Outdoor Lighting Standard Manual

TOWN OF CALEDON

Town of Caledon
6311 Old Church Road
Caledon, ON L7C 1J6

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1.0 GENERAL

1.1 Objectives

The regulation of outdoor lighting through this standard is intended to do the following:

- Enhance public safety and welfare by providing for adequate and appropriate outdoor lighting;
- Provide for lighting that will complement the character of the Town and reduce glare;
- Minimize light trespass;
- Standardize to (Light-Emitting Diode) LED technology for all fixture types. LED fixtures provide significant advantages including reduced power consumption, and reduced maintenance and operational costs compared to predecessor technology such as High-Pressure Sodium;

1.2 Applicability and Limitations

The requirements of this document shall apply to

- Street Lighting and Roadway Lighting;
- Walkways and Bikeways Lighting;
- Outdoor Lighting on lots and parcels in the municipality;
- Industrial and Commercial Outdoor Lighting Installations; and,
- Condominium Developments.

But, shall not apply to the following:

- Residential dwellings on private property lots on which they are the principal use.
- Traffic control lights.

When an existing non-residential outdoor lighting installation is being modified, extended, expanded, or added to, only the new streetlights on the lot shall be subject to this standard per Section 4.0.

1.3 Terminology

The following words, which are technical terms applying to lighting and are set forth below, shall have the meaning indicated below:

- BUG RATING: Backlight, Uplight, and Glare Rating system that identifies light trespass characteristics of a luminaire
- CUTOFF ANGLE: The angle formed by a line drawn from the direction of the direct light rays at the light source with respect to the vertical, beyond which no direct light is emitted.
- DIRECT LIGHT: Light emitted from the lamp, off the reflector or reflector diffuser, or through the refractor or diffuser lens, of a luminaire.
- FIXTURE: See “Luminaire”

- GLARE: Light emitted from a luminaire with intensity great enough to produce annoyance, discomfort, or a reduction in a viewer's ability to see.
- HEIGHT OF LUMINAIRE: The vertical distance from the finished grade of the ground directly below to the lowest direct light-emitting part of the luminaire.
- INDIRECT LIGHT: Direct light that has been reflected off other surfaces not part of the luminaire.
- INTERNATIONAL DARK SKY ASSOCIATION FIXTURE SEAL OF APPROVAL: This approval is a third-party certification for luminaires that minimize glare, reduce light trespass, and uplight to the night sky.
- LIGHT TRESPASS: The shining of direct light produced by a luminaire beyond the boundaries of the lot or parcel on which it is located.
- LUMEN: A measure of light energy generated by a light source. One footcandle is one lumen per square foot. For purposes of this standard, the lumen output shall be the initial lumen output of a lamp, as rated by the manufacturer.
- LUMINAIRE: The assembly that houses a LED array, lens, controller, and housing. Also referred to as a fixture.

2.0 STREET LIGHTING DESIGN AND SUBMISSION REQUIREMENTS

The street lighting system shall be designed and stamped by a qualified engineer in accordance with the Illumination Engineering Society of North America (IESNA) latest edition of RP-8 (American National Standard Practice for Roadway Lighting) and approved by the Town reviewer.

The objective in designing street lighting is to provide a uniform distribution of lighting at a level that is adequate for the intended use of the roadway or walkways.

2.1 Pre-Design

The Developer/Contractor/Consultant will consult Development Engineering to determine the type of lighting to be utilized on a given project. Typical uses for streetlight technologies and infrastructure are outlined in the table below, however, will ultimately be determined at the Town's discretion:

Typical Use	Pole-Style	Luminaire	Arm
Major, Collector, and Local Streets (non-community core, non-residential)	Round	Conventional Cobrahead	Elliptical
Residential Streets	Octagonal	Coach	Scroll
Community Cores (downtowns, urban centres, villages, and hamlets)	Octagonal	Coach	Scroll
Walkways/Bikeways	Round	Conventional Cobrahead	Elliptical

2.2 Street Lighting Design

All submissions of lighting plans shall be designed by a lighting designer familiar with the local, provincial, and industry standards. External Consultants (non-Town and non-Region staff) shall be certified by a Professional Engineer registered with PEO.

- A letter signed by the Professional Engineer that the lighting plan meets RP-8 design guidelines (External Consultants)
- The location and type of street lighting luminaires, including the height of the luminaire.
- The luminaire manufacturer's specification data, including lumen output and photometric data showing cutoff angles.
- The manufacturer's product ordering number for each luminaire
- A photometric plan showing the intensity of illumination at ground level expressed in LUX

- Ensure the spill light is within acceptable levels per RP-8 to reduce light trespass. House-side shields or backlight shields should be considered as a potential mitigation measure as part of the analysis.
- Ensure all luminaires have U0 BUG Rating for uplight
- Provide a clear summary of the following in LUX
  1. Average
  2. Maximum
  3. Minimum
  4. Average / Minimum Uniformity Ratio
  5. Maximum / Minimum Uniformity Ratio
  6. Maximum Veiling Luminance Ratio

2.3 Street Lighting Drawing Submission

The Developer/Contractor/Consultant must submit electronically to the Town a georeferenced shapefile (.shp) or a georeferenced CAD file (.dwg) projected with the Town standard coordinate system (NAD83/UTM Zone 17N) accompanied by an excel file (.xslx) containing the following information on each streetlight:

- Manufacturer
- Luminaire Type (i.e. decorative, cobra head, etc.)
- Wattage
- Number of luminaires on each pole
- Arm Manufacturer
- Arm Type (i.e. Victorian scroll, divot)
- Arm Length
- Mounting Type (i.e. side-mount, post-top)
- Mounting Height (from the ground to the bottom of the streetlight)
- Fuse Location (i.e. handhole or bracket)
- Power Source (above or underground wiring)
- Pole Manufacturer
- Pole Type (i.e. octagonal tapered, straight tapered, etc.)
- Pole Mounting (direct-buried, concrete-base footing)
- Meter Number (if a streetlight is connected to a meter, note this column will be blank until streetlights are installed)
- GIS Location

- Underground infrastructure (e.g. # of duct(s) entering, size, wire(s), wire sizes), power supply panel circuits and connections

The drawings submission should also be accompanied by the following documentation from the luminaire vendor:

- Shop Drawings
- IESNA LM-79-08 Photometric measurements
- IESNA LM-80-08.

2.4 Walkways and Bikeways Lighting Design

Sidewalks which are adjacent to roadways shall be compiled with RP-8 recommendations according to different pedestrian conflict level.

For other walkways and bikeways, separate lighting systems are required and shall comply with RP-8 recommended practices.

In addition to the requirements identified in Section 2.2 and Section 2.3 above, designs shall consider the following:

- Confirm with the Town the appropriate style of pole, arms, and fixtures to apply.
- The minimum luminaire mounting height is (4.58 m) 15 feet above finished grade.
- The Consultant should confer with the Town on any recommended pole layouts and/or spacing.
- Due to the variety of walkway/bikeway arrangements, and unless directed otherwise, it is incumbent upon the Consultant to complete a photometric analysis to determine the spacing which meets Town requirements and to include this information on the Detailed Design Drawings.
- Where walkways intersect with the Municipal Right-of-Way, the Consultant must ensure that there is a luminaire present either on the walkway or on the street within 2.0 m of the walkway entrance to ensure pedestrian safety.

2.5 Electrical Design Requirements

The electrical design associated with the streetlight system shall follow the following requirements in accordance with RP-8 and Ontario Electric Safety Code and shall be certified by a Professional Engineer.

- Consult with Hydro One for new electrical services to ensure utility power supplies and transformers are sized to support the new and future lighting loads
- Conductors shall be stranded copper or aluminum with suitable insulation and installed in conduit and rated for wet locations
- Conduit shall be installed underground using PVC conduit, where possible. For above-ground surface-mount applications, the conduit shall have additional mechanical protection using materials such as galvanized rigid steel
- All metallic equipment shall be connected to a common bonding conductor and should be properly grounded

- All lighting wiring shall be protected with circuit breakers or fuses at the lighting distribution cabinet. Furthermore, each luminaire shall be protected using in-line fuses or terminal block location within the pole hand hole.
- The designer shall consult with the Town on any special design requests such as additional conduit, junction boxes, and/or power supply requirements as part of the pre-design stage

3.0 APPROVED EQUIPMENT

3.1 Cobra Head-Style Luminaires

The following luminaires have been pre-approved for conventional street lighting and outdoor area lighting applications:

Manufacturer	Product Line	Product Code
General Electric	Evolve ERL Series	ERL1-*-**-**-30-A-GRAY-***
Cree Canada	XSP Series	XSP**-D-HT-***-**-30K7-**-SV-N
Philips Canada	Road Focus Series	RF*-**W**LED3K-G2-***-***-DMG-RCD7-**-GY3
Leotek Electronics	GreenCobra Series	GC**-***-**-WW-**-GY-***-PCR7-CR-***

Submission of alternate luminaires will not be accepted.

Additional Requirements / Specification Notes:

- Provide an unconditional manufacturer's comprehensive certified letter warrantying luminaire(s) for a minimum of ten (10) years. The luminaire manufacturer shall warrant the LED boards/system, during the stated warranty period, against failure defined as more than three (3) simultaneous non-operating LEDs
- Luminaires must be on the Qualified Products List (QPL) with the Design Lights Consortium (DLC)

Part ordering of qualified fixtures shall ensure the following:

- Luminaires must have U0 BUG up-light rating and demonstrate the International Dark-Sky Association (IDA) Fixture Seal of Approval
- Nominal Correlated Color Temperature (CCT) at 3000k
- Housing Color shall be grey or a similar equivalent
- Luminaires must be equipped with a NEMA 7-pin ANSI C136.41 receptacle.
- Luminaires must support 0-10 VDC dimming

3.2 Decorative-Style Luminaires

The following luminaries have been pre-approved for decorative street lighting or outdoor area lighting applications:

Manufacturer	Product Line	Product Code
Eaton	Streetworks Decorative Area (SDL) Series	SDL-E02-LED-D-*-***-BK-4N7-7030
Eaton	Streetworks Decorative Post Top (UTLD) Series	UTLD-E02-LED-D-*-***-BK-4N7-7030
HCI Lighting	SL20-LED Series	SL20-CAC-LED**W-3000K-***-TYPE **
King Luminaire	K601D Series	K601D-S/T-P4NL-**-3K
Amerlux	Coach Style Lantern (CSL) Series	CSL-*-*M-3K-T*-***-7P-***

Submission of alternate luminaires will not be accepted.

Additional Requirements / Specification Notes:

- Provide an unconditional manufacturer's comprehensive certified letter warrantying luminaire for a minimum of ten (10) years. The luminaire manufacturer shall warrant the LED boards/system, during the stated warranty period, against failure defined as more than three (3) simultaneous non-operating LEDs.
- Luminaires must be on the Qualified Products List (QPL) with the DesignLights Consortium (DLC)

Part ordering of qualified fixtures shall ensure the following:

- Luminaires must have U0 BUG up-light rating or demonstrate an International Dark-Sky Association (IDA) Fixture Seal of Approval Certificate
- Nominal Correlated Colour Temperature (CCT) at 3000k
- Colour shall be black or similar equivalent
- Luminaires must be equipped with a NEMA 7-pin ANSI C136.41 receptacle.
- Luminaires must support 0-10 VDC dimming
- House-side shields or backlight shields shall be included where warranted

3.3 Photocells

The following photocell controllers have been pre-approved for photocontrol:

Manufacturer	Product Line
Acuity Brands	DLL Elite
FP Controls	ELL Extra Long Life Series

Manufacturer	Product Line
FP Controls	TRS Long Life Photocell

Submission of alternate photocells will not be accepted.

Additional Requirements / Specification Notes:

- Provide an unconditional manufacturer's comprehensive certified letter warrantying photocell for a minimum of twenty (20) years.

3.4 Adaptive Lighting Control System

All luminaires shall have a NEMA 7-pin ANSI 136.41 receptacle to support wireless dimming features.

3.5 Poles

The following poles have been pre-approved for conventional and decorative luminaire applications, respectively:

Conventional Pole Manufacturer	Colour Finish	Product Line
StressCrete	Grey	Symmetry Series (Round)

Decorative Pole Manufacturer	Colour Finish	Product Line
StressCrete	Midnight Lace	Americana Series (Octagonal)

Submission of alternate poles will not be accepted.

Additional Requirements / Specification Notes:

- Provide an unconditional manufacturer's comprehensive certified letter warrantying the pole for a minimum of ten (10) years.
- Direct-buried Poles designed in accordance with CSA A14. However, local conditions may justify the need for base-mounted poles. In that case, the Designer should consult with the Town for permission. If base-mounted poles are permitted, the footings and anchorage assembly shall adhere to the requirements of:
  - OPSS.MUNI 904 Construction Specifications for Concrete Structures
  - Region of Peel Electrical Traffic Standards Drawing #4-7-1
  - Region of Peel Electrical Traffic Standards Drawing #4-7-2

Part ordering of qualified equipment shall ensure the following:

- Class A for decorative post top applications, Class B for decorative or conventional side-arm applications.
- Spun concrete with built-in raceway.
- Straight tapered for conventional applications or octagonal tapered for decorative applications.
- Grey for conventional applications or polished midnight lace (or similar) for decorative applications.

3.6 Arms

The following arms have been pre-approved for conventional and decorative luminaire applications, respectively:

Conventional Arm Manufacturer	Colour Finish	Product Line
King Luminaire	Grey	Tapered Elliptical Arm
Philips	Grey	Lumec Aluminum Elliptical Arm

Decorative Arm Manufacturer	Colour Finish	Product Line
King Luminaire	Black	Scroll Arm
Philips	Black	Lumec Decorative Scroll Arm

Submission of alternate arms will not be accepted.

<u>Additional Requirements / Specification Notes:</u>

- Provide an unconditional manufacturer's comprehensive certified letter warrantying the pole for a minimum of ten (10) years.

Part ordering of qualified equipment shall ensure the following:

- Conventional luminaire arms shall be tapered aluminum elliptical. Decorative arms shall be aluminum with a decorative scroll or similar decorative feature.
- Grey for conventional applications or polyester powder-coated black (or similar) for decorative applications.

4.0 COMMERCIAL, INDUSTRIAL, AND CONDOMINIUM OUTDOOR LIGHTING INSTALLATIONS

4.1 Requirements

This portion of the standard applies to all Commercial, Industrial and Condominium Outdoor lighting installations apply to private driveways, roads, sidewalks, and parking lots used for commercial, industrial, residential condominium, and/or institutional purposes.

All submissions of outdoor lighting plans shall adhere to Section 2.2, 2.4 and 2.5.

Specifically, lighting design plans shall ensure spill light is within acceptable levels per RP-8 to reduce light trespass to adjacent private and public property. Furthermore, luminaires shall have U0 Uplight rating as per the BUG rating system.

4.2 Hours of Operation Guideline

Suggested hours of operation for outdoor lighting in Commercial and Industrial areas are from 6:00 am to 11:00 pm, with the following exceptions:

- If the site is being used during these hours, such as at a business open to customers, or where employees are working, or where an institution or place of public assembly is conducting an activity, normal illumination shall be allowed during the activity, but for not more than one-half hour after the activity ceases.
- Low-level security lighting sufficient for the security of persons or property on the lot may be in operation between 11:00 p.m. and 6:00 am. The illumination levels and uniformity will be based on the exterior application and conform to the latest version of the IESNA guidelines as per IESNA G-1 “Guideline for Security Lighting for People, Property, and Critical Infrastructure”

A

Appendix A
Conventional Luminaires

GE Evolve™

LED Roadway Lighting

ERL1-ERLH-ERL2

current
powered by GE

GE Evolve™

LED Roadway Lighting

ERL1-ERLH-ERL2

The **Evolve** LED Roadway Luminaire is optimized for customers requiring a LED solution for local, collector and major roadways. GE's unique reflective optics are designed to optimize application efficiency and minimize glare. The modern design incorporates the heat sink directly into the unit for heat transfer to prolong LED life. This reliable unit has a 100,000 hour design life, significantly reducing maintenance needs and expense over the life of the fixture. This efficient solution lowers energy consumption compared to a traditional HID fixture for additional operating cost savings.

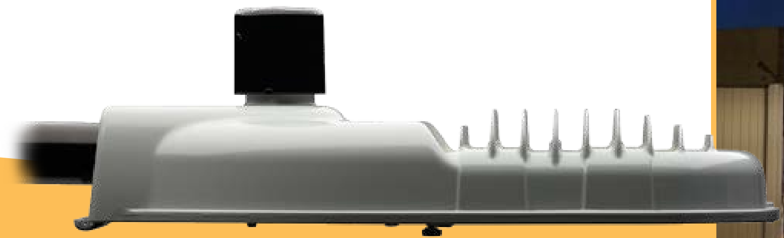
Features:

- Optimized roadway photometric distributions
- **Evolve**™ light engine consisting of reflective technology designed to optimize application efficiency and minimize glare
- 70 CRI at 2700K, 3000K and 4000K typical.
- –40°C to 50°C UL Ambient Typical.
- ULOR = 0 (zero uplight)
- Designed & Assembled in USA

Applications:

- Local Roadways
- Collector Roadways
- Major Roadway/Streets

Compatible with **LightGrid**™ Outdoor Wireless Control System



To learn more about **GE Evolve LED Roadway Lighting**, go to: **www.currentbyge.com**

GE Evolve™

LED Roadway Lighting

ERL1-ERLH-ERL2

Project name ________________

Date ________________

Type ________________

Typical Specifications: ERL1-ERLH-ERL2

LED & Optical

- **Output Range:** 1900 – 30000 lm
- **Photometric Options:** Type II Narrow, Type II Wide, Type III, Type IV
- **System Efficacy:** 100 - 145 LPW
- **CCT:** 2700K, 3000K, 4000K; High brightness LEDs @ 70 CRI

Lumen Maintenance Tables

Projected Lxx per IES TM-21 at 25°C for reference:

ERL1 LUMEN OUTPUT CODES	LXX(10K)@HOURS 25,000 HR	50,000 HR	100,000 HR
02,03,04,05,06	L96	L95	L91
07,08,09	L95	L91	L84
10	L89	L80	L64

ERLH LUMEN OUTPUT CODES	LXX(10K)@HOURS 25,000 HR	50,000 HR	100,000 HR
10, 11	L97	L96	L94
13, 14	L95	L93	L88
15, 16	L94	L91	L85

ERL2 LUMEN OUTPUT CODES	LXX(10K)@HOURS 25,000 HR	50,000 HR	100,000 HR
16, 18, 19, 21, 23	L96	L94	L91
25, 27, 28	L95	L93	L88
30	L95	L93	L87

Note: Projected Lxx based on LM80 (10,000 hour testing). DOE Lighting Facts Verification Testing Tolerances apply to initial luminous flux and lumen maintenance measurements.

Electrical

- **Input Voltage:** 120-277 volt and 347-480 volt
- **Input Frequency:** 50/60Hz
- **Power Factor (PF)*:** >90%
- **Total Harmonic Distortion (THD)*:** <20%

**Power factor and THD tolerance exceptions: ERL1 "02" Lumen output: PF and THD within tolerances above only at 120 volt. ERL1 "03" Lumen output: @120 volt PF~0.89; @ 480 volt THD~26% ERL1 "04" Lumen output: @480 volt THD~22%*

Ratings

- **Surge Protection:** per ANSI C136.2-2015:
  (Driver Internal):
  - 6kV/3kA "Basic: (120 Strikes)" - Standard on ERL1 (02-06)
  - 10kV/5kA "Enhanced: (40 Strikes)" - Standard on ERL1 (07 - 10), ERLH, ERL2

  (Additional Separate Secondary SPD)
  - 10kV/5kA "Enhanced: (40 Strikes) - Option "R"
  - 20kV/10kA "Elevated" (40 Strikes) - Option "T"
- **Safety:** UL/cUL Listed. UL 1598 listed, suitable for wet locations UL/cUL
- **Environmental:** Compliant with the materials restrictions of RoHS
- **EMI:** Title 47 CFR Part 15 Class A
- **Vibration:** 3G per ANSI C136.31-2010
- LM-79 testing in accordance with IESNA Standards
- Std. Optical enclosure rated per ANSI C136.25-2009:
  — ERL1/ERLH/ERL2 = IP65, Optional: IP66

Please refer to the DLC QPL website for the latest and most complete information. **www.designlights.org/QPL**

International Dark Sky Association listed. 2700K or 3000K must be selected to meet IDA certification and approval.

- **Operating Temperature:**

PRODUCT ID	LUMEN OUTPUT	AMBIENT READING
ERL1	02-10	-40°C to 50°C
ERLH	10-11, 13	-40°C to 50°C
ERLH	14-16	-40°C to 45°C
ERL2	16-28	-40°C to 50°C
ERL2	30	-40°C to 45°C

Delayed start may be experienced < -35°C

Construction & Finish

- **Housing:**
  — Die Cast Enclosure
  — Casting-integral heat sink for maximum heat transfer
- **Lensing:** Impact resistant tempered glass, standard
- **Paint:** Corrosion resistant polyester powder painted, minimum 2.0 mil. thickness.
  — Standard Colors: Dark Bronze, Black, & Gray
  — RAL & custom colors available
  — Optional coastal finish available.
- **Weight:** 12.4lbs (5.6kg) – 24lbs (10.9kg)

Warranty

- **System Warranty:** 5 Year Standard, 10 Year Optional

Controls

- **Dimming:**
  — Standard: 0-10V; Optional: DALI (120-277V Only)
- **Sensors:**
  — Photo electric sensors (PE) available.
- LightGrid™ compatible

Mounting

- Slipfitter with +/- 5 degree of adjustment for leveling.
- Integral die cast mounting pipe stop.
- Adjustable for 1.25 in. or 2 in. mounting pipe.

Suggested HID Replacement Lumen Levels

- ~4,000–5,000 lumens to replace 100W HPS Cobra-head
- ~7,000–8,800 lumens to replace 150W HPS Cobra-head
- ~8,500–11,500 lumens to replace 200W HPS Cobra-head
- ~11,500–14,000 lumens to replace 250W HPS Cobra-head
- ~21,000–30,000 lumens to replace 400W HPS Cobra-head

Note: Actual replacement lumens may vary based upon mounting height, pole spacing, design criteria, etc.

CONVERSION FROM PREVIOUS GENERATION OPTICS TO CURRENT GENERATION OPTICS**			
PREVIOUS	DESCRIPTION	CURRENT	DESCRIPTION
A1, B1	Extra Narrow/Narrow Asymmetric	A3	Type II Narrow
C1, E1	Asymmetric Short/Medium	B3	Type II Wide
D1, G1	Asymmetric Forward/Extra Wide	C3	Type III
F1	Asymmetric Wide	D3	Type IV
		E3	Type II Enhanced Back Light

**The information above is designed to provide a guideline to select the correct luminaire for a roadway application. The best and most accurate way to ensure the proper design is do a lighting layout Utilizing AGI.

GE Evolve™

LED Roadway Lighting

ERL1-ERLH-ERL2

Project name ________________

Date ________________

Type ________________

E R L 1 ____ _ __ __ __ _ ____ ___

PROD. ID	VOLTAGE	LUMEN OUTPUT	DISTRIBUTION*	CCT	CONTROLS	COLOR	OPTIONS
E = Evolve **R** = Roadway **L** = Local **1** = Single Module	**0** = 120-277V* **1** = 120 **2** = 208 **3** = 240 **4** = 277 **5** = 480 **D** = 347 **H** = 347-480*# * Not available with Fusing. Must choose a discrete voltage with F option. # **Not** available with E controls option.	**02*** **03**< **04**< **05**< **06** **07** **08** **09** **10** See Table *120V only, not compatible with 0-10V dimming. < See Note Under Controls Column	**A3** = Type II Narrow **B3** = Type II Wide **C3** = Type III **D3** = Type IV **E3** = Type II Enhanced Back Light See Table *Nominal IES Type classing subject to typical variation, individual units may differ.	**27** = 2700K<> **30** = 3000K **40** = 4000K <> Select 2700K or 3000K CCT for IDA approved units.	**A** = ANSI C136.41 7-pin **D** = ANSI C136.41 7-pin with Shorting Cap **E** = ANSI C136.41 7-pin with non-Dimming PE Control.* *PE Control Only available for 120-277V or 480V Discrete. Not available for 347-480V or 347V Discrete. < If dimming the 03 - 05 lumen output using a control supplied from a source other than GE call 1-888-694-3533, then select Option 2 at the prompt for assistance. **NOTE:** Dimming controls wired for 0-10V standard unless DALI option "U" requested.	**GRAY** = Gray **BLCK** = Black **DKBZ** = Dark Bronze	**A** = 4 Bolt Slipfitter † **F** = Fusing **G** = Internal Bubble Level **I** = IP66 Optical **L** = Tool-Less Entry **R** = Secondary 10kV/5kA SPD **T** = Secondary 20kV/10kA SPD **U** = DALI Programmable +^ **V1** = Variable Output via Field Adjustable Module** **X** = Single Package # **Y** = Coastal Finish* **XXX** = Special Options † Contact manufacturer for Lead-Time. # "X" option provides single pack box per fixture. Std Packaging = 20 units per Magna pak container. * Recommended for installations within 750 ft. from the coast. Contact Factory for Lead-Time. + Compatible with LightGrid 2.0 nodes. ^ Not available in 347V, 480V or 347-480V for Lumen Output Levels 07, 08, 09, and 10. ** Not available with DALI (U) option.

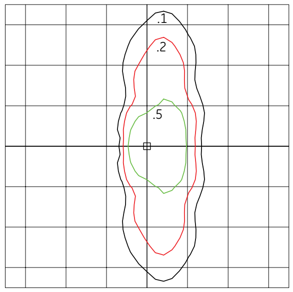
LUMEN OUTPUT	DISTRIBUTION	TYPICAL INITIAL LUMENS			TYPICAL SYSTEM WATTAGE		BUG RATING			IES FILE NUMBER					
										4000K		3000K		2700K	
		4000K	3000K	2700K	120-277V	347-480V	4000K	3000K	2700K	120-277V	347-480V	120-277V	347-480V	120-277V	347-480V
02	A3	2000	1900	1900	14	N/A	B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_02A340_-120V.IES	N/A	ERL1_02A330_-120V.IES	N/A	ERL1_02A327_-120V.IES	N/A
	B3						B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_02B340_-120V.IES	N/A	ERL1_02B330_-120V.IES	N/A	ERL1_02B327_-120V.IES	N/A
	C3						B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_02C340_-120V.IES	N/A	ERL1_02C330_-120V.IES	N/A	ERL1_02C327_-120V.IES	N/A
	D3						B0-U0-G1	B0-U0-G1	B0-U0-G1	ERL1_02D340_-120V.IES	N/A	ERL1_02D330_-120V.IES	N/A	ERL1_02D327_-120V.IES	N/A
	E3						B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_02E340_-120V.IES	N/A	ERL1_02E330_-120V.IES	N/A	ERL1_02E327_-120V.IES	N/A
03	A3	3000	2900	2800	22	26	B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_03A340_-120-277V.IES	ERL1_03A340_-347-480V.IES	ERL1_03A330_-120-277V.IES	ERL1_03A330_-347-480V.IES	ERL1_03A327_-120-277V.IES	ERL1_03A327_-347-480V.IES
	B3						B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_03B340_-120-277V.IES	ERL1_03B340_-347-480V.IES	ERL1_03B330_-120-277V.IES	ERL1_03B330_-347-480V.IES	ERL1_03B327_-120-277V.IES	ERL1_03B327_-347-480V.IES
	C3						B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_03C340_-120-277V.IES	ERL1_03C340_-347-480V.IES	ERL1_03C330_-120-277V.IES	ERL1_03C330_-347-480V.IES	ERL1_03C327_-120-277V.IES	ERL1_03C327_-347-480V.IES
	D3						B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_03D340_-120-277V.IES	ERL1_03D340_-347-480V.IES	ERL1_03D330_-120-277V.IES	ERL1_03D330_-347-480V.IES	ERL1_03D327_-120-277V.IES	ERL1_03D327--347-480V.IES
	E3						B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_03E340_-120-277V.IES	ERL1_03E340_-347-480V.IES	ERL1_03E330_-120-277V.IES	ERL1_03E330_-347-480V.IES	ERL1_03E327_-120-277V.IES	ERL1_03E327_-347-480V.IES
04	A3	4000	3900	3800	31	34	B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_04A340_-120-277V.IES	ERL1_04A340_-347-480V.IES	ERL1_04A330_-120-277V.IES	ERL1_04A330_-347-480V.IES	ERL1_04A327_-120-277V.IES	ERL1_04A327_-347-480V.IES
	B3						B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_04B340_-120-277V.IES	ERL1_04B340_-347-480V.IES	ERL1_04B330_-120-277V.IES	ERL1_04B330_-347-480V.IES	ERL1_04B327_-120-277V.IES	ERL1_04B327_-347-480V.IES
	C3						B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_04C340_-120-277V.IES	ERL1_04C340_-347-480V.IES	ERL1_04C330_-120-277V.IES	ERL1_04C330_-347-480V.IES	ERL1_04C327_-120-277V.IES	ERL1_04C327_-347-480V.IES
	D3						B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_04D340_-120-277V.IES	ERL1_04D340_-347-480V.IES	ERL1_04D330_-120-277V.IES	ERL1_04D330_-347-480V.IES	ERL1_04D327_-120-277V.IES	ERL1_04D327_-347-480V.IES
	E3						B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_04E340_-120-277V.IES	ERL1_04E340_-347-480V.IES	ERL1_04E330_-120-277V.IES	ERL1_04E330_-347-480V.IES	ERL1_04E327_-120-277V.IES	ERL1_04E327_-347-480V.IES
05	A3	5000	4900	4700	39	43	B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_05A340_-120-277V.IES	ERL1_05A340_-347-480V.IES	ERL1_05A330_-120-277V.IES	ERL1_05A330_-347-480V.IES	ERL1_05A327_-120-277V.IES	ERL1_05A327_-347-480V.IES
	B3						B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_05B340_-120-277V.IES	ERL1_05B340_-347-480V.IES	ERL1_05B330_-120-277V.IES	ERL1_05B330_-347-480V.IES	ERL1_05B327_-120-277V.IES	ERL1_05B327_-347-480V.IES
	C3						B1-U0-G2	B1-U0-G2	B1-U0-G2	ERL1_05C340_-120-277V.IES	ERL1_05C340_-347-480V.IES	ERL1_05C330_-120-277V.IES	ERL1_05C330_-347-480V.IES	ERL1_05C327_-120-277V.IES	ERL1_05C327_-347-480V.IES
	D3						B1-U0-G1	B1-U0-G1	B1-U0-G1	ERL1_05D340_-120-277V.IES	ERL1_05D340_-347-480V.IES	ERL1_05D330_-120-277V.IES	ERL1_05D330_-347-480V.IES	ERL1_05D327_-120-277V.IES	ERL1_05D327_-347-480V.IES
	E3						B2-U0-G2	B1-U0-G1	B1-U0-G1	ERL1_05E340_-120-277V.IES	ERL1_05E340_-347-480V.IES	ERL1_05E330_-120-277V.IES	ERL1_05E330_-347-480V.IES	ERL1_05E327_-120-277V.IES	ERL1_05E327_-347-480V.IES
06	A3	6000	5800	5700	47	52	B2-U0-G2	B2-U0-G2	B2-U0-G2	ERL1_06A340_-120-277V.IES	ERL1_06A340_-347-480V.IES	ERL1_06A330_-120-277V.IES	ERL1_06A330_-347-480V.IES	ERL1_06A327_-120-277V.IES	ERL1_06A327_-347-480V.IES
	B3						B1-U0-G2	B1-U0-G2	B1-U0-G2	ERL1_06B340_-120-277V.IES	ERL1_06B340_-347-480V.IES	ERL1_06B330_-120-277V.IES	ERL1_06B330_-347-480V.IES	ERL1_06B327_-120-277V.IES	ERL1_06B327_-347-480V.IES
	C3						B1-U0-G2	B1-U0-G2	B1-U0-G2	ERL1_06C340_-120-277V.IES	ERL1_06C340_-347-480V.IES	ERL1_06C330_-120-277V.IES	ERL1_06C330_-347-480V.IES	ERL1_06C327_-120-277V.IES	ERL1_06C327_-347-480V.IES
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2	ERL1_06D340_-120-277V.IES	ERL1_06D340_-347-480V.IES	ERL1_06D330_-120-277V.IES	ERL1_06D330_-347-480V.IES	ERL1_06D327_-120-277V.IES	ERL1_06D327_-347-480V.IES
	E3						B2-U0-G2	B2-U0-G2	B2-U0-G2	ERL1_06E340_-120-277V.IES	ERL1_06E340_-347-480V.IES	ERL1_06E330_-120-277V.IES	ERL1_06E330_-347-480V.IES	ERL1_06E327_-120-277V.IES	ERL1_06E327_-347-480V.IES
07	A3	7000	6800	6600	58		B2-U0-G2	B2-U0-G2	B2-U0-G2	ERL1_07A340____.IES		ERL1_07A330____.IES		ERL1_07A327____.IES	
	B3						B1-U0-G2	B1-U0-G2	B1-U0-G2	ERL1_07B340____.IES		ERL1_07B330____.IES		ERL1_07B327____.IES	
	C3						B1-U0-G2	B1-U0-G2	B1-U0-G2	ERL1_07C340____.IES		ERL1_07C330____.IES		ERL1_07C327____.IES	
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2	ERL1_07D340____.IES		ERL1_07D330____.IES		ERL1_07D327____.IES	
	E3						B2-U0-G2	B2-U0-G2	B2-U0-G2	ERL1_07E340____.IES		ERL1_07E330____.IES		ERL1_07E327____.IES	
08	A3	8000	7800	7600	71		B2-U0-G2	B2-U0-G2	B2-U0-G2	ERL1_08A340____.IES		ERL1_08A330____.IES		ERL1_08A327____.IES	
	B3						B2-U0-G2	B2-U0-G2	B2-U0-G2	ERL1_08B340____.IES		ERL1_08B330____.IES		ERL1_08B327____.IES	
	C3						B1-U0-G2	B1-U0-G2	B1-U0-G2	ERL1_08C340____.IES		ERL1_08C330____.IES		ERL1_08C327____.IES	
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2	ERL1_08D340____.IES		ERL1_08D330____.IES		ERL1_08D327____.IES	
	E3						B2-U0-G2	B2-U0-G2	B2-U0-G2	ERL1_08E340____.IES		ERL1_08E330____.IES		ERL1_08E327____.IES	
09	A3	9000	8800	8500	84		B2-U0-G2	B2-U0-G2	B2-U0-G2	ERL1_09A340____.IES		ERL1_09A330____.IES		ERL1_09A327____.IES	
	B3						B2-U0-G2	B2-U0-G2	B2-U0-G2	ERL1_09B340____.IES		ERL1_09B330____.IES		ERL1_09B327____.IES	
	C3						B2-U0-G2	B1-U0-G2	B1-U0-G2	ERL1_09C340____.IES		ERL1_09C330____.IES		ERL1_09C327____.IES	
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2	ERL1_09D340____.IES		ERL1_09D330____.IES		ERL1_09D327____.IES	
	E3						B2-U0-G2	B2-U0-G2	B2-U0-G2	ERL1_09E340____.IES		ERL1_09E330____.IES		ERL1_09E327____.IES	
10	A3	9800	9600	9250	97		B2-U0-G2	B2-U0-G2	B2-U0-G2	ERL1_10A340____.IES		ERL1_10A330____.IES		ERL1_10A327____.IES	
	B3						B2-U0-G2	B2-U0-G2	B2-U0-G2	ERL1_10B340____.IES		ERL1_10B330____.IES		ERL1_10B327____.IES	
	C3						B2-U0-G2	B2-U0-G2	B2-U0-G2	ERL1_10C340____.IES		ERL1_10C330____.IES		ERL1_10C327____.IES	
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2	ERL1_10D340____.IES		ERL1_10D330____.IES		ERL1_10D327____.IES	
	E3						B2-U0-G2	B2-U0-G2	B2-U0-G2	ERL1_10E340____.IES		ERL1_10E330____.IES		ERL1_10E327____.IES	

Photometrics:

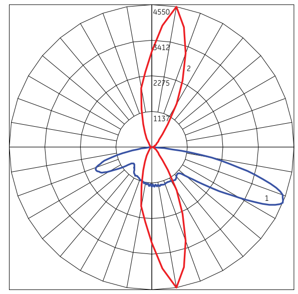
Evolve™ LED Streetlight (ERL1)

ERL1
Type II Narrow
(05A340)

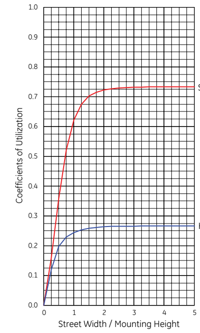
5,000 Lumens
4000K
ERL1_05A340___.IES



Grid Distance in Units of Mounting Height at 30'
Initial Footcandle Values at Grade

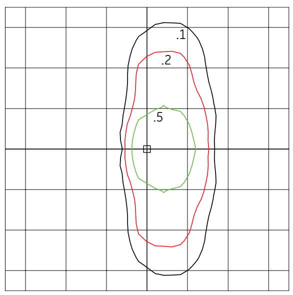


– Vertical plane through horizontal angle of Max. Cd at 80°
– Horizontal cone through vertical angle of Max. Cd at 67°

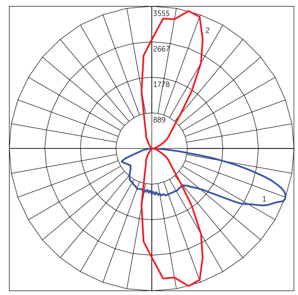


ERL1
Type II Wide
(05B340)

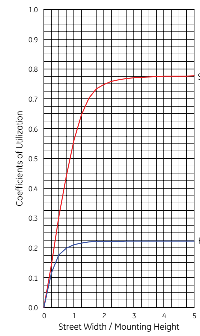
5,000 Lumens
4000K
ERL1_05B340___.IES



Grid Distance in Units of Mounting Height at 30'
Initial Footcandle Values at Grade

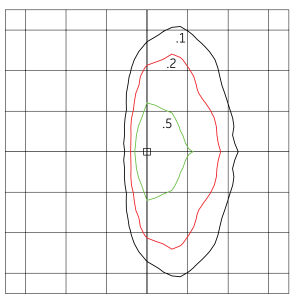


– Vertical plane through horizontal angle of Max. Cd at 75°
– Horizontal cone through vertical angle of Max. Cd at 69°

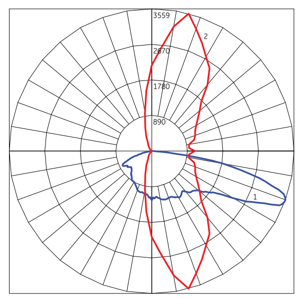


ERL1
Type III
((05C340)

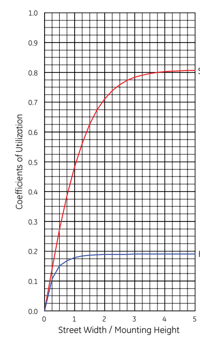
5,000 Lumens
4000K
ERL1_05C340___.IES



Grid Distance in Units of Mounting Height at 30'
Initial Footcandle Values at Grade

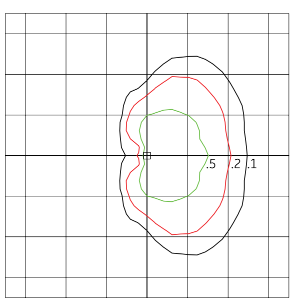


– Vertical plane through horizontal angle of Max. Cd at 75°
– Horizontal cone through vertical angle of Max. Cd at 70°

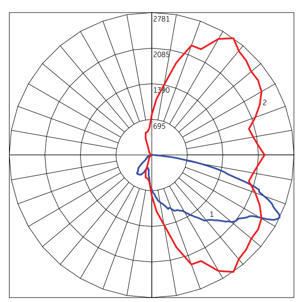


ERL1
Type IV
(05D340)

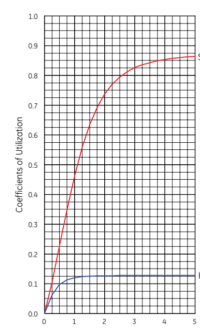
5,000 Lumens
4000K
ERL1_(05D340)___.IES



Grid Distance in Units of Mounting Height at 30'
Initial Footcandle Values at Grade

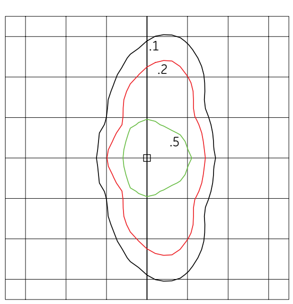


– Vertical plane through horizontal angle of Max. Cd at 55°
– Horizontal cone through vertical angle of Max. Cd at 64°

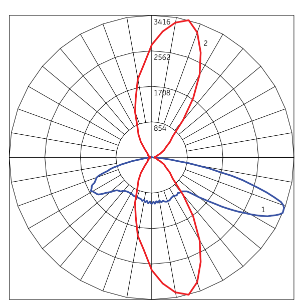


ERL1
Type II Enhanced Back Light
(05E340)

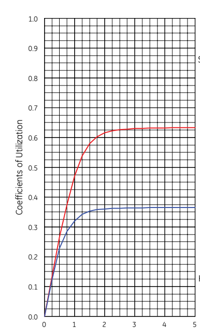
5,000 Lumens
4000K
ERL1_(05E340)___.IES



Grid Distance in Units of Mounting Height at 30'
Initial Footcandle Values at Grade



– Vertical plane through horizontal angle of Max. Cd at 75°
– Horizontal cone through vertical angle of Max. Cd at 67°



GE Evolve™

LED Roadway Lighting

ERL1-ERLH-ERL2

Project name ______________

Date ______________

Type ______________

E R L H

PROD. ID	VOLTAGE	LUMEN OUTPUT	DISTRIBUTION*	CCT	CONTROLS	COLOR	OPTIONS
E = Evolve **R** = Roadway **L** = Local **H** = High Output	**0** = 120-277V* **1** = 120 **2** = 208 **3** = 240 **4** = 277 **5** = 480 **D** = 347 **H** = 347-480*# * Not available with Fusing. Must choose a discrete voltage with F option. # **Not** available with E controls option.	**10** **11** **13** **14** **15** **16** See Table	**A3** = Type II Narrow **B3** = Type II Wide **C3** = Type III **D3** = Type IV **E3** = Type II Enhanced Back Light See Table *Nominal IES Type classing subject to typical variation, individual units may differ.	**30** = 3000K<> **40** = 4000K <>Select 3000K CCT for IDA approved units.	**A** = ANSI C136.41 7-pin **D** = ANSI C136.41 7-pin with Shorting Cap **E** = ANSI C136.41 7-pin with non-Dimming PE Control.* *PE Control Only available for 120-277V or 480V Discrete. Not available for 347-480V or 347V Discrete. **NOTE:** Dimming controls wired for 0-10V standard unless DALI option "U" requested.	**GRAY** = Gray **BLCK** = Black **DKBZ** = Dark Bronze	**A** = 4 Bolt Slipfitter † **F** = Fusing **G** = Internal Bubble Level **I** = IP66 Optical **L** = Tool-Less Entry **R** = Secondary 10kV/5kA SPD **T** = Secondary 20kV/10kA SPD **U** = DALI Programmable +^ **V1** = Variable Output via Field Adjustable Module** **X** = Single Package # **Y** = Coastal Finish* **XXX** = Special Options † Contact manufacturer for Lead-Time. # "X" option provides single pack box per fixture. Std Packaging = 20 units per Magna pak container. * Recommended for installations within 750 ft. from the coast. Contact Factory for Lead-Time. + Compatible with LightGrid 2.0 nodes. ^ Not available in 347V, 480V or 347-480V. ** Not available with DALI (U) option.

