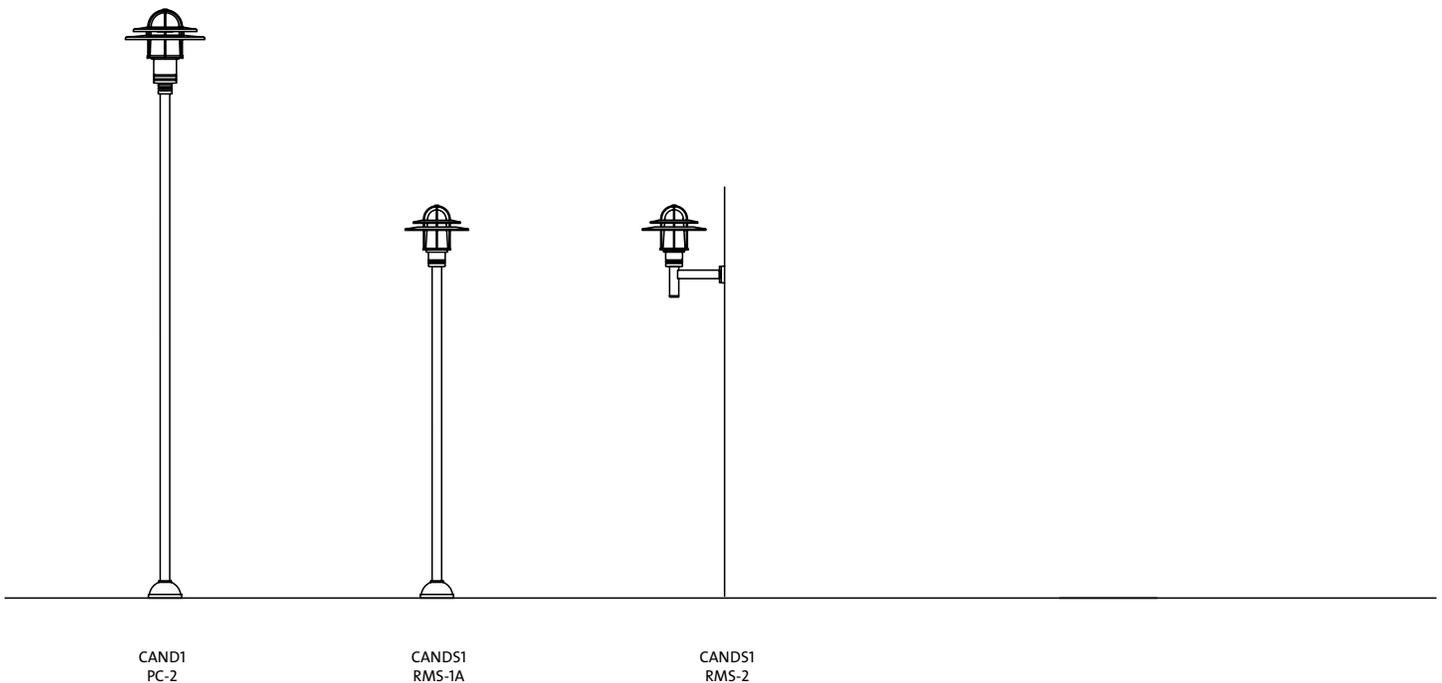
¹ Socket: GX24Q-2 (18W), GX24Q-3 (26 or 32W), GX24Q-4 (42W),
triple tube compact fluorescent (lamp not included)

> See end of document for details on line of poles available.

ORDERING SAMPLE

PRODUCT	LAMP	OPTICAL SYSTEM	VOLTAGE	FINISH
CANDS2	100 MH	SR5	240	GN6TX

ASSEMBLY EXAMPLES



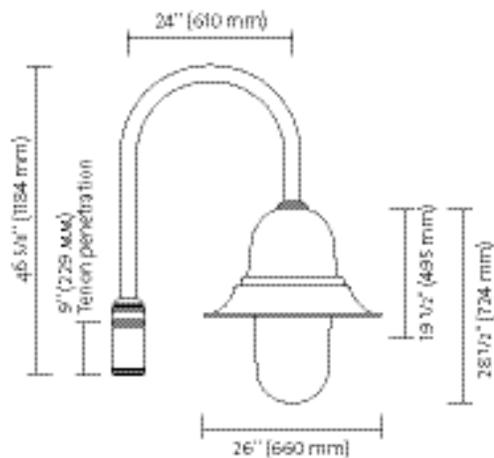
CAND3

CANDELA SERIES



LUMINAIRES

Conform to the **UL 1598** and **CSA C22.2 No. 250.0-08** standards



CAND3-SM

E.P.A.: 3.84 sq. ft.

Weight: 55.29 lbs (25.1 kg)

These globes are available in the following finishes:

PCC: Clear Polycarbonate
PCO: Opal Polycarbonate
PCCPD: POND Polycarbonate

CAND3-SM, CANDS3-SMS and CANDS3-SMS-M luminaires are UL and CSA approved

SPECIFICATIONS

Housing

Made from round shaped die cast aluminum (356), c/w a watertight grommet, mechanically assembled to the bracket with four bolts 3/8 16 UNC. This suspension system permits for a full rotation of the luminaire in 90 degrees increments.

Arm

Made from welded bent aluminium (6061-T6), with 2 3/8" (60 mm) of outside diameter.

Adaptor

Made of cast 356 aluminum. Slip fits on a 4" (102mm) outside diameter x 9" (229mm) long tenon. Mechanically fastened by two sets of four set screws at 90 degrees around the bracket.

Wiring

Gauge (#14) TEW wires, 6" (152 mm) minimum exceeding from luminaire.

Hardware

All exposed hardware is stainless steel. All seals and sealing devices are made of and/or lined with EPDM and/or silicone.

Finish

"Hot dip" chemical etching preparation. Lumital™ polyester powder coat finish. Excellent color retention as per #ASTM D2244, and outstanding salt-spray resistance according to #ASTM B117 testing procedures.

ORDERING INFORMATION

PRODUCT	LAMP	OPTICAL SYSTEM	VOLTAGE	LUMINAIRE OPTION	FINISH ¹
CAND3-SM-1A	50 MH, medium	RR3	120		BE2/TX
CAND3-SM-2	70 MH, medium	RR3MD	208		BE6/TX
	100 MH, medium	RR5	240		BE8/TX
	150 MH, medium		277		BK/TX
	200 MH ¹ , mogul		347		BR/TX
	250 MH ¹ , mogul	SE3		HS ²	GN/TX
	250 PSMH ¹ , mogul	SE5			GN4/TX
	35 HPS, medium	RACE3			GN6/TX
	50 HPS, mogul	RACE3D			GN8/TX
	70 HPS, mogul	RACE5			CY3/TX
	150 HPS, mogul				RD2/TX
	200 HPS, mogul				RD4/TX
	250 HPS, mogul				WH/TX
	18 CF ³				NP
	26 CF ³				TG
	32 CF ³				TS
	42 CF ³				
	40W42LED4K-R				
	65W42LED4K-R				

¹ Remote ballast
² HS: House shield

³ Socket: GX24Q-2 (18W), GX24Q-3 (26 or 32W), GX24Q-4 (42W),
triple tube compact fluorescent (lamp not included)
> See end of document for details on line of poles available.

LED LAMP DETAILS

These LED lamp details are showing typical delivered lumens relative to the complete luminaire with EcoSwap.

LED = Philips Lumileds Luxeon R, CRI = 70, CCT = 4000K (+/- 350K)
LED rated life = 70,000 hrs¹ - Driver rated life = 100,000 hrs

LAMP	TYPICAL DELIVERED LUMENS ²	TYPICAL LAMP WATTAGE (W)	TYPICAL SYSTEM WATTAGE ³ (W)	TYPICAL CURRENT @ 120 V (A)	TYPICAL CURRENT @ 240 V (A)	TYPICAL CURRENT @ 277 V (A)	LED CURRENT (MA)	HPS EQUIVALENT ⁴	LUMINAIRE EFFICACY RATING (LM/W)
40W42LED4K-R	4093	40	45	0.48	0.24	0.22	333	70	91
65W42LED4K-R	6020	65	70	0.72	0.36	0.32	500	100	86

¹ L70 = 70,000 hrs (at ambient temperature = 25°C and forward current = 500 mA).
² May vary depending on the optical distribution used.

³ System wattage includes the lamp and the LED driver.
⁴ Equivalence should always be confirmed by a photometric layout.
Note: Due to rapid and continuous advances in LED technology, LED luminaire data is subject to change without notice and at the discretion of Philips.

ORDERING SAMPLE

PRODUCT	LAMP	OPTICAL SYSTEM	VOLTAGE	LUMINAIRE OPTION	FINISH
CAND3-SM-2	200 MH	RR3	120	HS	NP

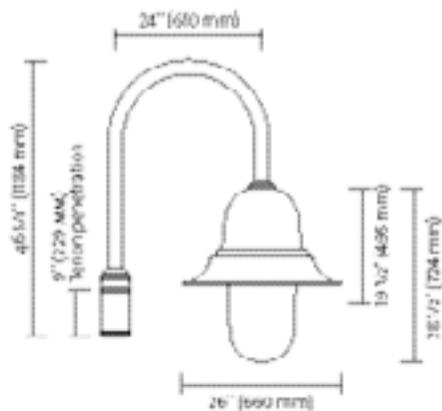
CANDS3

CANDELA SERIES



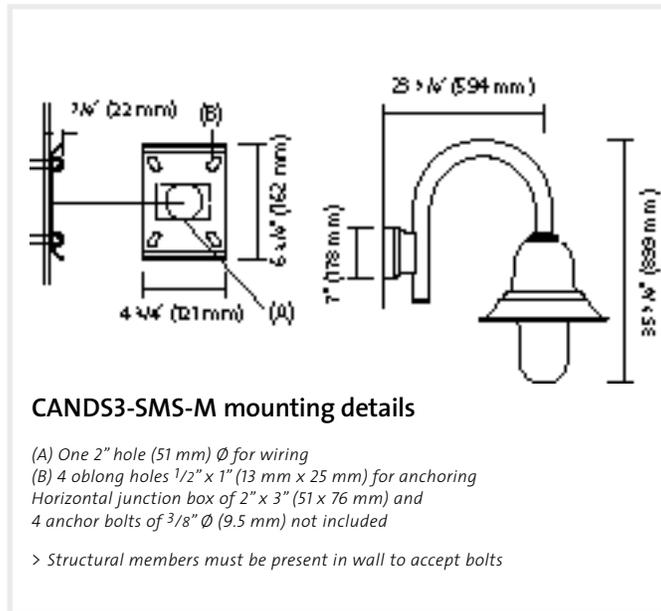
LUMINAIRES

Conform to the **UL 1598** and **CSA C22.2 No. 250.0-08** standards



CANDS3-SMS

E.P.A.: 1.5 sq. ft.
Weight: 32 lbs (14.6 kg)



SPECIFICATIONS

Housing

Made from round shaped die cast aluminum (356), c/w a watertight grommet, mechanically assembled to the bracket with four bolts 3/8 16 UNC. This suspension system permits for a full rotation of the luminaire in 90 degrees increments.

Arm

Made from welded bent aluminium (6061-T6), with 2 3/8" (60 mm) of outside diameter.

Adaptor

Made of cast 356 aluminum. Slip fits on a 4" (102mm) outside diameter x 9" (229mm) long tenon. Mechanically fastened by two sets of four set screws at 90 degrees around the bracket.

Wiring

Gauge (#14) TEW wires, 6" (152 mm) minimum exceeding from luminaire.

Hardware

All exposed hardware is stainless steel. All seals and sealing devices are made of and/or lined with EPDM and/or silicone.