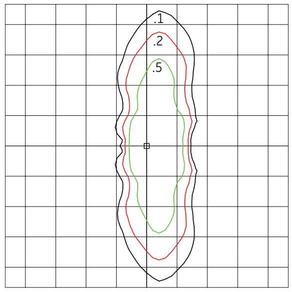
LUMEN OUTPUT	DISTRIBUTION	TYPICAL INITIAL LUMENS 4000K	TYPICAL INITIAL LUMENS 3000K	TYPICAL SYSTEM WATTAGE 120-277V	TYPICAL SYSTEM WATTAGE 347-480V	BUG RATING 4000K	BUG RATING 3000K	IES FILE NUMBER 4000K	IES FILE NUMBER 3000K
10	A3	10000	9600	82	82	B2-U0-G2	B2-U0-G2	ERLH_10A340____.IES	ERLH_10A330____.IES
	B3					B2-U0-G2	B2-U0-G2	ERLH_10B340____.IES	ERLH_10B330____.IES
	C3					B2-U0-G3	B2-U0-G2	ERLH_10C340____.IES	ERLH_10C330____.IES
	D3					B1-U0-G3	B1-U0-G2	ERLH_10D340____.IES	ERLH_10D330____.IES
	E3					B3-U0-G3	B3-U0-G3	ERLH_10E340____.IES	ERLH_10E330____.IES
11	A3	11500	11000	98	98	B3-U0-G3	B2-U0-G2	ERLH_11A340____.IES	ERLH_11A330____.IES
	B3					B3-U0-G3	B2-U0-G2	ERLH_11B340____.IES	ERLH_11B330____.IES
	C3					B2-U0-G3	B2-U0-G3	ERLH_11C340____.IES	ERLH_11C330____.IES
	D3					B1-U0-G3	B1-U0-G2	ERLH_11D340____.IES	ERLH_11D330____.IES
	E3					B3-U0-G3	B3-U0-G3	ERLH_11E340____.IES	ERLH_11E330____.IES
13	A3	13000	12500	111	111	B3-U0-G3	B3-U0-G3	ERLH_13A340____.IES	ERLH_13A330____.IES
	B3					B2-U0-G3	B2-U0-G3	ERLH_13B340____.IES	ERLH_13B330____.IES
	C3					B2-U0-G3	B2-U0-G3	ERLH_13C340____.IES	ERLH_13C330____.IES
	D3					B2-U0-G3	B2-U0-G3	ERLH_13D340____.IES	ERLH_13D330____.IES
	E3					B3-U0-G3	B3-U0-G3	ERLH_13E340____.IES	ERLH_13E330____.IES
14	A3	14000	13400	122	122	B3-U0-G3	B3-U0-G3	ERLH_14A340____.IES	ERLH_14A330____.IES
	B3					B2-U0-G3	B2-U0-G3	ERLH_14B340____.IES	ERLH_14B330____.IES
	C3					B2-U0-G3	B2-U0-G3	ERLH_14C340____.IES	ERLH_14C330____.IES
	D3					B2-U0-G3	B2-U0-G3	ERLH_14D340____.IES	ERLH_14D330____.IES
	E3					B3-U0-G3	B3-U0-G3	ERLH_14E340____.IES	ERLH_14E330____.IES
15	A3	15000	14400	136	136	B3-U0-G3	B3-U0-G3	ERLH_15A340____.IES	ERLH_15A330____.IES
	B3					B2-U0-G3	B2-U0-G3	ERLH_15B340____.IES	ERLH_15B330____.IES
	C3					B2-U0-G3	B2-U0-G3	ERLH_15C340____.IES	ERLH_15C330____.IES
	D3					B2-U0-G3	B2-U0-G3	ERLH_15D340____.IES	ERLH_15D330____.IES
	E3					B3-U0-G3	B3-U0-G3	ERLH_15E340____.IES	ERLH_15E330____.IES
16	A3	16000	15300	149	149	B3-U0-G3	B3-U0-G3	ERLH_16A340____.IES	ERLH_16A330____.IES
	B3					B3-U0-G3	B3-U0-G3	ERLH_16B340____.IES	ERLH_16B330____.IES
	C3					B2-U0-G3	B2-U0-G3	ERLH_16C340____.IES	ERLH_16C330____.IES
	D3					B2-U0-G3	B2-U0-G3	ERLH_16D340____.IES	ERLH_16D330____.IES
	E3					B3-U0-G3	B3-U0-G3	ERLH_16E340____.IES	ERLH_16E330____.IES

Photometrics:

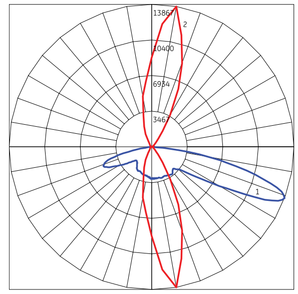
Evolve™ LED Streetlight (ERLH)

ERLH
Type II Narrow
(13A340)

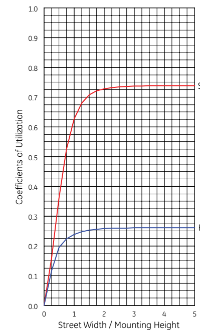
13,000 Lumens
4000K
ERLH_13A340___.IES



Grid Distance in Units of Mounting Height at 30'
Initial Footcandle Values at Grade

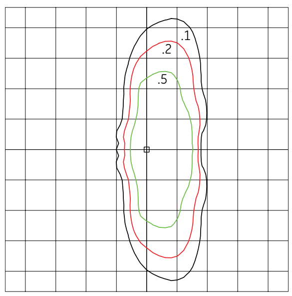


– Vertical plane through horizontal angle of Max. Cd at 80°
– Horizontal cone through vertical angle of Max. Cd at 69°

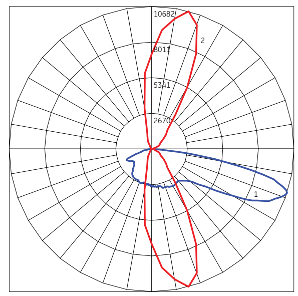


ERLH
Type II Wide
(13B340)

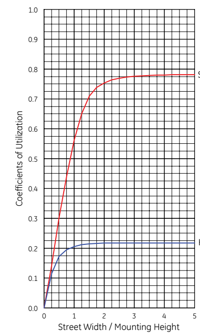
13,000 Lumens
4000K
ERLH_13B340___.IES



Grid Distance in Units of Mounting Height at 30'
Initial Footcandle Values at Grade

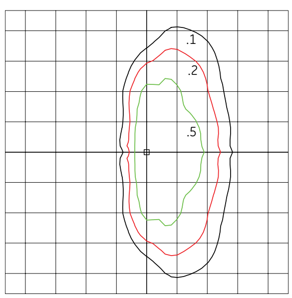


– Vertical plane through horizontal angle of Max. Cd at 75°
– Horizontal cone through vertical angle of Max. Cd at 72°

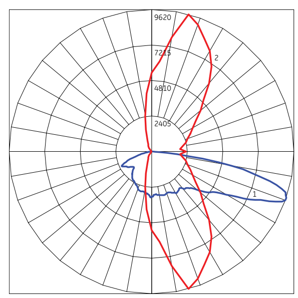


ERLH
Type III
(13C340)

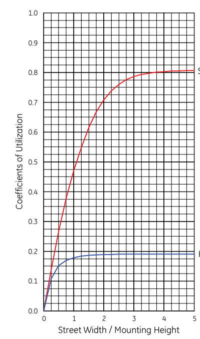
13,000 Lumens
4000K
ERLH_13C340___.IES



Grid Distance in Units of Mounting Height at 30'
Initial Footcandle Values at Grade

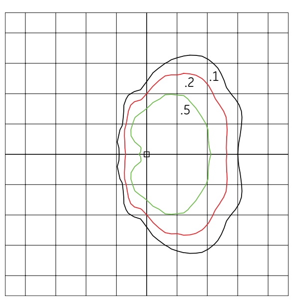


– Vertical plane through horizontal angle of Max. Cd at 75°
– Horizontal cone through vertical angle of Max. Cd at 71°

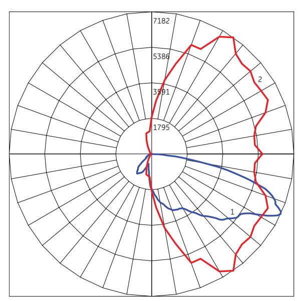


ERLH
Type IV
13D340

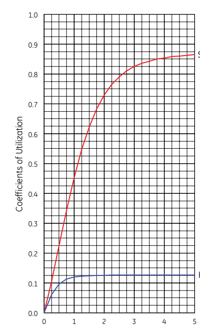
13,000 Lumens
4000K
ERLH_13D340___.IES



Grid Distance in Units of Mounting Height at 30'
Initial Footcandle Values at Grade

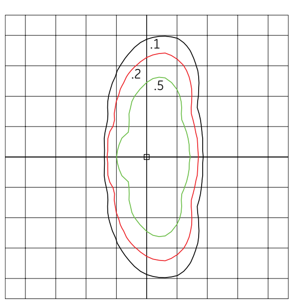


– Vertical plane through horizontal angle of Max. Cd at 55°
– Horizontal cone through vertical angle of Max. Cd at 65°

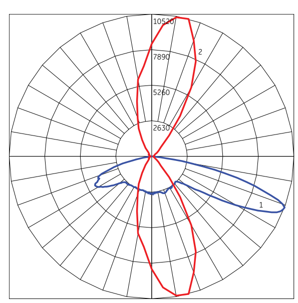


ERLH
Type II Enhanced Back Light
13E340

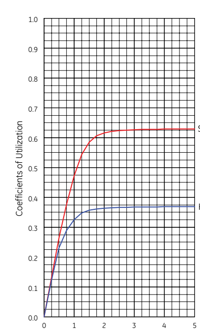
13,000 Lumens
4000K
ERLH_13E340___.IES



Grid Distance in Units of Mounting Height at 30'
Initial Footcandle Values at Grade



– Vertical plane through horizontal angle of Max. Cd at 75°
– Horizontal cone through vertical angle of Max. Cd at 69°



GE Evolve™

LED Roadway Lighting

ERL1-ERLH-ERL2

Project name ______________

Date ______________

Type ______________

E R L 2

_ _ _ _   _   _ _   _ _   _ _   _   _ _ _ _   _ _ _

PROD. ID	VOLTAGE	LUMEN OUTPUT	DISTRIBUTION*	CCT	CONTROLS	COLOR	OPTIONS
E = Evolve **R** = Roadway **L** = Local **2** = Double Module	**0** = 120-277V* **1** = 120 **2** = 208 **3** = 240 **4** = 277 **5** = 480 **D** = 347 **H** = 347-480*# * Not available with Fusing. Must choose a discrete voltage with F option. # **Not** available with E controls option.	**16** **18** **19** **21** **23** **25** **27** **28** **30** See Table	**A3** = Type II Narrow **B3** = Type II Wide **C3** = Type III **D3** = Type IV **E3** = Type II Enhanced Back Light See Table *Nominal IES Type classing subject to typical variation, individual units may differ.	**30** = 3000K<> **40** = 4000K **50** = 5000K* <> Select 3000K CCT for IDA approved units. *50 = 5200K for ERL2 lumen outputs 25, 27, 28, and 30.	**A** = ANSI C136.41 7-pin **D** = ANSI C136.41 7-pin with Shorting Cap **E** = ANSI C136.41 7-pin with non-Dimming PE Control.* *PE Control Only available for 120-277V or 480V Discrete. Not available for 347-480V or 347V Discrete. **NOTE:** Dimming controls wired for 0-10V standard unless DALI option "U" requested.	**GRAY** = Gray **BLCK** = Black **DKBZ** = Dark Bronze	**A** = 4 Bolt Slipfitter † **F** = Fusing **G** = Internal Bubble Level **I** = IP66 Optical **L** = Tool-Less Entry **R** = Secondary 10kV/5kA SPD **T** = Secondary 20kV/10kA SPD **U** = DALI Programmable ^ **V1** = Variable Output via Field Adjustable Module** **Y** = Coastal Finish* **XXX** = Special Options † Contact manufacturer for Lead-Time. * Recommended for installations within 750 ft. from the coast. Contact Factory for Lead-Time. + Compatible with LightGrid 2.0 nodes. ^ Not available in 347V, 480V or 347-480V. ** Not available with DALI (U) option.

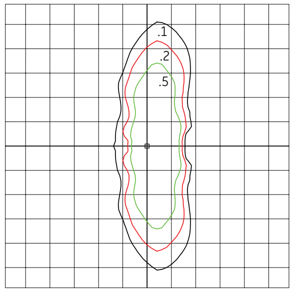
LUMEN OUTPUT	DISTRIBUTION	TYPICAL INITIAL LUMENS 4000K/ 5000-5200K	TYPICAL INITIAL LUMENS 3000K	TYPICAL SYSTEM WATTAGE 120-277V	TYPICAL SYSTEM WATTAGE 347-480V	BUG RATING 4000K	BUG RATING 3000K	IES FILE NUMBER 4000K 120-277V	IES FILE NUMBER 4000K 347-480V	IES FILE NUMBER 3000K 120-277V	IES FILE NUMBER 3000K 347-480V
16	A3	16000	15300	120	120	B3-U0-G3	B3-U0-G3	ERL2_16A340____.IES		ERL2_16A330____.IES	
	B3					B3-U0-G3	B3-U0-G3	ERL2_16B340____.IES		ERL2_16B330____.IES	
	C3					B2-U0-G3	B2-U0-G3	ERL2_16C340____.IES		ERL2_16C330____.IES	
	D3					B2-U0-G3	B2-U0-G3	ERL2_16D340____.IES		ERL2_16D330____.IES	
	E3					B3-U0-G3	B3-U0-G3	ERL2_16E340____.IES		ERL2_16E330____.IES	
18	A3	18000	17300	140	140	B3-U0-G3	B3-U0-G3	ERL2_18A340____.IES		ERL2_18A330____.IES	
	B3					B3-U0-G3	B3-U0-G3	ERL2_18B340____.IES		ERL2_18B330____.IES	
	C3					B2-U0-G3	B2-U0-G3	ERL2_18C340____.IES		ERL2_18C330____.IES	
	D3					B2-U0-G3	B2-U0-G3	ERL2_18D340____.IES		ERL2_18D330____.IES	
	E3					B3-U0-G3	B3-U0-G3	ERL2_18E340____.IES		ERL2_18E330____.IES	
19	A3	19000	18200	149	149	B3-U0-G3	B3-U0-G3	ERL2_19A340____.IES		ERL2_19A330____.IES	
	B3					B3-U0-G3	B3-U0-G3	ERL2_19B340____.IES		ERL2_19B330____.IES	
	C3					B3-U0-G3	B2-U0-G3	ERL2_19C340____.IES		ERL2_19C330____.IES	
	D3					B2-U0-G3	B2-U0-G3	ERL2_19D340____.IES		ERL2_19D330____.IES	
	E3					B3-U0-G3	B3-U0-G3	ERL2_19E340____.IES		ERL2_19E330____.IES	
21	A3	21000	20100	174	177	B3-U0-G3	B3-U0-G3	ERL2_21A340_-120-277V.IES	ERL2_21A340_-347-480V.IES	ERL2_21A330_-120-277V.IES	ERL2_21A330_-347-480V.IES
	B3					B3-U0-G3	B3-U0-G3	ERL2_21B340_-120-277V.IES	ERL2_21B340_-347-480V.IES	ERL2_21B330_-120-277V.IES	ERL2_21B330_-347-480V.IES
	C3					B3-U0-G4	B3-U0-G3	ERL2_21C340_-120-277V.IES	ERL2_21C340_-347-480V.IES	ERL2_21C330_-120-277V.IES	ERL2_21C330_-347-480V.IES
	D3					B2-U0-G3	B2-U0-G3	ERL2_21D340_-120-277V.IES	ERL2_21D340_-347-480V.IES	ERL2_21D330_-120-277V.IES	ERL2_21D330_-347-480V.IES
	E3					B3-U0-G3	B3-U0-G3	ERL2_21E340_-120-277V.IES	ERL2_21E340_-347-480V.IES	ERL2_21E330_-120-277V.IES	ERL2_21E330_-347-480V.IES
23	A3	23000	22100	194	196	B3-U0-G3	B3-U0-G3	ERL2_23A340_-120-277V.IES	ERL2_23A340_-347-480V.IES	ERL2_23A330_-120-277V.IES	ERL2_23A330_-347-480V.IES
	B3					B3-U0-G3	B3-U0-G3	ERL2_23B340_-120-277V.IES	ERL2_23B340_-347-480V.IES	ERL2_23B330_-120-277V.IES	ERL2_23B330_-347-480V.IES
	C3					B3-U0-G4	B3-U0-G4	ERL2_23C340_-120-277V.IES	ERL2_23C340_-347-480V.IES	ERL2_23C330_-120-277V.IES	ERL2_23C330_-347-480V.IES
	D3					B2-U0-G4	B2-U0-G4	ERL2_23D340_-120-277V.IES	ERL2_23D340_-347-480V.IES	ERL2_23D330_-120-277V.IES	ERL2_23D330_-347-480V.IES
	E3					B4-U0-G4	B3-U0-G3	ERL2_23E340_-120-277V.IES	ERL2_23E340_-347-480V.IES	ERL2_23E330_-120-277V.IES	ERL2_23E330_-347-480V.IES
25	A3	25000	24000	214	214	B3-U0-G3	B3-U0-G3	ERL2_25A340____.IES		ERL2_25A330____.IES	
	B3					B3-U0-G3	B3-U0-G3	ERL2_25B340____.IES		ERL2_25B330____.IES	
	C3					B3-U0-G4	B3-U0-G4	ERL2_25C340____.IES		ERL2_25C330____.IES	
	D3					B2-U0-G4	B2-U0-G4	ERL2_25D340____.IES		ERL2_25D330____.IES	
	E3					B4-U0-G4	B4-U0-G4	ERL2_25E340____.IES		ERL2_25E330____.IES	
27	A3	27000	25900	237	237	B3-U0-G3	B3-U0-G3	ERL2_27A340____.IES		ERL2_27A330____.IES	
	B3					B3-U0-G4	B3-U0-G4	ERL2_27B340____.IES		ERL2_27B330____.IES	
	C3					B3-U0-G4	B3-U0-G4	ERL2_27C340____.IES		ERL2_27C330____.IES	
	D3					B2-U0-G4	B2-U0-G4	ERL2_27D340____.IES		ERL2_27D330____.IES	
	E3					B4-U0-G4	B4-U0-G4	ERL2_27E340____.IES		ERL2_27E330____.IES	
28	A3	28000	26900	251	251	B3-U0-G3	B3-U0-G3	ERL2_28A340____.IES		ERL2_28A330____.IES	
	B3					B3-U0-G4	B3-U0-G4	ERL2_28B340____.IES		ERL2_28B330____.IES	
	C3					B3-U0-G4	B3-U0-G4	ERL2_28C340____.IES		ERL2_28C330____.IES	
	D3					B2-U0-G4	B2-U0-G4	ERL2_28D340____.IES		ERL2_28D330____.IES	
	E3					B4-U0-G4	B4-U0-G4	ERL2_28E340____.IES		ERL2_28E330____.IES	
30	A3	30000	28800	278	278	B4-U0-G4	B4-U0-G4	ERL2_30A340____.IES		ERL2_30A330____.IES	
	B3					B3-U0-G4	B3-U0-G4	ERL2_30B340____.IES		ERL2_30B330____.IES	
	C3					B3-U0-G4	B3-U0-G4	ERL2_30C340____.IES		ERL2_30C330____.IES	
	D3					B2-U0-G4	B2-U0-G4	ERL2_30D340____.IES		ERL2_30D330____.IES	
	E3					B4-U0-G4	B4-U0-G4	ERL2_30E340____.IES		ERL2_30E330____.IES	

Photometrics:

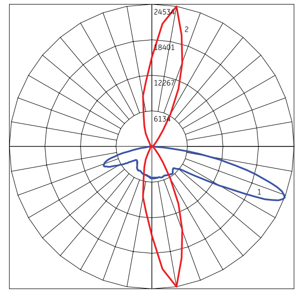
Evolve™ LED Streetlight (ERL2)

ERL2
Type II Narrow
(23A340)

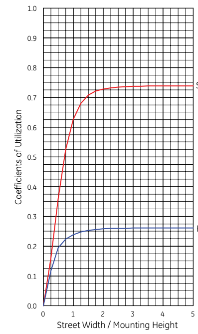
23,000 Lumens
4000K
ERL2_23A340___.IES



Grid Distance in Units of Mounting Height at 30'
Initial Footcandle Values at Grade

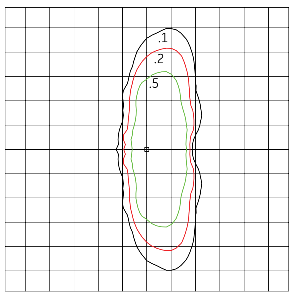


– Vertical plane through horizontal angle of Max. Cd at 80°
– Horizontal cone through vertical angle of Max. Cd at 69°

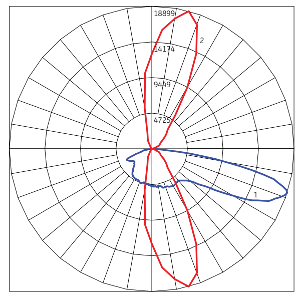


ERL2
Type II Wide
(23B340)

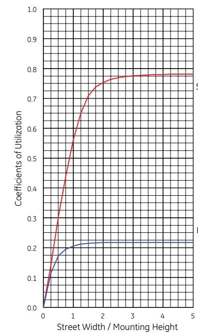
23,000 Lumens
4000K
ERL2_23B340___.IES



Grid Distance in Units of Mounting Height at 30'
Initial Footcandle Values at Grade

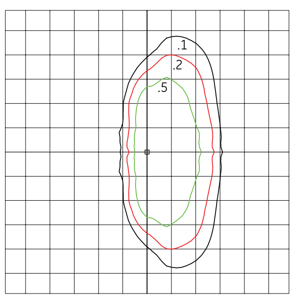


– Vertical plane through horizontal angle of Max. Cd at 75°
– Horizontal cone through vertical angle of Max. Cd at 72°

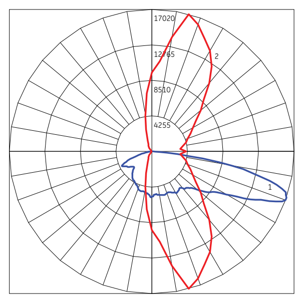


ERL2
Type III
(23C340)

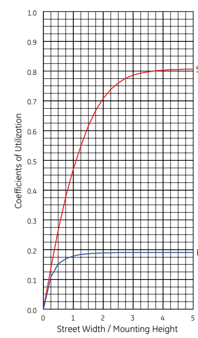
23,000 Lumens
4000K
ERL2_23C340___.IES



Grid Distance in Units of Mounting Height at 30'
Initial Footcandle Values at Grade

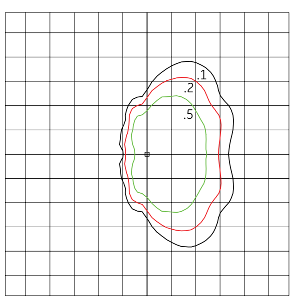


– Vertical plane through horizontal angle of Max. Cd at 75°
– Horizontal cone through vertical angle of Max. Cd at 71°

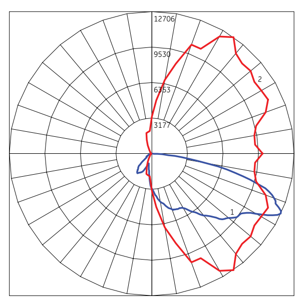


ERL2
Type IV
(23D340)

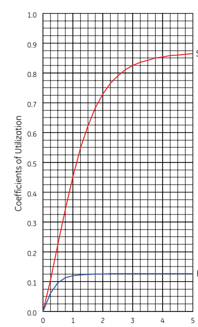
23,000 Lumens
4000K
ERL2_23D340___.IES



Grid Distance in Units of Mounting Height at 30'
Initial Footcandle Values at Grade

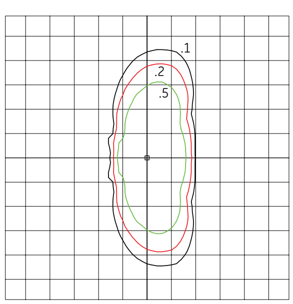


– Vertical plane through horizontal angle of Max. Cd at 55°
– Horizontal cone through vertical angle of Max. Cd at 65°

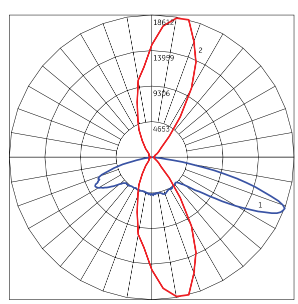


ERL2
Type II Enhanced Back Light
(23E340)

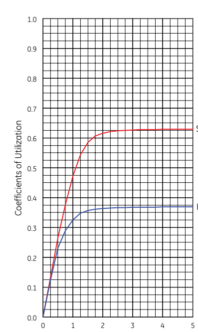
23,000 Lumens
4000K
ERL2_23E340___.IES



Grid Distance in Units of Mounting Height at 30'
Initial Footcandle Values at Grade



– Vertical plane through horizontal angle of Max. Cd at 75°
– Horizontal cone through vertical angle of Max. Cd at 69°



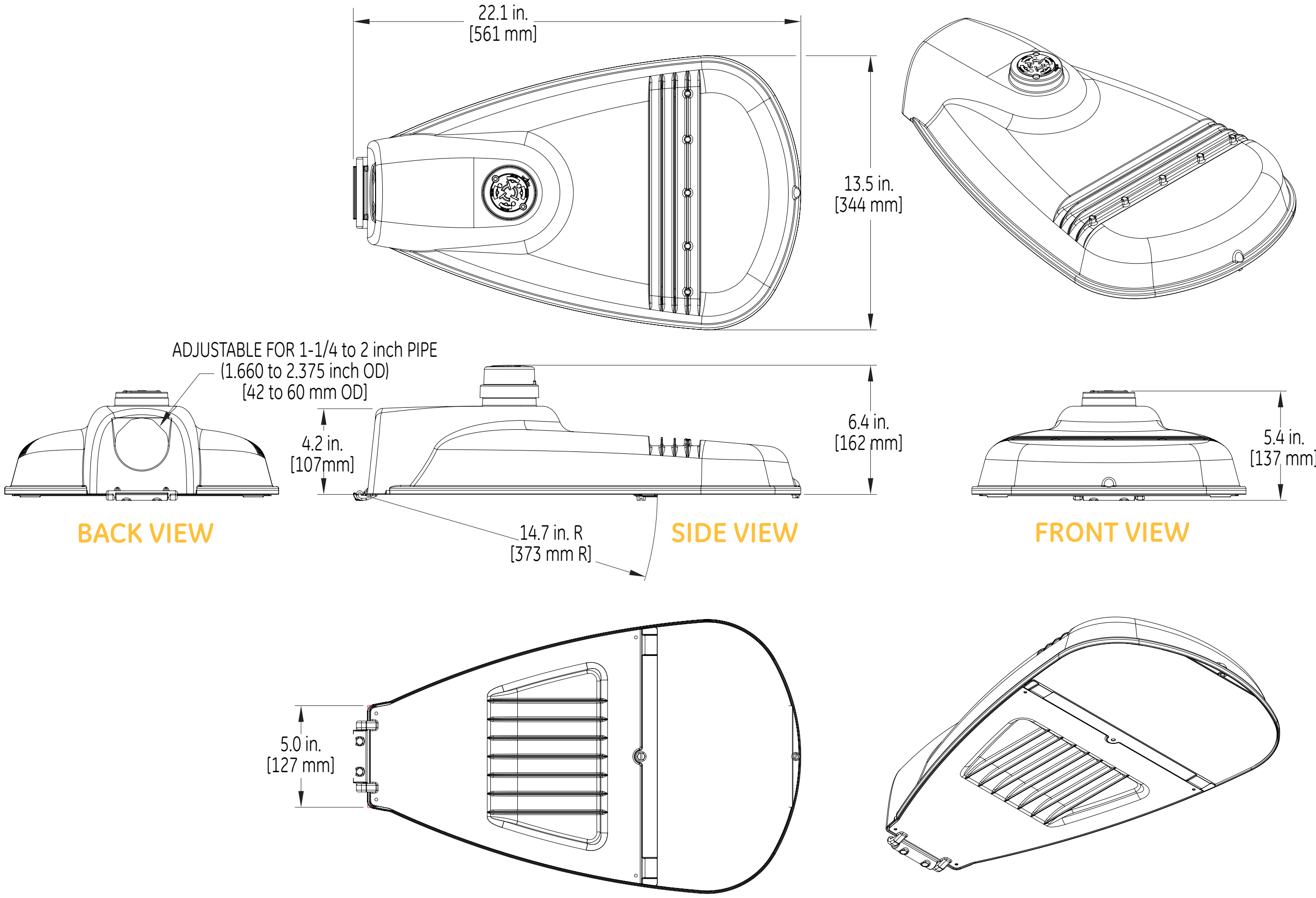
GE Evolve™

LED Roadway Lighting

ERL1-ERLH-ERL2

Product Dimensions:

Evolve™ LED Streetlight (ERL1)



DATA

- Approximate net weight: 12.4 lbs (5.6kgs) -15.5 lbs (7.0kgs) with XFMR
- Effective Projected Area (EPA): 0.5 sq ft max (0.046 sq m)

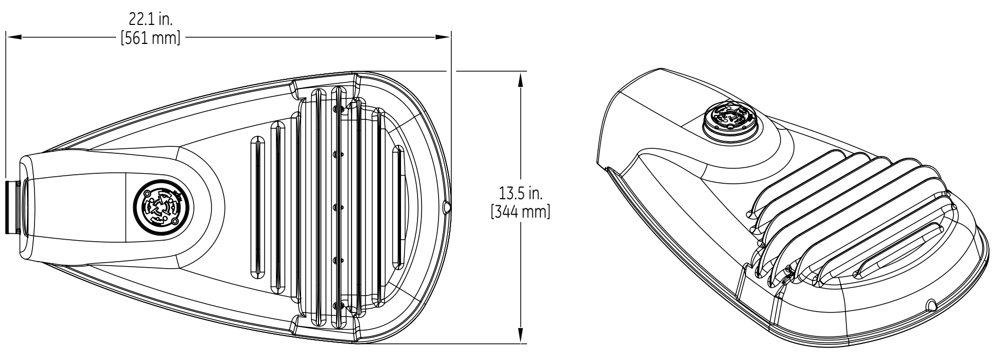
GE Evolve™

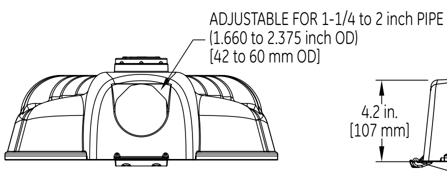
LED Roadway Lighting

ERL1-ERLH-ERL2

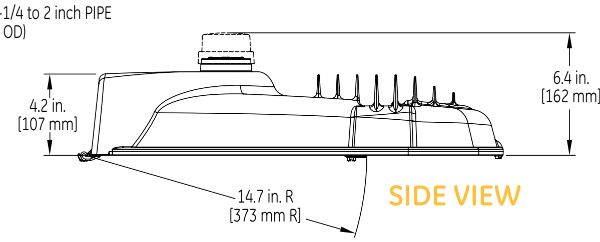
Product Dimensions:

Evolve™ LED Streetlight (ERLH)

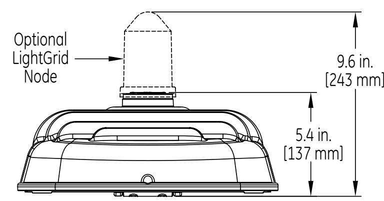




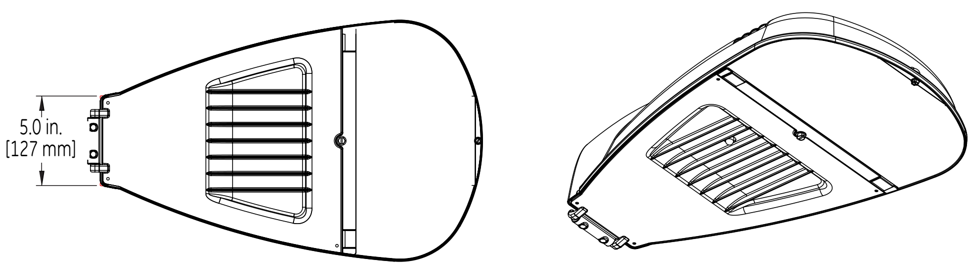
BACK VIEW



SIDE VIEW



FRONT VIEW



DATA	
	• Approximate net weight: 15.15 lbs (6.9 kgs) - 2 Bolt Slipfitter • Approximate net weight: 15.85 lbs (7.2 kgs) - 4 Bolt Slipfitter • Effective Projected Area (EPA): 0.5 sq ft max (0.046 sq m)

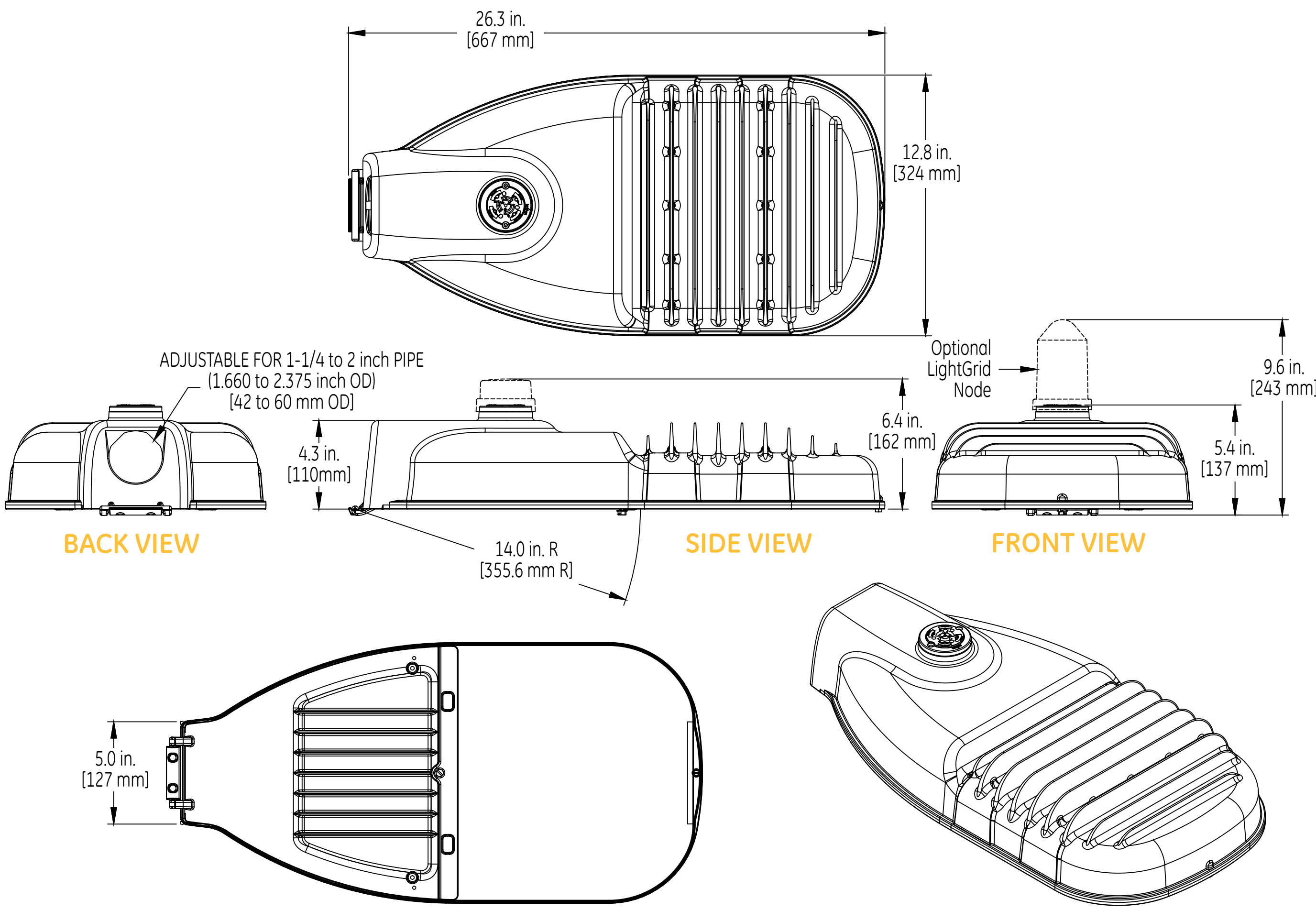
GE Evolve™

LED Roadway Lighting

ERL1-ERLH-ERL2

Product Dimensions:

Evolve™ LED Streetlight (ERL2)



DATA

- Approximate net weight: 24.0 lbs (10.9 kgs)
  Contact manufacturer for specific configuration weight.
- Effective Projected Area (EPA): 0.57 sq ft max (0.053 sq m)

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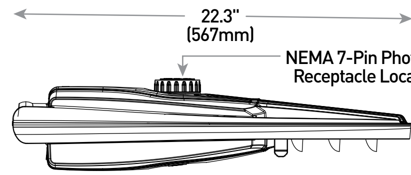
XSP Series

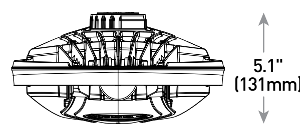
XSPSM LED Street/Area Luminaire - Small

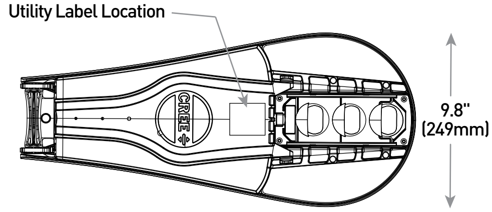
Product Description

In addition to a low initial cost, the XSPSM LED Street/Area luminaire maintains the familiar look of the traditional cobrahead design and delivers substantial energy savings while reducing maintenance time and costs. The hassle-free design of the XSP small luminaire includes tool-less entry and +/- 5˚ fixture leveling for easy installation. Our NanoOptic® Precision Delivery Grid™ optic achieves better optical control than traditional street and area lighting fixtures and efficiently delivers white uniform light for safer-feeling communities.
Applications: Residential roads, collector roads, parking lots, and general area spaces

8L Luminaire Shown







Performance Summary

NanoOptic® Precision Delivery Grid™ optic
Assembled in the U.S.A. of U.S. and imported parts
Initial Delivered Lumens: Up to 7,825
Efficacy: Up to 113 LPW
CRI: Minimum 70 CRI
CCT: 2700K, 3000K, 4000K, 5000K, 5700K
Limited Warranty†: 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

† See http://lighting.cree.com/warranty for warranty terms

Accessories

Field-Installed
Backlight Control Shield XA-SPR3BLS - Provides 1 mounting height cutoff - Polycarbonate construction - Refer to initial delivered lumen tables for lumen output

Lumen Packages	Weight
5L	9.0 lbs. (4.1kg)
8L	9.2 lbs. (4.2kg)

Ordering Information

Example: XSPSM-D-HT-2LG-5L-27K7-UL-SV-N

XSPSM	D	HT					SV	N	
Product	**Version**	**Mounting**	**Optic**	**Lumen Package****	**CCT/CRI**	**Voltage**	**Color Options**	**Utility Label/ Receptacle**	**Options**
XSPSM	**D**	**HT** Horizontal Tenon	**Asymmetric** **2LG*** Type II Long **2ME*** Type II Medium **3ME*** Type III Medium **4ME*** Type IV Medium	**5L** 5,000 Lumens **8L** 8,000 Lumens	**27K7** 2700K, 70 CRI **30K7** 3000K, 70 CRI **40K7** 4000K, 70 CRI **50K7** 5000K, 70 CRI **57K7** 5700K, 70 CRI	**UL** Universal 120-277V **UH** Universal 347-480V	**SV** Silver	**N** **Utility Label and NEMA® 7-Pin Photocell Receptacle** - External wattage label per ANSI C136.15 - 7-pin receptacle per ANSI C136.41 - Factory connected 0-10V dim leads - Photocell or shorting cap by others	**Q9/Q8/Q7/Q6/Q5/Q4/Q3/Q2/Q1** **Field Adjustable Output** - Must select Q9, Q8, Q7, Q6, Q5, Q4, Q3, Q2, or Q1 - Offers full range lumen adjustability - Includes wattage label for setting selected - Refer to pages 8 & 9 for power and lumen values - Luminaire may also be dimmed through 7-Pin receptacle with use of dimming control by others **X8/X7/X6/X5/X4/X3/X2/X1** **Locked Lumen Output** - Must select X8, X7, X6, X5, X4, X3, X2, or X1 - Lumen output is permanently locked to the setting selected - Includes wattage label for setting selected - Refer to pages 8 & 9 for power and lumen values - Dimming is only available through 7-Pin receptacle with use of dimming control by others

* Available with Backlight Shield when ordered with field-installed accessory (see table above)
** Lumen Package codes identify approximate light output only. Actual lumen output levels may vary depending on CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values

Product Specifications

CONSTRUCTION & MATERIALS

- Die cast aluminum housing w/UV stabilized polymeric door for long weathering and reliability
- Tool-less entry
- Mounts on 1.25" (32mm) IP, 1.66" (42mm) O.D. or 2" (51mm) IP, 2.375" (60mm) O.D. horizontal tenon (minimum 8" (203mm) in length) and is adjustable +/- 5° to allow for fixture leveling (includes two axis T-level to aid in leveling)
- Luminaire secures with two 410 stainless steel mounting bolts
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable silver powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion
- **Weight:** 5L: 9.0 lbs. (4.1kg); 8L: 9.2 lbs. (4.2kg)

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V or 347-480V, 50/60Hz
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush
- Designed with 0-10V dimming capabilities. Controls by others
- **10V Source Current:** 0.15mA
- **Operating Temperature Range:** -40°C - +40°C (-40°F - +104°F)

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Certified to ANSI C136.31-2001, 3G bridge and overpass vibration standards
- Meets CALTrans 611 Vibration testing
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Meets Buy American requirements within ARRA
- RoHS compliant. Consult factory for additional details
- Dark Sky Friendly, IDA Approved when ordered with 27K7 or 30K7 CCTs. Please refer to http://darksky.org/fsa/fsa-products/ for most current information
- DLC and DLC Premium qualified versions available. Please refer to https://www.designlights.org/search/ for most current information

Electrical Data*

Lumen Package	Optics	CCT/ CRI	System Watts 120-480V	Utility Label Wattage	Total Current (A)					
					120V	208V	240V	277V	347V	480V
5L	All	All	47	50	0.40	0.23	0.20	0.17	0.14	0.10
8L	All	All	69	70	0.58	0.34	0.29	0.26	0.20	0.15

* Electrical data at 25°C (77°F). Actual wattage may differ by +/- 10% when operating between 120-277V or 347-480V +/- 10%.