Finish

"Hot dip" chemical etching preparation. Lumital™ polyester powder coat finish. Excellent color retention as per #ASTM D2244, and outstanding salt-spray resistance according to #ASTM B117 testing procedures.

ORDERING INFORMATION

PRODUCT	LAMP	OPTICAL SYSTEM	VOLTAGE	FINISH ¹
CANDS3-SM-1A	50 MH, medium	SR5	120	BE2/TX
CANDS3-SM-2	70 MH, medium	SR5D	208	BE6/TX
CANDS3-SMS-M	100 MH, medium		240	BE8/TX
			277	BK/TX
	35 HPS, medium		347	BR/TX
	50 HPS, mogul			GN/TX
	70 HPS, mogul			GN4/TX
	150 HPS, mogul			GN6/TX
	18 CF ²			GN8/TX
	26 CF ²			CY3/TX
	32 CF ²			RD2/TX
	42 CF ²			RD4/TX
				WH/TX
			NP	
			TG	
			TS	

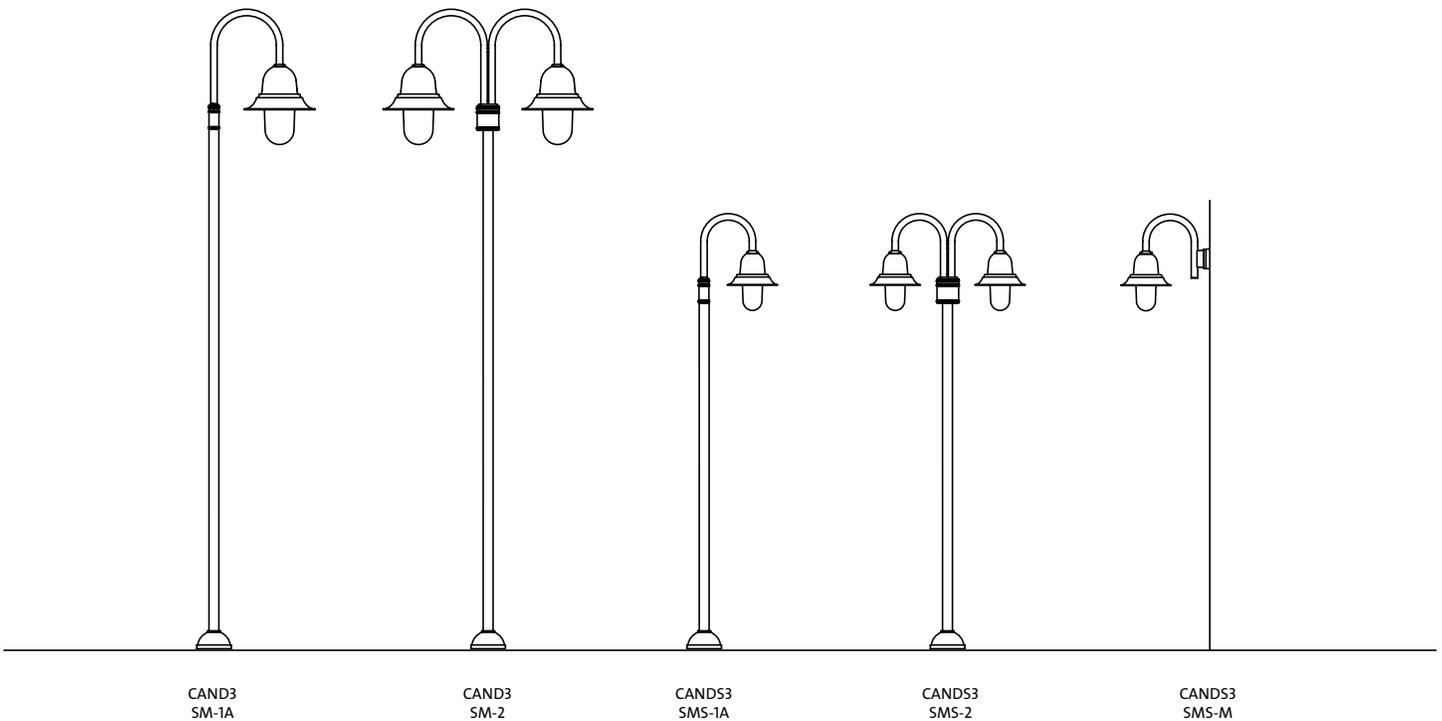
¹ Remote ballast

² Socket: GX24Q-2 (18W), GX24Q-3 (26 or 32W), GX24Q-4 (42W), triple tube compact fluorescent (lamp not included)

ORDERING SAMPLE

PRODUCT	LAMP	OPTICAL SYSTEM	VOLTAGE	FINISH
CANDS3-SMS-M	100 MH, medium	SR5	240	BGN6/TX

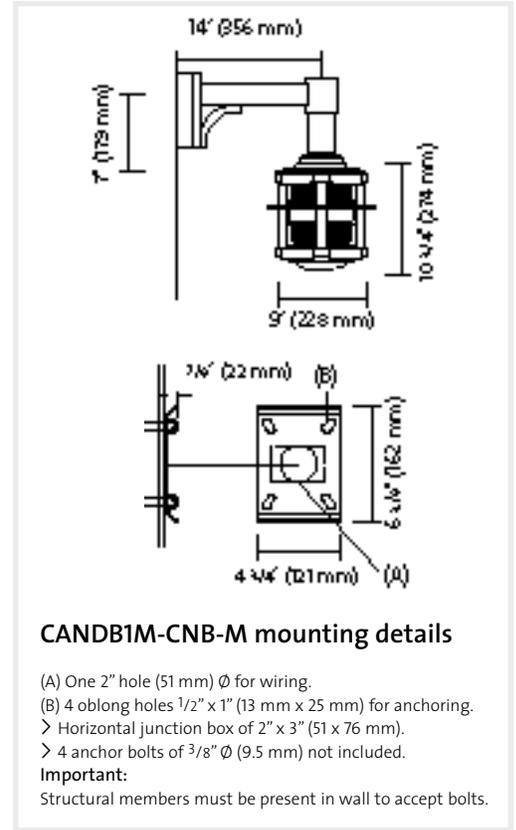
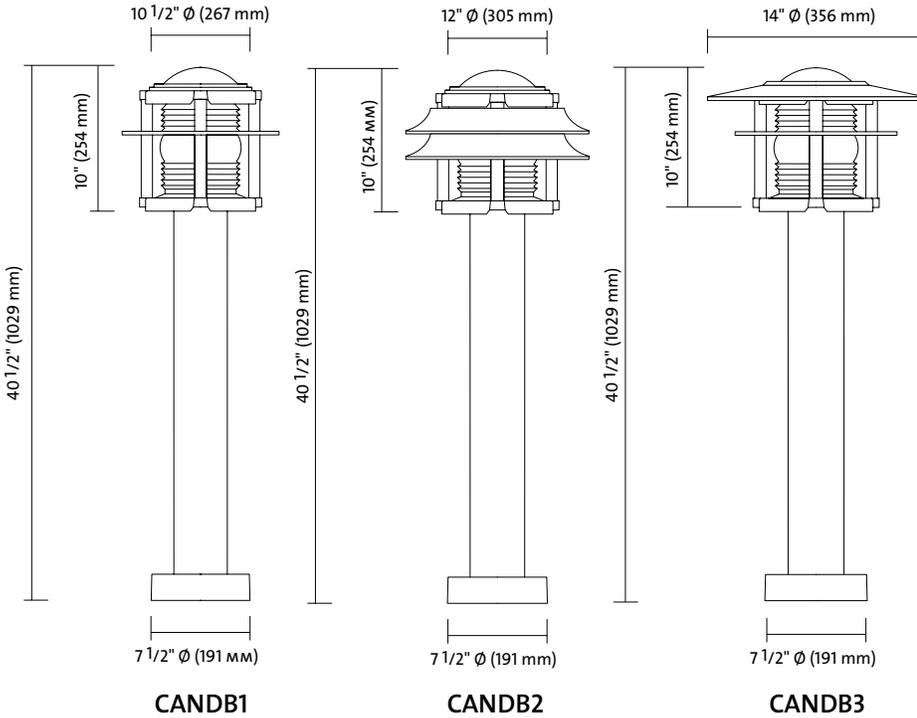
ASSEMBLY EXAMPLES





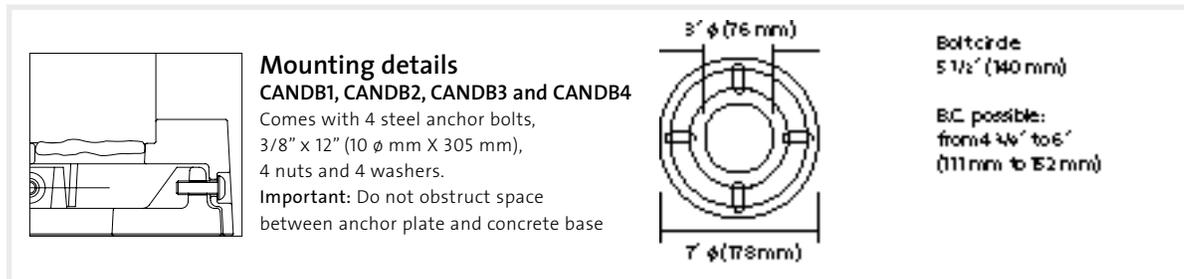
LUMINAIRES

Conform to the **UL 1598** and **CSA C22.2 No. 250.0-08** standards



CANDB1, CANDB2, CANDB3, CANDB4 and CANDB1M-CNB-M bollards are UL and CSA approved

ANCHOR PLATE



SPECIFICATIONS

Hood

Made from round molded aluminum (356), mechanically assembled.

Cage

Made from four molded aluminum(356) rods of 0.840" (21 mm) outside diameter, mechanically assembled to the housing.

Closing system

Two screws on a housing gives access to the luminaire interior and the lamp.

Housing

Made from molded aluminum (356), mechanically assembled.

Louvers

Made from welded aluminium (356), mechanically assembled.

Hardware

All exposed hardware is stainless steel. All seals and sealing devices are made of and/or lined with EPDM and/or silicone.

Finish

"Hot dip" chemical etching preparation. Lumital™ polyester powder coat finish. Excellent color retention as per #ASTM D2244, and out-standing salt-spray resistance according to #ASTM B117 testing procedures.

CANDB1, CANDB2 and CANDB3

Base

Made from aluminum of 4 1/2" (114 mm) of exterior diameter, welded to the base cover.

Base-cover

Made from molded aluminum (356), mechanically retained to the anchor plate.

ORDERING INFORMATION

PRODUCT	LAMP	OPTICAL SYSTEM	VOLTAGE	BOLLARD OPTIONS	FINISH ¹
CANDB1	50 HM, medium	FRN	120	DE ⁴	BE2/TX GN8/TX
CANDB2	70 HM, medium	FRNB	208	DR ⁵	BE6/TX GY3/TX
CANDB3	100 HM, medium	RR3	240	GFI ⁶	BE8/TX RD2/TX
CANDB4		RR3MD	277	GT ⁷	BG2/TX RD4/TX
CANDB1M-CNB-M ²	35 SHP, medium	RR5	347	PH7 ⁸	BK/TX WH/TX
	50SHP, medium			VPA ⁹	BR/TX NP
	70 SHP, medium			H ¹⁰	GN/TX TG
	100 SHP, medium				GN4/TX TS
	18 CF ³				GN6/TX
	26 CF ³				
	32 CF ³				
42 CF ³					

¹ Consult Philips Lumec's color chart.

² Remote ballast.