XSPSM Series Ambient Adjusted Lumen Maintenance[1]

Ambient	Initial LMF	25K hr Projected[2] LMF	50K hr Projected[2] LMF	75K hr Calculated[3] LMF	100K hr Calculated[3] LMF
5°C (41°F)	1.03	1.03	1.03	1.03	1.03
10°C (50°F)	1.03	1.03	1.03	1.03	1.03
15°C (59°F)	1.02	1.02	1.02	1.02	1.02
20°C (68°F)	1.01	1.01	1.01	1.01	1.01
25°C (77°F)	1.00	1.00	1.00	1.00	1.00

[1] Lumen maintenance values at 25°C (77°F) are calculated per TM-21 based on LM-80 data and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors. Please refer to the Temperature Zone Reference Document for outdoor average nighttime ambient conditions
[2] In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip)
[3] In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip)

Photometry

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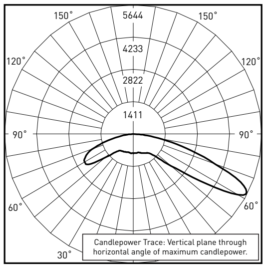
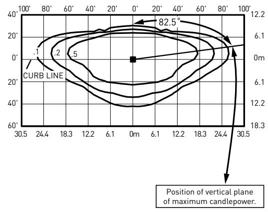
2LG



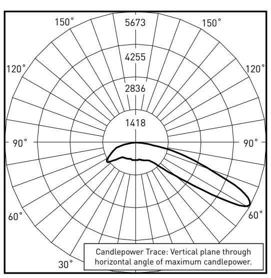
RESTL Test Report #: PL12486-001B
XSPSM-D-**-2LG-5L-40K7-UL-SV-N
Initial Delivered Lumens: 5,168



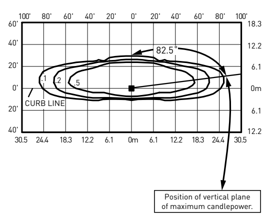
XSPSM-D-**-2LG-5L-40K7-UL-SV-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 5,200
Initial FC at grade

Type II Long Distribution										
Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
5L	4,930	B2 U0 G2	5,075	B2 U0 G2	5,200	B2 U0 G2	5,225	B2 U0 G2	5,225	B2 U0 G2
8L	7,375	B2 U0 G2	7,575	B2 U0 G2	7,775	B2 U0 G2	7,825	B2 U0 G2	7,825	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf



RESTL Test Report #: PL12762-001B
XSPSM-D-**-2LG-5L-40K7-UL-SV-N
w/XA-SPR3BLS
Initial Delivered Lumens: 3,651



XSPSM-D-**-2LG-5L-40K7-UL-SV-N
w/XA-SPR3BLS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 3,690
Initial FC at grade

Type II Long w/BLS Distribution										
Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
5L	3,500	B1 U0 G1	3,600	B1 U0 G1	3,690	B1 U0 G1	3,710	B1 U0 G1	3,710	B1 U0 G1
8L	5,225	B1 U0 G1	5,375	B1 U0 G1	5,525	B1 U0 G1	5,550	B1 U0 G1	5,550	B1 U0 G1

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
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Photometry

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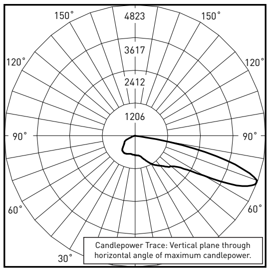
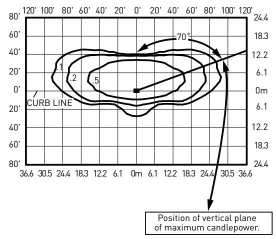
2ME



RESTL Test Report #: PL12483-001B
XSPSM-D-**-2ME-5L-40K7-UL-SV-N
Initial Delivered Lumens: 5,221



XSPSM-D-**-2ME-5L-40K7-UL-SV-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 5,200
Initial FC at grade

Type II Medium Distribution

Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
5L	4,930	B1 U0 G1	5,075	B1 U0 G1	5,200	B1 U0 G1	5,225	B1 U0 G1	5,225	B1 U0 G1
8L	7,375	B1 U0 G2	7,575	B1 U0 G2	7,775	B2 U0 G2	7,825	B2 U0 G2	7,825	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
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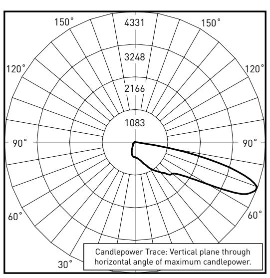
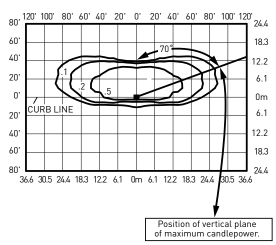


RESTL Test Report #: PL12759-001B
XSPSM-D-**-2ME-5L-40K7-UL-SV-N
w/XA-SPR3BLS
Initial Delivered Lumens: 4,193



XSPSM-D-**-2ME-5L-40K7-UL-SV-N
w/XA-SPR3BLS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 4,160
Initial FC at grade

Type II Medium w/BLS Distribution

Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
5L	3,940	B0 U0 G1	4,060	B0 U0 G1	4,160	B0 U0 G1	4,180	B0 U0 G1	4,180	B0 U0 G1
8L	5,900	B1 U0 G2	6,050	B1 U0 G2	6,225	B1 U0 G2	6,250	B1 U0 G2	6,250	B1 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
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Photometry

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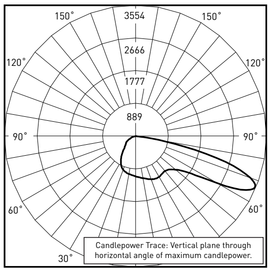
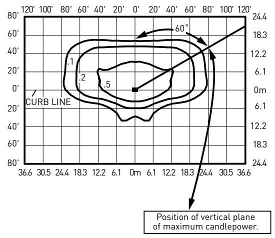
3ME



RESTL Test Report #: PL12484-001B
XSPSM-D-**-3ME-5L-40K7-UL-SV-N
Initial Delivered Lumens: 5,145



XSPSM-D-**-3ME-5L-40K7-UL-SV-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 5,200
Initial FC at grade

Type III Medium Distribution

Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
5L	4,930	B1 U0 G1	5,075	B1 U0 G1	5,200	B1 U0 G1	5,225	B1 U0 G1	5,225	B1 U0 G1
8L	7,375	B2 U0 G2	7,575	B2 U0 G2	7,775	B2 U0 G2	7,825	B2 U0 G2	7,825	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
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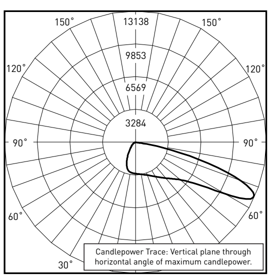
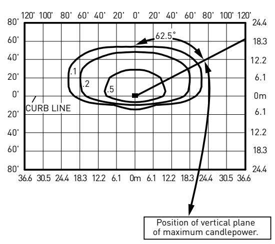


RESTL Test Report #: PL12765-002B
XSPLG-D-**-3ME-24L-40K7-UL-SV-N
w/XA-SP2BLS
Initial Delivered Lumens: 16,503



XSPSM-D-**-3ME-5L-40K7-UL-SV-N
w/XA-SPR3BLS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 3,690
Initial FC at grade

Type III Medium w/BLS Distribution

Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
5L	3,500	B1 U0 G1	3,600	B1 U0 G1	3,690	B1 U0 G1	3,710	B1 U0 G1	3,710	B1 U0 G1
8L	5,225	B1 U0 G2	5,375	B1 U0 G2	5,525	B1 U0 G2	5,550	B1 U0 G2	5,550	B1 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
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Photometry

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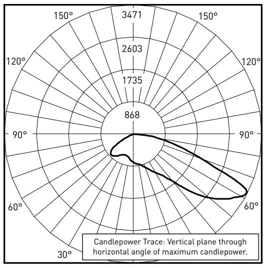
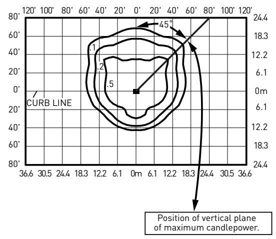
4ME



RESTL Test Report #: PL12485-001B
XSPSM-D-**-4ME-5L-40K7-UL-SV-N
Initial Delivered Lumens: 5,256



XSPSM-D-**-4ME-5L-40K7-UL-SV-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 5,200
Initial FC at grade

Type IV Medium Distribution										
Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
5L	4,930	B2 U0 G1	5,075	B2 U0 G1	5,200	B2 U0 G1	5,225	B2 U0 G1	5,225	B2 U0 G1
8L	7,375	B2 U0 G2	7,575	B2 U0 G2	7,775	B2 U0 G2	7,825	B2 U0 G2	7,825	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
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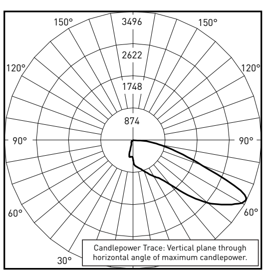
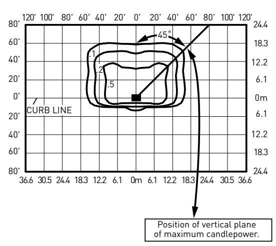


RESTL Test Report #: PL12761-001B
XSPSM-D-**-4ME-5L-40K7-UL-SV-N
w/XA-SPR3BLS
Initial Delivered Lumens: 3,899

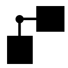
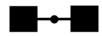
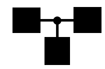
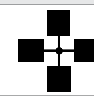


XSPSM-D-**-4ME-5L-40K7-UL-SV-N
w/XA-SPR3BLS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 3,850
Initial FC at grade

Type IV Medium w/BLS Distribution										
Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
5L	3,650	B1 U0 G1	3,760	B1 U0 G1	3,850	B1 U0 G1	3,870	B1 U0 G1	3,870	B1 U0 G1
8L	5,450	B1 U0 G2	5,600	B1 U0 G2	5,750	B1 U0 G2	5,800	B1 U0 G2	5,800	B1 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf

Luminaire EPA

Horizontal Tenon Mount – Weight: 5L: 9.0 lbs. (4.1kg); **8L:** 9.2 lbs. (4.2kg)				
Single	2 @ 90°	2 @ 180°	3 @ 90°	4 @ 90°
Tenon Configuration If used with Cree tenons, please add tenon EPA with luminaire EPA				
				
PD-1H4; PT-1H	PD-2H4(90); PT-2H(90)	PD-2H4(180); PT-2H(180)	PD-3H4(90); PT-3H(90)	PD-4H4(90); PT-4H(90)
0.57	0.85	1.14	1.42	1.56

Tenon EPA

Part Number	EPA
PD Series Tenons	0.09
PT Series Tenons	0.10
WM-2L	0.13
XA-TMDA8	0.19

Tenons and Brackets‡ (must specify color)

Square Internal Mount Horizontal Tenons (Aluminum)
- Mounts to 4" (102mm) square aluminum or steel poles

PD-1H4 – Single
PD-2H4(90) – 90° Twin
PD-2H4(180) – 180° Twin
PD-3H4(90) – 90° Triple
PD-4H4(90) – 90° Quad

Wall Mount Brackets
- Mounts to wall or roof

WM-2L – Extended Horizontal

Round External Mount Horizontal Tenons (Aluminum)
- Mounts to 2.375"-3" (60-76mm) O.D. round aluminum or steel poles or tenons
- Mounts to 3" (76mm), 4" (102mm), 5" (127mm), or 6" (152mm) square pole with PB-1A* tenon

PT-1H – Single
PT-2H(90) – 90° Twin
PT-2H(180) – 180° Twin
PT-3H(90) – 90° Triple
PT-4H(90) – 90° Quad

Direct Arm Pole Adaptor Bracket
- Mounts to 3-6" (76-152mm) round or square aluminum or steel poles

XA-TMDA8

‡ Refer to the Bracket and Tenons spec sheet for more details
* Specify pole size: 3 (3"), 4 (4"), 5 (5"), or 6 (6") for single, double or triple luminaire orientation or 4 (4"), 5 (5") or 6 (6") for quad luminaire orientation

Field Adjustable Output (Q9/Q8/Q7/Q6/Q5/Q4/Q3/Q2/Q1) Option Description:

The Field Adjustable Output option enables the street and area luminaire within the XSP Series on this page to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected lumen output, will be fully adjustable between the outputs, and will include a wattage label that indicates the wattage of the luminaire at the selected lumen output (Rounded to nearest 10 watts per ANSI C136.15-2015.). Additional dimming functionality is available when a dimming control (by others) is used in the 7-Pin receptacle.

Locked Lumen Output (X8/X7/X6/X5/X4/X3/X2/X1) Option Description:

The Locked Lumen Output option on this page permanently locks the lumen output on the XSP Series street and area luminaire to the setting selected. When ordered with the X option, the luminaire will be shipped from the factory at the lumen output setting selected, and will include a wattage label that indicates the wattage of the setting selected. When this option is selected, the luminaire output is not able to be adjusted in the field except if a dimming control (by others) is used in the 7-Pin receptacle.

Q & X Option Power & Lumen Data – 5L

Q Option Setting	X Option Setting	CCT/CRI	System Watts†	Label Wattage	Lumen Values†					Optics Qualified on DLC QPL	
			120-480V		2LG/2ME/3ME/4ME	2LG w/BLS	2ME w/BLS	3ME w/BLS	4ME w/BLS	Standard	Premium
Q9	N/A (Full Power)	27K7	47	50	4,930	3,500	3,940	3,500	3,650		2LG, 2ME, 3ME, 4ME
		30K7			5,075	3,600	4,060	3,600	3,760	2LG, 2ME, 3ME, 4ME	
		40K7			5,200	3,690	4,160	3,690	3,850		2LG, 2ME, 3ME, 4ME
		50K7			5,225	3,710	4,180	3,710	3,870		2LG, 2ME, 3ME, 4ME
		57K7			5,225	3,710	4,180	3,710	3,870		2LG, 2ME, 3ME, 4ME
Q8	X8	27K7	44	40	4,780	3,390	3,820	3,390	3,540		2LG, 2ME, 3ME, 4ME
		30K7			4,910	3,490	3,930	3,490	3,630		2LG, 2ME, 3ME, 4ME
		40K7			5,050	3,590	4,040	3,590	3,740		2LG, 2ME, 3ME, 4ME
		50K7			5,075	3,600	4,060	3,600	3,760		2LG, 2ME, 3ME, 4ME
		57K7			5,075	3,600	4,060	3,600	3,760		2LG, 2ME, 3ME, 4ME
Q7	X7	27K7	42	40	4,580	3,250	3,660	3,250	3,390		2LG, 2ME, 3ME, 4ME
		30K7			4,710	3,340	3,770	3,340	3,490		2LG, 2ME, 3ME, 4ME
		40K7			4,830	3,430	3,860	3,430	3,570		2LG, 2ME, 3ME, 4ME
		50K7			4,860	3,450	3,890	3,450	3,600		2LG, 2ME, 3ME, 4ME
		57K7			4,860	3,450	3,890	3,450	3,600		2LG, 2ME, 3ME, 4ME
Q6	X6	27K7	40	40	4,450	3,160	3,560	3,160	3,290		2LG, 2ME, 3ME, 4ME
		30K7			4,570	3,240	3,660	3,240	3,380		2LG, 2ME, 3ME, 4ME
		40K7			4,690	3,330	3,750	3,330	3,470		2LG, 2ME, 3ME, 4ME
		50K7			4,720	3,350	3,780	3,350	3,490		2LG, 2ME, 3ME, 4ME
		57K7			4,720	3,350	3,780	3,350	3,490		2LG, 2ME, 3ME, 4ME
Q5	X5	27K7	37	40	4,125	2,930	3,300	2,930	3,050		2LG, 2ME, 3ME, 4ME
		30K7			4,250	3,020	3,400	3,020	3,150		2LG, 2ME, 3ME, 4ME
		40K7			4,350	3,090	3,480	3,090	3,220		2LG, 2ME, 3ME, 4ME
		50K7			4,375	3,110	3,500	3,110	3,240		2LG, 2ME, 3ME, 4ME
		57K7			4,375	3,110	3,500	3,110	3,240		2LG, 2ME, 3ME, 4ME
Q4	X4	27K7	33	30	3,800	2,700	3,040	2,700	2,810		2LG, 2ME, 3ME, 4ME
		30K7			3,925	2,790	3,140	2,790	2,900		2LG, 2ME, 3ME, 4ME
		40K7			4,025	2,860	3,220	2,860	2,980		2LG, 2ME, 3ME, 4ME
		50K7			4,050	2,880	3,240	2,880	3,000		2LG, 2ME, 3ME, 4ME
		57K7			4,050	2,880	3,240	2,880	3,000		2LG, 2ME, 3ME, 4ME
Q3	X3	27K7	30	30	3,480	2,470	2,780	2,470	2,580		2LG, 2ME, 3ME, 4ME
		30K7			3,580	2,540	2,860	2,540	2,650		2LG, 2ME, 3ME, 4ME
		40K7			3,670	2,610	2,940	2,610	2,720		2LG, 2ME, 3ME, 4ME
		50K7			3,700	2,630	2,960	2,630	2,740		2LG, 2ME, 3ME, 4ME
		57K7			3,700	2,630	2,960	2,630	2,740		2LG, 2ME, 3ME, 4ME
Q2	X2	27K7	27	30	3,160	2,240	2,530	2,240	2,340		2LG, 2ME, 3ME, 4ME
		30K7			3,250	2,310	2,600	2,310	2,410		2LG, 2ME, 3ME, 4ME
		40K7			3,340	2,370	2,670	2,370	2,470		2LG, 2ME, 3ME, 4ME
		50K7			3,360	2,390	2,690	2,390	2,490		2LG, 2ME, 3ME, 4ME
		57K7			3,360	2,390	2,690	2,390	2,490		2LG, 2ME, 3ME, 4ME
Q1	X1	27K7	24	20	2,890	2,050	2,310	2,050	2,140		2LG, 2ME, 3ME, 4ME
		30K7			2,970	2,110	2,380	2,110	2,200		2LG, 2ME, 3ME, 4ME
		40K7			3,040	2,160	2,430	2,160	2,250		2LG, 2ME, 3ME, 4ME
		50K7			3,060	2,170	2,450	2,170	2,260		2LG, 2ME, 3ME, 4ME
		57K7			3,060	2,170	2,450	2,170	2,260		2LG, 2ME, 3ME, 4ME

† Electrical and lumen data at 25˚C (77˚F). Actual wattage and lumen output may differ by +/-10% when operating between 120-277V or 347-480V +/-10%

Field Adjustable Output (Q9/Q8/Q7/Q6/Q5/Q4/Q3/Q2/Q1) Option Description:

The Field Adjustable Output option enables the street and area luminaire within the XSP Series on this page to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected lumen output, will be fully adjustable between the outputs, and will include a wattage label that indicates the wattage of the luminaire at the selected lumen output (Rounded to nearest 10 watts per ANSI C136.15-2015.). Additional dimming functionality is available when a dimming control by others is used in the 7-Pin receptacle.

Locked Lumen Output (X8/X7/X6/X5/X4/X3/X2/X1) Option Description:

The Locked Lumen Output option on this page permanently locks the lumen output on the XSP Series street and area luminaire to the setting selected. When ordered with the X option, the luminaire will be shipped from the factory at the lumen output setting selected, and will include a wattage label that indicates the wattage of the setting selected. When this option is selected, the luminaire output is not able to be adjusted in the field except if a dimming control by others is used in the 7-Pin receptacle.

Q & X Option Power & Lumen Data – 8L

Q Option Setting	X Option Setting	CCT/ CRI	System Watts†	Label Wattage	Lumen Values†					Optics Qualified on DLC QPL	
			120-480V		2LG/2ME/3ME/4ME	2LG w/BLS	2ME w/BLS	3ME w/BLS	4ME w/BLS	Standard	Premium
Q9	N/A (Full Power)	27K7	69	70	7,375	5,225	5,900	5,225	5,450	2LG, 2ME, 3ME, 4ME	
		30K7			7,575	5,375	6,050	5,375	5,600		2LG, 2ME, 3ME, 4ME
		40K7			7,775	5,525	6,225	5,525	5,750	2LG, 2ME, 3ME, 4ME	
		50K7			7,825	5,550	6,250	5,550	5,800	2LG, 2ME, 3ME, 4ME	
		57K7			7,825	5,550	6,250	5,550	5,800	2LG, 2ME, 3ME, 4ME	
Q8	X8	27K7	65	70	7,150	5,075	5,725	5,075	5,300		2LG, 2ME, 3ME, 4ME
		30K7			7,325	5,200	5,850	5,200	5,425		2LG, 2ME, 3ME, 4ME
		40K7			7,525	5,350	6,025	5,350	5,575	2LG, 2ME, 3ME, 4ME	
		50K7			7,575	5,375	6,050	5,375	5,600	2LG, 2ME, 3ME, 4ME	
		57K7			7,575	5,375	6,050	5,375	5,600	2LG, 2ME, 3ME, 4ME	
Q7	X7	27K7	62	60	6,850	4,875	5,475	4,875	5,075		2LG, 2ME, 3ME, 4ME
		30K7			7,025	5,000	5,625	5,000	5,200		2LG, 2ME, 3ME, 4ME
		40K7			7,225	5,125	5,775	5,125	5,350	2LG, 2ME, 3ME, 4ME	
		50K7			7,275	5,175	5,825	5,175	5,375		2LG, 2ME, 3ME, 4ME
		57K7			7,275	5,175	5,825	5,175	5,375		2LG, 2ME, 3ME, 4ME
Q6	X6	27K7	59	60	6,650	4,720	5,325	4,720	4,920		2LG, 2ME, 3ME, 4ME
		30K7			6,825	4,850	5,450	4,850	5,050		2LG, 2ME, 3ME, 4ME
		40K7			7,000	4,970	5,600	4,970	5,175		2LG, 2ME, 3ME, 4ME
		50K7			7,050	5,000	5,650	5,000	5,225		2LG, 2ME, 3ME, 4ME
		57K7			7,050	5,000	5,650	5,000	5,225		2LG, 2ME, 3ME, 4ME
Q5	X5	27K7	54	50	6,125	4,350	4,900	4,350	4,530		2LG, 2ME, 3ME, 4ME
		30K7			6,275	4,460	5,025	4,460	4,640		2LG, 2ME, 3ME, 4ME
		40K7			6,450	4,580	5,150	4,580	4,770		2LG, 2ME, 3ME, 4ME
		50K7			6,500	4,620	5,200	4,620	4,810		2LG, 2ME, 3ME, 4ME
		57K7			6,500	4,620	5,200	4,620	4,810		2LG, 2ME, 3ME, 4ME
Q4	X4	27K7	49	50	5,750	4,080	4,600	4,080	4,260		2LG, 2ME, 3ME, 4ME
		30K7			5,900	4,190	4,720	4,190	4,370		2LG, 2ME, 3ME, 4ME
		40K7			6,050	4,300	4,840	4,300	4,480		2LG, 2ME, 3ME, 4ME
		50K7			6,100	4,330	4,880	4,330	4,510		2LG, 2ME, 3ME, 4ME
		57K7			6,100	4,330	4,880	4,330	4,510		2LG, 2ME, 3ME, 4ME
Q3	X3	27K7	44	40	5,200	3,690	4,160	3,690	3,850		2LG, 2ME, 3ME, 4ME
		30K7			5,350	3,800	4,280	3,800	3,960		2LG, 2ME, 3ME, 4ME
		40K7			5,475	3,890	4,380	3,890	4,050		2LG, 2ME, 3ME, 4ME
		50K7			5,525	3,920	4,420	3,920	4,090		2LG, 2ME, 3ME, 4ME
		57K7			5,525	3,920	4,420	3,920	4,090		2LG, 2ME, 3ME, 4ME
Q2	X2	27K7	40	40	4,750	3,370	3,800	3,370	3,520		2LG, 2ME, 3ME, 4ME
		30K7			4,875	3,460	3,900	3,460	3,610		2LG, 2ME, 3ME, 4ME
		40K7			4,975	3,530	3,980	3,530	3,680		2LG, 2ME, 3ME, 4ME
		50K7			5,025	3,570	4,020	3,570	3,720		2LG, 2ME, 3ME, 4ME
		57K7			5,025	3,570	4,020	3,570	3,720		2LG, 2ME, 3ME, 4ME
Q1	X1	27K7	35	40	4,325	3,070	3,460	3,070	3,200		2LG, 2ME, 3ME, 4ME
		30K7			4,425	3,140	3,540	3,140	3,270		2LG, 2ME, 3ME, 4ME
		40K7			4,550	3,230	3,640	3,230	3,370		2LG, 2ME, 3ME, 4ME
		50K7			4,575	3,250	3,660	3,250	3,390		2LG, 2ME, 3ME, 4ME
		57K7			4,575	3,250	3,660	3,250	3,390		2LG, 2ME, 3ME, 4ME

† Electrical and lumen data at 25°C (77°F). Actual wattage and lumen output may differ by +/-10% when operating between 120-277V or 347-480V +/-10%

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XSP Series

XSPMD LED Street/Area Luminaire – Medium

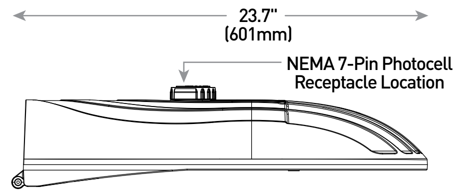
Product Description

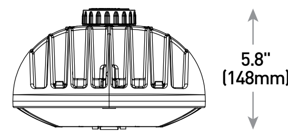
Designed from the ground up as a totally optimized LED street and area lighting system, the XSP Series delivers incredible efficiency without sacrificing application performance. Beyond substantial energy savings and reduced maintenance, Cree achieves greater optical control with our NanoOptic® Precision Delivery Grid™ optic when compared to traditional cobra head luminaires. The XSP Series is the better alternative for traditional street and area lighting with quick payback and improved performance.
Applications: Collector roads, major roads, parking lots, and general area spaces

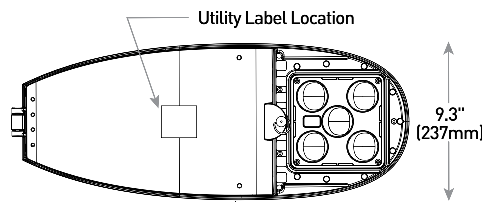
Performance Summary

NanoOptic® Precision Delivery Grid™ optic
Assembled in the U.S.A. of U.S. and imported parts
Initial Delivered Lumens: Up to 11,875
Efficacy: Up to 125 LPW
CRI: Minimum 70 CRI
CCT: 2700K, 3000K, 4000K, 5000K, 5700K
Limited Warranty†: 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

† See http://lighting.cree.com/warranty for warranty terms







Accessories

Field-Installed	
Backlight Control Shield XA-SP1BLS - Provides 1 mounting height cutoff - Polycarbonate construction - Refer to initial delivered lumen tables for lumen output	**Bird Spikes** XA-SP1BRDSPK

Weight
13.9 lbs. (6.3kg)

Ordering Information

Example: XSPMD-D-HT-2LG-12L-27K7-UL-SV-N

XSPMD	D	HT		12L				N	
Product	**Version**	**Mounting**	**Optic**	**Lumen Package****	**CCT/CRI**	**Voltage**	**Color Options**	**Utility Label/ Receptacle**	**Options**
XSPMD	**D**	**HT** Horizontal Tenon	**Asymmetric** **2LG*** Type II Long **2ME*** Type II Medium **3ME*** Type III Medium **4ME*** Type IV Medium	**12L** 12,000 Lumens	**27K7** 2700K, 70 CRI **30K7** 3000K, 70 CRI **40K7** 4000K, 70 CRI **50K7** 5000K, 70 CRI **57K7** 5700K, 70 CRI	**UL** Universal 120-277V **UH** Universal 347-480V	**BK** Black **BZ** Bronze **SV** Silver **WH** White	**N** **Utility Label and NEMA® 7-Pin Photocell Receptacle** - External wattage label per ANSI C136.15 - 7-pin receptacle per ANSI C136.41 - Factory connected 0-10V dim leads - Photocell or shorting cap by others	**F** **Fuse** - When code dictates fusing, use time delay fuse - Available for US applications only **G** **Small Four Bolt Mounting** - Mounts to 1.25" (32mm) IP, 1.66" (42mm) O.D. horizontal tenon **J** **Large Four Bolt Mounting** - Mounts to 2" (51mm) IP, 2.375" (60mm) O.D. horizontal tenon **Q9/Q8/Q7/Q6/Q5/Q4/Q3/Q2/Q1** **Field Adjustable Output** - Must select Q9, Q8, Q7, Q6, Q5, Q4, Q3, Q2, or Q1 - Offers full range lumen adjustability - Includes wattage label for setting selected - Refer to page 8 for power and lumen values - Luminaire may also be dimmed through 7-Pin receptacle with use of dimming control by others **X8/X7/X6/X5/X4/X3/X2/X1** **Locked Lumen Output** - Must select X8, X7, X6, X5, X4, X3, X2, or X1 - Lumen output is permanently locked to the setting selected - Includes wattage label for setting selected - Refer to page 8 for power and lumen values - Dimming is only available through 7-Pin receptacle with use of dimming control by others

* Available with Backlight Shield when ordered with field-installed accessory (see table above)
** Lumen Package codes identify approximate light output only. Actual lumen output levels may vary depending on CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values

Rev. Date: V1 01/24/2019

Product Specifications

CONSTRUCTION & MATERIALS

- Die cast aluminum housing
- Tool-less entry
- Mounts on 1.25" (32mm) IP, 1.66" (42mm) O.D. or 2" (51mm) IP, 2.375" (60mm) O.D. horizontal tenon (minimum 8" [203mm] in length) and is adjustable +/- 5˚ to allow for fixture leveling (includes two axis T-level to aid in leveling)
- Luminaire secures with two 410 stainless steel mounting bolts; optional four point mounting available
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Black, bronze, silver and white are available
- **Weight:** 13.9 lbs. (6.3kg)

ELECTRICAL SYSTEM

- **Input Voltage**: 120-277V or 347-480V, 50/60Hz
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- Designed with 0-10V dimming capabilities. Controls by others
- **10V Source Current:** 0.15mA
- **Operating Temperature Range:** -40˚C - +40˚C (-40˚F - +104˚F)

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Certified to ANSI C136.31-2001, 3G bridge and overpass vibration standards
- Meets CALTrans 611 Vibration testing
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Meets Buy American requirements within ARRA
- RoHS compliant. Consult factory for additional details
- Dark Sky Friendly, IDA Approved when ordered with 27K7 or 30K7 CCTs. Please refer to http://darksky.org/fsa/fsa-products/ for most current information
- DLC Premium qualified. Please refer to https://www.designlights.org/search/ for most current information

Electrical Data*

Lumen Package	Optics	CCT/CRI	System Watts 120-480V	Utility Label Wattage	Total Current (A)					
					120V	208V	240V	277V	347V	480V
12L	All	All	95	100	0.80	0.46	0.40	0.35	0.27	0.20

* Electrical data at 25˚C (77˚F). Actual wattage may differ by +/- 10% when operating between 120-277V or 347-480V +/- 10%

XSPMD Series Ambient Adjusted Lumen Maintenance[1]

Ambient	Initial LMF	25K hr Projected[2] LMF	50K hr Projected[2] LMF	75K hr Projected[2] LMF	100K hr Calculated[3] LMF
5˚C (41˚F)	1.03	1.02	1.02	1.02	1.02
10˚C (50˚F)	1.03	1.02	1.02	1.02	1.02
15˚C (59˚F)	1.02	1.01	1.01	1.01	1.01
20˚C (68˚F)	1.01	1.00	1.00	1.00	1.00
25˚C (77˚F)	1.00	0.99	0.99	0.99	0.99

[1] Lumen maintenance values at 25˚C (77˚F) are calculated per TM-21 based on LM-80 data and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors. Please refer to the Temperature Zone Reference Document for outdoor average nighttime ambient conditions

[2] In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip)

[3] In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip)

Photometry

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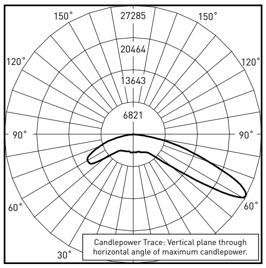
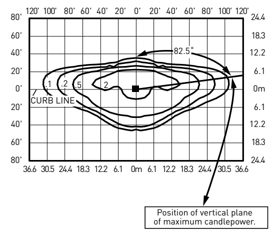
2LG



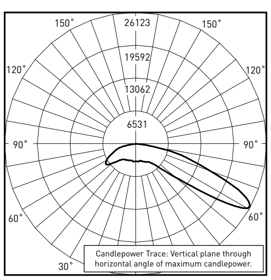
RESTL Test Report #: PL12765-007B
XSPLG-D-**-2LG-24L-40K7-UL-SV-N
Initial Delivered Lumens: 23,437



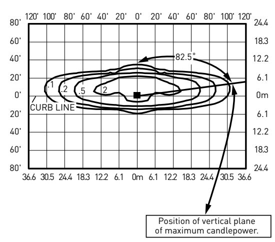
XSPMD-D-**-2LG-12L-40K7-UL-SV-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 11,800
Initial FC at grade

Type II Long Distribution										
Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
12L	11,150	B3 U0 G3	11,475	B3 U0 G3	11,800	B3 U0 G3	11,875	B3 U0 G3	11,875	B3 U0 G3

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf



RESTL Test Report #: PL12765-008B
XSPLG-D-**-2LG-24L-40K7-UL-SV-N
w/XA-SP2BLS
Initial Delivered Lumens: 17,373



XSPMD-D-**-2LG-12L-40K7-UL-SV-N
w/XA-SP1BLS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 8,725
Initial FC at grade

Type II Long w/BLS Distribution										
Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
12L	8,250	B2 U0 G1	8,500	B2 U0 G2	8,725	B2 U0 G2	8,800	B2 U0 G2	8,800	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf

Photometry

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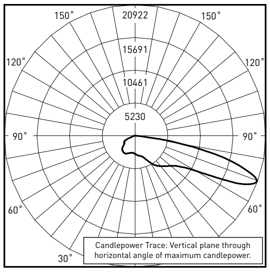
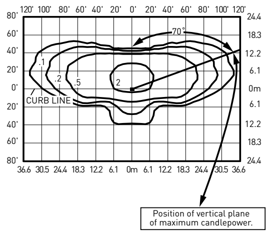
2ME



RESTL Test Report #: 12765-003B
XSPLG-D-**-2ME-24L-40K7-UL-SV-N
Initial Delivered Lumens: 23,168



XSPMD-D-**-2ME-12L-40K7-UL-SV-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 11,800
Initial FC at grade

Type II Medium Distribution

Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
12L	11,150	B2 U0 G2	11,475	B2 U0 G2	11,800	B2 U0 G2	11,875	B2 U0 G2	11,875	B2 U0 G2

* Initial delivered lumens at 25˚C (77˚F). Actual production yield may vary between -10 and +10% of initial delivered lumens
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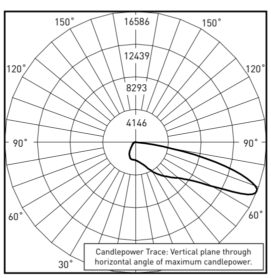
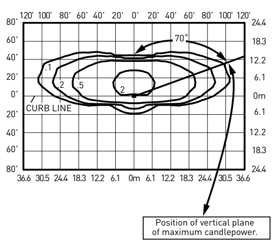


RESTL Test Report #: PL12765-004B
XSPLG-D-**-2ME-24L-40K7-UL-SV-N
w/XA-SP2BLS
Initial Delivered Lumens: 17,757



XSPMD-D-**-2ME-12L-40K7-UL-SV-N
w/XA-SP1BLS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 9,075
Initial FC at grade

Type II Medium w/BLS Distribution

Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
12L	8,575	B1 U0 G2	8,825	B1 U0 G2	9,075	B1 U0 G2	9,150	B1 U0 G2	9,150	B1 U0 G2

* Initial delivered lumens at 25˚C (77˚F). Actual production yield may vary between -10 and +10% of initial delivered lumens
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Photometry

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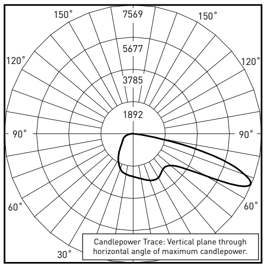
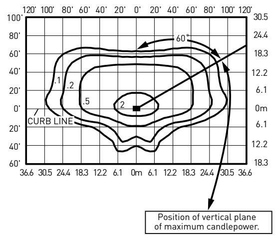
3ME



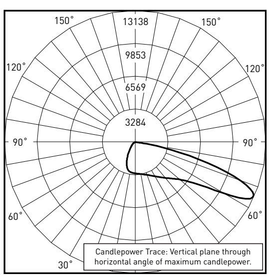
RESTL Test Report #: PL12611-001B
XSPMD-D-**-3ME-12L-40K7-UL-SV-N
Initial Delivered Lumens: 11,144



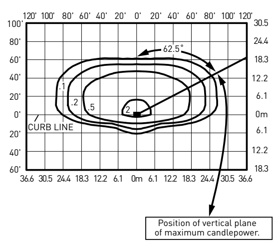
XSPMD-D-**-3ME-12L-40K7-UL-SV-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 11,800
Initial FC at grade

Type III Medium Distribution										
Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
12L	11,150	B2 U0 G2	11,475	B2 U0 G2	11,800	B2 U0 G2	11,875	B2 U0 G2	11,875	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf



RESTL Test Report #: PL12765-002B
XSPLG-D-**-3ME-24L-40K7-UL-SV-N
w/XA-SP2BLS
Initial Delivered Lumens: 16,503



XSPMD-D-**-3ME-12L-40K7-UL-SV-N
w/XA-SP1BLS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 8,375
Initial FC at grade

Type III Medium w/BLS Distribution										
Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
12L	7,925	B1 U0 G2	8,150	B1 U0 G2	8,375	B1 U0 G2	8,425	B1 U0 G2	8,425	B1 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf

Photometry

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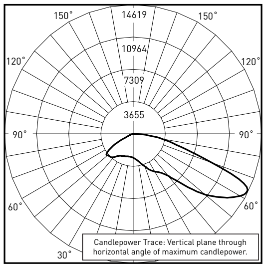
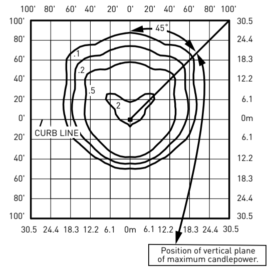
4ME



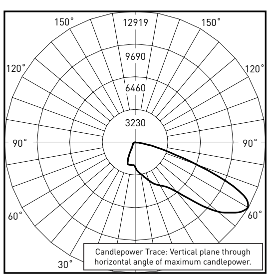
RESTL Test Report #: PL12765-005B
XSPLG-D-**-4ME-24L-40K7-UL-SV-N
Initial Delivered Lumens: 23,195



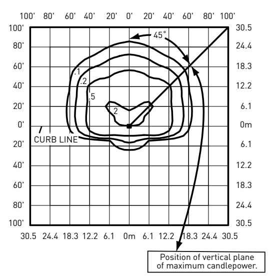
XSPMD-D-**-4ME-12L-40K7-UL-SV-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 11,800
Initial FC at grade

Type IV Medium Distribution										
Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
12L	11,150	B2 U0 G2	11,475	B2 U0 G2	11,800	B2 U0 G2	11,875	B2 U0 G2	11,875	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf



RESTL Test Report #: PL12765-006B
XSPLG-D-**-4ME-24L-40K7-UL-SV-N
w/XA-SP2BLS
Initial Delivered Lumens: 16,941



XSPMD-D-**-4ME-12L-40K7-UL-SV-N
w/XA-SP1BLS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 8,625
Initial FC at grade

Type IV Medium w/BLS Distribution										
Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
12L	8,150	B1 U0 G2	8,375	B1 U0 G2	8,625	B1 U0 G2	8,675	B1 U0 G2	8,675	B1 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
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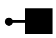
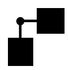
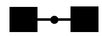
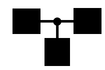
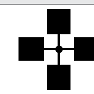
Luminaire EPA

Horizontal Tenon Mount – Weight: 13.9 lbs. (6.3kg)				
Single	2 @ 90˚	2 @ 180˚	3 @ 90˚	4 @ 90˚
Tenon Configuration If used with Cree tenons, please add tenon EPA with luminaire EPA				
 PD-1H4; PT-1H	 PD-2H4(90); PT-2H(90)	 PD-2H4(180); PT-2H(180)	 PD-3H4(90); PT-3H(90)	 PD-4H4(90); PT-4H(90)
0.71	1.02	1.43	1.74	2.04

Tenon EPA

Part Number	EPA
PD Series Tenons	0.09
PT Series Tenons	0.10
WM-2L	0.13
XA-TMDA8	0.19

Tenons and Brackets‡ (must specify color)

Square Internal Mount Horizontal Tenons (Aluminum)
- Mounts to 4" (102mm) square aluminum or steel poles

PD-1H4 – Single
PD-2H4(90) – 90˚ Twin
PD-2H4(180) – 180˚ Twin
PD-3H4(90) – 90˚ Triple
PD-4H4(90) – 90˚ Quad

Wall Mount Brackets
- Mounts to wall or roof

WM-2L – Extended Horizontal

Round External Mount Horizontal Tenons (Aluminum)
- Mounts to 2.375"-3" (60-76mm) O.D. round aluminum or steel poles or tenons
- Mounts to 3" (76mm), 4" (102mm), 5" (127mm), or 6" (152mm) square pole with PB-1A* tenon

PT-1H – Single
PT-2H(90) – 90˚ Twin
PT-2H(180) – 180˚ Twin
PT-3H(90) – 90˚ Triple
PT-4H(90) – 90˚ Quad

Direct Arm Pole Adaptor Bracket
- Mounts to 3-6" (76-152mm) round or square aluminum or steel poles

XA-TMDA8

‡ Refer to the Bracket and Tenons spec sheet for more details
* Specify pole size: 3 (3"), 4 (4"), 5 (5"), or 6 (6") for single, double or triple luminaire orientation or 4 (4"), 5 (5") or 6 (6") for quad luminaire orientation

Field Adjustable Output (Q9/Q8/Q7/Q6/Q5/Q4/Q3/Q2/Q1) Option Description:

The Field Adjustable Output option enables the street and area luminaire within the XSP Series on this page to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected lumen output, will be fully adjustable between the outputs, and will include a wattage label that indicates the wattage of the luminaire at the selected lumen output (Rounded to nearest 10 watts per ANSI C136.15-2015.). Additional dimming functionality is available when a dimming control (by others) is used in the 7-Pin receptacle.

Locked Lumen Output (X8/X7/X6/X5/X4/X3/X2/X1) Option Description:

The Locked Lumen Output option on this page permanently locks the lumen output on the XSP Series street and area luminaire to the setting selected. When ordered with the X option, the luminaire will be shipped from the factory at the lumen output setting selected, and will include a wattage label that indicates the wattage of the setting selected. When this option is selected, the luminaire output is not able to be adjusted in the field except if a dimming control (by others) is used in the 7-Pin receptacle.

Q & X Option Power & Lumen Data – 12L

Q Option Setting	X Option Setting	CCT/CRI	System Watts†	Label Wattage	Lumen Values†					Optics Qualified on DLC QPL	
			120-480V		2LG/2ME/3ME/4ME	2LG w/BLS	2ME w/BLS	3ME w/BLS	4ME w/BLS	Standard	Premium
Q9	N/A (Full Power)	27K7	95	100	11,150	8,250	8,575	7,925	8,150		2LG, 2ME, 3ME, 4ME
		30K7			11,475	8,500	8,825	8,150	8,375		2LG, 2ME, 3ME, 4ME
		40K7			11,800	8,725	9,075	8,375	8,625		2LG, 2ME, 3ME, 4ME
		50K7			11,875	8,800	9,150	8,425	8,675		2LG, 2ME, 3ME, 4ME
		57K7			11,875	8,800	9,150	8,425	8,675		2LG, 2ME, 3ME, 4ME
Q8	X8	27K7	90	90	10,825	8,000	8,325	7,675	7,900		2LG, 2ME, 3ME, 4ME
		30K7			11,125	8,225	8,575	7,900	8,125		2LG, 2ME, 3ME, 4ME
		40K7			11,425	8,450	8,800	8,100	8,350		2LG, 2ME, 3ME, 4ME
		50K7			11,500	8,500	8,850	8,175	8,400		2LG, 2ME, 3ME, 4ME
		57K7			11,500	8,500	8,850	8,175	8,400		2LG, 2ME, 3ME, 4ME
Q7	X7	27K7	85	90	10,375	7,675	8,000	7,375	7,575		2LG, 2ME, 3ME, 4ME
		30K7			10,650	7,875	8,200	7,550	7,775		2LG, 2ME, 3ME, 4ME
		40K7			10,950	8,100	8,425	7,775	8,000		2LG, 2ME, 3ME, 4ME
		50K7			11,025	8,150	8,500	7,825	8,050		2LG, 2ME, 3ME, 4ME
		57K7			11,025	8,150	8,500	7,825	8,050		2LG, 2ME, 3ME, 4ME
Q6	X6	27K7	81	80	10,050	7,425	7,750	7,125	7,325		2LG, 2ME, 3ME, 4ME
		30K7			10,325	7,650	7,950	7,325	7,525		2LG, 2ME, 3ME, 4ME
		40K7			10,625	7,875	8,175	7,550	7,750		2LG, 2ME, 3ME, 4ME
		50K7			10,700	7,925	8,250	7,600	7,800		2LG, 2ME, 3ME, 4ME
		57K7			10,700	7,925	8,250	7,600	7,800		2LG, 2ME, 3ME, 4ME
Q5	X5	27K7	74	70	9,250	6,850	7,125	6,575	6,750		2LG, 2ME, 3ME, 4ME
		30K7			9,525	7,050	7,325	6,775	6,950		2LG, 2ME, 3ME, 4ME
		40K7			9,775	7,225	7,525	6,950	7,125		2LG, 2ME, 3ME, 4ME
		50K7			9,850	7,300	7,575	7,000	7,200		2LG, 2ME, 3ME, 4ME
		57K7			9,850	7,300	7,575	7,000	7,200		2LG, 2ME, 3ME, 4ME
Q4	X4	27K7	67	70	8,700	6,450	6,700	6,175	6,350		2LG, 2ME, 3ME, 4ME
		30K7			8,925	6,600	6,875	6,325	6,525		2LG, 2ME, 3ME, 4ME
		40K7			9,175	6,800	7,075	6,525	6,700		2LG, 2ME, 3ME, 4ME
		50K7			9,250	6,850	7,125	6,575	6,750		2LG, 2ME, 3ME, 4ME
		57K7			9,250	6,850	7,125	6,575	6,750		2LG, 2ME, 3ME, 4ME
Q3	X3	27K7	60	60	7,875	5,825	6,075	5,600	5,750		2LG, 2ME, 3ME, 4ME
		30K7			8,100	6,000	6,225	5,750	5,925		2LG, 2ME, 3ME, 4ME
		40K7			8,325	6,150	6,400	5,900	6,075		2LG, 2ME, 3ME, 4ME
		50K7			8,375	6,200	6,450	5,950	6,125		2LG, 2ME, 3ME, 4ME
		57K7			8,375	6,200	6,450	5,950	6,125		2LG, 2ME, 3ME, 4ME
Q2*	X2*	27K7	54	50	7,150	5,300	5,500	5,075	5,225		2LG, 2ME, 3ME, 4ME
		30K7			7,350	5,450	5,650	5,225	5,375		2LG, 2ME, 3ME, 4ME
		40K7			7,550	5,575	5,825	5,350	5,500		2LG, 2ME, 3ME, 4ME
		50K7			7,625	5,650	5,875	5,425	5,575		2LG, 2ME, 3ME, 4ME
		57K7			7,625	5,650	5,875	5,425	5,575		2LG, 2ME, 3ME, 4ME
Q1*	X1*	27K7	48	50	6,525	4,830	5,025	4,630	4,760		2LG, 2ME, 3ME, 4ME
		30K7			6,700	4,960	5,150	4,760	4,890		2LG, 2ME, 3ME, 4ME
		40K7			6,900	5,100	5,325	4,900	5,025		2LG, 2ME, 3ME, 4ME
		50K7			6,950	5,150	5,350	4,930	5,075		2LG, 2ME, 3ME, 4ME
		57K7			6,950	5,150	5,350	4,930	5,075		2LG, 2ME, 3ME, 4ME

† Electrical and lumen data at 25˚C (77˚F). Actual wattage and lumen output may differ by +/-10% when operating between 120-277V or 347-480V +/-10%

* DLC Premium for 120V & 347V only

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XSP Series

XSPLG LED Street/Area Luminaire – Large

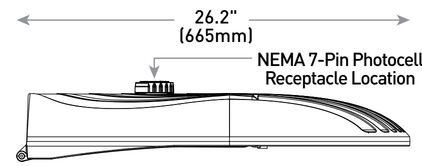
Product Description

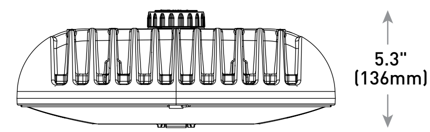
Designed from the ground up as a totally optimized LED street and area lighting system, the XSP Series delivers incredible efficiency without sacrificing application performance. Beyond substantial energy savings and reduced maintenance, Cree achieves greater optical control with our NanoOptic® Precision Delivery Grid™ optic when compared to traditional cobra head luminaires. The XSP Series is the better alternative for traditional street and area lighting with quick payback and improved performance.
Applications: Multi-lane freeways, express ways, major roads, parking lots, and general area spaces

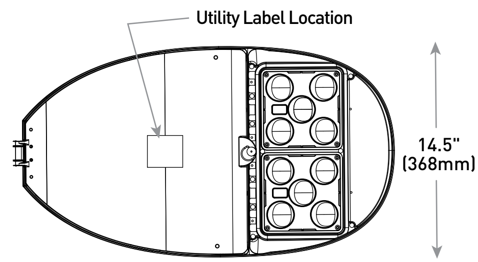
Performance Summary

NanoOptic® Precision Delivery Grid™ optic
Assembled in the U.S.A. of U.S. and imported parts
Initial Delivered Lumens: Up to 23,800
Efficacy: Up to 129 LPW
CRI: Minimum 70 CRI
CCT: 2700K, 3000K, 4000K, 5000K, 5700K
Limited Warranty†: 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

† See http://lighting.cree.com/warranty for warranty terms







Accessories

Field-Installed	
Backlight Control Shield XA-SP2BLS - Provides 1 mounting height cutoff - Polycarbonate construction - Refer to initial delivered lumen tables for lumen output	**Bird Spikes** XA-SP2BRDSPK

Weight
23.4 lbs. (10.6kg)

Ordering Information

Example: XSPLG-D-HT-2LG-24L-27K7-UL-SV-N

XSPLG	D	HT						N	
Product	**Version**	**Mounting**	**Optic**	**Lumen Package****	**CCT/CRI**	**Voltage**	**Color Options**	**Utility Label/ Receptacle**	**Options**
XSPLG	**D**	**HT** Horizontal Tenon	**Asymmetric** **2LG*** Type II Long **2ME*** Type II Medium **3ME*** Type III Medium **4ME*** Type IV Medium	**18L** 18,000 Lumens **24L** 24,000 Lumens	**27K7** 2700K, 70 CRI **30K7** 3000K, 70 CRI **40K7** 4000K, 70 CRI **50K7** 5000K, 70 CRI **57K7** 5700K, 70 CRI	**UL** Universal 120-277V **UH** Universal 347-480V	**BK** Black **BZ** Bronze **SV** Silver **WH** White	**N** **Utility Label and NEMA® 7-Pin Photocell Receptacle** - External wattage label per ANSI C136.15 - 7-pin receptacle per ANSI C136.41 - Factory connected 0-10V dim leads - Photocell or shorting cap by others	**F** **Fuse** - When code dictates fusing, use time delay fuse - Available for US applications only **G** **Small Four Bolt Mounting** - Mounts to 1.25" (32mm) IP, 1.66" (42mm) O.D. horizontal tenon **J** **Large Four Bolt Mounting** - Mounts to 2" (51mm) IP, 2.375" (60mm) O.D. horizontal tenon **Q9/Q8/Q7/Q6/Q5** **Field Adjustable Output** - 18L: must select setting Q9, Q8, Q7, or Q6 - 24L: must select setting Q9, Q8, Q7, Q6, or Q5 - Offers full range lumen adjustability - Includes wattage label for setting selected - Refer to pages 8 and 9 for power and lumen values - Luminaire may also be dimmed through 7-Pin receptacle with use of dimming control by others **X8/X7/X6/X5** **Locked Lumen Output** - 18L: must select setting X8, X7, or X6 - 24L: must select setting X8, X7, X6, or X5 - Lumen output is permanently locked to the setting selected - Includes wattage label for setting selected - Refer to pages 8 and 9 for power and lumen values - Dimming is only available through 7-Pin receptacle with use of dimming control by others

* Available with Backlight Shield when ordered with field-installed accessory (see table above)
** Lumen Package codes identify approximate light output only. Actual lumen output levels may vary depending on CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values

Rev. Date: V1 01/24/2019

Product Specifications

CONSTRUCTION & MATERIALS
- Die cast aluminum housing
- Tool-less entry
- Mounts on 1.25" (32mm) IP, 1.66" (42mm) O.D. or 2" (51mm) IP, 2.375" (60mm) O.D. horizontal tenon (minimum 8" [203mm] in length) and is adjustable +/- 5˚ to allow for fixture leveling (includes two axis T-level to aid in leveling)
- Luminaire secures with two 410 stainless steel mounting bolts; optional four point mounting available
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Black, bronze, silver and white are available
- **Weight:** 23.4 lbs. (10.6kg)

ELECTRICAL SYSTEM
- **Input Voltage:** 120-277V or 347-480V, 50/60Hz
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- Designed with 0-10V dimming capabilities. Controls by others
- **10V Source Current:** 0.15mA
- **Operating Temperature Range:** -40˚C - +40˚C (-40˚F - +104˚F)

REGULATORY & VOLUNTARY QUALIFICATIONS
- cULus Listed
- Suitable for wet locations
- Certified to ANSI C136.31-2001, 3G bridge and overpass vibration standards
- Meets CALTrans 611 Vibration testing
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Meets Buy American requirements within ARRA
- RoHS compliant. Consult factory for additional details
- Dark Sky Friendly, IDA Approved when ordered with 27K7 or 30K7 CCTs. Please refer to http://darksky.org/fsa/fsa-products/ for most current information
- DLC Premium qualified when ordered with 24L lumen package. Please refer to https://www.designlights.org/search/ for most current information

Electrical Data*

Lumen Package	Optics	CCT/ CRI	System Watts 120-480V	Utility Label Wattage	Total Current (A)					
					120V	208V	240V	277V	347V	480V
18L	All	All	128	130	1.07	0.63	0.55	0.48	0.37	0.27
24L	All	All	184	180	1.54	0.89	0.77	0.67	0.54	0.39

* Electrical data at 25˚C (77˚F). Actual wattage may differ by +/- 10% when operating between 120-277V or 347-480V +/- 10%

XSPLG Series Ambient Adjusted Lumen Maintenance[1]

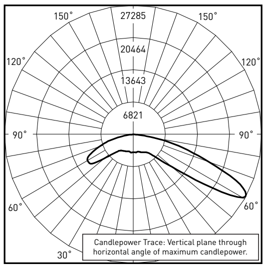
Ambient	Initial LMF	25K hr Projected[2] LMF	50K hr Projected[2] LMF	75K hr Projected[2] LMF	100K hr Calculated[3] LMF
5˚C (41˚F)	1.03	1.02	1.02	1.02	1.02
10˚C (50˚F)	1.03	1.02	1.02	1.02	1.02
15˚C (59˚F)	1.02	1.01	1.01	1.01	1.01
20˚C (68˚F)	1.01	1.00	1.00	1.00	1.00
25˚C (77˚F)	1.00	0.99	0.99	0.99	0.99

[1] Lumen maintenance values at 25˚C (77˚F) are calculated per TM-21 based on LM-80 data and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors. Please refer to the Temperature Zone Reference Document for outdoor average nighttime ambient conditions
[2] In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip)
[3] In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip)

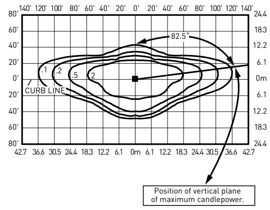
Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP accredited laboratory. To obtain an IES file specific to your project consult: http://lighting.cree.com/products/outdoor/street-and-roadway/xsp-series

2LG



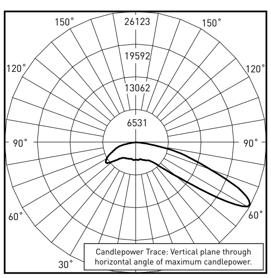
RESTL Test Report #: PL12765-007B
XSPLG-D-**-2LG-24L-40K7-UL-SV-N
Initial Delivered Lumens: 23,437



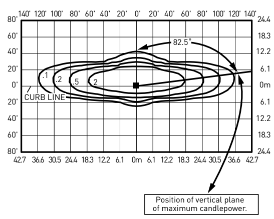
XSPLG-D-**-2LG-24L-40K7-UL-SV-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 23,600
Initial FC at grade

Type II Long Distribution										
Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
18L	17,400	B3 U0 G3	17,800	B3 U0 G3	18,400	B3 U0 G3	18,500	B3 U0 G3	18,500	B3 U0 G3
24L	22,300	B4 U0 G3	23,000	B4 U0 G3	23,600	B4 U0 G3	23,800	B4 U0 G3	23,800	B4 U0 G3

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf



RESTL Test Report #: PL12765-008B
XSPLG-D-**-2LG-24L-40K7-UL-SV-N
w/XA-SP2BLS
Initial Delivered Lumens: 17,373



XSPLG-D-**-2LG-24L-40K7-UL-SV-N
w/XA-SP2BLS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 17,500
Initial FC at grade

Type II Long w/BLS Distribution										
Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
18L	12,875	B2 U0 G2	13,175	B2 U0 G2	13,625	B2 U0 G2	13,700	B2 U0 G2	13,700	B2 U0 G2
24L	16,500	B3 U0 G2	17,000	B3 U0 G3	17,500	B3 U0 G3	17,600	B3 U0 G3	17,600	B3 U0 G3

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf

Photometry

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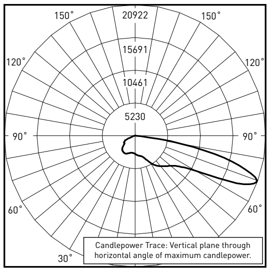
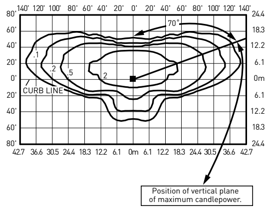
2ME



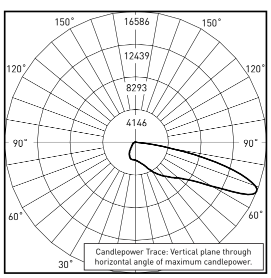
RESTL Test Report #: PL12765-003B
XSPLG-D-**-2ME-24L-40K7-UL-SV-N
Initial Delivered Lumens: 23,168



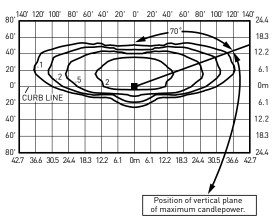
XSPLG-D-**-2ME-24L-40K7-UL-SV-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 23,600
Initial FC at grade

Type II Medium Distribution										
	2700K		3000K		4000K		5000K		5700K	
Lumen Package	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
18L	17,400	B3 U0 G3	17,800	B3 U0 G3	18,400	B3 U0 G3	18,500	B3 U0 G3	18,500	B3 U0 G3
24L	22,300	B3 U0 G3	23,000	B3 U0 G3	23,600	B3 U0 G3	23,800	B3 U0 G3	23,800	B3 U0 G3

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf



RESTL Test Report #: PL12765-004B
XSPLG-D-**-2ME-24L-40K7-UL-SV-N
w/XA-SP2BLS
Initial Delivered Lumens: 17,757



XSPLG-D-**-2ME-24L-40K7-UL-SV-N
w/XA-SP2BLS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 18,200
Initial FC at grade

Type II Medium w/BLS Distribution										
	2700K		3000K		4000K		5000K		5700K	
Lumen Package	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
18L	13,400	B1 U0 G2	13,700	B1 U0 G2	14,175	B1 U0 G2	14,250	B1 U0 G2	14,250	B1 U0 G2
24L	17,200	B2 U0 G3	17,700	B2 U0 G3	18,200	B2 U0 G3	18,300	B2 U0 G3	18,300	B2 U0 G3

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf

Photometry

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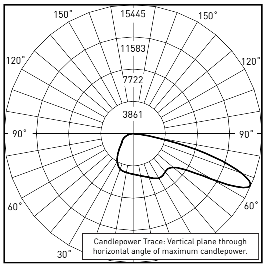
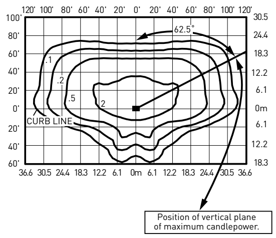
3ME



RESTL Test Report #: PL12765-001B
XSPLG-D-**-3ME-24L-40K7-UL-SV-N
Initial Delivered Lumens: 23,083

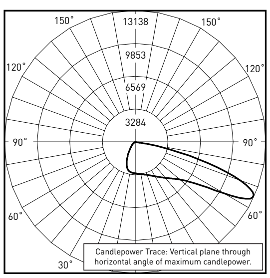


XSPLG-D-**-3ME-24L-40K7-UL-SV-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 23,600
Initial FC at grade

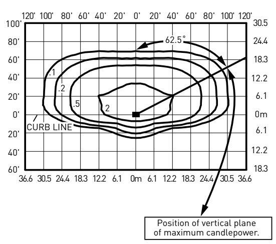
Type III Medium Distribution

Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
18L	17,400	B3 U0 G3	17,800	B3 U0 G3	18,400	B3 U0 G3	18,500	B3 U0 G3	18,500	B3 U0 G3
24L	22,300	B3 U0 G3	23,000	B3 U0 G3	23,600	B3 U0 G4	23,800	B3 U0 G4	23,800	B3 U0 G4

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf



RESTL Test Report #: PL12765-002B
XSPLG-D-**-3ME-24L-40K7-UL-SV-N
w/XA-SP2BLS
Initial Delivered Lumens: 16,503



XSPLG-D-**-3ME-24L-40K7-UL-SV-N
w/XA-SP2BLS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 16,800
Initial FC at grade

Type III Medium w/BLS Distribution

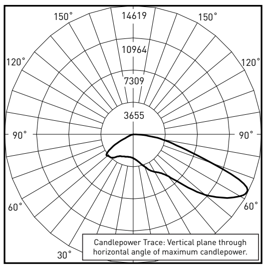
Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
18L	12,350	B2 U0 G2	12,650	B2 U0 G2	13,075	B2 U0 G2	13,125	B2 U0 G2	13,125	B2 U0 G2
24L	15,800	B2 U0 G3	16,300	B2 U0 G3	16,800	B2 U0 G3	16,900	B2 U0 G3	16,900	B2 U0 G3

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf

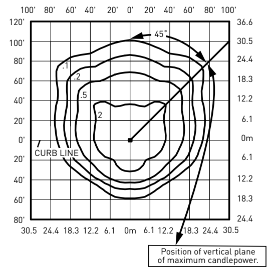
Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP accredited laboratory. To obtain an IES file specific to your project consult: http://lighting.cree.com/products/outdoor/street-and-roadway/xsp-series

4ME



RESTL Test Report #: PL12765-005B
XSPLG-D-**-4ME-24L-40K7-UL-SV-N
Initial Delivered Lumens: 23,195

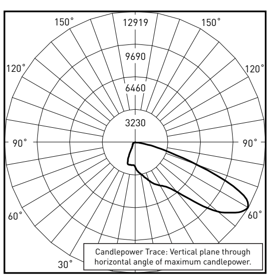


XSPLG-D-**-4ME-24L-40K7-UL-SV-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 23,600
Initial FC at grade

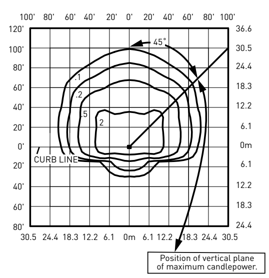
Type IV Medium Distribution

Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
18L	17,400	B3 U0 G3	17,800	B3 U0 G3	18,400	B3 U0 G3	18,500	B3 U0 G3	18,500	B3 U0 G3
24L	22,300	B3 U0 G3	23,000	B3 U0 G3	23,600	B3 U0 G3	23,800	B4 U0 G3	23,800	B4 U0 G3

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf



RESTL Test Report #: PL12765-006B
XSPLG-D-**-4ME-24L-40K7-UL-SV-N
w/XA-SP2BLS
Initial Delivered Lumens: 16,941



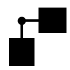
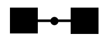
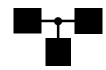
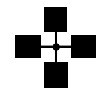
XSPLG-D-**-4ME-24L-40K7-UL-SV-N
w/XA-SP2BLS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 17,200
Initial FC at grade

Type IV Medium w/BLS Distribution

Lumen Package	2700K		3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
18L	12,700	B2 U0 G2	13,000	B2 U0 G2	13,425	B2 U0 G2	13,500	B2 U0 G2	13,500	B2 U0 G2
24L	16,300	B2 U0 G2	16,800	B2 U0 G2	17,200	B2 U0 G3	17,400	B2 U0 G3	17,400	B2 U0 G3

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf

Luminaire EPA

Horizontal Tenon Mount – Weight: 23.4 lbs. (10.6kg)				
Single	2 @ 90°	2 @ 180°	3 @ 90°	4 @ 90°
Tenon Configuration If used with Cree tenons, please add tenon EPA with luminaire EPA				
 PD-1H4; PT-1H	 PD-2H4(90); PT-2H(90)	 PD-2H4(180); PT-2H(180)	 PD-3H4(90); PT-3H(90)	 PD-4H4(90); PT-4H(90)
0.69	1.14	1.38	1.83	2.28

Tenon EPA

Part Number	EPA
PD Series Tenons	0.09
PT Series Tenons	0.10
WM-2L	0.13
XA-TMDA8	0.19

Tenons and Brackets‡ (must specify color)

Square Internal Mount Horizontal Tenons (Aluminum)
- Mounts to 4" (102mm) square aluminum or steel poles

PD-1H4 – Single
PD-2H4(90) – 90° Twin
PD-2H4(180) – 180° Twin
PD-3H4(90) – 90° Triple
PD-4H4(90) – 90° Quad

Wall Mount Brackets
- Mounts to wall or roof

WM-2L – Extended Horizontal

Round External Mount Horizontal Tenons (Aluminum)
- Mounts to 2.375"-3" (60-76mm) O.D. round aluminum or steel poles or tenons
- Mounts to 3" (76mm), 4" (102mm), 5" (127mm), or 6" (152mm) square pole with PB-1A* tenon

PT-1H – Single
PT-2H(90) – 90° Twin
PT-2H(180) – 180° Twin
PT-3H(90) – 90° Triple
PT-4H(90) – 90° Quad

Direct Arm Pole Adaptor Bracket
- Mounts to 3-6" (76-152mm) round or square aluminum or steel poles

XA-TMDA8

‡ Refer to the Bracket and Tenons spec sheet for more details
* Specify pole size: 3 (3"), 4 (4"), 5 (5"), or 6 (6") for single, double or triple luminaire orientation or 4 (4"), 5 (5") or 6 (6") for quad luminaire orientation

Field Adjustable Output (Q9/Q8/Q7/Q6) Option Description:

The Field Adjustable Output option enables the street and area luminaire within the XSP Series on this page to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected lumen output, will be fully adjustable between the outputs, and will include a wattage label that indicates the wattage of the luminaire at the selected lumen output (Rounded to nearest 10 watts per ANSI C136.15-2015.). Additional dimming functionality is available when a dimming control (by others) is used in the 7-Pin receptacle.

Locked Lumen Output (X8/X7/X6) Option Description:

The Locked Lumen Output option on this page permanently locks the lumen output on the XSP Series street and area luminaire to the setting selected. When ordered with the X option, the luminaire will be shipped from the factory at the lumen output setting selected, and will include a wattage label that indicates the wattage of the setting selected. When this option is selected, the luminaire output is not able to be adjusted in the field except if a dimming control (by others) is used in the 7-Pin receptacle.

Q & X Option Power & Lumen Data – 18L

Q Option Setting	X Option Setting	CCT/CRI	System Watts†	Label Wattage	Lumen Values†					Optics Qualified on DLC QPL	
			120-480V		2LG/2ME/3ME/4ME	2LG w/BLS	2ME w/BLS	3ME w/BLS	4ME w/BLS	Standard	Premium
Q9	N/A (Full Power)	27K7	128	130	17,400	12,875	13,400	12,350	12,700	TBD	TBD
		30K7			17,800	13,175	13,700	12,650	13,000	TBD	TBD
		40K7			18,400	13,625	14,175	13,075	13,425	TBD	TBD
		50K7			18,500	13,700	14,250	13,125	13,500	TBD	TBD
		57K7			18,500	13,700	14,250	13,125	13,500	TBD	TBD
Q8	X8	27K7	116	120	15,800	11,700	12,175	11,225	11,525	TBD	TBD
		30K7			16,200	12,000	12,475	11,500	11,825	TBD	TBD
		40K7			16,700	12,350	12,850	11,850	12,200	TBD	TBD
		50K7			16,800	12,425	12,925	11,925	12,275	TBD	TBD
		57K7			16,800	12,425	12,925	11,925	12,275	TBD	TBD
Q7	X7	27K7	103	100	14,325	10,600	11,025	10,175	10,450	TBD	TBD
		30K7			14,725	10,900	11,350	10,450	10,750	TBD	TBD
		40K7			15,100	11,175	11,625	10,725	11,025	TBD	TBD
		50K7			15,300	11,325	11,775	10,875	11,175	TBD	TBD
		57K7			15,300	11,325	11,775	10,875	11,175	TBD	TBD
Q6	X6	27K7	91	90	13,075	9,675	10,075	9,275	9,550	TBD	TBD
		30K7			13,450	9,950	10,350	9,550	9,825	TBD	TBD
		40K7			13,825	10,225	10,650	9,825	10,100	TBD	TBD
		50K7			13,925	10,300	10,725	9,875	10,175	TBD	TBD
		57K7			13,925	10,300	10,725	9,875	10,175	TBD	TBD

† Electrical and lumen data at 25˚C (77˚F). Actual wattage and lumen output may differ by +/-10% when operating between 120-277V or 347-480V +/-10%

Field Adjustable Output (Q9/Q8/Q7/Q6/Q5) Option Description:

The Field Adjustable Output option enables the street and area luminaire within the XSP Series on this page to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected lumen output, will be fully adjustable between the outputs, and will include a wattage label that indicates the wattage of the luminaire at the selected lumen output (Rounded to nearest 10 watts per ANSI C136.15-2015.). Additional dimming functionality is available when a dimming control (by others) is used in the 7-Pin receptacle.

Locked Lumen Output (X8/X7/X6/X5) Option Description:

The Locked Lumen Output option on this page permanently locks the lumen output on the XSP Series street and area luminaire to the setting selected. When ordered with the X option, the luminaire will be shipped from the factory at the lumen output setting selected, and will include a wattage label that indicates the wattage of the setting selected. When this option is selected, the luminaire output is not able to be adjusted in the field except if a dimming control (by others) is used in the 7-Pin receptacle.

Q & X Option Power & Lumen Data – 24L

Q Option Setting	X Option Setting	CCT/CRI	System Watts†	Label Wattage	Lumen Values†					Optics Qualified on DLC QPL	
			120-480V		2LG/2ME/3ME/4ME	2LG w/BLS	2ME w/BLS	3ME w/BLS	4ME w/BLS	Standard	Premium
Q9	N/A (Full Power)	27K7	184	180	22,300	16,500	17,200	15,800	16,300		2LG, 2ME, 3ME, 4ME
		30K7			23,000	17,000	17,700	16,300	16,800		2LG, 2ME, 3ME, 4ME
		40K7			23,600	17,500	18,200	16,800	17,200		2LG, 2ME, 3ME, 4ME
		50K7			23,800	17,600	18,300	16,900	17,400		2LG, 2ME, 3ME, 4ME
		57K7			23,800	17,600	18,300	16,900	17,400		2LG, 2ME, 3ME, 4ME
Q8	X8	27K7	174	170	21,600	16,000	16,600	15,300	15,800		2LG, 2ME, 3ME, 4ME
		30K7			22,300	16,500	17,200	15,800	16,300		2LG, 2ME, 3ME, 4ME
		40K7			22,900	16,900	17,600	16,300	16,700		2LG, 2ME, 3ME, 4ME
		50K7			23,000	17,000	17,700	16,300	16,800		2LG, 2ME, 3ME, 4ME
		57K7			23,000	17,000	17,700	16,300	16,800		2LG, 2ME, 3ME, 4ME
Q7	X7	27K7	164	160	20,700	15,300	15,900	14,700	15,100		2LG, 2ME, 3ME, 4ME
		30K7			21,300	15,800	16,400	15,100	15,500		2LG, 2ME, 3ME, 4ME
		40K7			21,900	16,200	16,900	15,500	16,000		2LG, 2ME, 3ME, 4ME
		50K7			22,100	16,400	17,000	15,700	16,100		2LG, 2ME, 3ME, 4ME
		57K7			22,100	16,400	17,000	15,700	16,100		2LG, 2ME, 3ME, 4ME
Q6	X6	27K7	156	160	20,100	14,875	15,500	14,275	14,675		2LG, 2ME, 3ME, 4ME
		30K7			20,700	15,300	15,900	14,700	15,100		2LG, 2ME, 3ME, 4ME
		40K7			21,300	15,800	16,400	15,100	15,500		2LG, 2ME, 3ME, 4ME
		50K7			21,400	15,800	16,500	15,200	15,600		2LG, 2ME, 3ME, 4ME
		57K7			21,400	15,800	16,500	15,200	15,600		2LG, 2ME, 3ME, 4ME
Q5	X5	27K7	143	140	18,500	13,700	14,250	13,125	13,500		2LG, 2ME, 3ME, 4ME
		30K7			19,000	14,050	14,625	13,500	13,875		2LG, 2ME, 3ME, 4ME
		40K7			19,600	14,500	15,100	13,925	14,300		2LG, 2ME, 3ME, 4ME
		50K7			19,700	14,575	15,200	13,975	14,375		2LG, 2ME, 3ME, 4ME
		57K7			19,700	14,575	15,200	13,975	14,375		2LG, 2ME, 3ME, 4ME

† Electrical and lumen data at 25°C (77°F). Actual wattage and lumen output may differ by +/-10% when operating between 120-277V or 347-480V +/-10%

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PHILIPS
LUMEC

Roadway

RoadFocus

RFS (small)

Project:	
Location:	
Cat.No:	
Type:	
Lamps:	Qty:
Notes:	

The Philips Lumec RoadFocus LED Cobra Head luminaires feature a sleek design that provides seamless replacement of existing HID luminaires. RoadFocus is available in three sizes, offers multiple lumen packages, and a complete array of optical distributions, making it an outstanding solution for multiple roadway applications. Includes Service Tag, Philips innovative way to provide assistance throughout the life of the product.