³ Socket: GX24Q-2 (18W), GX24Q-3 (26 or 32W), GX24Q-4 (42W), triple tube compact fluorescent (lamp not included)

⁴ DE: Direct burial

⁵ DR: Duplex receptacle (120 V only)

⁶ GFI: Duplex receptacle with ground fault interruptor on mounting (120 V only)

⁷ GT: Glow top

⁸ PH7: Photoelectric cell

⁹ VPA: Vandal proof

¹⁰ H: Variable height, from 15" (380 mm) to 48" (1220 mm), in 1" (25 mm) increments. Ballast is remote up to 24" (610 mm)

ORDERING SAMPLE

PRODUCT	LAMP	OPTICAL SYSTEM	VOLTAGE	BOLLARD OPTIONS	FINISH
CANDB1	70 HM	RR3	120	DR	NP

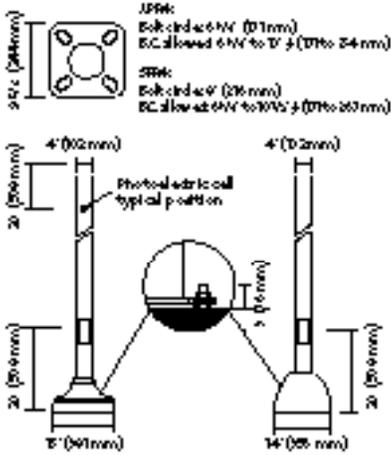
POLES

CANDELA SERIES



APR4 Aluminum
SPR4 Steel
c/w LBC4C

APR4 Aluminum
SPR4 Steel
c/w LBC10



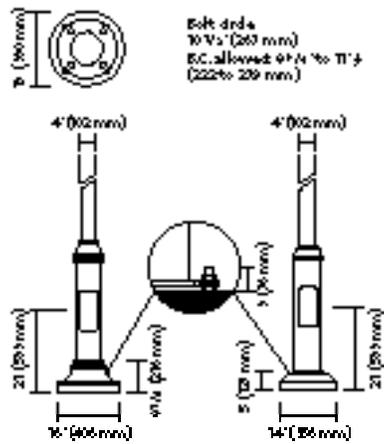
APR4 c/w LBC4C or LBC10 - Aluminum

APR4F-8	8	2.44	4	102	0.125	3.2	21	10	12.5	9.5	7.8	5.8
APR4U-8	8	2.44	4	102	0.226	5.7	32	14	22.4	17.2	14.3	10.8
APR4F-10	10	3.05	4	102	0.125	3.2	24	11	9.5	7.1	5.7	4.1
APR4U-10	10	3.05	4	102	0.226	5.7	38	17	16.7	12.6	10.4	7.8
APR4F-12	12	3.66	4	102	0.125	3.2	28	13	6.7	5.0	4.0	2.9
APR4U-12	12	3.66	4	102	0.226	5.7	44	20	11.5	8.6	7.0	5.2
APR4W-12	12	3.66	4	102	0.318	8.1	58	26	15.3	11.5	9.5	7.0
APR4F-14	14	4.27	4	102	0.125	3.2	31	14	3.6	2.5	1.9	1.3
APR4U-14	14	4.27	4	102	0.226	5.7	51	23	6.6	4.8	3.9	2.8
APR4W-14	14	4.27	4	102	0.318	8.1	67	30	8.9	6.6	5.4	3.9
APR4F-15	15	4.57	4	102	0.125	3.2	33	15	2.8	1.9	1.4	—
APR4U-15	15	4.57	4	102	0.226	5.7	54	24	5.5	3.9	3.1	2.1
APR4W-15	15	4.57	4	102	0.318	8.1	71	32	7.5	5.5	4.4	3.1
									70 ft ²	80 ft ²	875 ft ²	100 ft ²
Catalog number	Nominal height	Section	Wall thickness	Weight	EPA rating (mph)							

F/U/W: Wall thickness

AM6 Aluminum
SM6 Steel

P604 Aluminum
P604S Steel



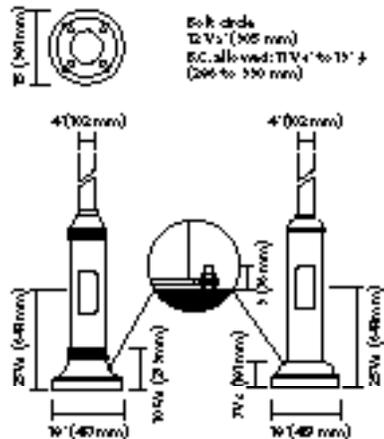
AM6 - P604 - Aluminum

AM6F-8	P604AF-8	8	2.44	4	102	0.125	3.2	27	12	18.4	14.3	12.0	9.2
AM6U-8	P604AU-8	8	2.44	4	102	0.226	5.7	37	17	30.0	25.0	21.0	16.3
AM6F-10	P604AF-10	10	3.05	4	102	0.125	3.2	31	14	13.2	10.2	8.5	6.4
AM6U-10	P604AU-10	10	3.05	4	102	0.226	5.7	41	19	23.4	18.0	15.0	11.3
AM6F-12	P604AF-12	12	3.66	4	102	0.125	3.2	35	16	9.9	7.4	6.0	4.4
AM6U-12	P604AU-12	12	3.66	4	102	0.226	5.7	45	20	15.8	11.8	9.8	7.3
AM6F-13	P604AF-13	13	3.97	4	102	0.125	3.2	36	16	8.1	6.0	4.9	3.5
AM6U-13	P604AU-13	13	3.97	4	102	0.226	5.7	46	21	13.1	9.9	8.1	5.9
AM6F-14	P604AF-14	14	4.27	4	102	0.125	3.2	38	17	5.3	3.9	3.1	2.2
AM6U-14	P604AU-14	14	4.27	4	102	0.226	5.7	48	22	8.7	6.5	5.3	3.9
AM6F-15	P604AF-15	15	4.57	4	102	0.125	3.2	40	18	4.3	3.0	2.4	1.6
AM6U-15	P604AU-15	15	4.57	4	102	0.226	5.7	50	23	7.3	5.3	4.2	3.0
										70 ft ²	80 ft ²	875 ft ²	100 ft ²
Catalog number	Nominal height	Section	Wall thickness	Weight	EPA rating (mph)								