Ordering guide

example: RFS-35W16LED4K-G2-R2M-UNV-DMG-HS-PH8-RCD7-GY3

Series	LED module	CCT	Generation	Distribution	Voltage	Controls [4]	Options	Finish
RFS			G2					
RFS RoadFocus Roadway, small	**15W12LED** **20W12LED** **25W12LED** **30W12LED** **35W12LED** **40W12LED** **45W12LED**[7] **55W12LED**[7] **25W16LED** **30W16LED** **35W16LED** **45W16LED** **50W16LED** **54W16LED** **60W16LED**[7]	**4K** 4000k **3K** 3000k **2.7K**[11] 2700k	**G2** Generation 2	**Type 2** **R2S** Type II short (ASYM) **R2M** Type II Medium (ASYM) **Type 3** **R3S** Type III short (ASYM) **R3M** Type III Medium (ASYM) **Type 4** **4** Type IV (ASYM) **Type 5** **5**[2] Type V (SYMM)	**UNV** 120-277V **HVU** 347-480V	**DALI**[1] Digitally addressable lighting interface **DMG**[5] 0-10V **SRD**[1] Sensor ready driver, standard configuration **SRD1**[1] Sensor ready driver, alternate configuration	**API** Factory installed NEMA label, ANSI C136.15-2015 compliant **FAWS**[7] Field adjustable wattage selector **HS** House Side Shield, shield, 1 per 16 LED light engine **NRC**[8] No receptacle **NYBC** 4-position terminal block **PH8**[1,10] Twist-lock photoelectric cell, UNV (120-277VAC) **PH8/347**[10,12] Twist-lock photoelectric cell (347VAC) **PH8/480**[10,12] Twist-lock photoelectric cell (480VAC) **PHXL**[1,10] Twist-lock photoelectric Cell, extended life, UNV (120-277VAC) **PH9**[10] Shorting cap **RCD**[3,9] Tool less receptacle for twist-lock photocell or shorting cap, 5-pin (optional) **RCD7**[3,5] Tool less receptacle for twist-lock photocell or shorting cap, 7-pin (standard) **SP2** 20kV / 10kA Surge protector **TLRSR**[6] SR receptacle	**BK** Black **BR** Bronze **GY3** Gray **WH** White

1. Not available with **HVU**.
2. Not available with **HS** option.
3. Use of photoelectric cell or shorting cap is required to ensure proper illumination.
4. Select either **DALI** or **DMG** or **SRD** or **SRD1** mandatory option.
5. Please note this integrated feature come standard with RoadFocus.
6. Only available with **SRD** or **SRD1** Driver Options.
7. Only available with **DMG** Driver Options.
8. Not available with **PH8**, **PH8/347**, **PH8/480**, **PHXL**, **PH9**, **DALI**, **SRD** or **SRD1** Driver Options.
9. Not available with **SRD** Driver Options.
10. Either **RCD** or **RCD7** must be selected for this option.
11. Extended lead-time may apply. Consult factory.
12. Not available with **UNV**.

Accessories (must be ordered as separate line item - quickly and easily installed in the field)

Interact City connector node *

*Contact the factory for additional support when connected lighting or additional services are desired.

RFS RoadFocus

Small, LED Cobrahead

LED Wattage values

Ordering Code	Total LEDs	LED Current (mA)	Average System Watts[13]	Wattage label[14]
RFS-15W12LED	12	330	14	10
RFS-20W12LED	12	465	19	20
RFS-25W12LED	12	590	25	20
RFS-30W12LED	12	720	30	30
RFS-35W12LED	12	845	35	40
RFS-40W12LED	12	970	40	40
RFS-45W12LED	12	1100	45	40
RFS-55W12LED	12	1310	55	50

Ordering Code	Total LEDs	LED Current (mA)	Average System Watts[13]	Wattage label[14]
RFS-25W16LED	16	440	24	20
RFS-30W16LED	16	530	29	30
RFS-35W16LED	16	700	38	40
RFS-45W16LED	16	830	45	50
RFS-50W16LED	16	915	50	50
RFS-54W16LED	16	1050	53	50
RFS-60W16LED	16	1105	61	60

13. Typical values, rounded.
14. As per ANSI C136.15-2015. Consult factory for other labeling needs.

LED Lumen values

		Type R2S			Type R2M			Type R3S			Type R3M			Type 4			Type 5		
Ordering Code	Color Temp.	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
RFS-15W12LED	4000	1,784	127	B1-U0-G0	1,723	122	B1-U0-G1	1,735	123	B0-U0-G0	1,692	120	B1-U0-G1	1,695	120	B0-U0-G1	1,790	127	B1-U0-G0
RFS-20W12LED	4000	2,426	125	B1-U0-G0	2,336	120	B1-U0-G1	2,360	122	B1-U0-G1	2,288	118	B1-U0-G1	2,299	119	B1-U0-G1	2,430	125	B2-U0-G1
RFS-25W12LED	4000	3,043	122	B1-U0-G1	2,940	118	B1-U0-G1	3,014	121	B1-U0-G1	2,788	112	B1-U0-G1	2,872	115	B1-U0-G1	3,105	124	B2-U0-G1
RFS-30W12LED	4000	3,624	122	B1-U0-G1	3,460	117	B1-U0-G1	3,523	119	B1-U0-G1	3,364	114	B1-U0-G1	3,429	116	B1-U0-G1	3,602	122	B2-U0-G1
RFS-35W12LED	4000	4,243	121	B1-U0-G1	4,041	115	B1-U0-G1	4,125	118	B1-U0-G1	3,913	112	B1-U0-G1	4,010	115	B1-U0-G1	4,199	120	B3-U0-G1
RFS-40W12LED	4000	4,799	120	B1-U0-G1	4,572	114	B1-U0-G1	4,663	117	B1-U0-G1	4,388	110	B1-U0-G1	4,536	113	B1-U0-G1	4,731	118	B3-U0-G1
RFS-45W12LED	4000	5,300	119	B1-U0-G1	5,059	113	B1-U0-G1	5,158	115	B1-U0-G1	4,816	108	B1-U0-G1	5,012	112	B1-U0-G1	5,210	117	B3-U0-G1
RFS-55W12LED	4000	6,388	117	B2-U0-G1	6,103	111	B2-U0-G1	6,214	113	B1-U0-G2	5,721	104	B2-U0-G1	6,023	110	B1-U0-G2	6,226	114	B3-U0-G1
RFS-25W16LED	4000	3,145	130	B1-U0-G0	3,074	127	B1-U0-G1	3,124	129	B1-U0-G1	3,029	125	B1-U0-G1	2,991	124	B1-U0-G1	3,170	131	B2-U0-G1
RFS-30W16LED	4000	3,692	128	B1-U0-G1	3,609	125	B1-U0-G1	3,667	127	B1-U0-G1	3,556	123	B1-U0-G1	3,511	122	B1-U0-G1	3,721	129	B2-U0-G1
RFS-35W16LED	4000	4,674	123	B1-U0-G1	4,568	120	B1-U0-G1	4,643	122	B1-U0-G1	4,501	118	B1-U0-G1	4,445	117	B1-U0-G1	4,711	124	B3-U0-G1
RFS-45W16LED	4000	5,378	119	B1-U0-G1	5,257	116	B1-U0-G1	5,342	118	B1-U0-G1	5,179	114	B1-U0-G1	5,115	113	B1-U0-G2	5,421	120	B3-U0-G1
RFS-50W16LED	4000	5,910	118	B2-U0-G1	5,776	115	B2-U0-G1	5,871	117	B1-U0-G2	5,691	113	B2-U0-G1	5,620	112	B1-U0-G2	5,956	119	B3-U0-G1
RFS-54W16LED	4000	6,153	116	B2-U0-G1	6,013	113	B2-U0-G1	6,112	115	B1-U0-G2	5,924	112	B2-U0-G1	5,851	110	B1-U0-G2	6,201	117	B3-U0-G1
RFS-60W16LED	4000	6,944	114	B2-U0-G1	6,787	111	B2-U0-G1	6,898	113	B1-U0-G2	6,687	109	B2-U0-G1	6,604	108	B1-U0-G2	6,999	115	B3-U0-G1

		Type R2S			Type R2M			Type R3S			Type R3M			Type 4			Type 5		
Ordering Code	Color Temp.	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
RFS-15W12LED	3000	1,683	120	B1-U0-G0	1,626	115	B1-U0-G0	1,637	116	B0-U0-G0	1,597	113	B1-U0-G1	1,599	114	B0-U0-G1	1,689	120	B1-U0-G0
RFS-20W12LED	3000	2,289	118	B1-U0-G0	2,204	114	B1-U0-G1	2,227	115	B1-U0-G1	2,159	111	B1-U0-G1	2,169	112	B1-U0-G1	2,293	118	B2-U0-G1
RFS-25W12LED	3000	2,872	115	B1-U0-G0	2,774	111	B1-U0-G1	2,844	114	B1-U0-G1	2,631	106	B1-U0-G1	2,710	110	B1-U0-G1	2,929	118	B2-U0-G1
RFS-30W12LED	3000	3,419	116	B1-U0-G1	3,265	110	B1-U0-G1	3,324	112	B1-U0-G1	3,175	107	B1-U0-G1	3,235	109	B1-U0-G1	3,398	115	B2-U0-G1
RFS-35W12LED	3000	4,004	114	B1-U0-G1	3,813	109	B1-U0-G1	3,892	111	B1-U0-G1	3,693	106	B1-U0-G1	3,784	108	B1-U0-G1	3,962	113	B2-U0-G1
RFS-40W12LED	3000	4,528	113	B1-U0-G1	4,314	108	B1-U0-G1	4,400	110	B1-U0-G1	4,140	104	B1-U0-G1	4,280	107	B1-U0-G1	4,464	112	B3-U0-G1
RFS-45W12LED	3000	5,001	112	B1-U0-G1	4,773	107	B1-U0-G1	4,867	109	B1-U0-G1	4,545	102	B1-U0-G1	4,729	106	B1-U0-G2	4,916	110	B3-U0-G1
RFS-55W12LED	3000	6,028	110	B2-U0-G1	5,759	105	B2-U0-G1	5,864	107	B1-U0-G2	5,398	99	B1-U0-G1	5,683	104	B1-U0-G2	5,875	107	B3-U0-G1
RFS-25W16LED	3000	2,968	123	B1-U0-G0	2,900	120	B1-U0-G1	2,948	122	B1-U0-G1	2,858	118	B1-U0-G1	2,822	117	B1-U0-G1	2,991	124	B2-U0-G1
RFS-30W16LED	3000	3,484	121	B1-U0-G1	3,405	118	B1-U0-G1	3,460	120	B1-U0-G1	3,355	116	B1-U0-G1	3,313	115	B1-U0-G1	3,511	122	B2-U0-G1
RFS-35W16LED	3000	4,410	116	B1-U0-G1	4,310	113	B1-U0-G1	4,381	115	B1-U0-G1	4,247	112	B1-U0-G1	4,194	110	B1-U0-G1	4,445	117	B3-U0-G1
RFS-45W16LED	3000	5,075	112	B1-U0-G1	4,960	110	B1-U0-G1	5,041	111	B1-U0-G1	4,887	108	B1-U0-G1	4,826	107	B1-U0-G2	5,115	113	B3-U0-G1
RFS-50W16LED	3000	5,576	111	B2-U0-G1	5,450	109	B2-U0-G1	5,539	110	B1-U0-G1	5,370	107	B1-U0-G1	5,303	106	B1-U0-G2	5,620	112	B3-U0-G1
RFS-54W16LED	3000	5,806	110	B2-U0-G1	5,674	107	B2-U0-G1	5,767	109	B1-U0-G2	5,590	105	B1-U0-G1	5,521	104	B1-U0-G2	5,851	110	B3-U0-G1
RFS-60W16LED	3000	6,552	107	B2-U0-G1	6,404	105	B2-U0-G1	6,509	107	B1-U0-G2	6,310	103	B2-U0-G1	6,231	102	B1-U0-G2	6,604	108	B3-U0-G1

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout – contact Applications at outdoorlighting.applications@philips.com. Consult DLC QPL to confirm your specific fixture selection is DLC approved.

Note: Some data may be scaled based on tests of similar but not identical luminaries.

RFS RoadFocus

Small, LED Cobrahead

LED Lumen values (continued)

		Type R2S			Type R2M			Type R3S			Type R3M			Type 4			Type 5		
Ordering Code	**Color Temp.**	**Lumen Output**	**Efficacy (LPW)**	**BUG Rating**	**Lumen Output**	**Efficacy (LPW)**	**BUG Rating**	**Lumen Output**	**Efficacy (LPW)**	**BUG Rating**	**Lumen Output**	**Efficacy (LPW)**	**BUG Rating**	**Lumen Output**	**Efficacy (LPW)**	**BUG Rating**	**Lumen Output**	**Efficacy (LPW)**	**BUG Rating**
RFS-15W12LED	2700	1,346	96	B1-U0-G0	1,301	92	B1-U0-G0	1,310	93	B0-U0-G0	1,278	91	B1-U0-G0	1,279	91	B0-U0-G1	1,351	96	B1-U0-G0
RFS-20W12LED	2700	1,831	94	B1-U0-G0	1,763	91	B1-U0-G1	1,782	92	B0-U0-G0	1,727	89	B1-U0-G1	1,735	89	B0-U0-G1	1,834	95	B1-U0-G0
RFS-25W12LED	2700	2,286	92	B1-U0-G0	2,208	89	B1-U0-G1	2,265	91	B1-U0-G1	2,095	84	B1-U0-G1	2,158	87	B1-U0-G1	2,332	94	B2-U0-G1
RFS-30W12LED	2700	2,735	92	B1-U0-G0	2,612	88	B1-U0-G1	2,659	90	B1-U0-G1	2,540	86	B1-U0-G1	2,588	87	B1-U0-G1	2,718	92	B2-U0-G1
RFS-35W12LED	2700	3,203	92	B1-U0-G0	3,050	87	B1-U0-G1	3,114	89	B1-U0-G1	2,954	84	B1-U0-G1	3,027	86	B1-U0-G1	3,170	91	B2-U0-G1
RFS-40W12LED	2700	3,622	91	B1-U0-G1	3,451	86	B1-U0-G1	3,520	88	B1-U0-G1	3,312	83	B1-U0-G1	3,424	86	B1-U0-G1	3,571	89	B2-U0-G1
RFS-45W12LED	2700	4,001	90	B1-U0-G1	3,818	85	B1-U0-G1	3,894	87	B1-U0-G1	3,636	81	B1-U0-G1	3,783	85	B1-U0-G1	3,933	88	B2-U0-G1
RFS-55W12LED	2700	4,822	88	B1-U0-G1	4,607	84	B1-U0-G1	4,691	86	B1-U0-G1	4,318	79	B1-U0-G1	4,546	83	B1-U0-G1	4,700	86	B3-U0-G1
RFS-25W16LED	2700	2,374	98	B1-U0-G0	2,320	96	B1-U0-G1	2,358	98	B1-U0-G1	2,286	95	B1-U0-G1	2,258	93	B1-U0-G1	2,393	99	B2-U0-G1
RFS-30W16LED	2700	2,787	97	B1-U0-G0	2,724	94	B1-U0-G1	2,768	96	B1-U0-G1	2,684	93	B1-U0-G1	2,650	92	B1-U0-G1	2,809	97	B2-U0-G1
RFS-35W16LED	2700	3,528	93	B1-U0-G1	3,448	91	B1-U0-G1	3,505	92	B1-U0-G1	3,398	89	B1-U0-G1	3,355	88	B1-U0-G1	3,556	94	B2-U0-G1
RFS-45W16LED	2700	4,060	90	B1-U0-G1	3,968	88	B1-U0-G1	4,033	89	B1-U0-G1	3,910	86	B1-U0-G1	3,861	85	B1-U0-G1	4,092	90	B3-U0-G1
RFS-50W16LED	2700	4,461	89	B1-U0-G1	4,360	87	B1-U0-G1	4,431	88	B1-U0-G1	4,296	86	B1-U0-G1	4,242	85	B1-U0-G1	4,496	90	B3-U0-G1
RFS-54W16LED	2700	4,645	88	B1-U0-G1	4,539	86	B1-U0-G1	4,614	87	B1-U0-G1	4,472	84	B1-U0-G1	4,417	83	B1-U0-G1	4,681	88	B3-U0-G1
RFS-60W16LED	2700	5,242	86	B1-U0-G1	5,123	84	B1-U0-G1	5,207	85	B1-U0-G1	5,048	83	B1-U0-G1	4,985	82	B1-U0-G2	5,283	86	B3-U0-G1

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout – contact Applications at outdoorlighting.applications@philips.com. Consult DLC QPL to confirm your specific fixture selection is DLC approved.

Note: Some data may be scaled based on tests of similar but not identical luminaries.

Predicted Lumen Depreciation Data

Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions. L_{70} is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L_{70} hours limited to 6 times actual LED test hours

Ambient Temperature °C	Driver mA	Calculated L_{70} Hours	L_{70} per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	**up to 1050 mA**	**>100,000 hours**	**>60,000 hours**	**>84%**
25°C	**above 1050 mA**	**75,000 hours**	**>36,000 hours**	**>75%**

Field Adjustable Wattage (FAWS) Multiplier Chart

FAWS Position	Typical Delivered Lumens Multiplier	Typical System wattage
1	0.31	0.28
2	0.53	0.50
3	0.62	0.58
4	0.70	0.67
5	0.78	0.75
6	0.83	0.81
7	0.89	0.87
8	0.92	0.91
9	0.96	0.95
10	1.00	1.00

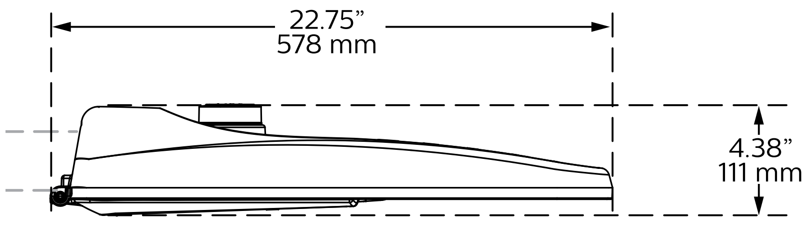
Note: Typical value accuracy +/- 5%

RFS RoadFocus

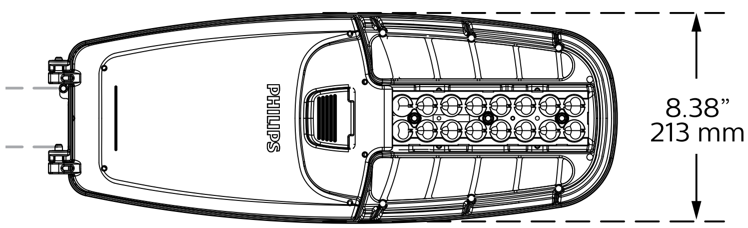
Small, LED Cobrahead

Dimensions

Side View



Bottom View



Specifications

Housing

Made of a low copper die cast Aluminum alloy (A360), 0.100" (2.5mm) minimum thickness. Fits on a 1.66" (42mm) O.D. (1.25" NPS), 1.9" (48mm) O.D. (1.5" NPS) or 2 3/8" (60mm) O.D. (2" NPS) by 5 1/2" (140mm) minimum long tenon. Comes with a zinc plated clamp fixed by 2 zinc plated hexagonal bolts 3/8 16 UNC for ease of installation. Provides an easy step adjustment of +/- 5° tilt in 2.5º increments. Includes integral bubble level standard (always included). A quick release, tool less entry, single latch, hinged, removable door opens downward to provide access to electronic components and to a terminal block. Door is secured to prevent accidental dropping or disengagement. A clearance of 13" (330mm) at the rear is required in order to remove the door. Complete with a bird guard protecting against birds and similar intruders and an ANSI label as per C136.15-2015 to identify wattage and source (both included in box). Housing (including electrical compartment) rated IP54 per ANSI C136.37.

Light Engine

Composed of 4 main components: LED Module / Optical System / Heat Sink / Driver.

Electrical components are RoHS compliant, IP66 sealed light engine equipped LEDs tested by ISO 17025-2005 accredited lab in accordance with IESNA LM-80 guidelines in compliance with EPA ENERGY STAR, extrapolations in accordance with IESNA TM-21. Metal core board ensures greater heat transfer and longer lifespan.

LED Module: Composed of high-performance white LEDs. Color temperature as per ANSI/NEMA bin 2700 Kelvin nominal (2725 ±145K), 2700 Kelvin nominal (2725 ±145K) CRI 80 min, 3000 Kelvin nominal (3045K +/- 175K) or 4000 Kelvin nominal (3985K +/- 275K), CRI 70 Min. 75 Typical. Other CCT/CRI also available, consult factory.

Optical System: Composed of high performance UV stabilized optical grade polymer refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. System is rated IP66. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance. 0% uplight and U0 per IESNA TM-15.

Heat Sink: Built in the housing, designed to ensure high efficacy and superior cooling by natural vertical convection air flow pattern always close to LEDs and driver optimising their efficiency and life. Product does not use any cooling device with moving parts (only passive cooling). Wide openings enable natural cleaning and removal of dirt and debris. Entire luminaire is rated for operation in ambient temperature of -40°C / -40°F up to +40°C / +104°F. +50°C / +122°F also available, consult factory.

Driver: High power factor of 90% min. Electronic driver, operating range 50/60 Hz. Auto adjusting universal voltage input from 120 to 277 VAC rated for both application line to line or line to neutral, Class I or 2, THD of 20% max.

DMG: Dimming compatible 0-10 volts.
The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built in driver surge protection of 2.5kV (min).

Integrated Features

DMG: Dimmable driver 0-10V.

RCD7*: Tool less orientable receptacle with 7 pins enabling dimming and additional functionality (to be determined), can be used with a twist lock Interact City node or photoelectric cell or a shorting cap.

Please note: Additional hardware will be required to utilize the additional 2 pins on this receptacle.

SP1: Surge protection device tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with DOE MSSLC Model Specification for LED Roadway Luminaires Appendix D Electrical Immunity High test level 10kV/10kA.

Please note that these integrated features always come with RoadFocus luminaire.

** Use of photoelectric cell or shorting cap is required to ensure proper illumination.*

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Specifications (continued)

Driver and Luminaire Options

DALI: Pre-set driver compatible with the DALI control system.

SRD: Sensor Ready Driver including SR communication (used for dimming and other functionalities), 24V auxiliary supply and a logical signal input (LSI) connected to the top NEMA twist lock receptacle and bottom TLRSR receptacle, if this option included/chosen. This configuration is compatible with Interact City controllers.

SRD1: Sensor Ready Driver including SR communication (used for dimming and other functionalities) but with 24V auxiliary supply and a logical signal input (LSI) not connected to the top NEMA twist lock. If TLRSR receptacle option included, standard SR communication, 24V auxiliary supply and LSI are connected to the TLRSR receptacle.

FAWS: Field Adjustable Wattage Selector, pre-set to the highest position, can be easily switched in the field to the required position. This reduces total luminaire wattage consumption and reduces the light level – see the FAWS multiplier chart for more details.

Note: It is not recommended to use FAWS with other dimming or controls; if you do, set the switch to position 10 (maximum output) to enable the other dimming or controls. Switching FAWS to any position other than 10 will disable the other dimming or controls.

NRC: No Receptacle. Fixture is shipped with a cap instead of a receptacle.

NYBC: 4-position terminal block

SP2: 20kV / 10kA surge protection device that provides extra protection beyond the SP1 10kV/10kA level.

RCD*: Tool Less orientable receptacle with 5 pins enabling dimming, can be used with a twist lock Interact City or photoelectric cell or a shorting cap.

TLRSR: SR Sensor connector, installed in fixture door. Shipped with protective cover.

HS: House side shield, 1 per 16 LED light engine.

PH8: Twist-lock photoelectric cell, UNV (120-277VAC).

PH8/347: Twist-lock photoelectric cell, UNV (120-277VAC).

PH8/480: Twist-lock photoelectric cell, UNV (120-277VAC).

PHXL: Twist-lock Photoelectric Cell, extended life, UNV (120-277VAC).

PH9*: Shorting cap.

API: Factory Installed NEMA label, ANSI C136.15-2015 compliant. Consult factory for other labeling needs.

** Use of photoelectric cell or shorting cap is required to ensure proper illumination.*

Luminaire Useful Life

Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in situ thermal testing in accordance with UL1598 and UL8750, Philips System Reliability Tool, Philips Advance data and LED manufacturer LM-80/TM-21 data, expected to reach 100,000 + hours with >L70 lumen maintenance @ 25°C. Luminaire Useful Life accounts for LED lumen maintenance AND all of these additional factors including: LED life, driver life, PCB substrate, solder joints, on/off cycles, burning hours and corrosion.

Wiring

The connection of the luminaire is done using a terminal block connector 600V, 85A for use with #2 14 AWG. wires from the primary circuit, located inside the housing. Due to the inrush current that occurs with electronic drivers, recommend using a 10Amp time-delay fuse to avoid unwanted fuse blowing (false tripping) that can occur with normal or fast acting fuses.

Hardware

All exposed screws shall be complete with Ceramic primer seal to reduce seizing of the parts, also offers a high resistance to corrosion. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

Finish

Color in accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with ± 1 mils/24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard.

The surface treatment achieves a minimum of 3000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

LED products manufacturing standard

The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Vibration Resistance

The RFS meets the ANSI C136.31, American National Standard for Roadway Luminaire Vibration specifications for Bridge/overpass applications. (Tested for 3G over 100,000 cycles by independent lab)

Certifications and Compliance

cULus Listed for Canada and USA. Luminaire meets DOE and MSSLC Model Specification for LED Roadway Luminaires. Most versions of RoadFocus LED Cobrahead luminaires are DesignLights Consortium qualified, consult DLC QPL to confirm your specific fixture selection is approved. CCTs 3000K and warmer are Dark Sky Approved. Luminaire complies with or exceeds the following ANSI C136 standards: .2, .3, .10, .14, .15, .22, .25, .31, .37, .41.

Service Tag

Each individual luminaire is uniquely identifiable, thanks to the Philips Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making installation and maintenance operations faster and easier, no matter what stage of the luminaire's lifetime. Just download the APP and register your product right away.

For more details visit: **philips.com/servicetag**

Limited Warranty

10-year limited warranty.
See **philips.com/warranties** for details and restrictions.

Brackets/Arms

For brackets / arms available with this luminaire, see Lumec 3D for details.

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PHILIPS
LUMEC

Roadway

RoadFocus

RFM (medium)

Project:	
Location:	
Cat.No:	
Type:	
Lamps:	Qty:
Notes:	

The Philips Lumec RoadFocus LED Cobra Head luminaires feature a sleek design that provides seamless replacement of existing HID luminaires. RoadFocus is available in three sizes, offers multiple lumen packages, and a complete array of optical distributions, making it an outstanding solution for all types of roadway applications. Includes Service Tag, Philips innovative way to provide assistance throughout the life of the product.

Ordering guide

example: RFM-108W32LED3K-G2-R2M-UNV-DMG-HS-PH8-RCD7-GY3

Series	LED module	CCT	Generation	Distribution	Voltage	Controls [4]	Options	Finish
RFM			G2					
RFM RoadFocus Roadway, medium	**30W24LED** **35W32LED**[12] **45W24LED** **50W40LED** **55W24LED** **55W32LED**[12] **55W48LED**[12] **72W32LED** **80W48LED** **85W24LED** **85W36LED** **90W40LED** **108W32LED** **108W48LED** **130W32LED**[7] **135W40LED** **160W48LED**	**4K** 4000k **3K** 3000k **2.7K**[11] 2700k	**G2** Generation 2	**Type 2** **R2S** Type II short (ASYM) **R2M** Type II Medium (ASYM) **Type 3** **R3S** Type III short (ASYM) **R3M** Type III Medium (ASYM) **Type 4** **4** Type IV (ASYM) **Type 5** **5**[2] Type V (SYMM)	**UNV** 120-277V **HVU** 347-480V	**DALI**[1] Digitally addressable lighting interface **DMG**[5] 0-10V **SRD**[1] Sensor ready driver, standard configuration **SRD1**[1] Sensor ready driver, alternate configuration	**2C** Two clamp with 4 bolts **API** Factory installed NEMA label, ANSI C136.15-2015 compliant **FAWS**[7] Field adjustable wattage selector **HS** House Side Shield, shield, 1 per 16 LED light engine **NRC**[8] No receptacle **NYBC** 4-position terminal block **PH8**[1,10] Twist-lock photoelectric cell, UNV (120-277VAC) **PH8/347**[10,13] Twist-lock photoelectric cell (347VAC) **PH8/480**[10,13] Twist-lock photoelectric cell (480VAC) **PHXL**[1,10] Twist-lock photoelectric Cell, extended life, UNV (120-277VAC) **PH9**[10] Shorting cap **RCD**[3,9] Tool less receptacle for twist-lock photocell or shorting cap, 5-pin (optional) **RCD7**[3,5] Tool less receptacle for twist-lock photocell or shorting cap, 7-pin (standard) **SP2** 20kV / 10kA Surge protector **TLRSR**[6] SR receptacle	**BK** Black **BR** Bronze **GY3** Gray **WH** White

1. Not available with **HVU**.
2. Not available with **HS** option.
3. Use of photoelectric cell or shorting cap is required to ensure proper illumination.
4. Select either **DALI** or **DMG** or **SRD** or **SRD1** mandatory option.
5. Please note this integrated feature come standard with RoadFocus.
6. Only available with **SRD** or **SRD1** Driver Options.
7. Only available with **DMG** Driver Options
8. Not available with **PH8**, **PH8/347**, **PH8/480**, **PHXL**, **PH9**, **DALI**, **SRD** or **SRD1** Driver Options.
9. Not available with **SRD** Driver Options.
10. Either **RCD** or **RCD7** must be selected for this option.
11. Extended lead-time may apply. Consult factory.
12. **FAWS** table accuracy +/- 15% on these models.
13. Not available with **UNV**.

RFM RoadFocus

Medium, LED Cobrahead

Accessories (must be ordered as separate line item - quickly and easily installed in the field)

Interact City connector node.*

* Contact the factory for additional support when connected lighting or additional services are desired.

Predicted Lumen Depreciation Data

Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions. L_{70} is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L_{70} hours limited to 6 times actual LED test hours

Ambient Temperature °C	Driver mA	Calculated L_{70} Hours	L_{70} per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	up to 1050 mA	>100,000 hours	>60,000 hours	>88%
25°C	above 1050 mA	74,000 hours	>36,000 hours	75%

LED Wattage values

Ordering Code	Total LEDs	LED Current (mA)	Average System Watts[14]	Wattage label[15]
RFM-30W24LED	24	350	28	30
RFM-45W24LED	24	530	41	40
RFM-55W24LED	24	700	55	50
RFM-85W24LED	24	1050	82	80
RFM-35W32LED	32	350	37	40
RFM-55W32LED	32	530	53	50
RFM-72W32LED	32	700	73	70
RFM-108W32LED	32	1050	108	110
RFM-130W32LED	32	1250	129	130

Ordering Code	Total LEDs	LED Current (mA)	Average System Watts[14]	Wattage label[15]
RFM-85W36LED	36	700	80	80
RFM-50W40LED	40	350	44	40
RFM-90W40LED	40	700	88	90
RFM-135W40LED	40	1050	135	140
RFM-55W48LED	48	350	55	60
RFM-80W48LED	48	530	81	80
RFM-108W48LED	48	700	106	110
RFM-160W48LED	48	1050	161	160

14. Typical values, rounded.
15. As per ANSI C136.15-2015. Consult factory for other labeling needs.

LED Lumen values

		Type R2S			Type R2M			Type R3S			Type R3M			Type 4			Type 5		
Ordering Code	Color Temp.	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
RFM-30W24LED	4000	3,720	133	B1-U0-G1	3,568	128	B1-U0-G1	3,707	133	B1-U0-G1	3,577	128	B1-U0-G1	3,631	130	B1-U0-G1	3,679	132	B2-U0-G1
RFM-45W24LED	4000	5,355	129	B1-U0-G1	5,135	124	B1-U0-G1	5,335	129	B1-U0-G1	5,147	124	B1-U0-G1	5,226	126	B1-U0-G2	5,295	128	B3-U0-G1
RFM-55W24LED	4000	6,791	124	B2-U0-G1	6,512	119	B2-U0-G1	6,766	124	B1-U0-G2	6,528	119	B2-U0-G1	6,628	121	B1-U0-G2	6,715	123	B3-U0-G1
RFM-85W24LED	4000	9,276	113	B2-U0-G1	8,896	108	B2-U0-G2	9,242	112	B2-U0-G2	8,917	108	B2-U0-G2	9,054	110	B2-U0-G2	9,173	112	B3-U0-G2
RFM-35W32LED	4000	5,013	136	B1-U0-G1	4,802	130	B1-U0-G1	4,876	132	B1-U0-G1	4,821	130	B1-U0-G1	4,777	129	B1-U0-G2	4,926	133	B3-U0-G1
RFM-55W32LED	4000	7,212	135	B2-U0-G1	6,908	129	B2-U0-G1	7,015	131	B1-U0-G2	6,936	130	B2-U0-G1	6,872	129	B1-U0-G2	7,087	133	B3-U0-G2
RFM-72W32LED	4000	9,129	125	B2-U0-G1	8,745	120	B2-U0-G2	8,881	122	B1-U0-G2	8,780	120	B2-U0-G2	8,700	119	B2-U0-G2	8,972	123	B3-U0-G2
RFM-108W32LED	4000	12,704	118	B3-U0-G2	12,170	113	B3-U0-G2	12,358	114	B2-U0-G2	12,218	113	B3-U0-G2	12,106	112	B2-U0-G2	12,485	116	B4-U0-G2
RFM-130W32LED	4000	14,676	114	B3-U0-G2	14,059	109	B3-U0-G3	14,277	111	B2-U0-G2	14,115	110	B3-U0-G2	13,986	109	B2-U0-G3	14,423	112	B4-U0-G2
RFM-85W36LED	4000	10,433	130	B2-U0-G2	9,994	125	B2-U0-G2	10,149	127	B2-U0-G2	10,034	125	B2-U0-G2	9,942	124	B2-U0-G2	10,253	128	B4-U0-G2
RFM-50W40LED	4000	6,351	143	B2-U0-G1	6,084	137	B2-U0-G1	6,178	139	B1-U0-G2	6,108	138	B2-U0-G1	6,052	136	B1-U0-G2	6,242	141	B3-U0-G1
RFM-90W40LED	4000	11,592	131	B3-U0-G2	11,105	126	B3-U0-G2	11,276	128	B2-U0-G2	11,148	126	B3-U0-G2	11,047	125	B2-U0-G2	11,392	129	B4-U0-G2
RFM-135W40LED	4000	15,835	117	B3-U0-G2	15,169	112	B3-U0-G3	15,404	114	B2-U0-G3	15,229	113	B3-U0-G2	15,090	112	B2-U0-G3	15,562	115	B4-U0-G2
RFM-55W48LED	4000	7,520	137	B2-U0-G1	7,204	131	B2-U0-G2	7,315	133	B1-U0-G2	7,232	131	B2-U0-G1	7,166	130	B1-U0-G2	7,390	134	B3-U0-G2
RFM-80W48LED	4000	10,817	134	B3-U0-G2	10,362	129	B2-U0-G2	10,522	131	B2-U0-G2	10,403	129	B2-U0-G2	10,308	128	B2-U0-G2	10,630	132	B4-U0-G2
RFM-108W48LED	4000	13,694	129	B3-U0-G2	13,118	124	B3-U0-G2	13,321	126	B2-U0-G2	13,170	124	B3-U0-G2	13,049	123	B2-U0-G3	13,457	127	B4-U0-G2
RFM-160W48LED	4000	19,056	119	B3-U0-G2	18,255	114	B3-U0-G3	18,537	115	B3-U0-G3	18,327	114	B3-U0-G3	18,160	113	B3-U0-G3	18,727	117	B4-U0-G2

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout - contact Applications at outdoorlighting.applications@philips.com. Consult DLC QPL to confirm your specific fixture selection is DLC approved.

Note: Some data may be scaled based on tests of similar but not identical luminaries.

RFM RoadFocus

Medium, LED Cobrahead

LED Lumen values (continued)

		Type R2S			Type R2M			Type R3S			Type R3M			Type 4			Type 5		
Ordering Code	**Color Temp.**	**Lumen Output**	**Efficacy** (LPW)	**BUG Rating**	**Lumen Output**	**Efficacy** (LPW)	**BUG Rating**	**Lumen Output**	**Efficacy** (LPW)	**BUG Rating**	**Lumen Output**	**Efficacy** (LPW)	**BUG Rating**	**Lumen Output**	**Efficacy** (LPW)	**BUG Rating**	**Lumen Output**	**Efficacy** (LPW)	**BUG Rating**
RFM-30W24LED	3000	3,511	126	B1-U0-G1	3,367	121	B1-U0-G1	3,498	125	B1-U0-G1	3,375	121	B1-U0-G1	3,427	123	B1-U0-G1	3,472	124	B2-U0-G1
RFM-45W24LED	3000	5,052	122	B1-U0-G1	4,845	117	B1-U0-G1	5,034	122	B1-U0-G1	4,857	117	B1-U0-G1	4,931	119	B1-U0-G2	4,996	121	B3-U0-G1
RFM-55W24LED	3000	6,407	117	B2-U0-G1	6,145	112	B2-U0-G1	6,384	117	B1-U0-G2	6,160	113	B2-U0-G1	6,254	114	B1-U0-G2	6,336	116	B3-U0-G1
RFM-85W24LED	3000	8,753	106	B2-U0-G1	8,394	102	B2-U0-G2	8,721	106	B1-U0-G2	8,414	102	B2-U0-G2	8,543	104	B2-U0-G2	8,655	105	B3-U0-G2
RFM-35W32LED	3000	4,730	128	B1-U0-G1	4,531	123	B1-U0-G1	4,601	124	B1-U0-G1	4,549	123	B1-U0-G1	4,507	122	B1-U0-G1	4,648	126	B3-U0-G1
RFM-55W32LED	3000	6,805	127	B2-U0-G1	6,519	122	B2-U0-G1	6,619	124	B1-U0-G2	6,544	122	B2-U0-G1	6,485	121	B1-U0-G2	6,687	125	B3-U0-G1
RFM-72W32LED	3000	8,614	118	B2-U0-G1	8,252	113	B2-U0-G2	8,380	115	B1-U0-G2	8,285	113	B2-U0-G2	8,209	112	B2-U0-G2	8,465	116	B3-U0-G2
RFM-108W32LED	3000	11,987	111	B3-U0-G2	11,483	106	B3-U0-G2	11,661	108	B2-U0-G2	11,528	107	B3-U0-G2	11,423	106	B2-U0-G2	11,780	109	B4-U0-G2
RFM-130W32LED	3000	13,848	108	B3-U0-G2	13,266	103	B3-U0-G2	13,471	105	B2-U0-G2	13,318	103	B3-U0-G2	13,196	102	B2-U0-G3	13,609	106	B4-U0-G2
RFM-85W36LED	3000	9,844	123	B2-U0-G2	9,430	118	B2-U0-G2	9,576	120	B2-U0-G2	9,467	118	B2-U0-G2	9,381	117	B2-U0-G2	9,674	121	B3-U0-G2
RFM-50W40LED	3000	5,993	135	B2-U0-G1	5,741	129	B2-U0-G1	5,830	131	B1-U0-G2	5,764	130	B2-U0-G1	5,711	129	B1-U0-G2	5,889	133	B3-U0-G1
RFM-90W40LED	3000	10,938	124	B3-U0-G2	10,478	119	B2-U0-G2	10,640	120	B2-U0-G2	10,519	119	B2-U0-G2	10,423	118	B2-U0-G2	10,749	122	B4-U0-G2
RFM-135W40LED	3000	14,941	111	B3-U0-G2	14,313	106	B3-U0-G3	14,535	108	B2-U0-G2	14,370	106	B3-U0-G2	14,239	105	B2-U0-G3	14,684	109	B4-U0-G2
RFM-55W48LED	3000	7,096	129	B2-U0-G1	6,797	123	B2-U0-G1	6,903	125	B1-U0-G2	6,824	124	B2-U0-G1	6,762	123	B1-U0-G2	6,973	127	B3-U0-G1
RFM-80W48LED	3000	10,206	127	B2-U0-G2	9,777	121	B2-U0-G2	9,929	123	B2-U0-G2	9,816	122	B2-U0-G2	9,726	121	B2-U0-G2	10,030	124	B4-U0-G2
RFM-108W48LED	3000	12,921	122	B3-U0-G2	12,378	117	B3-U0-G2	12,569	119	B2-U0-G2	12,427	117	B3-U0-G2	12,313	116	B2-U0-G2	12,698	120	B4-U0-G2
RFM-160W48LED	3000	17,981	112	B3-U0-G2	17,225	107	B3-U0-G3	17,491	109	B2-U0-G3	17,293	108	B3-U0-G3	17,135	107	B3-U0-G3	17,671	110	B4-U0-G2

		Type R2S			Type R2M			Type R3S			Type R3M			Type 4			Type 5		
Ordering Code	**Color Temp.**	**Lumen Output**	**Efficacy** (LPW)	**BUG Rating**	**Lumen Output**	**Efficacy** (LPW)	**BUG Rating**	**Lumen Output**	**Efficacy** (LPW)	**BUG Rating**	**Lumen Output**	**Efficacy** (LPW)	**BUG Rating**	**Lumen Output**	**Efficacy** (LPW)	**BUG Rating**	**Lumen Output**	**Efficacy** (LPW)	**BUG Rating**
RFM-30W24LED	2700	2,812	101	B1-U0-G0	2,697	97	B1-U0-G1	2,802	100	B1-U0-G1	2,703	97	B1-U0-G1	2,745	98	B1-U0-G1	2,781	100	B2-U0-G1
RFM-45W24LED	2700	4,034	97	B1-U0-G1	3,869	93	B1-U0-G1	4,020	97	B1-U0-G1	3,878	94	B1-U0-G1	3,938	95	B1-U0-G1	3,989	96	B3-U0-G1
RFM-55W24LED	2700	5,102	93	B1-U0-G1	4,892	89	B1-U0-G1	5,083	93	B1-U0-G1	4,904	90	B1-U0-G1	4,979	91	B1-U0-G2	5,045	92	B3-U0-G1
RFM-85W24LED	2700	6,932	84	B2-U0-G1	6,648	81	B2-U0-G1	6,907	84	B1-U0-G2	6,664	81	B2-U0-G1	6,766	82	B1-U0-G2	6,855	83	B3-U0-G1
RFM-35W32LED	2700	3,789	102	B1-U0-G1	3,629	98	B1-U0-G1	3,686	100	B1-U0-G1	3,644	99	B1-U0-G1	3,610	98	B1-U0-G1	3,723	101	B2-U0-G1
RFM-55W32LED	2700	5,433	102	B2-U0-G1	5,205	97	B1-U0-G1	5,286	99	B1-U0-G1	5,226	98	B1-U0-G1	5,178	97	B1-U0-G2	5,340	100	B3-U0-G1
RFM-72W32LED	2700	6,859	94	B2-U0-G1	6,570	90	B2-U0-G1	6,672	91	B1-U0-G2	6,596	90	B2-U0-G1	6,536	90	B1-U0-G2	6,740	92	B3-U0-G1
RFM-108W32LED	2700	9,494	88	B2-U0-G2	9,095	84	B2-U0-G2	9,235	86	B2-U0-G2	9,131	85	B2-U0-G2	9,047	84	B2-U0-G2	9,330	86	B3-U0-G2
RFM-130W32LED	2700	10,940	85	B3-U0-G2	10,480	81	B2-U0-G2	10,642	83	B2-U0-G2	10,521	82	B2-U0-G2	10,425	81	B2-U0-G2	10,751	83	B4-U0-G2
RFM-85W36LED	2700	7,838	98	B2-U0-G1	7,508	94	B2-U0-G2	7,624	95	B1-U0-G2	7,538	94	B2-U0-G2	7,469	93	B1-U0-G2	7,703	96	B3-U0-G2
RFM-50W40LED	2700	4,800	108	B1-U0-G1	4,598	104	B1-U0-G1	4,670	105	B1-U0-G1	4,617	104	B1-U0-G1	4,574	103	B1-U0-G2	4,717	106	B3-U0-G1
RFM-90W40LED	2700	8,709	99	B2-U0-G1	8,343	94	B2-U0-G2	8,472	96	B1-U0-G2	8,376	95	B2-U0-G2	8,299	94	B2-U0-G2	8,558	97	B3-U0-G2
RFM-135W40LED	2700	11,834	88	B3-U0-G2	11,336	84	B3-U0-G2	11,511	85	B2-U0-G2	11,381	84	B3-U0-G2	11,277	83	B2-U0-G2	11,629	86	B4-U0-G2
RFM-55W48LED	2700	5,684	103	B2-U0-G1	5,445	99	B1-U0-G1	5,529	100	B1-U0-G2	5,466	99	B1-U0-G1	5,416	98	B1-U0-G2	5,586	101	B3-U0-G1
RFM-80W48LED	2700	8,150	101	B2-U0-G1	7,807	97	B2-U0-G2	7,928	98	B1-U0-G2	7,838	97	B2-U0-G2	7,766	96	B1-U0-G2	8,009	99	B3-U0-G2
RFM-108W48LED	2700	10,288	97	B2-U0-G2	9,855	93	B2-U0-G2	10,008	94	B2-U0-G2	9,894	93	B2-U0-G2	9,804	92	B2-U0-G2	10,110	95	B4-U0-G2
RFM-160W48LED	2700	14,241	89	B3-U0-G2	13,642	85	B3-U0-G2	13,853	86	B2-U0-G2	13,696	85	B3-U0-G2	13,571	84	B2-U0-G3	13,995	87	B4-U0-G2

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout – contact Applications at outdoorlighting.applications@philips.com. Consult DLC QPL to confirm your specific fixture selection is DLC approved.

Note: Some data may be scaled based on tests of similar but not identical luminaries.

RFM RoadFocus

Medium, LED Cobrahead

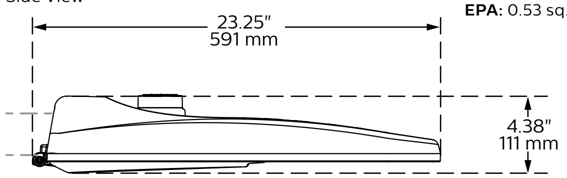
Field Adjustable Wattage (FAWS) Multiplier Chart

FAWS Position	Typical Delivered Lumens Multiplier	Typical System wattage
1	0.31	0.28
2	0.53	0.50
3	0.62	0.58
4	0.70	0.67
5	0.78	0.75
6	0.83	0.81
7	0.89	0.87
8	0.92	0.91
9	0.96	0.95
10	1.00	1.00

Note: Typical value accuracy +/- 5%

Dimensions

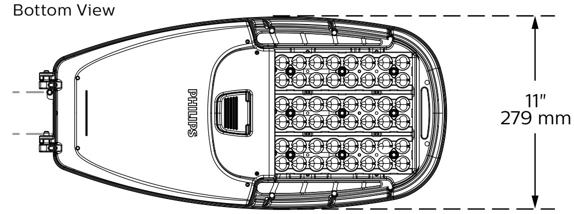
Side View



Weight: 12.2 Lbs

EPA: 0.53 sq. ft.

Bottom View



Specifications

Housing

Made of a low copper die cast Aluminum alloy (A360), 0.100" (2.5mm) minimum thickness. Fits on a 1.66" (42mm) O.D. (1.25" NPS), 1.9" (48mm) O.D. (1.5" NPS) or 2 3/8" (60mm) O.D. (2" NPS) by 5 1/2" (140mm) minimum long tenon. Comes with a zinc plated clamp fixed by 2 zinc plated hexagonal bolts 3/8 16 UNC for ease of installation. Provides an easy step adjustment of +/- 5° tilt in 2.5º increments. Includes integral bubble level standard (always included). A quick release, tool less entry, single latch, hinged, removable door opens downward to provide access to electronic components and to a terminal block. Door is secured to prevent accidental dropping or disengagement. A clearance of 13" (330mm) at the rear is required in order to remove the door. Complete with a bird guard protecting against birds and similar intruders and an ANSI label as per C136.15-2015 to identify wattage and source (both included in box). Housing (including electrical compartment) rated IP54 per ANSI C136.37.

Light Engine

Composed of 4 main components: LED Module / Optical System / Heat Sink / Driver.

Electrical components are RoHS compliant, IP66 sealed light engine LEDs tested by ISO 17025-2005 accredited lab in accordance with IESNA LM-80 guidelines in compliance with EPA ENERGY STAR, extrapolations in accordance with IESNA TM-21. Metal core board ensures greater heat transfer and longer lifespan.

LED Module: Composed of high-performance white LEDs. Color temperature as per ANSI/NEMA bin 2700 Kelvin nominal (2725 ±145K) CRI 80 min, 3000 Kelvin nominal (3045K +/- 175K) or 4000 Kelvin nominal (3985K +/- 275K), CRI 70 Min. 75 Typical. Other CCT/CRI also available, consult factory.

Optical System: Composed of high performance UV stabilized optical grade polymer refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. System is rated IP66. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance. 0% uplight and U0 per IESNA TM-15.

Heat Sink: Built in the housing, designed to ensure high efficacy and superior cooling by natural vertical convection air flow pattern always close to LEDs and driver optimizing their efficiency and life. Product does not use any cooling device with moving parts (only passive cooling). Wide openings enable natural cleaning and removal of dirt and debris. Entire luminaire is rated for operation in ambient temperature of -40°C / -40°F up to +40°C / +104°F. +50°C / +122°F also available, consult factory.

Driver: High power factor of 90% min. Electronic driver, operating range 50/60 Hz. Auto adjusting universal voltage input from 120 to 277 or 347 to 480 VAC rated for both application line to line or line to neutral, Class I, THD of 20% max.

DMG: Dimming compatible 0-10 volts.
The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built in driver surge protection of 2.5kV (min).

Integrated Features

DMG: Dimmable driver 0-10V.

RCD7*: Tool less orientable receptacle with 7 pins enabling dimming and additional functionality (to be determined), can be used with a twist lock Interact City node or photoelectric cell or a shorting cap.

SP1: Surge protection device tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with DOE MSSLC Model Specification for LED Roadway Luminaires Appendix D Electrical Immunity High test level 10kV/10kA.

Please note that these integrated features always come with RoadFocus luminaire.

** Use of photoelectric cell or shorting cap is required to ensure proper illumination.*

RFM RoadFocus

Medium, LED Cobrahead

Specifications (continued)

Driver and Luminaire Options

DALI: Pre-set driver compatible with the DALI control system.

SRD: Sensor Ready Driver including SR communication (used for dimming and other functionalities), 24V auxiliary supply and a logical signal input (LSI) connected to the top NEMA twist lock receptacle and bottom TLRSR receptacle, if this option included/chosen. This configuration is compatible with Interact City controllers.

SRD1: Sensor Ready Driver including SR communication (used for dimming and other functionalities) but with 24V auxiliary supply and a logical signal input (LSI) not connected to the top NEMA twist lock. If TLRSR receptacle option included, standard SR communication, 24V auxiliary supply and LSI are connected to the TLRSR receptacle.

FAWS: Field Adjustable Wattage Selector, pre-set to the highest position, can be easily switched in the field to the required position. This reduces total luminaire wattage consumption and reduces the light level – see the FAWS multiplier chart for more details.

Note: It is not recommended to use FAWS with other dimming or controls; if you do, set the switch to position 10 (maximum output) to enable the other dimming or controls. Switching FAWS to any position other than 10 will disable the other dimming or controls.

SP2: 20kV / 10kA surge protection device that provides extra protection beyond the SP1 10kV/10kA level.

NRC: No Receptacle. Fixture is shipped with a cap instead of a receptacle.

NYBC: 4-position terminal block

RCD*: Tool Less orientable receptacle with 5 pins enabling dimming, can be used with a twist lock Interact City or photoelectric cell or a shorting cap.

TLRSR: SR Sensor connector, installed in fixture door. Shipped with protective cover.

HS: House side shield, 1 per 16 LED light engine.

PH8: Twist-lock Photoelectric Cell, UNV (120-277VAC).

PH8/347: Twist-lock Photoelectric Cell, HVU (347VAC).

PH8/480: Twist-lock Photoelectric Cell, HVU (480VAC).

PHXL: Twist-lock Photoelectric Cell, extended life, UNV (120-277VAC).

PH9: Shorting cap.

API: Factory Installed NEMA label, ANSI C136.15-2015 compliant. Consult factory for other labeling needs.

** Use of photoelectric cell or shorting cap is required to ensure proper illumination.*

Luminaire Useful Life

Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in situ thermal testing in accordance with UL1598 and UL8750, Philips System Reliability Tool, Philips Advance data and LED manufacturer LM-80/TM-21 data, expected to reach 100,000 + hours (72W32LED and 108W48LED at 700mA) or 94,500 hours (108W32LED and 160W48LED at 1050mA) with >L70 lumen maintenance @ 25°C. Luminaire Useful Life accounts for LED lumen maintenance AND all of these additional factors including: LED life, driver life, PCB substrate, solder joints, on/off cycles, burning hours and corrosion.

Wiring

The connection of the luminaire is done using a terminal block connector 600V, 85A for use with #2 14 AWG. wires from the primary circuit, located inside the housing. Due to the inrush current that occurs with electronic drivers, recommend using a 10Amp time-delay fuse to avoid unwanted fuse blowing (false tripping) that can occur with normal or fast acting fuses.

Hardware

All exposed screws shall be complete with Ceramic primer seal to reduce seizing of the parts, also offers a high resistance to corrosion. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

Finish

Color in accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with ± 1 mils/24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard.

The surface treatment achieves a minimum of 3000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

LED products manufacturing standard

The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Vibration Resistance

The RFM meets the ANSI C136.31, American National Standard for Roadway Luminaire Vibration specifications for Bridge/overpass applications. (Tested for 3G over 100,000 cycles by independent lab)

Certifications and Compliance

cULus Listed for Canada and USA. Luminaire meets DOE and MSSLC Model Specification for LED Roadway Luminaires. Most versions of RoadFocus LED Cobrahead luminaires are DesignLights Consortium qualified, consult DLC QPL to confirm your specific fixture selection is approved. CCTs 3000K and warmer are Dark Sky Approved. Luminaire complies with or exceeds the following ANSI C136 standards: .2, .3, .10, .14, .15, .22, .25, .31, .37, .41.

Service Tag

Each individual luminaire is uniquely identifiable, thanks to the Philips Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making installation and maintenance operations faster and easier, no matter what stage of the luminaire's lifetime. Just download the APP and register your product right away.

For more details visit: **philips.com/servicetag**

Limited Warranty

10-year limited warranty.
See **philips.com/warranties** for details and restrictions.

Brackets/Arms

For brackets / arms available with this luminaire, see Lumec 3D for details.

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PHILIPS
LUMEC

Roadway

RoadFocus

RFL (large)

Project:	
Location:	
Cat.No:	
Type:	
Lamps:	Qty:
Notes:	

The Philips Lumec RoadFocus LED Cobra Head luminaires feature a sleek design that provides seamless replacement of existing HID luminaires. RoadFocus is available in three sizes, offers multiple lumen packages, and a complete array of optical distributions, making it an outstanding solution for all types of roadway applications. Includes Service Tag, Philips innovative way to provide assistance throughout the life of the product.

Ordering guide

example: RFL-215W96LED4K-G2-R3M-UNV-DMG-RCD7-GY3

Series	LED module	CCT	Generation	Distribution	Voltage	Controls [4]	Options	Finish
RFL			G2					
RFL RoadFocus Roadway, large	**145W64LED**	**4K** 4000k	**G2** Generation 2	**Type 2**	**UNV** 120-277V	**DALI**[1] Digitally addressable lighting interface	**API** Factory installed NEMA label, ANSI C136.15-2015 compliant	**BK** Black
	220W64LED	**3K** 3000k		**R2S** Type II short (ASYM)	**HVU** 347-480V	**DMG**[5] 0-10V	**FAWS**[7] Field adjustable wattage selector	**BR** Bronze
	245W72LED	**2.7K**[11] 2700k		**R2M** Type II Medium (ASYM)		**SRD**[1] Sensor ready driver, standard configuration	**HS** House Side Shield, shield, 1 per 16 LED light engine	**GY3** Gray
	260W76LED			**Type 3**		**SRD1**[1] Sensor ready driver, alternate configuration	**NRC**[8] No receptacle	**WH** White
	90W80LED			**R3S** Type III short (ASYM)			**NYBC** 4-position terminal block	
	135W80LED			**R3M** Type III Medium (ASYM)			**PH8**[1,10] Twist-lock photoelectric cell, UNV (120-277VAC)	
	180W80LED			**Type 4**			**PH8/347**[10,13] Twist-lock photoelectric cell (347VAC)	
	270W80LED			**4** Type IV (ASYM)			**PH8/480**[10,13] Twist-lock photoelectric cell (480VAC)	
	160W96LED			**Type 5**			**PHXL**[1,10] Twist-lock photoelectric Cell, extended life, UNV (120-277VAC)	
	215W96LED			**5**[2] Type V (SYMM)			**PH9**[10] Shorting cap	
	335W96LED						**RCD**[3,9] Tool less receptacle for twist-lock photocell or shorting cap, 5-pin (optional)	
	190W112LED						**RCD7**[3,5] Tool less receptacle for twist-lock photocell or shorting cap, 7-pin (standard)	
	241W112LED						**SP2** 20kV / 10kA Surge protector	
	350W112LED[7]						**TLRSR**[6] SR receptacle	

1. Not available with **HVU**.
2. Not available with **HS** option.
3. Use of photoelectric cell or shorting cap is required to ensure proper illumination.
4. Select either **DALI** or **DMG** or **SRD** or **SRD1** mandatory option.
5. Please note this integrated feature come standard with RoadFocus.
6. Only available with **SRD** or **SRD1** Driver Options.
7. Only available with **DMG** Driver Options
9. Not available with **SRD** Driver Options.
10. Either **RCD** or **RCD7** must be selected for this option.
11. Extended lead-time may apply. Consult factory.
12. **FAWS** table accuracy +/- 15% on these models.
13. Not available with **UNV**.

RFL RoadFocus

Large, LED Cobrahead

Accessories (must be ordered as separate line items - quickly and easily installed in the field)

Interact City Connector node *

*Contact the factory for additional support when connected lighting or additional services are desired.

Predicted Lumen Depreciation Data

Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions.L_{70} is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L_{70} hours limited to 6 times actual LED test hours

Ambient Temperature °C	Driver mA	Calculated L_{70} Hours	L_{70} per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	up to 1050 mA	>100,000 hours	>60,000 hours	>88%

LED Wattage values

Ordering Code	Total LEDs	LED Current (mA)	Average System Watts[14]	Wattage label[15]
RFL-145W64LED	64	700	137	140
RFL-220W64LED	64	1050	216	220
RFL-245W72LED	72	1050	244	240
RFL-260W76LED	76	1050	256	260
RFL-90W80LED	80	350	93	90
RFL-135W80LED	80	530	136	140
RFL-180W80LED	80	700	174	170
RFL-270W80LED	80	1050	268	270

Ordering Code	Total LEDs	LED Current (mA)	Average System Watts[14]	Wattage label[15]
RFL-160W96LED	96	530	156	160
RFL-215W96LED	96	700	207	210
RFL-335W96LED	96	1050	323	320
RFL-190W112LED	112	530	188	190
RFL-241W112LED	112	700	243	240
RFL-350W112LED	112	950	340	340

14. Typical values, rounded.
15. As per ANSI C136.15-2015. Consult factory for other labeling needs.

LED Lumen values

		Type R2S			Type R2M			Type R3S			Type R3M			Type 4			Type 5		
Ordering Code	Color Temp.	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
RFL-145W64LED	4000	17,955	131	B3-U0-G2	17,361	127	B3-U0-G3	17,586	128	B2-U0-G3	17,183	125	B3-U0-G3	17,299	126	B3-U0-G3	17,596	128	B4-U0-G2
RFL-220W64LED	4000	24,554	114	B3-U0-G2	23,743	110	B3-U0-G3	24,051	111	B3-U0-G4	23,500	109	B3-U0-G3	23,657	110	B3-U0-G4	24,064	112	B5-U0-G3
RFL-245W72LED	4000	27,624	113	B3-U0-G3	26,710	110	B3-U0-G3	27,057	111	B3-U0-G4	26,437	108	B3-U0-G3	26,614	109	B3-U0-G4	27,073	111	B5-U0-G3
RFL-260W76LED	4000	29,158	114	B4-U0-G3	28,194	110	B4-U0-G3	28,560	112	B3-U0-G4	27,906	109	B3-U0-G3	28,093	110	B3-U0-G4	28,577	112	B5-U0-G3
RFL-90W80LED	4000	12,325	133	B3-U0-G2	11,917	129	B3-U0-G2	12,072	130	B2-U0-G2	11,795	127	B3-U0-G2	11,874	128	B2-U0-G2	12,079	130	B4-U0-G2
RFL-135W80LED	4000	17,729	130	B3-U0-G2	17,142	126	B3-U0-G3	17,365	127	B2-U0-G3	16,967	124	B3-U0-G3	17,081	125	B3-U0-G3	17,375	127	B4-U0-G2
RFL-180W80LED	4000	22,444	129	B3-U0-G2	21,702	125	B3-U0-G3	21,984	126	B3-U0-G3	21,480	123	B3-U0-G3	21,624	124	B3-U0-G4	21,996	126	B5-U0-G3
RFL-270W80LED	4000	30,693	114	B4-U0-G3	29,678	111	B4-U0-G3	30,064	112	B3-U0-G4	29,374	110	B4-U0-G4	29,571	110	B3-U0-G4	30,081	112	B5-U0-G4
RFL-160W96LED	4000	21,230	136	B3-U0-G2	20,337	130	B3-U0-G3	20,509	131	B3-U0-G3	20,440	131	B3-U0-G3	20,304	130	B3-U0-G4	20,974	134	B5-U0-G3
RFL-215W96LED	4000	26,876	130	B3-U0-G3	25,746	124	B3-U0-G3	25,963	125	B3-U0-G4	25,876	125	B3-U0-G3	25,703	124	B3-U0-G4	26,552	128	B5-U0-G3
RFL-335W96LED	4000	37,400	116	B4-U0-G3	35,827	111	B4-U0-G4	36,129	112	B3-U0-G4	36,008	111	B4-U0-G4	35,768	111	B3-U0-G5	36,949	114	B5-U0-G4
RFL-190W112LED	4000	24,768	132	B3-U0-G2	23,726	126	B3-U0-G3	23,927	128	B3-U0-G4	23,846	127	B3-U0-G3	23,687	126	B3-U0-G4	24,470	130	B5-U0-G3
RFL-241W112LED	4000	31,355	129	B4-U0-G3	30,036	124	B4-U0-G3	30,290	125	B3-U0-G4	30,188	124	B4-U0-G4	29,987	123	B3-U0-G4	30,977	127	B5-U0-G4
RFL-350W112LED	4000	40,210	118	B4-U0-G4	38,519	113	B4-U0-G4	38,844	114	B3-U0-G5	38,714	114	B4-U0-G4	38,456	113	B3-U0-G5	39,726	117	B5-U0-G4

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout - contact Applications at outdoorlighting.applications@philips.com. Consult DLC QPL to confirm your specific fixture selection is DLC approved.

Note: Some data may be scaled based on tests of similar but not identical luminaries.

RFL RoadFocus

Large, LED Cobrahead

LED Lumen values (continued)

Ordering Code	Color Temp.	Type R2S			Type R2M			Type R3S			Type R3M			Type 4			Type 5		
		Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
RFL-145W64LED	3000	16,942	124	B3-U0-G2	16,381	120	B3-U0-G3	16,594	121	B2-U0-G3	16,214	118	B3-U0-G2	16,323	119	B2-U0-G3	16,604	121	B4-U0-G2
RFL-220W64LED	3000	23,169	107	B3-U0-G2	22,403	104	B3-U0-G3	22,694	105	B3-U0-G3	22,174	103	B3-U0-G3	22,322	103	B3-U0-G4	22,707	105	B5-U0-G3
RFL-245W72LED	3000	26,065	107	B3-U0-G3	25,203	103	B3-U0-G3	25,531	105	B3-U0-G4	24,945	102	B3-U0-G3	25,113	103	B3-U0-G4	25,545	105	B5-U0-G3
RFL-260W76LED	3000	27,513	108	B3-U0-G3	26,603	104	B3-U0-G3	26,949	105	B3-U0-G4	26,331	103	B3-U0-G3	26,508	104	B3-U0-G4	26,964	105	B5-U0-G3
RFL-90W80LED	3000	11,629	125	B3-U0-G2	11,245	121	B3-U0-G2	11,391	123	B2-U0-G2	11,130	120	B2-U0-G2	11,204	121	B2-U0-G2	11,397	123	B4-U0-G2
RFL-135W80LED	3000	16,728	123	B3-U0-G2	16,175	119	B3-U0-G3	16,385	120	B2-U0-G3	16,010	117	B3-U0-G2	16,117	118	B2-U0-G3	16,394	120	B4-U0-G2
RFL-180W80LED	3000	21,177	122	B3-U0-G2	20,477	118	B3-U0-G3	20,743	119	B3-U0-G3	20,268	116	B3-U0-G3	20,404	117	B3-U0-G4	20,755	119	B5-U0-G3
RFL-270W80LED	3000	28,961	108	B4-U0-G3	28,004	104	B4-U0-G3	28,367	106	B3-U0-G4	27,717	103	B3-U0-G3	27,903	104	B3-U0-G4	28,383	106	B5-U0-G3
RFL-160W96LED	3000	20,032	128	B3-U0-G2	19,190	123	B3-U0-G3	19,352	124	B3-U0-G3	19,287	123	B3-U0-G3	19,158	122	B3-U0-G4	19,791	126	B5-U0-G3
RFL-215W96LED	3000	25,360	123	B3-U0-G3	24,293	117	B3-U0-G3	24,498	118	B3-U0-G4	24,416	118	B3-U0-G3	24,253	117	B3-U0-G4	25,054	121	B5-U0-G3
RFL-335W96LED	3000	35,290	109	B4-U0-G3	33,805	105	B4-U0-G4	34,091	106	B3-U0-G4	33,976	105	B4-U0-G4	33,750	104	B3-U0-G5	34,864	108	B5-U0-G4
RFL-190W112LED	3000	23,371	125	B3-U0-G2	22,388	119	B3-U0-G3	22,577	120	B3-U0-G3	22,501	120	B3-U0-G3	22,351	119	B3-U0-G4	23,089	123	B5-U0-G3
RFL-241W112LED	3000	29,586	122	B4-U0-G3	28,342	117	B4-U0-G3	28,581	118	B3-U0-G4	28,485	117	B3-U0-G3	28,295	116	B3-U0-G4	29,229	120	B5-U0-G3
RFL-350W112LED	3000	37,941	112	B4-U0-G4	36,345	107	B4-U0-G4	36,652	108	B3-U0-G5	36,529	108	B4-U0-G4	36,286	107	B3-U0-G5	37,484	110	B5-U0-G4

Ordering Code	Color Temp.	Type R2S			Type R2M			Type R3S			Type R3M			Type 4			Type 5		
		Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
RFL-145W64LED	2700	13,489	98	B3-U0-G2	13,043	95	B3-U0-G2	13,212	96	B2-U0-G2	12,909	94	B3-U0-G2	12,996	95	B2-U0-G3	13,220	96	B4-U0-G2
RFL-220W64LED	2700	18,350	85	B3-U0-G2	17,743	82	B3-U0-G3	17,973	83	B2-U0-G3	17,561	81	B3-U0-G3	17,679	82	B3-U0-G3	17,984	83	B4-U0-G2
RFL-245W72LED	2700	20,643	85	B3-U0-G2	19,961	82	B3-U0-G3	20,220	83	B3-U0-G3	19,757	81	B3-U0-G3	19,889	82	B3-U0-G4	20,232	83	B5-U0-G3
RFL-260W76LED	2700	21,790	85	B3-U0-G2	21,070	82	B3-U0-G3	21,344	83	B3-U0-G3	20,854	81	B3-U0-G3	20,994	82	B3-U0-G4	21,356	83	B5-U0-G3
RFL-90W80LED	2700	9,315	100	B2-U0-G2	9,007	97	B2-U0-G2	9,124	98	B1-U0-G2	8,915	96	B2-U0-G2	8,975	97	B2-U0-G2	9,129	98	B3-U0-G2
RFL-135W80LED	2700	13,357	98	B3-U0-G2	12,916	95	B3-U0-G2	13,084	96	B2-U0-G2	12,784	94	B3-U0-G2	12,869	94	B2-U0-G3	13,091	96	B4-U0-G2
RFL-180W80LED	2700	16,861	97	B3-U0-G2	16,304	94	B3-U0-G3	16,516	95	B2-U0-G3	16,137	93	B3-U0-G2	16,245	93	B2-U0-G3	16,525	95	B4-U0-G2
RFL-270W80LED	2700	22,937	86	B3-U0-G2	22,179	83	B3-U0-G3	22,467	84	B3-U0-G3	21,952	82	B3-U0-G3	22,099	82	B3-U0-G4	22,480	84	B5-U0-G3
RFL-160W96LED	2700	15,996	102	B3-U0-G2	15,323	98	B3-U0-G3	15,452	99	B2-U0-G3	15,400	98	B3-U0-G2	15,298	98	B2-U0-G3	15,803	101	B4-U0-G2
RFL-215W96LED	2700	20,191	98	B4-U0-G3	19,342	93	B3-U0-G3	19,505	94	B3-U0-G3	19,440	94	B3-U0-G3	19,310	93	B3-U0-G4	19,948	96	B5-U0-G3
RFL-335W96LED	2700	27,949	87	B4-U0-G3	26,774	83	B3-U0-G3	27,000	84	B3-U0-G4	26,909	83	B3-U0-G3	26,730	83	B3-U0-G4	27,613	85	B5-U0-G3
RFL-190W112LED	2700	18,661	99	B3-U0-G2	17,877	95	B3-U0-G3	18,027	96	B2-U0-G3	17,967	96	B3-U0-G3	17,847	95	B3-U0-G3	18,437	98	B4-U0-G2
RFL-241W112LED	2700	23,556	97	B3-U0-G2	22,566	93	B3-U0-G3	22,756	94	B3-U0-G3	22,680	93	B3-U0-G3	22,528	93	B3-U0-G4	23,272	96	B5-U0-G3
RFL-350W112LED	2700	30,106	89	B4-U0-G3	28,840	85	B4-U0-G3	29,084	86	B3-U0-G4	28,986	85	B3-U0-G4	28,793	85	B3-U0-G4	29,744	88	B5-U0-G4

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout – contact Applications at outdoorlighting.applications@philips.com. Consult DLC QPL to confirm your specific fixture selection is DLC approved.

Note: Some data may be scaled based on tests of similar but not identical luminaries.

Field Adjustable Wattage (FAWS) Multiplier Chart

FAWS Position	Typical Delivered Lumens Multiplier	Typical System wattage
1	0.31	0.28
2	0.53	0.50
3	0.62	0.58
4	0.70	0.67
5	0.78	0.75
6	0.83	0.81
7	0.89	0.87
8	0.92	0.91
9	0.96	0.95
10	1.00	1.00

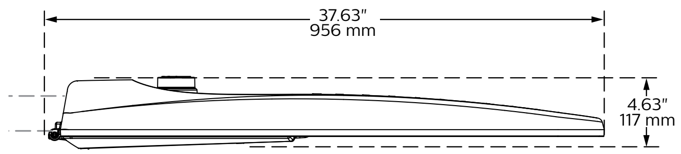
Note: Typical value accuracy +/- 5%

RFL RoadFocus

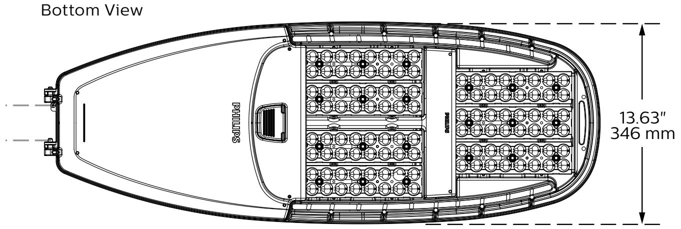
Large, LED Cobrahead

Dimensions

Side View



Bottom View



Weight: 27.3 Lbs

EPA: 0.92 sq. ft.

Specifications

Housing

Made of a low copper die cast Aluminum alloy (A360), 0.100" (2.5mm) minimum thickness. Fits on a 1.66" (42mm) O.D. (1.25" NPS), 1.9" (48mm) O.D. (1.5" NPS) or 2 3/8" (60mm) O.D. (2" NPS) by 5 1/2" (140mm) minimum long tenon. Comes with 2 zinc plated clamps fixed by 4 zinc plated hexagonal bolts 3/8 16 UNC for ease of installation. Provides an easy step adjustment of +/- 5° tilt in 2.5º increments. Includes integral bubble level standard (always included). A quick release, tool less entry, single latch, hinged, removable door opens downward to provide access to electronic components and to a terminal block. Door is secured to prevent accidental dropping or disengagement. A clearance of 13" (330mm) at the rear is required in order to remove the door. Complete with a bird guard protecting against birds and similar intruders and an ANSI label as per C136.15-2015 to identify wattage and source (both included in box). Housing (including electrical compartment) rated IP54 per ANSI C136.37.

Light Engine

Composed of 4 main components: LED Module / Optical System / Heat Sink / Driver.

Electrical components are RoHS compliant, IP66 sealed light engine LEDs tested by ISO 17025-2005 accredited lab in accordance with IESNA LM-80 guidelines in compliance with EPA ENERGY STAR, extrapolations in accordance with IESNA TM-21. Metal core board ensures greater heat transfer and longer lifespan.

LED Module: Composed of high-performance white LEDs. Color temperature as per ANSI/NEMA bin 2700 Kelvin nominal (2725 ±145K) CRI 80 min, 3000 Kelvin nominal (3045K +/- 175K) or 4000 Kelvin nominal (3985K +/- 275K), CRI 70 Min. 75 Typical. Other CCT/CRI also available, consult factory.

Optical System: Composed of high performance UV stabilized optical grade polymer refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. System is rated IP66. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance. 0% uplight and U0 per IESNA TM-15.

Heat Sink: Built in the housing, designed to ensure high efficacy and superior cooling by natural vertical convection air flow pattern always close to LEDs and driver optimising their efficiency and life. Product does not use any cooling device with moving parts (only passive cooling). Wide openings enable natural cleaning and removal of dirt and debris. Entire luminaire is rated for operation in ambient temperature of -40°C / -40°F up to +40°C / +104°F.

Driver: High power factor of 90% min. Electronic driver, operating range 50/60 Hz. Auto adjusting universal voltage input from 120 to 277 or 347 to 480 VAC rated for both application line to line or line to neutral, Class I, THD of 20% max. 1 driver (64 LED); 2 drivers (all others).

DMG: Dimming compatible 0-10 volts. The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built in driver surge protection of 2.5kV (min).

Integrated Features

DMG: Dimmable driver 0-10V.

RCD7*: Tool less receptacle with 7 pins enabling dimming and additional functionality (to be determined), can be used with a twist lock Interact City node or photoelectric cell or a shorting cap.

SP1: Surge protection device tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with DOE MSSLC Model Specification for LED Roadway Luminaires Appendix D Electrical Immunity High test level 10kV/10kA.

Please note that these integrated features always come with RoadFocus luminaire.

** Use of photoelectric cell or shorting cap is required to ensure proper illumination.*

RFL RoadFocus

Large, LED Cobrahead

Specifications (continued)

Driver and Luminaire Options

DALI: Pre-set driver compatible with the DALI control system.

SRD: Sensor Ready Driver including SR communication (used for dimming and other functionalities), 24V auxiliary supply and a logical signal input (LSI) connected to the top NEMA twist lock receptacle and bottom TLRSR receptacle, if this option included/ chosen. This configuration is compatible with Interact City controllers.

SRD1: Sensor Ready Driver including SR communication (used for dimming and other functionalities) but with 24V auxiliary supply and a logical signal input (LSI) not connected to the top NEMA twist lock. If TLRSR receptacle option included, standard SR communication, 24V auxiliary supply and LSI are connected to the TLRSR receptacle.

FAWS: Field Adjustable Wattage Selector, pre-set to the highest position, can be easily switched in the field to the required position. This reduces total luminaire wattage consumption and reduces the light level – see the FAWS multiplier chart for more details.

Note: It is not recommended to use FAWS with other dimming or controls; if you do, set the switch to position 10 (maximum output) to enable the other dimming or controls. Switching FAWS to any position other than 10 will disable the other dimming or controls.

SP2: 20kV / 10kA surge protection device that provides extra protection beyond the SP1 10kV/10kA level.

NRC: No Receptacle. Fixture is shipped with a cap instead of a receptacle.

NYBC: 4-position terminal block

RCD*: Tool less receptacle with 5 pins enabling dimming, can be used with a twist lock Interact City or photoelectric cell or a shorting cap.

TLRSR: SR Sensor connector, installed in fixture door. Shipped with protective cover.

HS: House side shield, 1 per 16 LED light engine.

PH8: Twist-lock Photoelectric Cell, UNV (120-277VAC).

PH8/347: Twist-lock Photoelectric Cell, HVU (347VAC).

PH8/480: Twist-lock Photoelectric Cell, HVU (480VAC).

PHXL: Twist-lock Photoelectric Cell, extended life, UNV (120-277VAC).

PH9: Shorting cap.

API: Factory Installed NEMA label, ANSI C136.15-2015 compliant. Consult factory for other labeling needs.

** Use of photoelectric cell or shorting cap is required to ensure proper illumination.*

Luminaire Useful Life

Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in situ thermal testing in accordance with UL1598 and UL8750, Philips System Reliability Tool, Philips Advance data and LED manufacturer LM-80/TM-21 data, expected to reach 100,000 + hours with >L70 lumen maintenance @ 25°C. Luminaire Useful Life accounts for LED lumen maintenance AND all of these additional factors including: LED life, driver life, PCB substrate, solder joints, on/off cycles, burning hours and corrosion.

Wiring

The connection of the luminaire is done using a terminal block connector 600V, 85A for use with #2 14 AWG. wires from the primary circuit, located inside the housing. Due to the inrush current that occurs with electronic drivers, recommend using a 10Amp time-delay fuse to avoid unwanted fuse blowing (false tripping) that can occur with normal or fast acting fuses.

Hardware

All exposed screws shall be complete with Ceramic primer seal to reduce seizing of the parts, also offers a high resistance to corrosion. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

Finish

Color in accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with ± 1 mils/24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard.

The surface treatment achieves a minimum of 3000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

LED products manufacturing standard

The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Vibration Resistance

The RFL meets the ANSI C136.31, American National Standard for Roadway Luminaire Vibration specifications for Bridge/overpass applications. (Tested for 3G over 100,000 cycles by independent lab)

Certifications and Compliance

cULus Listed for Canada and USA. Luminaire meets DOE and MSSLC Model Specification for LED Roadway Luminaires. Most versions of RoadFocus LED Cobrahead luminaires are DesignLights Consortium qualified, consult DLC QPL to confirm your specific fixture selection is approved. CCTs 3000K and warmer are Dark Sky Approved. Luminaire complies with or exceeds the following ANSI C136 standards: .2, .3, .10, .14, .15, .22, .25, .31, .37, .41.

Service Tag

Each individual luminaire is uniquely identifiable, thanks to the Philips Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making installation and maintenance operations faster and easier, no matter what stage of the luminaire's lifetime. Just download the APP and register your product right away.

For more details visit: **philips.com/servicetag**

Limited Warranty

10-year limited warranty.
See **philips.com/warranties** for details and restrictions.