F/U/W: Wall thickness

AM8 Aluminum
SM8 Steel

P804 Aluminum
P804S Steel



AM8 - P804 - Aluminum

AM8F-8	P804AF-8	8	2.44	4	102	0.125	3.2	34	15	19.9	15.5	13.0	10.0
AM8U-8	P804AU-8	8	2.44	4	102	0.226	5.7	41	19	30.0	27.0	22.8	17.7
AM8F-10	P804AF-10	10	3.05	4	102	0.125	3.2	38	17	14.1	10.9	9.1	6.9
AM8U-10	P804AU-10	10	3.05	4	102	0.226	5.7	47	21	24.7	19.3	16.3	12.5
AM8F-12	P804AF-12	12	3.66	4	102	0.125	3.2	42	19	10.5	8.0	6.6	4.9
AM8U-12	P804AU-12	12	3.66	4	102	0.226	5.7	53	24	18.9	14.6	12.0	9.0
AM8F-13	P804AF-13	13	3.97	4	102	0.125	3.2	43	20	9.2	7.0	5.7	4.1
AM8U-13	P804AU-13	13	3.97	4	102	0.226	5.7	56	25	15.8	11.8	9.7	7.3
AM8F-14	P804AF-14	14	4.27	4	102	0.125	3.2	45	20	6.1	4.6	3.7	2.7
AM8U-14	P804AU-14	14	4.27	4	102	0.226	5.7	60	27	10.5	7.8	6.4	4.7
AM8F-15	P804AF-15	15	4.57	4	102	0.125	3.2	47	21	5.0	3.5	2.8	2.0
AM8U-15	P804AU-15	15	4.57	4	102	0.226	5.7	63	29	8.7	6.4	5.2	3.7
										70 ft ²	80 ft ²	875 ft ²	100 ft ²
Catalog number	Nominal height	Section	Wall thickness	Weight	EPA rating (mph)								

F/U/W: Wall thickness

POLES

CANDELA SERIES



SPR4 c/w LBC4C or LBC10 - Steel

SPR4D-8	8	2.44	4	102	0.120	3.0	55	25	27.5	21.2	17.6	13.4
SPR4D-10	10	3.05	4	102	0.120	3.0	65	30	21.8	16.6	13.8	10.3
SPR4N-10	10	3.05	4	102	0.188	4.8	94	43	30.0	24.8	20.8	15.7
SPR4D-12	12	3.66	4	102	0.120	3.0	75	34	17.6	13.2	10.9	8.0
SPR4N-12	12	3.66	4	102	0.188	4.8	110	50	26.4	20.3	16.8	12.6
SPR4D-14	14	4.27	4	102	0.120	3.0	85	39	11.8	8.8	7.1	5.1
SPR4N-14	14	4.27	4	102	0.188	4.8	125	57	17.0	12.9	10.6	7.9
SPR4V-14	14	4.27	4	102	0.250	6.4	160	73	22.7	17.2	14.2	10.7
SPR4D-15	15	4.57	4	102	0.120	3.0	90	41	9.9	7.3	6.0	4.3
SPR4N-15	15	4.57	4	102	0.188	4.8	133	60	14.7	11.0	9.0	6.7
SPR4V-15	15	4.57	4	102	0.250	6.4	170	77	19.6	14.8	12.1	9.0
	ft	m	in	mm	in	mm	lb	kg	70 ft ²	80 ft ²	87.5 ft ²	100 ft ²
Catalog number	Nominal height		Section	Wall thickness		Weight		EPA rating (mph)				

D/N/V: Wall thickness

SM6 - P604S - Steel

SM6F-8 P604SF-8	8	2.44	4	102	0.120	3.2	85	39	30.0	30.0	27.0	20.8
SM6N-8 P604SN-8	8	2.44	4	102	0.188	4.8	99	45	30.0	30.0	30.0	30.0
SM6F-10 P604SF-10	10	3.05	4	102	0.120	3.2	95	43	30.0	23.5	19.7	15.2
SM6N-10 P604SN-10	10	3.05	4	102	0.188	4.8	115	52	30.0	30.0	29.4	22.5
SM6F-12 P604SF-12	12	3.66	4	102	0.120	3.2	105	48	23.6	18.3	15.3	11.6
SM6N-12 P604SN-12	12	3.66	4	102	0.188	4.8	180	59	30.0	27.3	22.8	17.5
SM6F-14 P604SF-14	14	4.27	4	102	0.120	3.2	115	52	15.5	11.8	9.8	7.3
SM6N-14 P604SN-14	14	4.27	4	102	0.188	4.8	145	66	23.2	18.0	15.0	11.3
SM6F-15 P604SF-15	15	4.57	4	102	0.120	3.2	120	54	14.0	10.5	8.7	6.4
SM6N-15 P604SN-15	15	4.57	4	102	0.188	4.8	153	69	20.7	15.4	13.0	9.7
SM6V-15 P604SV-15	15	4.57	4	102	0.250	6.4	182	83	25.4	19.4	16.0	12.0
	ft	m	in	mm	in	mm	lb	kg	70 ft ²	80 ft ²	87.5 ft ²	100 ft ²
Catalog number	Nominal height		Section	Wall thickness		Weight		EPA rating (mph)				

F/N/V: Wall thickness

SM8 - P804S - Steel

SM8F-8 P804SF-8	8	2.44	4	102	0.120	3.2	117	53	30.0	30.0	29.1	22.5
SM8N-8 P804SN-8	8	2.44	4	102	0.188	4.8	129	58	30.0	30.0	30.0	30.0
SM8F-10 P804SF-10	10	3.05	4	102	0.120	3.2	127	57	30.0	25.2	21.2	16.2
SM8N-10 P804SN-10	10	3.05	4	102	0.188	4.8	145	65	30.0	30.0	30.0	24.0
SM8F-12 P804SF-12	12	3.66	4	102	0.120	3.2	137	62	25.0	19.3	16.2	12.3
SM8N-12 P804SN-12	12	3.66	4	102	0.188	4.8	160	72	30.0	28.9	24.1	18.5
SM8F-14 P804SF-14	14	4.27	4	102	0.120	3.2	146	66	16.2	12.3	10.2	7.6
SM8N-14 P804SN-14	14	4.27	4	102	0.188	4.8	175	79	24.2	18.8	15.6	11.8
SM8F-15 P804SF-15	15	4.57	4	102	0.120	3.2	151	68	14.6	10.9	9.1	6.7
SM8N-15 P804SN-15	15	4.57	4	102	0.188	4.8	183	83	22.0	17.0	14.2	10.6
SM8V-15 P804SV-15	15	4.57	4	102	0.250	6.4	210	95	28.7	22.3	18.5	13.7
	ft	m	in	mm	in	mm	lb	kg	70 ft ²	80 ft ²	87.5 ft ²	100 ft ²
Catalog number	Nominal height		Section	Wall thickness		Weight		EPA rating (mph)				

F/N/V: Wall thickness

APR4 c/w LBC4C or APR4 c/w LBC10

Made from a one-piece, seamless 4" round (102 mm) tube of extruded aluminum welded to both the top and bottom of a reinforced base cast from zinc-rich aluminum.

SPR4 c/w LBC4C or SPR4 c/w LBC10

Made from a one-piece, 4" round (102 mm) tube of high-tensile carbon steel sealed by a rolled and flattened vertical weld seam and welded to both the top and bottom of a steel base.

AM6 / P604 / AM8 / P804

Made from a one-piece, seamless 4" round (102 mm) round tube of extruded aluminum welded over and in a 6 5/8" round (168 mm) extruded aluminum pole base for AM6 / P604S poles and 8 5/8" (219 mm) for AM8 / P804 poles.

SM6 / P604S / SM8 / P804S

Made from a one-piece, 4" round (102 mm) high-tensile carbon steel shaft sealed by a rolled and flattened vertical weld seam and welded over and in a 6 5/8" round (168 mm) high-tensile carbon-steel pole base for the SM6 / P604S and 8 5/8" (219 mm) for SM8 / P804S poles. The assembly is welded to both the top and bottom of a steel base.

All poles:

- Maintenance opening, complete with cover.
- Copper ground lug.
- Joint and base cover: made from two pieces of cast aluminum (356) mechanically fastened with stainless steel screws.
- Finish: "hot dip" chemical etching preparation. Lumital™ polyester powder coat textured finish. Available in 14 standard colors.
- Duraval UV-resistant exterior finish as per # ASTM G7 and outstanding salt-spray resistance according to # ASTM D2247 testing procedures

Note:

EPA recommendations are calculated according to AASHTO standards and include a 30% gust factor, with a 50 lb. (22.7 kg) load applied 1 ft. (305 mm) above the center of the pole. The maximum EPA rating shown is 30.0 sq. ft. Some poles may exceed this rating.

Options:

PH7: Button-type photoelectric cell (specify operating voltage).

DR: Duplex receptacle (120 V line volt. only)

GFI: DR with common ground fault interrupter (120 V line volt. only)

Other pole thicknesses are available for use with banner arms. Consult factory.

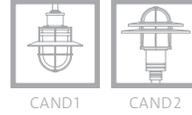
Philips Lumec neither designs nor makes recommendations as to the design of concrete bases.

Note: Philips Lumec reserves the right to modify the above details to reflect changes in the cost of materials and/or production and/or design without prior notice.

PHOTOMETRY



RR:
Round borosilicate refractor



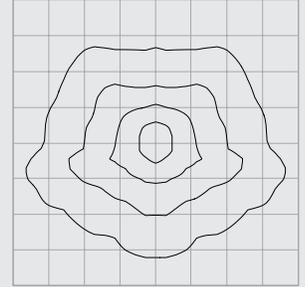
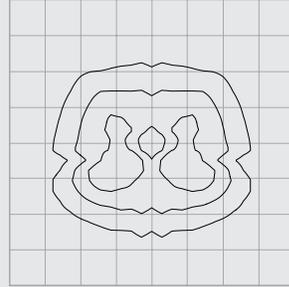
RR3

Type 3

Asymmetrical distribution that spreads the light forward and on either side. Non cut-off optics according to IES classification.

Recommended applications

- > Roads, pedestrian walkway, bicycle path
- > Building entryway
- > Interior and exterior pedestrian mall
- > Nautical environment, boardwalk



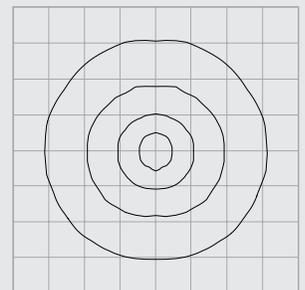
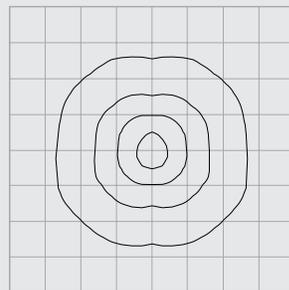
RR5

Type 5

Symmetrical distribution that spreads the light forward and on either side. Non cut-off optics according to IES classification.

Recommended applications

- > Middle of parking lot
- > Interior and exterior pedestrian mall
- > Building entryway



SE:
Hydroformed reflector system set in
faceted arc-image duplicating pattern



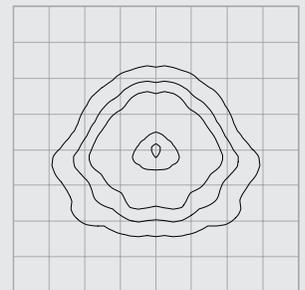
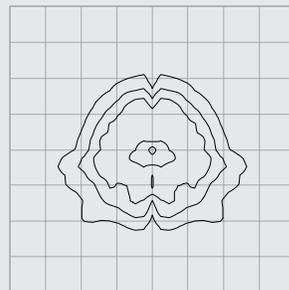
SE3

Type 3

Asymmetrical distribution that spreads the light forward and on either side. Vertical control of the flux. Non cut-off optics according to IES classification.