Brackets/Arms

For brackets / arms available with this luminaire, see Lumec 3D for details.

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281 Hillmount Rd, Markham, ON, Canada L6C 2S3
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LEOTEK
LITE-ON GROUP

Project

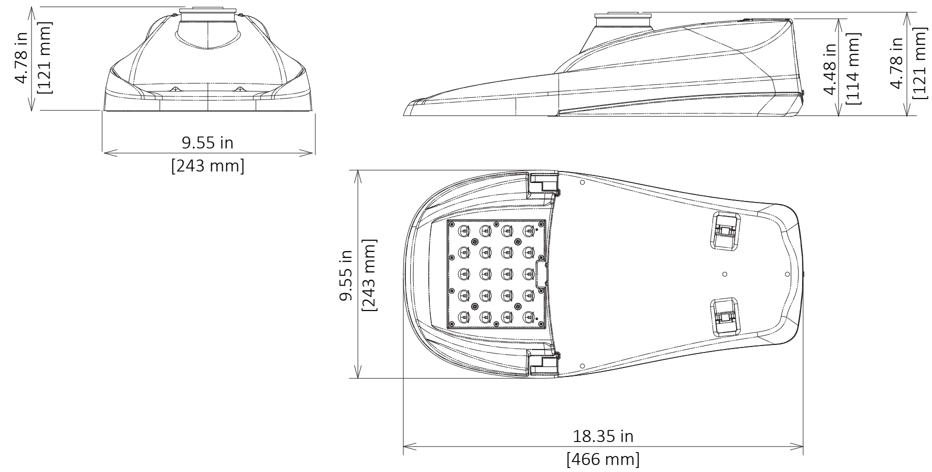
Type

Catalog No.

GreenCobra™ Jr. LED Street Light
GCJ H-Series Specification Data Sheet

Luminaire Data

Weight 7 lbs [3.2 kg]
EPA 0.39 ft^2



Ordering Information

Sample Catalog No. GCJ1 20H MV NW 2R GY 580

Product	LED Code	Voltage	Color Temperature	Distribution	Finish[1]	GCJ0 Drive Current Code[2]	Options
GCJ0	**15H**	**MV** 120-277V	**WW** 3000K	**2R** Type 2	**GY** Gray	**300**	**FDC**[3] Fixed Drive Current
		HV 347-480V	**NW** 4000K	**3** Type 3	**DB** Dark Bronze	**390**	**FFA**[4] Full Field Adjustability
			CW 5000K	**4** Type 4		**490**	**LPCR** Less Photocontrol Receptacle
				5 Type 5	**BK** Black	**590**	
						700	**PCR7**[5] ANSI 7-wire Photo-control Receptacle
						GCJ1 Drive Current Code[2]	
GCJ1	**20H**						**PCR7-CR**[6] Control Ready 7-wire PC Receptacle
						350	
						450	**WL** Utility Wattage Label
						530	**4B** 4-Bolt Mounting Bracket
						580	
						700	**RWG** Rubber Wildlife Guard
						GCJ2 Drive Current Code[2]	**SWTB** Straight Wire Terminal Block
GCJ2	**20H**						
							BBL Bubble Level
						700	**CF**[7] Coastal Paint Finish
						830	
						900	
						1A	

Notes:

1 Gray, Black, and Dark Bronze standard. Consult factory for other finishes.

2 Specified drive current code is the factory set maximum drive current. Field adjustable current selector enables standard dimming to lower wattage drive currents only. Consult factory if wattage limits require a special drive current.

3 Non-field adjustable, fixed drive current. Specify required drive current code. Not available with PCR7-CR option.

4 The FFA option enables full field adjustability from the specified drive current code to all drive currents available. This option is not DLC qualified.

5 Field adjustable current selector included to enable standard dimming to lower wattage drive currents only. Field changeable connectors included to enable connection to PCR7 (wireless node dimming is disabled by default).

6 Control-ready wired at factory for wireless node dimming. Supplied at maximum drive current. If a lower drive current is required, consult factory.

7 Specify the CF Option for coastal installation. See warranty for details.

8 Flush mounted house side shield. Shield cuts light off at 1/2 mounting height behind luminaire.

9 Flush mounted cul-de-sac shield. Shield cuts light off at 1/2 mounting height behind luminaire and 1-1/2 mounting height on either side of luminaire.

10 Flush mounted front side shield cuts light off at approximately one mounting height in front of luminaire (street side).

11 Specify Color (GY, DB, BK)

12 Specify MV (120-277V) or HV (347-480V).

Accessories*	
HSSGCJ[8]	House Side Shield, Snap-On*
CSSGCJ[9]	Cul-De-Sac Side Shield, Snap-On*
FSSGCJ[10]	Front Side Shield, Snap-On*
SPB[11]	Square Pole Horizontal Arm Bracket
RPB[11]	Round Pole Horizontal Arm Bracket
PTB[11]	Pole Top Tenon Horizontal Arm Bracket
PTB2[11]	Pole Top Tenon Horizontal Arm Bracket (2@180°)
WB[11]	Wall Horizontal Arm Bracket
BSK	Bird Deterrent Spider Kit
LLPC[12]	Long-Life Twist Lock Photocontrol
SC	Twist Lock Shorting Cap

*Accessories are ordered separately and not to be included in the catalog number. For factory installed HSS, CSS, and FSS specify as option in luminaire catalog number.

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Assembled in the U.S.A. c UL us LISTED DLC DLC PREMIUM ida

Luminaire Specifications

Housing
Die cast aluminum housing with universal two-bolt slip fitter mounts to 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter mast arm. One-piece aluminum housing provides passive heat-sinking of the LEDs and has upper surfaces that shed precipitation. Four-bolt mounting bracket is available. Mounting provisions meet 3G vibration per ANSI C136.31-2010 Normal Application, Bridge & Overpass. Mounting has leveling adjustment from ± 5° in 2.5° steps. Electrical components are accessed without tools via a high-strength, non-conductive polycarbonate door with quick-release latches. Polycarbonate material meets UL 746C for outdoor usage. Available rubber wildlife guard (RWG option) conforms to mast arm with no gaps.

Light Emitting Diodes
Hi-flux/Hi-power white LEDs produce a minimum of 90% of initial intensity at 100,000 hours of life based on IES TM-21 (L90 ≥ 100k hours). LEDs are tested in accordance with IES LM-80 testing procedures. LEDS have correlated color temperature of 3000K (WW), 4000K (NW), or 5000K (CW) and 70 CRI minimum. LEDs are 100% mercury and lead free.

Field Adjustability
LED drive current can be changed in the field to adjust light output for local conditions (not available with PCR7-CR option). The specified drive current code will be the factory set maximum drive current and field adjustments can only be made to available lower wattage drive currents. Select the FFA option if full field adjustability to all available drive currents (700mA max or 1A max) is desired. The FFA option is not DLC qualified.

Quality Control
Every luminaire is performance tested before and after a 2-hour burn-in period. Assembled in the USA.

Optical Systems
Micro-lens optical systems produce IESNA Type 2, Type 3, Type 4, or Type 5 distributions and are fully sealed to maintain an IP66 rating. Luminaire produces 0% total lumens above 90º (BUG Rating, U=0). Optional house side shield cuts light off at 1/2 mounting height behind luminaire. Cul-de-sac shield provides back and side light control for end of cul-de-sac applications. Both shields are field installable without tools.

Electrical
Rated life of electrical components is 100,000 hours. Uses isolated power supply that is 1-10V dimmable. Power supply is wired with quick-disconnect terminals. Power supply features a minimum power factor of .90 and <20% Total Harmonic Distortion (THD). EMC meets or exceeds FCC CFR Part 15. Terminal block accommodates 6 to 14 gauge wire. Surge protection complies with IEEE/ANSI C62.41 Category C High, 20kV/10kA and ANSI C136.2-2015, 20kV/10kA.

Controls
3-Wire photocontrol receptacle is standard. ANSI C136.41 7-wire (PCR7) photocontrol receptacles is available. All photocontrol receptacles have tool-less rotatable bases. Wireless control module is provided by others.

Finish
Housing receives a durable, fade-resistant polyester powder coat finish with 3.0 mil nominal thickness. Standard finish tested to withstand 5000 hours in salt spray exposure per ASTM B117 and Coastal Finish per ASTM G85. Finish meets scribe creepage rating 8 per ASTM D1654. Finish tested 500 hours in UV exposure per ASTM G154 and meets ASTM D523 gloss retention.

Listings/Ratings/Labels
Luminaires are UL listed for use in wet locations in the United States and Canada. DesignLights Consortium™ qualified product. Consult DLC QPL for Standard and Premium Classification Listings. International Dark Sky Association listed. Luminaire is qualified to operate at ambient temperatures of -40°C to 40°C. Assembled in the U.S.A

Photometry
Luminaires photometrics are tested by certified independent testing laboratories in accordance with IES LM-79 testing procedures.

Warranty
10-year limited warranty is standard on luminaire and components.

Vandal Resistance
Housing and optics rated to IK10

Standards
Luminaire complies with:
ANSI: C136.2, C136.3, C136.10, C136.13, C136.15, C136.22, C136.31, C136.35, C136.37, C136.41, C62.41, C78.377, C82.77
Other: FCC 47 CFR, IEC 60598, ROHS II, UL 1449, UL 1598

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Performance Data: 3000K (WW)

All data nominal. IES files for all CCTs available at leotek.com.

Product	LED Code	Drive Current Code	System Wattage (W)	Delivered Lumens (Lm)[1]	Efficacy (Lm/W)
GCJ0	15H	300[2]	15	1810	121
		390[2]	19	2280	120
		490[3]	24	2840	118
		590	30	3410	114
		700	35	3910	112
GCJ1	20H	350[3]	25	3040	122
		450	29	3470	120
		530	34	3980	117
		580	39	4470	115
		700	46	5130	112
GCJ2	20H	700	45	5020	112
		830	54	5780	107
		900	58	6120	106
		1A	68	6960	102

Notes:
1 Nominal lumens. Normal tolerance ± 10% due to factors including distribution type, LED bin variance, and ambient temperatures.
2 DLC Approved only at 120VAC.
3 DLC Approved at 120-240VAC.

Performance Data: 4000K (NW) and 5000K (CW)

All data nominal. IES files for all CCTs available at leotek.com.

Product	LED Code	Drive Current Code	System Wattage (W)	Delivered Lumens (Lm)[1]	Efficacy (Lm/W)
GCJ0	15H	300[2]	15	2000	133
		390[2]	19	2490	131
		490[3]	24	3070	128
		590	30	3650	122
		700	35	4180	119
GCJ1	20H	350[3]	25	3240	130
		450	29	3720	128
		530	34	4320	127
		580	39	4850	124
		700	46	5510	120
GCJ2	20H	700	45	5430	121
		830	54	6210	115
		900	58	6630	114
		1A	68	7430	109

Notes:
1 Nominal lumens. Normal tolerance ± 10% due to factors including distribution type, LED bin variance, and ambient temperatures.
2 DLC Approved only at 120VAC.
3 DLC Approved at 120-240VAC.

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BUG Ratings: 3000K (WW)

All data nominal. IES files for all CCTs are available at leotek.com.

		Type 2R	Type 3	Type 4	Type 5
Product & LED Code	**Drive Current Code**	**BUG Rating**	**BUG Rating**	**BUG Rating**	**BUG Rating**
GCJ0 15H	300	B0 U0 G0	B1 U0 G1	B1 U0 G1	B1 U0 G0
	390	B1 U0 G0	B1 U0 G1	B1 U0 G1	B1 U0 G0
	490	B1 U0 G1	B1 U0 G1	B1 U0 G1	B2 U0 G0
	590	B1 U0 G1	B1 U0 G1	B1 U0 G1	B2 U0 G0
	700	B1 U0 G1	B1 U0 G1	B1 U0 G1	B2 U0 G1
GCJ1 20H	350	B1 U0 G1	B1 U0 G1	B1 U0 G1	B2 U0 G0
	450	B1 U0 G1	B1 U0 G1	B1 U0 G1	B2 U0 G0
	530	B1 U0 G1	B1 U0 G1	B1 U0 G1	B2 U0 G1
	580	B1 U0 G1	B1 U0 G1	B1 U0 G1	B2 U0 G1
	700	B1 U0 G1	B2 U0 G1	B2 U0 G1	B3 U0 G1
GCJ2 20H	700	B1 U0 G1	B1 U0 G1	B2 U0 G1	B3 U0 G1
	830	B1 U0 G1	B2 U0 G2	B2 U0 G1	B3 U0 G1
	900	B1 U0 G1	B2 U0 G2	B2 U0 G1	B3 U0 G1
	1A	B1 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G1

BUG Ratings: 4000K (NW) and 5000K (CW)

All data nominal. IES files for all CCTs are available at leotek.com.

		Type 2R	Type 3	Type 4	Type 5
Product & LED Code	**Drive Current Code**	**BUG Rating**	**BUG Rating**	**BUG Rating**	**BUG Rating**
GCJ0 15H	300	B1 U0 G0	B1 U0 G1	B1 U0 G1	B1 U0 G0
	390	B1 U0 G0	B1 U0 G1	B1 U0 G1	B1 U0 G0
	490	B1 U0 G1	B1 U0 G1	B1 U0 G1	B2 U0 G0
	590	B1 U0 G1	B1 U0 G1	B1 U0 G1	B2 U0 G1
	700	B1 U0 G1	B1 U0 G1	B1 U0 G1	B2 U0 G1
GCJ1 20H	350	B1 U0 G1	B1 U0 G1	B1 U0 G1	B2 U0 G1
	450	B1 U0 G1	B1 U0 G1	B1 U0 G1	B2 U0 G1
	530	B1 U0 G1	B1 U0 G1	B1 U0 G1	B2 U0 G1
	580	B1 U0 G1	B1 U0 G1	B2 U0 G1	B3 U0 G1
	700	B1 U0 G1	B2 U0 G1	B2 U0 G1	B3 U0 G1
GCJ2 20H	700	B1 U0 G1	B2 U0 G1	B2 U0 G1	B3 U0 G1
	830	B1 U0 G1	B2 U0 G2	B2 U0 G1	B3 U0 G1
	900	B1 U0 G1	B2 U0 G2	B2 U0 G2	B3 U0 G1
	1A	B1 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G1

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Project

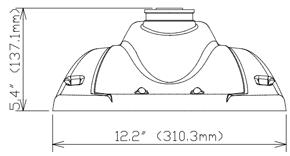
Type

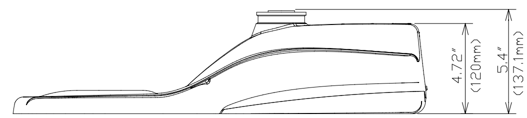
Catalog No.

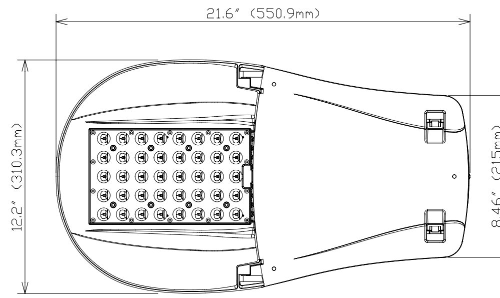
GreenCobra™ Midsize LED Street Light
GCM H-Series Specification Data Sheet

Luminaire Data

Weight 10 lbs [4.6 kg]
EPA 0.44 ft^2







Ordering Information

Sample Catalog No. GCM2 30H MV NW 2R GY 700 PCR7 WL

Product	LED Code	Voltage	Color Temperature	Distribution	Finish[1]	30H Drive Current Code[2]	Options
GCM2	**30H**	**MV** 120-277V	**WW** 3000K	**2S** Type 2 Short	**GY** Gray	**530**	**FDC**[3] Fixed Drive Current
		HV 347-480V	**NW** 4000K	**2R** Type 2 Medium	**DB** Dark Bronze	**610**	**FFA**[4] Full field Adjustability
			CW 5000K	**3R** Type 3 Medium		**700**	**LPCR** Less Photocontrol Receptacle
				4 Type 4	**BK** Black	**850**	
				5 Type 5		**1A**	**PCR7**[5] ANSI 7-wire Photo-control Receptacle
GCM2	**40H**					**40H Drive Current Code**[2]	**PCR7-CR**[6] Control Ready 7-wire PC Receptacle
							WL Utility Wattage Label
						575	**4B** 4-Bolt Mounting Bracket
						700	**RWG** Rubber Wildlife Guard
						850	**SWTB** Straight Wire Terminal Block
						950	**BBL** Bubble Level
						1A	**CF**[7] Coastal Paint Finish

Notes:

1 Gray, Black, and Dark Bronze standard. Consult factory for other finishes.

2 Specified drive current code is the factory set maximum drive current. Field adjustable current selector enables standard dimming to lower wattage drive currents only. Consult factory if wattage limits require a special drive current.

3 Non-field adjustable, fixed drive current. Specify required drive current. Not available with PCR7-CR option.

4 The FFA option enables full field adjustability from the specified drive current code to all drive currents available. This option is not DLC qualified.

5 Field adjustable current selector included to enable standard dimming to lower wattage drive currents only. Field changeable connectors included to enable connection to PCR7 (wireless node dimming is disabled by default).

6 Control-ready wired at factory for wireless node dimming. Supplied at maximum drive current. If a lower drive current is required, consult factory.

7 Specify the CF Option for coastal installation. See warranty for details.

8 Flush mounted house side shield. Shield cuts light off at 1/2 mounting height behind luminaire.

9 Flush mounted cul-de-sac shield. Shield cuts light off at 1/2 mounting height behind luminaire and 1-1/2 mounting height on either side of luminaire.

10 Flush mounted front side shield cuts light off at approximately one mounting height in front of luminaire (street side).

11 Specify Color (GY, DB, BK)

12 Specify MV (120-277V) or HV (347V-480V)

Accessories*	
HSSGCM[8]	House Side Shield, Snap-On*
CSSGCM[9]	Cul-De-Sac Side Shield, Snap-On*
FSSGCM[10]	Front Side Shield, Snap-On*
SPB[11]	Square Pole Horizontal Arm Bracket
RPB[11]	Round Pole Horizontal Arm Bracket
PTB[11]	Pole Top Tenon Horizontal Arm Bracket
PTB2[11]	Pole Top Tenon Horizontal Arm Bracket (2@180°)
WB[11]	Wall Horizontal Arm Bracket
BSK	Bird Deterrent Spider Kit
LLPC[12]	Long-Life Twist Lock Photocontrol
SC	Twist Lock Shorting Cap

*Accessories are ordered separately and not to be included in the catalog number. For factory installed HSS, CSS, and FSS consult factory.

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GreenCobra™ Midsize LED Street Light
GCM H-Series Specification Data Sheet

Luminaire Specifications

Housing
Die cast aluminum housing with universal two-bolt slip fitter mounts to 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter mast arm. One-piece aluminum housing provides passive heat-sinking of the LEDs and has upper surfaces that shed precipitation. Four-bolt mounting bracket is available. Mounting provisions meet 3G vibration per ANSI C136.31-2010 Normal Application, Bridge & Overpass. Mounting has leveling adjustment from ± 5° in 2.5° steps. Electrical components are accessed without tools via a high-strength, non-conductive polycarbonate door with quick-release latches. Polycarbonate material meets UL 746C for outdoor usage. Available rubber wildlife guard (RWG option) conforms to mast arm with no gaps.

Light Emitting Diodes
High-flux/High-power white LEDs produce a minimum of 90% of initial intensity over 75,000 hours of life based on IES TM-21 (L90 ≥ 75k hours). LEDs are tested in accordance with IES LM-80 testing procedures. LEDs have correlated color temperature of 3000K (WW), 4000K (NW), or 5000K (CW) and 70 CRI minimum. LEDs are 100% mercury and lead free.

Field Adjustability
LED drive current can be changed in the field to adjust light output for local conditions (not available with PCR7-CR option). The specified drive current code will be the factory set maximum drive current and field adjustments can only be made to available lower wattage drive currents. Select the FFA option if full field adjustability to all available drive currents (1A max) is desired. The FFA option is not DLC qualified.

Quality Control
Every luminaire is performance tested before and after a 2-hour burn-in period. Assembled in the USA.

Optical Systems
Micro-lens optical systems produce IESNA Type 2, Type 3, Type 4, or Type 5 distributions and are fully sealed to maintain an IP66 rating. Luminaire produces 0% total lumens above 90º (BUG Rating, U=0). Optional house side shield cuts light off at 1/2 mounting height behind luminaire. Cul-de-sac shield provides back and side light control for end of cul-de-sac applications. Both shields are field installable without tools.

Electrical
Rated life of electrical components is 100,000 hours. Uses isolated power supply that is 1-10V dimmable. Power supply is wired with quick-disconnect terminals. Power supply features a minimum power factor of .90 and <20% Total Harmonic Distortion (THD). EMC meets or exceeds FCC CFR Part 15. Terminal block accommodates 6 to 14 gauge wire. Surge protection complies with IEEE/ANSI C62.41 Category C High, 20kV/10kA and ANSI C136.2-2015, 20kV/10kA.

Controls
3-Wire photocontrol receptacle is standard. ANSI C136.41 7-wire (PCR7) photocontrol receptacle is available. All photocontrol receptacles have tool-less rotatable bases. Wireless control module is provided by others.

Finish
Housing receives a durable, fade-resistant polyester powder coat finish with 3.0 mil nominal thickness. Standard finish tested to withstand 5000 hours in salt spray exposure per ASTM B117 and Coastal Finish per ASTM G85. Finish meets scribe creepage rating 8 per ASTM D1654. Finish tested 500 hours in UV exposure per ASTM G154 and meets ASTM D523 gloss retention.

Listings/Ratings/Labels
Luminaires are UL listed for use in wet locations in the United States and Canada. DesignLights Consortium™ qualified product. Consult DLC QPL for Standard and Premium Classification Listings. International Dark Sky Association listed. Luminaire is qualified to operate at ambient temperatures of -40°C to 40°C.

Photometry
Luminaires photometrics are tested by certified independent testing laboratories in accordance with IES LM-79 testing procedures.

Warranty
10-year limited warranty is standard on luminaire and components.

Vandal Resistance
Housing and optics rated to IK10

Standards
Luminaire complies with:
ANSI: C136.2, C136.3, C136.10, C136.13, C136.15, C136.22, C136.31, C136.35, C136.37, C136.41, C62.41, C78.377, C82.77
Other: FCC 47 CFR, IEC 60598, ROHS II, UL 1449, UL 1598

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Performance Data: 3000K (WW)

All data nominal. IES files for all CCTs available at leotek.com.

Product	LED Code	Drive Current Code	System Wattage (W)	Delivered Lumens (Lm) [1]	Efficacy (Lm/W)
GCM2	30H	530	48	5770	120
		610	58	6700	116
		700	68	7620	112
		850	82	8800	107
		1A	101	10480	104
	40H	575	73	8780	120
		700	88	10230	116
		850	107	11960	112
		950	121	13040	108
		1A	135	14080	104

Notes:
1 Nominal lumens. Normal tolerance ± 10% due to factors including distribution type, LED bin variance, and ambient temperatures.

Performance Data: 4000K (NW) and 5000K (CW)

All data nominal. IES files for all CCTs available at leotek.com.

Product	LED Code	Drive Current Code	System Wattage (W)	Delivered Lumens (Lm) [1]	Efficacy (Lm/W)
GCM2	30H	530	48	6330	132
		610	58	7440	128
		700	68	8550	126
		850	82	9830	120
		1A	101	11720	116
	40H	575	73	9590	131
		700	88	11260	128
		850	107	13270	124
		950	121	14390	119
		1A	135	15430	114

Notes:
1 Nominal lumens. Normal tolerance ± 10% due to factors including distribution type, LED bin variance, and ambient temperatures.

BUG Ratings

3000K (WW)

Product	LED Code	Drive Current Code	Type 2S BUG Rating	Type 2R BUG Rating	Type 3R BUG Rating	Type 4 BUG Rating	Type 5 BUG Rating
GCM2	30H	530	B2 U0 G1	B1 U0 G1	B2 U0 G2	B2 U0 G1	B3 U0 G1
		610	B2 U0 G1	B1 U0 G1	B2 U0 G2	B2 U0 G2	B3 U0 G1
		700	B2 U0 G1	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G1
		850	B2 U0 G1	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		1A	B2 U0 G2	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
	40H	575	B2 U0 G1	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		700	B2 U0 G2	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		850	B2 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G2	B3 U0 G2
		950	B3 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G2	B4 U0 G2
		1A	B2 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G2	B4 U0 G2

4000K (NW)

Product	LED Code	Drive Current Code	Type 2S BUG Rating	Type 2R BUG Rating	Type 3R BUG Rating	Type 4 BUG Rating	Type 5 BUG Rating
GCM2	30H	530	B2 U0 G1	B1 U0 G1	B2 U0 G2	B2 U0 G1	B3 U0 G1
		610	B2 U0 G1	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G1
		700	B2 U0 G1	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		850	B2 U0 G2	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		1A	B3 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2	B3 U0 G2
	40H	575	B2 U0 G2	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		700	B2 U0 G2	B2 U0 G2	B3 U0 G3	B2 U0 G2	B3 U0 G2
		850	B3 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G2	B4 U0 G2
		950	B3 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G2	B4 U0 G2
		1A	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2

5000K (CW)

Product	LED Code	Drive Current Code	Type 2S BUG Rating	Type 2R BUG Rating	Type 3R BUG Rating	Type 4 BUG Rating	Type 5 BUG Rating
GCM2	30H	530	B2 U0 G1	B1 U0 G1	B2 U0 G2	B2 U0 G1	B3 U0 G1
		610	B2 U0 G1	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G1
		700	B2 U0 G1	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		850	B2 U0 G2	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		1A	B2 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G2	B3 U0 G2
	40H	575	B2 U0 G2	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		700	B2 U0 G2	B2 U0 G2	B3 U0 G3	B2 U0 G2	B3 U0 G2
		850	B3 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G2	B4 U0 G2
		950	B3 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G2	B4 U0 G2
		1A	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2

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Project

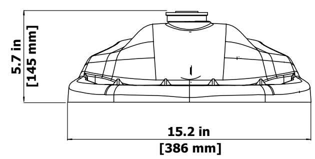
Type

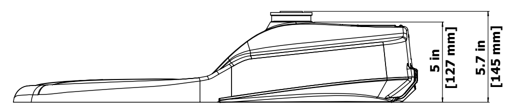
Catalog No.

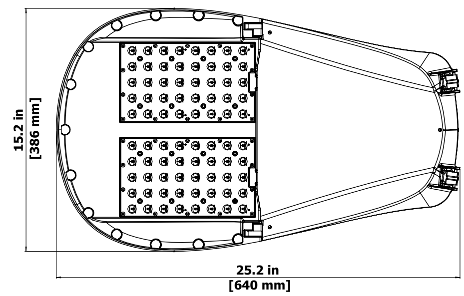
GreenCobra™ LED Street Light
GCL G-Series Specification Data Sheet

Luminaire Data

Weight 18 lbs [8.17 kg]
EPA 0.52 ft.^{2}







Ordering Information

Sample Catalog No. GCL1 60G MV WW 2S GY 350 PCR7 RWG

Product	LED Code	Voltage	Color Temperature	Distribution	Finish[1]	GCL1 Current Code[2]	Options
GCL1	60G	**MV** 120-277V	**WW** 3000K	**2S** Type 2 Short	**GY** Gray	350	**FDC[3]** Fixed Drive Current
	80G	**HV** 347-480V	**NW** 4000K	**2R** Type 2 Medium	**DB** Dark Bronze	450	**FFA[4]** Full Field Adjustability
			CW 5000K	**3R** Type 3 Medium	**BK** Black	530	**LPCR** Less Photocontrol Receptacle
				4 Type 4		610	**PCR7[5]** ANSI 7-wire Photocontrol Receptacle
				5 Type 5		700	**PCR7-CR[6]** Control Ready 7-wire Photocontrol Receptacle
GCL2	60G					**GCL2 Current Code[2]**	**4B** 4-Bolt Slip-Fitter
						750	**RWG** Rubber Wildlife Guard
						800	**WL** Utility Wattage Label
						900	**BBL** Bubble Level
						975	**CF[7]** Coastal Paint Finish
						1A	

Notes:

1 Gray, Black and Dark Bronze standard. Consult factory for other finishes.

2 Specified drive current code is the factory set maximum drive current. Field adjustable current selector enables standard dimming to lower wattage drive currents only. Consult factory if wattage limits require a special drive current.

3 Non-field adjustable, fixed drive current. Specify required drive current. Not available with PCR7-CR option.

4 The FFA option enables full field adjustability from the specified drive current code to all drive currents available. This option is not DLC qualified.

5 Field adjustable current selector included to enable standard dimming to lower wattage drive currents only. Field changeable connectors included to enable connection to PCR7 (wireless node dimming is disabled by default).

6 Control-ready wired at factory for wireless node dimming. Supplied at maximum drive current. If lower drive current is required, consult factory.

7 Specify the CF Option for coastal installation. See warranty for details.

8 Flush mounted house side shield. Shield cuts light off at 1/2 mounting height behind luminaire.

9 Flush mounted cul-de-sac shield. Shield cuts light off at 1/2 mounting height behind luminaire and 1-1/2 mounting height on either side of luminaire.

10 Flush mounted front side shield cuts light off at approximately one mounting height in front of luminaire (street side).

11 Specify Color (GY, DB, BK)

12 Specify MV (120-277V) or HV (347V-480V)

Accessories*	
HSSGCL[8]	House Side Shield, Snap-On*
CSSGCL[9]	Cul-De-Sac Side Shield, Snap-On*
FSSGCL[10]	Front Side Shield, Snap-On*
SPB[11]	Square Pole Horizontal Arm Bracket
RPB[11]	Round Pole Horizontal Arm Bracket
PTB[11]	Pole Top Tenon Horizontal Arm Bracket
PTB2[11]	Pole Top Tenon Horizontal Arm Bracket (2@180°)
WB[11]	Wall Horizontal Arm Bracket
BSK	Bird Deterrent Spider Kit
LLPC[12]	Long-Life Twist Lock Photocontrol
SC	Twist Lock Shorting Cap

*Accessories are ordered separately and not to be included in the catalog number. For factory installed HSS, CSS, and FSS consult factory.

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GreenCobra™ LED Street Light
GCL G-Series Specification Data Sheet

Luminaire Specifications

Housing
Die cast aluminum housing with universal two-bolt slip fitter mounts to 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter mast arm. Four-bolt mounting bracket (4B option) is available. Mounting provisions meet 3G vibration per ANSI C136.31-2010 Normal Application, Bridge & Overpass. Mounting has leveling adjustment from ± 5° in 2.5° steps. Electrical components are accessed without tools via high-strength, non-conductive polycarbonate door with stainless steel quick-release latches. Polycarbonate material is UL recognized and meets UL 746C for outdoor usage. Standard mast arm guard is Polycarbonate with removable insert. Available rubber wildlife guard (RWG option) conforms to mast arm with no gaps.

Light Emitting Diodes
Hi-flux/Hi-power white LEDs produce a minimum of 90% of initial intensity at 100,000 hours of life based on IES TM-21 (L90 = 100k hours). LEDs are tested in accordance with IES LM-80 testing procedures. LEDs have correlated color temperature of 3000K (WW), 4000K (NW), or 5000K (CW) and 70 minimum CRI. LEDs are ROHS compliant, 100% mercury and lead free.

Field Adjustability
LED drive current can be changed in the field to adjust light output for local conditions (not available with PCR7-CR option). The specified drive current code will be the factory set maximum drive current and field adjustments can only be made to available lower wattage drive currents. Select the FFA option if full field adjustability to all available drive currents (700mA max or 1A max) is desired. The FFA option is not DLC qualified.

Quality Control
Every luminaire is performance tested before and after a 2-hour burn-in period. Assembled in the USA.

Optical Systems
Micro-lens systems produce IESNA Type 2 Short (2S), Type 2 Medium (2R), Type 3 Medium (3R), Type 4 (4), and Type 5 (5) distributions. Luminaire produces 0% total lumens above 90° (BUG Rating, U=0). Optical systems maintain an IP66 rating. Optional house side shield cuts light off at 1/2 mounting height behind luminaire. Cul-de-sac shield provides back and side light control for end of cul-de-sac applications. Both shields are field installable without tools.

Electrical
Power supply life is rated for 100,000 hours. Power Supply is 1-10V dimmable. Power supply features a minimum power factor of .90 and <20% Total Harmonic Distortion (THD). EMC meets or exceeds FCC CFR Part 15. Terminal block accommodates 6 to 14 gauge wire and is aligned for straight wire entry. Surge protection complies with IEEE/ANSI C62.41 Category C High, 20kV/10kA and ANSI C136.2-2015, 20kV/10kA.

Controls
3-Wire photocontrol receptacle is standard. ANSI C136.41 7-wire (PCR7) photocontrol receptacle is available. All photocontrol receptacles have tool-less rotatable base. Wireless control module is provided by others.

Finish
Housing receives a durable, fade-resistant polyester powder coat finish with 3.0 mil nominal thickness. Standard finish tested to withstand 5000 hours in salt spray exposure per ASTM B117 and Coastal Finish per ASTM G85. Finish meets scribe creepage rating 8 per ASTM D1654. Finish tested 500 hours in UV exposure per ASTM G154 and meets ASTM D523 gloss retention.

Listings/Ratings/Labels
Luminaires are UL listed for use in wet locations in the United States and Canada. DesignLights Consortium™ qualified product. Consult DLC QPL for Standard and Premium Classification Listings. International Dark Sky Association listed. Luminaire is qualified to operate at ambient temperatures of -40°C to 40°C.

Photometry
Luminaires photometrics are tested by certified independent testing laboratories in accordance with IES LM-79 testing procedures.

Warranty
10-year limited warranty is standard on luminaire and components.

Vandal Resistance
Housing and optics rated to IK10

Standards
Luminaire complies with:
ANSI: C136.2, C136.3, C136.10, C136.13, C136.15, C136.22, C136.31, C136.35, C136.37, C136.41, C62.41, C78.377, C82.77
Other: FCC 47 CFR, IEC 60598, ROHS II, UL 1449, UL 1598

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LEOTEK LITE-ON GROUP

GreenCobra™ LED Street Light
GCL G-Series Specification Data Sheet

Performance Data
All data nominal. IES files for all CCTs avvailable at leotek.com.

3000K (WW)

Product	LED Code	Drive Current Code	System Wattage (W)	Delivered Lumens (Lm)	Efficacy (Lm/W)[1]
GCL1	**60G**	350	70	8800	126
		450	85	10500	124
		530	105	12700	121
		610	120	14200	118
		700	135	15600	116
GCL1	**80G**	350	85	11150	131
		450	115	14400	125
		530	130	16000	123
		610	160	18700	117
		700	185	20800	112
GCL2	**60G**	750	149	17500	117
		800	163	18600	114
		900	183	20100	110
		975	192	20600	107
		1A	208	21700	104

Notes:
1 Nominal lumens. Normal tolerance ± 10% due to factors including distribution type, LED bin variance, and ambient temperatures.

4000K (NW) and 5000K (NW)

Product	LED Code	Drive Current Code	System Wattage (W)	Delivered Lumens (Lm)	Efficacy (Lm/W)[1]
GCL1	**60G**	350	70	9250	132
		450	85	11000	129
		530	105	13300	127
		610	120	15000	125
		700	135	16400	121
GCL1	**80G**	350	85	11700	138
		450	115	15200	132
		530	130	16800	129
		610	160	20000	125
		700	185	22100	119
GCL2	**60G**	750	149	18500	124
		800	163	19600	120
		900	183	21200	116
		975	192	21800	114
		1A	208	22900	110

Notes:
1 Nominal lumens. Normal tolerance ± 10% due to factors including distribution type, LED bin variance, and ambient temperatures.

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BUG Ratings

3000K (WW)

Product	LED Code	Drive Current Code	Type 2S BUG Rating	Type 2R BUG Rating	Type 3R BUG Rating	Type 4 BUG Rating	Type 5 BUG Rating
GCL1	60G	350	B2 U0 G2	B1 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		450	B2 U0 G2	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		530	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2	B4 U0 G2
		610	B2 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G3	B4 U0 G2
		700	B2 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G3	B4 U0 G2
	80G	350	B2 U0 G2	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		450	B2 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G3	B4 U0 G2
		530	B2 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G3	B4 U0 G2
		610	B3 U0 G2	B3 U0 G2	B3 U0 G3	B3 U0 G3	B4 U0 G2
		700	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2
GCL2	60G	750	B3 U0 G2	B3 U0 G2	B3 U0 G3	B3 U0 G3	B4 U0 G2
		800	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2
		900	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2
		975	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2
		1A	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2

4000K (NW)

Product	LED Code	Drive Current Code	Type 2S BUG Rating	Type 2R BUG Rating	Type 3R BUG Rating	Type 4 BUG Rating	Type 5 BUG Rating
GCL1	60G	350	B1 U0 G2	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		450	B2 U0 G2	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		530	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2	B4 U0 G2
		610	B2 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G3	B4 U0 G2
		700	B2 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G3	B4 U0 G2
	80G	350	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2	B3 U0 G2
		450	B2 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G3	B4 U0 G2
		530	B3 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G3	B4 U0 G2
		610	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2
		700	B3 U0 G3	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2
GCL2	60G	750	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2
		800	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2
		900	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2
		975	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2
		1A	B3 U0 G3	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2

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Specifications subject to change without notice.

BUG Ratings

5000K (CW)

			Type 2S	Type 2R	Type 3R	Type 4	Type 5
Product	**LED Code**	**Drive Current Code**	**BUG Rating**	**BUG Rating**	**BUG Rating**	**BUG Rating**	**BUG Rating**
GCL1	**60G**	350	B1 U0 G2	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		450	B2 U0 G2	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		530	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2	B4 U0 G2
		610	B2 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G3	B4 U0 G2
		700	B2 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G3	B4 U0 G2
	80G	350	B1 U0 G2	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		450	B2 U0 G2	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2
		530	B2 U0 G2	B2 U0 G2	B2 U0 G2	B3 U0 G2	B4 U0 G2
		610	B2 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G3	B4 U0 G2
		700	B2 U0 G2	B2 U0 G2	B3 U0 G3	B3 U0 G3	B4 U0 G2
GCL2	**60G**	750	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2
		800	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2
		900	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2
		975	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2
		1A	B3 U0 G2	B3 U0 G3	B3 U0 G3	B3 U0 G3	B4 U0 G2

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Specifications subject to change without notice.

B

Appendix B
Decorative Luminaires

DESCRIPTION

The Springdale LED outdoor luminaire displays the old-fashioned charm of traditional area lighting, enhancing any setting with distinctive styling. As a decorative luminaire, the Springdale LED tastefully complements the architectural and environmental design of parks and roadways. The high-lumen downlight configuration uses Eaton's patented LightBAR™ technology to deliver uniform and efficient illumination to pedestrian and roadway applications.

Catalog #		**Type**
Project		
Comments		**Date**
Prepared by		

SPECIFICATION FEATURES

Construction
Heavy-duty die-cast aluminum housing ensures strength of construction and longevity in application. Casting is hinged and opens with a simple 1/4 turn thumb screw for ease of maintenance.

Optics
Choice of six patented, high efficiency AccuLED Optic™ technology manufactured from injection-molded acrylic. Optics are precisely designed to shape the light output, maximizing efficiency and application spacing. AccuLED Optic technology, creates consistent distributions with the scalability to meet customized application requirements. Offered Standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 3000K CCT, 5000K CCT and 5700K CCT. For the ultimate level of spill light control, an optional houseside shield accessory can be field or factory installed. The house-side shield is designed to seamlessly integrate with the SL2 or SL3 optics.

Electrical
LED drivers mount to die-cast aluminum back housing for optimal heat sinking, operation efficacy, and prolonged life. Standard drivers feature electronic universal voltage (120-277V 50/60Hz), 347V 60Hz or 480V 60Hz operation, greater than 0.9 power factor, less than 20% harmonic distortion, and is suitable for operation in -40°C to 40°C ambient environments. All fixtures are shipped standard with 10kV/10kA common-mode and differential-mode surge protection. Optional 0-10V dimming driver available. LightBARs feature an IP66 enclosure rating and maintain greater than 95% lumen maintenance at 60,000 hours per IESNA TM-21.

Mounting
Decorative scroll arm, ordered separately, secures to casting with four bolts, which are supplied with the luminaire.

Finish
Cast components finished in a super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey and white, dark platinum and graphite metallic. RAL and custom color matches available.