Recommended applications

- > Roads, pedestrian walkway, bicycle path
- > Building entryway
- > Narrow streets, private entry
- > Interior and exterior pedestrian mall
- > Nautical environment, boardwalk



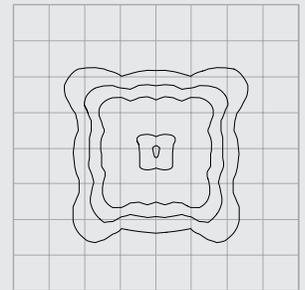
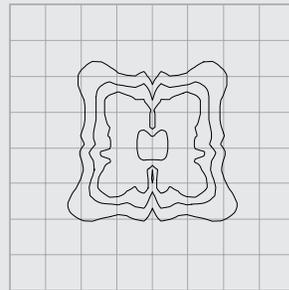
SE5

Type 5

Symmetrical distribution that spreads the light in a square pattern. Non cut-off optics according to IES classification.

Recommended applications

- > Middle of parking lot
- > Interior and exterior pedestrian mall
- > Building entryway
- > Pedestrian walkway



* Compact fluorescent photometry available on demand

PHOTOMETRY



RACE:
Acrylic (max. 100 W) or borosilicate
(150 W and more) refractor with
segmented upright recovery reflector



CAND1



CAND3

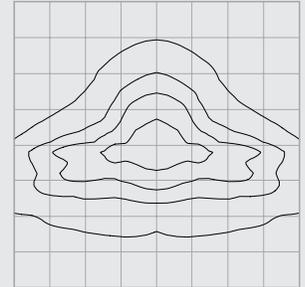
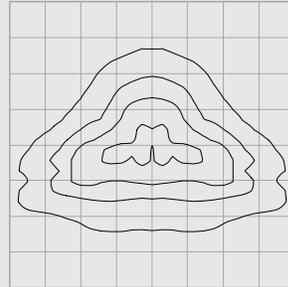
RACE3

Type 3

Asymmetrical distribution that spreads the light forward and on either side. Non cut-off optics according to IES classification.

Recommended applications

- > Roads, pedestrian walkway, bicycle path
- > Building entryway
- > Narrow streets, private entry
- > Interior and exterior pedestrian mall
- > Nautical environment, boardwalk



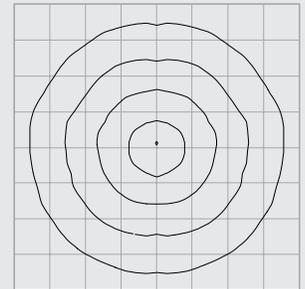
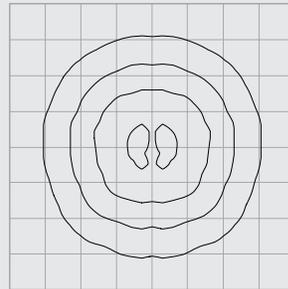
RACE5

Type 5

Symmetrical distribution that spreads the light evenly in a circular pattern. Non cut-off optics according to IES classification.

Recommended applications

- > Middle of parking lot
- > Interior and exterior pedestrian mall
- > Building entryway
- > Pedestrian walkway



SR:
Small round borosilicate refractor

CANDS2 CANDS1/CANDS3



CANDS1



CANDS2



CANDS3

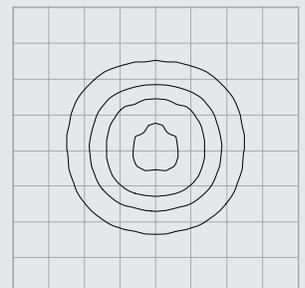
SR5

Type 5

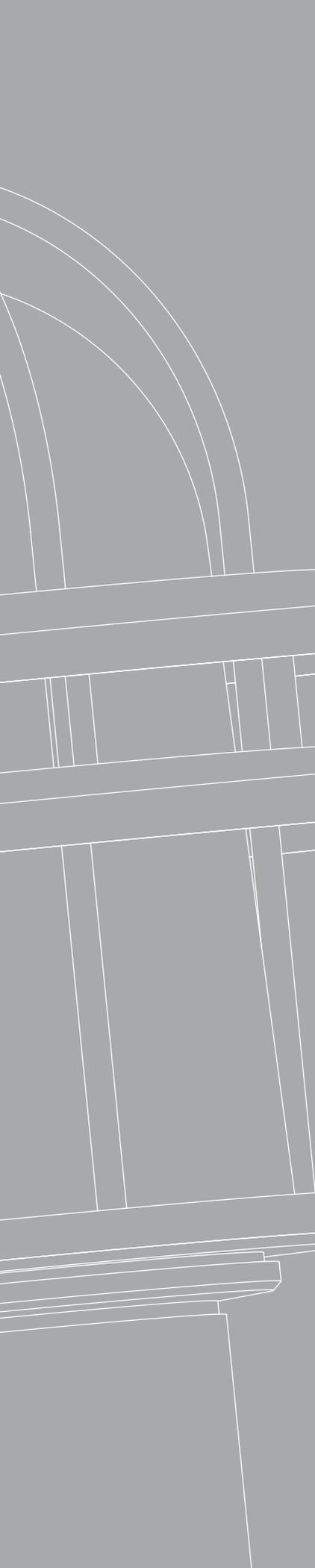
Symmetrical distribution that spreads the light in a circle pattern. Non cut-off optics according to IES classification.

Applications recommandées

- > Interior and exterior pedestrian mall
- > Building entryway
- > Pedestrian walkway
- > Parcs



* Compact fluorescent photometry available on demand



>>
LUMINAIRE > CAND2
POLE > APR4-LBC1



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



The choice to not print paper brochures anymore but to make them available on-line is an example of the positive environmental actions that Philips Lumec has decided to undertake. This not only considerably reduces our paper consumption but also guarantees the exactitude of the information our clients receive.