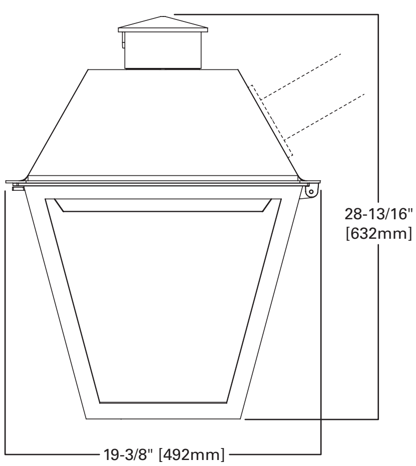
Warranty
Five-year warranty.

SDL
Springdale LED

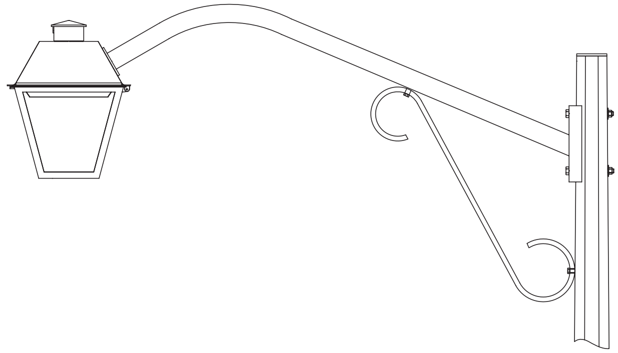
1 - 4 LightBARs
LED

DECORATIVE LUMINAIRE

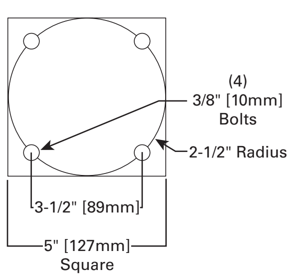
DIMENSIONS



MOUNTING CONFIGURATION (ARM BY OTHERS)



MOUNTING DETAIL



CERTIFICATION DATA
UL/cUL Listed
LM79 / LM80 Compliant
IP66 LightBARs
ISO 9001

ENERGY DATA
Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60Hz, 347V 60Hz, 480V 60Hz
-40°C Minimum Temperature
40°C Ambient Temperature Rating

EPA
Effective Projected Area: (Sq. Ft.) 2.22

SHIPPING DATA
Approximate Net Weight:
40 lbs. (18.14 kgs)

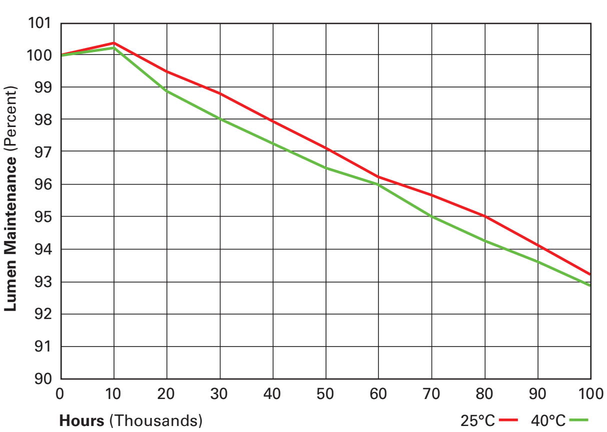
POWER AND LUMENS (STANDARD CONFIGURATION - NO LENSES)

LED LightBARS		E01	E02	E03	E04	F01	F02	F03	F04
Drive Current		350mA Drive Current				1A Drive Current			
Number of LEDs		21 LEDs				7 LEDs			
Power (Wattage)		25W	52W	75W	97W	26W	55W	78W	102W
Current @ 120V (A)		0.22	0.44	0.63	0.82	0.22	0.46	0.66	0.86
Current @ 277V (A)		0.10	0.20	0.28	0.36	0.10	0.21	0.29	0.37
Power (Wattage)		31W	58W	82W	99W	32W	60W	85W	105W
Current @ 347V (A)		0.11	0.19	0.28	0.29	0.11	0.19	0.28	0.30
Current @ 480V (A)		0.09	0.15	0.20	0.21	0.09	0.15	0.21	0.22
Optics									
T2S	Lumens	2,300	4,714	6,573	8,874	1,916	3,927	5,475	7,393
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2
T3S	Lumens	2,424	4,969	6,927	9,352	2,001	4,102	5,718	7,791
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B2-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2
SL2	Lumens	2,494	5,111	7,126	9,621	2,162	4,431	6,178	8,341
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B2-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G2	B2-U0-G2
SL3	Lumens	2,503	5,130	7,152	9,656	2,150	4,408	6,145	8,297
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G2	B2-U0-G2
5MQ	Lumens	2,722	5,580	7,779	10,502	2,268	4,648	6,480	8,749
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2	B1-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2
5WQ	Lumens	2,692	5,518	7,693	10,387	2,257	4,626	6,449	8,708
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2

LUMEN MAINTENANCE

Ambient Temperature	25,000 Hours*	50,000 Hours*	60,000 Hours*	100,000 Hours*	Theoretical L70 (Hours)
25°C	>99%	>97%	>96%	>93%	>250,000
40°C	>98%	>97%	>96%	>92%	>425,000

* Per IESNA TM-21 data.



LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
10°C	1.02
15°C	1.01
25°C	1.00
40°C	0.99

Powering Business Worldwide

Eaton
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.eaton.com/lighting

Canadian Sales
5925 McLaughlin Road
Mississauga, Ontario L5R 1B8
P: 905-501-3000
F: 905-501-3172

Specifications and dimensions subject to change without notice.

ORDERING INFORMATION

Sample Number: SDL-E04-LED-D-U-T3S-BK-4N7

Product Family	Number of LightBARs [1, 2]	Source Type	Driver	Voltage	Distribution	Color
SDL=Springdale LED	**E01**=(1) 21 LED LightBAR **E02**=(2) 21 LED LightBARs **E03**=(3) 21 LED LightBARs **E04**=(4) 21 LED LightBARs **F01**=(1) 7 LED LightBAR **F02**=(2) 7 LED LightBARs **F03**=(3) 7 LED LightBARs **F04**=(4) 7 LED LightBARs	**LED**=Sold State Light Emitting	**E**=Non-Dimming **D**=Dimming [3]	**U**=Universal (120-277V) **8**=480V [4] **9**=347V	**T2S**=Type II **T3S**=Type III **SL2**=Type II with Spill Control **SL3**=Type III with Spill Control **5MQ**=Type V Square Medium **5WQ**=Type V Square Wide	**AP**=Grey **BZ**=Bronze **BK**=Black **DP**=Dark Platinum **GM**=Graphite Metallic **WH**=White

Options (Add as Suffix)	Accessories (Order Separately)
4=NEMA Photocontrol Receptacle **4N7**=NEMA 7-PIN Photocontrol Receptacle [5] **7030**=70 CRI / 3000K [6] **7050**=70 CRI / 5000K [6] **7060**=70 CRI / 5700K [6] **8030**=80 CRI / 3000K [6] **2L**=Two Circuits [7] **P**=Polycarbonate Refractive Lens Panels [8] **HSS**=Factory Installed House Side Shield [9] **LCF**=LightBAR Cover Plate Matches Housing Finish	**OA/RA1013**=Photocontrol Shorting Cap **OA/RA1014**=NEMA Photocontrol - 120V **OA/RA1016**=NEMA Photocontrol - 105V-285V **OA/RA1027**=NEMA Photocontrol - 480V **OA/RA1201**=NEMA Photocontrol - 347V **OA1223**=10kV Surge Module Replacement **LB/HSS-21**=Field Installed House Side Shield for "E" LightBARs [9, 10] **LB/HSS-7**=Field Installed House Side Shield for "F" LightBARs [9, 10]

NOTES:
1. 21 LED LightBAR driven at 350mA, 7 LED LightBAR driven at 1A.
2. Standard 4000K CCT and nominal 70 CRI.
3. Only available in E02-E04 and F02-F04. Must specify 4N7 option if photocontrol receptacle is required.
4. Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase ThreeWire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
5. Must specify dimming driver.
6. Consult factory for lead times and lumen multiplier.
7. Low-level output varies by bar count. Consult factory. Requires two or more LightBARs.
8. EPA = 4.1 if polycarbonate refractive lens panels are included.
9. Only for use with SL2 and SL3 distributions.
10. One required for each LightBAR.

Streetworks

DESCRIPTION

The Traditionaire LED outdoor luminaire displays the old-fashioned charm of traditional area lighting, enhancing any setting with distinctive styling. As a decorative luminaire, the Traditionaire LED tastefully complements the architectural and environmental design of parks and roadways. The high-lumen downlight configuration uses Eaton''s patented LightBAR™ technology to deliver uniform and efficient illumination to pedestrian and roadway applications.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
Hinged (stainless steel hinge pins) die-cast aluminum housing and cover with cupola. 3G vibration tested to ensure strength of construction and longevity in application.

Optics
Choice of six patented, high-efficiency AccuLED Optic™ technology manufactured from injection-molded acrylic. Optics are precisely designed to shape the light output, maximizing efficiency and application spacing. AccuLED Optic technology, creates consistent distributions with the scalability to meet customized application requirements. Offered Standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 3000K CCT, 5000K CCT and 5700K CCT. For the ultimate level of spill light control, an optional house-side shield accessory can be field or factory installed. The house-side shield is designed to seamlessly integrate with the SL2 or SL3 optics.

Electrical
LED drivers mount to die-cast aluminum back housing for optimal heat sinking, operation efficacy, and prolonged life. Standard drivers feature electronic universal voltage (120-277V 50/60Hz), 347V 60Hz or 480V 60Hz operation, greater than 0.9 power factor, less than 20% harmonic distortion, and is suitable for operation in -40°C to 40°C ambient environments. All fixtures are shipped standard with 10kV/10kA common – and differential – mode surge protection. LightBARs feature an IP66 enclosure rating and maintain greater than 95% lumen maintenance at 60,000 hours per IESNA TM-21.

Mounting
Self-aligning pole-top fitter for 3" O.D. pole tops or vertical tenons. Square headed 1-1/4" polymer coated mounting bolts with a lock nut.

Finish
Cast components finished in a super durable black TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Optional colors include: bronze, grey and white. RAL and custom color matches available.

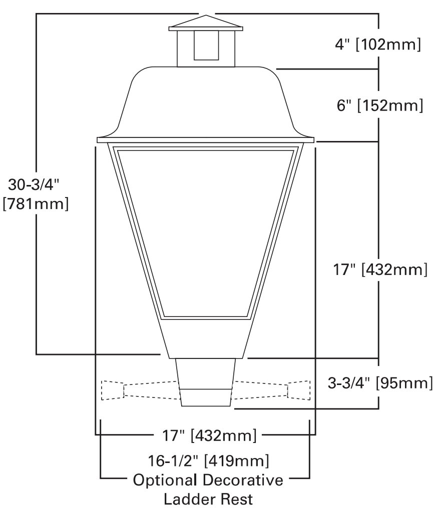
Warranty
Five-year warranty.

UTLD
TRADITIONAIRE LED DOWNLIGHT

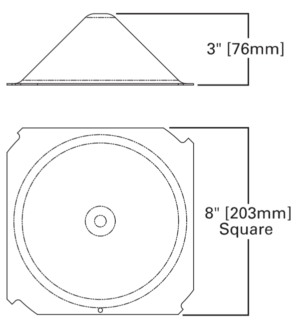
1 - 3 LightBARs
Solid State LED

DECORATIVE POST TOP LUMINAIRE

DIMENSIONS



OPTIONAL BIRD CONE



CERTIFICATION DATA

UL/cUL Listed
LM79 / LM80 Compliant
3G Vibration Rated
IP66 LightBARs
ISO 9001

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60Hz, 347V/60Hz, 480V/60Hz
-40°C Minimum Temperature
40°C Ambient Temperature Rating

EPA

Effective Projected Area: (Sq. Ft.)
2.3

SHIPPING DATA

Approximate Net Weight:
37 lbs. (17 kgs.)

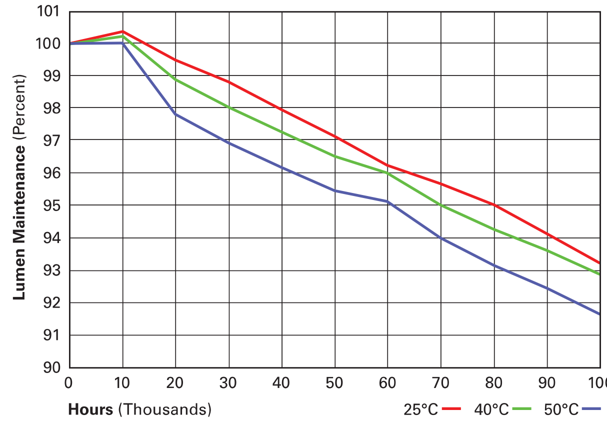
POWER AND LUMENS (STANDARD CONFIGURATION - NO LENSES OR BIRD CONE)

LED LightBARS		E01	E02	E03	F01	F02	F03
Number of LEDs		**21 LEDs**	**21 LEDs**	**21 LEDs**	**7 LEDs**	**7 LEDs**	**7 LEDs**
Power (Wattage)		25	52	75	26	55	78
Current @ 120V (A)		0.21	0.43	0.63	0.22	0.46	0.65
Current @ 277V (A)		0.09	0.19	0.27	0.09	0.20	0.28
Optics							
T2	Lumens	2,678	5,356	8,033	2,211	4,421	6,632
	BUG Rating	1-0-1	2-0-2	2-0-2	1-0-1	2-0-2	2-0-2
T3	Lumens	2,695	5,391	8,086	2,225	4,450	6,676
	BUG Rating	1-0-1	2-0-2	3-0-3	1-0-1	2-0-2	2-0-2
T4	Lumens	2,637	5,274	7,911	2,177	4,354	6,531
	BUG Rating	1-0-1	1-0-2	1-0-2	1-0-1	1-0-2	1-0-2
SL2	Lumens	2,646	5,292	7,937	2,184	4,368	6,552
	BUG Rating	1-0-1	1-0-2	2-0-2	1-0-1	1-0-1	2-0-2
SL3	Lumens	2,629	5,258	7,886	2,170	4,340	6,510
	BUG Rating	1-0-1	1-0-2	2-0-2	1-0-1	1-0-1	1-0-2
5MQ	Lumens	2,815	5,630	8,445	2,324	4,648	6,972
	BUG Rating	2-0-1	3-0-1	3-0-2	2-0-1	3-0-1	3-0-1
5WQ	Lumens	2,825	5,651	8,476	2,333	4,665	6,997
	BUG Rating	2-0-1	3-0-1	3-0-2	2-0-1	3-0-1	3-0-2

LUMEN MAINTENANCE

Ambient Temperature	25,000 Hours*	50,000 Hours*	60,000 Hours*	100,000 Hours	Theoretical L70 (Hours)
25°C	> 99%	> 97%	> 96%	> 93%	> 450,000
40°C	> 98%	> 97%	> 96%	> 92%	> 425,000
50°C	> 97%	> 96%	> 95%	> 91%	> 400,000

* Per IESNA TM-21 data.



LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
10°C	1.02
15°C	1.01
25°C	1.00
40°C	0.99
50°C	0.96

ORDERING INFORMATION

Sample Number: UTLD-F03-LED-D-U-T3-4N7

Product Family	Number of LightBARs [1, 2]	Source Type	Driver	Voltage	Distribution
UTLD=Traditionaire™ LED Downlight	**E01**=(1) 21 LED LightBAR **E02**=(2) 21 LED LightBARs **E03**=(3) 21 LED LightBARs **F01**=(1) 7 LED LightBAR **F02**=(2) 7 LED LightBARs **F03**=(3) 7 LED LightBARs	**LED**=Solid State Light Emitting Diodes	**E**=Non-Dimming **D**=Dimming [3]	**U**=Universal (120-277V) **8**=480V [4] **9**=347V	**T2**=Type II **T3**=Type III **SL2**=Type II w/Spill Control **SL3**=Type III w/Spill Control **5MQ**Type V Square Medium **5WQ**=Type V Square Wide

Options (Add as Suffix)	**Accessories** (Order Separately)
4=NEMA Photocontrol Receptacle **4N7**=NEMA 7-PIN Twistlock Photocontrol Receptacle [5] **W**=20' #10 Leads **S**=Snap Latches for Tool-less Light Replacement **U**=UL/CSA Listed **J**=Factory Installed Ladder Rest **7030**=70 CRI / 3000K CCT [6] **7050**=70 CRI / 5000K CCT [6] **7060**=70 CRI / 5700K CCT [6] **8030**=80 CRI / 3000K CCT [6] **2L**=Two Circuits [7] **A**=Refractive Lens Panels [8] **LCF**=LightBAR Cover Plate Matches Housing Finish **BC**=Bird Cone [8] **HSS**=Factory Installed House Side Shield [9] **AP**=Grey **BZ**=Bronze **WH**=White	**TA1BK**=Decorative Ladder Rest for Field Installation **OA1222**=10kV Surge Replacement Module **LB/HSS-21**=Field Installed House Side Shield for "E" LightBARs [9, 10] **LB/HSS-07**=Field Installed House Side Shield for "F" LightBARs [9, 10]

NOTES:
1. 21 LED LightBAR driven at 350mA, 7 LED LightBAR driven at 1A.
2. Standard 4000K CCT and nominal 70 CRI.
3. Must specify 4N7 option.
4. Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
5. Only available with dimming drivers.
6. Consult factory for lead times and lumen multiplier.
7. Low-level output varies by bar count. Consult factory. Requires two or more LightBARs.
8. Lens panels and bird cone can not be ordered together.
9. Only for use with SL2 and SL3 distributions.
10. One required for each LightBAR.

Eaton
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.eaton.com/lighting

Specifications and dimensions subject to change without notice.

PRODUCT TECHNICAL DATA SHEET

HCI LIGHTING
HERITAGE CASTING & IRONWORKS LTD.

SL20-LED SERIES

SPECIFICATIONS

Housing
Made from heavy duty cast aluminum to withstand harsh weather.

Hardware
All exposed hardware is made of durable stainless steel, with industrial strength seals.

Interior Design & Optical
Energy efficient LED driver is mounted on a removable plate, with quick disconnect wiring and toolless hood access for easy driver maintenance.
Calculated minimum at 100,000 hrs (CRI≥70) with available full reports for both TM-21 and L70 upon request.

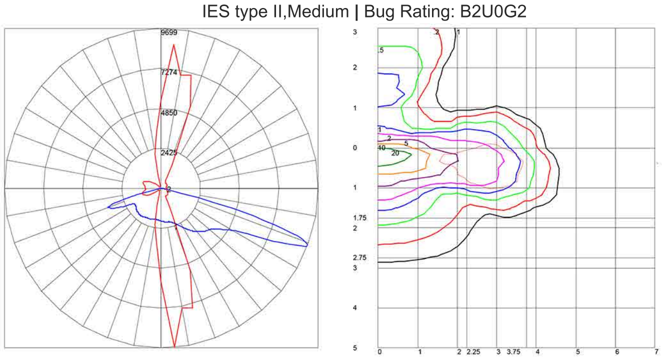
Exterior Design & Finish
Luminaire is designed to fit post top, pendant or side mounting with our ornamental arms and poles, and is suitable for wet locations.
Finish is electrostatically applied with thermoset polyester powder-coat.

SIZES

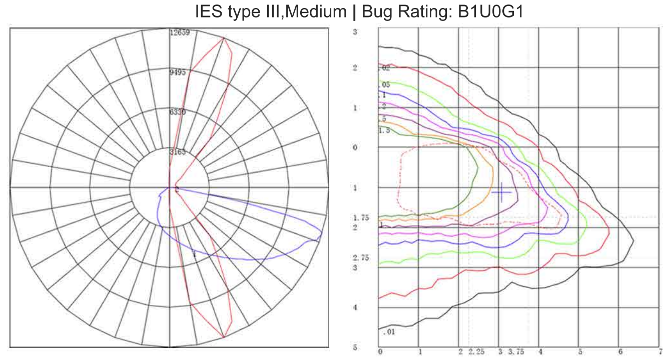
	length	width	height	weight	tenon size	EPA
Large	20”	20”	30”	47 lbs	3”(W) x 4”(L)	3.20 ft²
Small	-	-	-	-	-	-

PHOTOMETRICS

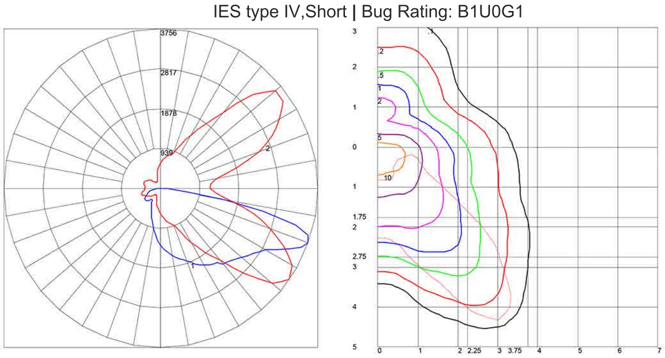
SAMPLE ILLUSTRATION
IES type II,Medium | Bug Rating: B2U0G2



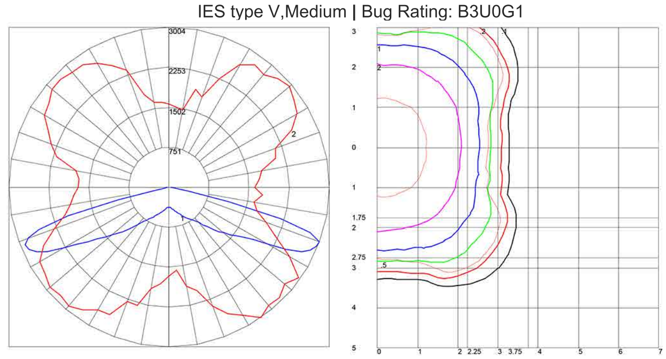
SAMPLE ILLUSTRATION
IES type III,Medium | Bug Rating: B1U0G1



SAMPLE ILLUSTRATION
IES type IV,Short | Bug Rating: B1U0G1



SAMPLE ILLUSTRATION
IES type V,Medium | Bug Rating: B3U0G1



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PRODUCT TECHNICAL DATA SHEET

HCI LIGHTING
HERITAGE CASTING & IRONWORKS LTD.

PRODUCT CONFIGURATION

PRODUCT	FITTER	DIFFUSER TYPE	WATTAGE (DELIVERED LUMENS)	CCT	VOLTAGE	OPTICS	OPTIONS	FINIALS	COLOR
SL20	N/A	**CAC** CLEAR ACRYLIC **CPC** CLEAR POLYCARBONATE **CTG** CLEAR TEMPERED GLASS **FAC** FROSTED ACRYLIC **FPC** FROSTED POLYCARBONATE **WAC** WHITE ACRYLIC **WPC** WHITE POLYCARBONATE	36W (3636lm) 55W (5555lm) 70W (7272lm) 80W (11600lm) 100W (14500lm) 120W (17400lm) 150W (21750lm) *(*MEASURED AT 4000K*)* ± 10% VARIANCE CUSTOM	3000K 4000K 5000K 6000K ± 10% VARIANCE	120V~277V STEP DOWN TRANSFORMER 347V 480V	IES TYPE II (2) III (3) IV (4) V (5)	**CHY** DECORATIVE CHIMNEY **DIM** DIMMING CONTROL **FUS** INTERNAL FUSING **PCB** BUTTON TYPE PHOTOCELL **PEC** TWIST LOCK PHOTOCELL	FA FB FC FD FE FF FG FH FI FJ	STANDARD RAL 6005 GREEN 7012 GREY 8019 BRONZE 9011 BLACK 9016 WHITE **TEXTURE AVAILABLE* CUSTOM RAL

SL20** IS EQUIVALENT TO **F150-L** & **F195-L

Product ordering sample SL20 - CAC - LED36W (3636lm) - 4000K - 120~277V - TYPE II - CHY - RAL9011 BLACK

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K601D COACH LANTERN - LED

KING LED TECHNOLOGY

The K601D is a cost effective coach lantern with a historical appearance that offers high performance Advanced LED Technology with our signature P4 optical system. It has excellent spacing and low glare providing a perfect solution for city streets, parks, schools and commercial areas.

PROJECT:______________________________

PREPARED BY: ______________________________

DATE:______________________________

PRODUCT SPECIFICATIONS

LED ENGINE
Light engine shall include an array of 30, 60 or 84 solid state Cree X-Series high power LEDs (light emitting diodes). The emitters shall be mounted to a metal core circuit board using SMT technology. The LEDs and circuit boards shall then be mounted to a high performance heat sink.

OPTICS
External light control shall consist of high precision refractive lenses mounted above the LED emitter arrays in such a way to achieve optimum uplight control. The lenses shall also control horizontal light distribution so that Type II, III, IV or V IESNA distribution patterns are achieved.

LENS
The K601D Coach Lantern is available with or without a lens. The lens panels can be made of clear polycarbonate or clear acrylic.

DECORATIVE BODY
All cast components shall consist of an aluminum alloy ADC12. The main body acts as an enclosure for the LED array and is of adequate thickness to give sufficient structural rigidity.

With the Post Top, the capital shall have an opening at the base tenon body to allow the luminaire to be mounted to a tenon of 3-1/2" maximum diameter. The luminaire shall be locked in place by means of heavy duty, stainless-steel setscrews.

The K601D Coach Lantern is also available as a Pendant with multiple mounting options, including the KPL10, KPL11, KPL20, KPL21, KPL30, KPL31 and KPL40. The K601D Coach Lantern can also be mounted with a Side Mounted scroll arm. Please contact King Luminaire for more details and specifications.

DRIVER
The LED universal dimmable driver will be class 2 and capable of 120 - 277V or 347 - 480V input voltage, greater than 0.9 power factor, less than 20% total harmonic distortion and features an ambient temperature range of -35°C up to 65°C. Each LED system comes with a standard surge protection designed to withstand up to 20kV/10kA of transient line surge as per IEEE C62.41.2 C High. An in-line ferrite choke is utilized to provide protection against EFT's.

PHOTOMETRICS
Fixtures are tested to IESNA LM79 specifications. These reports are available upon request.

CHROMATICITY
High output LEDs come standard at 3000K & 4000K (+/- 300K) with a minimum nominal 70 CRI. Additional CCT emitters are available upon request.

LUMEN MAINTENANCE
Reported (TM21) and Calculated (L70) reports are available upon request with a minimum calculated value of 100,000 hrs.

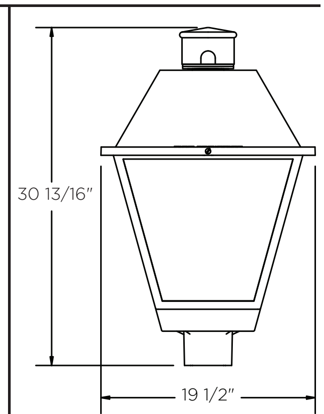
WIRING
All internal wiring and connections shall be completed so that it will be necessary only to attach the incoming supply connectors to Mate-N-Lok connectors or to a terminal block. Mate-N-Lok shall be certified for 600V operation. Internal wire connectors shall be crimp connector only and rated at 1000V and 150°C. All wiring to be CSA certified and/or UL listed, type SFF-2, SEWF-2, or SEW-2 No. 14 gauge, 150°C, 600V, and color coded for the required voltage.

THERMALS
Fixtures tested by a DOE sanctioned test facility to determine the maximum in-situ solder-point or junction-point temperatures of the LED emitters. This report is available upon request.

FINISH
Housing is finished with a 13 step KingCoat™ SuperDurable polyester TGIC powder coat. Standard colors include strobe white, brown metal, marina blue, gate gray, Chicago bronze, standard gold, standard black, federal green and rain forest. Please see our website for a complete list of colors. RAL and custom color matches are available.

MISCELLANEOUS
All exterior hardware and fasteners, wholly or partly exposed, shall be stainless steel alloy. All internal fasteners are stainless steel or zinc coated steel. All remaining internal hardware is stainless steel, aluminum alloy, or zinc coated steel.

WARRANTY
The K601D Coach Lantern LED luminaire comes with a 7 year limited warranty.



CERTIFICATION:
CSA US Listed
Suitable for wet locations
ISO 9001
IP66
ARRA Compliant
LM79 / LM80 Compliant

DRIVER INFO:
>0.9 Power Factor
<20% Total Harmonic Distortion
120 - 277V & 347 - 480V
-35°C Min. Case Temperature
65°C Max. Case Temperature
Surge Protection: ANSI C136.2
extreme level 20kV/10kA

EPA (with Lens):

Post Top;	2.7 sq. ft.
Side Mount:	2.45 sq. ft.
Pendant:	2.45 sq. ft.

FIXTURE WEIGHT (with Lens):

Post Top:	34 lbs
Side Mount:	25 lbs
Pendant:	25 lbs

C US

POWER & LUMENS - POST TOP

K601D COACH LANTERN - LED

Test Voltage: 120V
Nominal Color Temperature: 3000K & 4000K[1]
7030 Engine Series: 30 Emitters (40 - 100W Max)
8060 Engine Series: 60 Emitters (120W Max)
8084Engine Series: 84 Emitters (150 - 200W Max)
LED Engine + Driver Rated Life = 100,000 hrs[2]

To learn more about the P4 Optic, please see the P4 Optic Information Sheet

Post Top

Photometric Test Report Number	Lens Option	Color Temperature	IES Distribution	Nominal Watts	Engine Series	Delivered Lumens[3]	Efficacy (LM/W)[3]	mA @ emitter	Driver Output Current	BUG Rating	HID Equivalent[4]
601DTP4NL302540H	No Lens	4000	Type III	25	7030	3220	121	270	2000	1-0-1	50-70
601DTP4AC304030	Acrylic Clear	3000	Type III	40	7030	3637	86.4	400	2000	1-2-1	50-70
601DTP4AC304040	Acrylic Clear	4000	Type III	40	7030	3927	94.4	400	2000	1-3-1	50-70
601DTP4AC504030	Acrylic Clear	3000	Type V	40	7030	3702	85.7	400	2000	2-2-1	50-70
601DTP4AC504040	Acrylic Clear	4000	Type V	40	7030	3861	94.6	400	2000	2-2-1	50-70
601DTP4NL304030	No Lens	3000	Type III	40	7030	3804	91.0	400	2000	1-0-1	50-70
601DTP4NL304040	No Lens	4000	Type III	40	7030	4086	95.5	400	2000	1-0-1	50-70
601DTP4NL504030	No Lens	3000	Type V	40	7030	3925	92.8	400	2000	2-0-1	50-70
601DTP4NL504040	No Lens	4000	Type V	40	7030	4105	96.1	400	2000	2-0-1	50-70
601DTP4AC306030	Acrylic Clear	3000	Type III	60	7030	4910	80.0	600	3000	1-3-1	70-100
601DTP4AC306040	Acrylic Clear	4000	Type III	60	7030	5389	88.1	600	3000	1-3-2	70-100
601DTP4AC506030	Acrylic Clear	3000	Type V	60	7030	5013	79.3	600	3000	2-2-1	70-100
601DTP4AC506040	Acrylic Clear	4000	Type V	60	7030	5231	88.5	600	3000	2-3-1	70-100
601DTP4NL306030	No Lens	3000	Type III	60	7030	5251	85.4	600	3000	1-0-1	70-100
601DTP4NL306040H	No Lens	4000	Type III	60	7030	6555	115	600	3000	2-0-2	70-100
601DTP4NL506030	No Lens	3000	Type V	60	7030	5402	86.7	600	3000	2-0-1	70-100
601DTP4NL506040	No Lens	4000	Type V	60	7030	5591	88.7	600	3000	2-0-1	70-100
601DTP4AC307530	Acrylic Clear	3000	Type III	75	7030	5819	76.5	800	4000	1-3-2	100-150
601DTP4AC307540	Acrylic Clear	4000	Type III	75	7030	6224	83.5	800	4000	2-3-2	100-150
601DTP4AC507530	Acrylic Clear	3000	Type V	75	7030	5852	75.6	800	4000	2-3-1	100-150
601DTP4AC507540	Acrylic Clear	4000	Type V	75	7030	6130	84.4	800	4000	2-3-1	100-150
601DTP4NL307530	No Lens	3000	Type III	75	7030	6166	81.7	800	4000	1-0-1	100-150
601DTP4NL307540	No Lens	4000	Type III	75	7030	6509	83.7	800	4000	1-0-2	100-150
601DTP4NL507530	No Lens	3000	Type V	75	7030	6248	82.9	800	4000	2-0-1	100-150
601DTP4NL507540	No Lens	4000	Type V	75	7030	6530	84.6	800	4000	2-0-1	100-150
601DTP4AC310030	Acrylic Clear	3000	Type III	100	7030	6873	67.0	960	4800	2-3-2	150-175
601DTP4AC310040	Acrylic Clear	4000	Type III	100	7030	7530	77.7	960	4800	2-3-2	150-175
601DTP4AC510030	Acrylic Clear	3000	Type V	100	7030	6968	68.9	960	4800	2-3-2	150-175
601DTP4AC510040	Acrylic Clear	4000	Type V	100	7030	8035	83.4	960	4800	2-3-2	150-175
601DTP4NL310030	No Lens	3000	Type III	100	7030	7403	76.1	960	4800	2-0-2	150-175
601DTP4NL310040H	No Lens	4000	Type III	100	7030	10169	106	960	4800	2-0-2	150-175
601DTP4NL510030	No Lens	3000	Type V	100	7030	7625	77.4	960	4800	3-0-1	150-175
601DTP4NL510040	No Lens	4000	Type V	100	7030	7864	79.1	960	4800	3-0-1	150-175
In Testing	Acrylic Clear	3000	Type III	120	8060	N/A	N/A	600	6000	N/A	150-200
In Testing	Acrylic Clear	4000	Type III	120	8060	N/A	N/A	600	6000	N/A	150-200
In Testing	Acrylic Clear	3000	Type V	120	8060	N/A	N/A	600	6000	N/A	150-200
In Testing	Acrylic Clear	4000	Type V	120	8060	N/A	N/A	600	6000	N/A	150-200
In Testing	No Lens	3000	Type III	120	8060	N/A	N/A	600	6000	N/A	150-200
In Testing	No Lens	4000	Type III	120	8060	N/A	N/A	600	6000	N/A	150-200
In Testing	No Lens	3000	Type V	120	8060	N/A	N/A	600	6000	N/A	150-200
In Testing	No Lens	4000	Type V	120	8060	N/A	N/A	600	6000	N/A	150-200
In Testing	Acrylic Clear	3000	Type III	150	8084	N/A	N/A	500	7500	N/A	200-250
In Testing	Acrylic Clear	4000	Type III	150	8084	N/A	N/A	500	7500	N/A	200-250
In Testing	Acrylic Clear	3000	Type V	150	8084	N/A	N/A	500	7500	N/A	200-250
In Testing	Acrylic Clear	4000	Type V	150	8084	N/A	N/A	500	7500	N/A	200-250
In Testing	No Lens	3000	Type III	150	8084	N/A	N/A	500	7500	N/A	200-250
In Testing	No Lens	4000	Type III	150	8084	N/A	N/A	500	7500	N/A	200-250
In Testing	No Lens	3000	Type V	150	8084	N/A	N/A	500	7500	N/A	200-250
In Testing	No Lens	4000	Type V	150	8084	N/A	N/A	500	7500	N/A	200-250

P4 = 4th Generation Flat Array
[1]Color temperature is nominal, please see test report for specific chromaticity information
[2]Contact factory for TM21 information/Driver specification
[3]Due to the continuous advancements in LED technology, luminaire delivered lumen and efficacy is subject to change without notice at the discretion of King Luminaire
[4]Equivalence should always be confirmed by performing a photometric layout, due to the variability of performance requirements and application criteria

POWER & LUMENS - PENDANT/SIDE MT *K601D COACH LANTERN - LED*

Test Voltage: 120V
Nominal Color Temperature: 3000K & 4000K[1]
7030 Engine Series: 30 Emitters (40 - 100W Max)
8060 Engine Series: 60 Emitters (120W Max)
8084Engine Series: 84 Emitters (150 - 200W Max)
LED Engine + Driver Rated Life = 100,000 hrs[2]

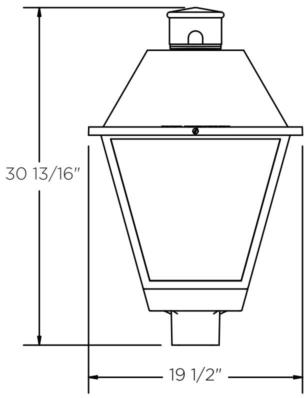
To learn more about the P4 Optic, please see the P4 Optic Information Sheet

Pendant/Side Mount

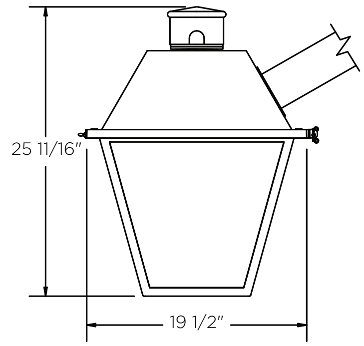
Photometric Test Report Number	Lens Option	Color Temperature	IES Distribution	Nominal Watts	Engine Series	Delivered Lumens[3]	Efficacy (LM/W)[3]	mA @ emitter	Driver Output Current	BUG Rating	HID Equivalent[4]
601DSP4NL302540H	No Lens	4000	Type III	25	7030	3396	128	270	2000	1-0-1	50-70
601DPP4AC304030	Acrylic Clear	3000	Type III	40	7030	3843	91.9	400	2000	1-2-1	50-70
601DPP4AC304040	Acrylic Clear	4000	Type III	40	7030	4196	100.9	400	2000	1-3-1	50-70
601DPP4AC504030	Acrylic Clear	3000	Type V	40	7030	3968	91.6	400	2000	2-2-1	50-70
601DPP4AC504040	Acrylic Clear	4000	Type V	40	7030	4164	101.8	400	2000	2-2-1	50-70
601DSP4NL304030E	No Lens	3000	Type III	40	7030	4067	105	400	2000	1-0-1	50-70
601DSP4NL304040H	No Lens	4000	Type III	40	7030	4938	123	400	2000	1-0-1	50-70
601DPP4NL504030	No Lens	3000	Type V	40	7030	4141	94.8	400	2000	2-0-1	50-70
601DPP4NL504040	No Lens	4000	Type V	40	7030	4372	102.4	400	2000	2-0-1	50-70
601DPP4AC306030	Acrylic Clear	3000	Type III	60	7030	5275	85.8	600	3000	1-3-1	70-100
601DPP4AC306040	Acrylic Clear	4000	Type III	60	7030	5736	94.0	600	3000	1-3-2	70-100
601DPP4AC506030	Acrylic Clear	3000	Type V	60	7030	5459	85.6	600	3000	2-2-1	70-100
601DPP4AC506040	Acrylic Clear	4000	Type V	60	7030	5589	94.9	600	3000	2-3-1	70-100
601DPP4NL306030	No Lens	3000	Type III	60	7030	5564	90.2	600	3000	1-0-1	70-100
601DSP4NL306040H	No Lens	4000	Type III	60	7030	6921	121	600	3000	2-0-2	70-100
601DPP4NL506030	No Lens	3000	Type V	60	7030	5650	87.9	600	3000	2-0-1	70-100
601DPP4NL506040	No Lens	4000	Type V	60	7030	5974	94.8	600	3000	2-0-1	70-100
601DPP4AC307530	Acrylic Clear	3000	Type III	75	7030	6134	79.4	800	4000	1-3-1	100-150
601DPP4AC307540	Acrylic Clear	4000	Type III	75	7030	6670	89.4	800	4000	2-3-2	100-150
601DPP4AC507530	Acrylic Clear	3000	Type V	75	7030	6286	81.3	800	4000	2-3-1	100-150
601DPP4AC507540	Acrylic Clear	4000	Type V	75	7030	6560	90.9	800	4000	2-3-1	100-150
601DSP4NL307530E	No Lens	3000	Type III	75	7030	6972	93	800	4000	2-0-2	100-150
601DSP4NL307540H	No Lens	4000	Type III	75	7030	9075	115	800	4000	2-0-2	100-150
601DPP4NL507530	No Lens	3000	Type V	75	7030	6437	82.3	800	4000	2-0-1	100-150
601DPP4NL507540	No Lens	4000	Type V	75	7030	6970	90.2	800	4000	2-0-1	100-150
601DPP4AC310030	Acrylic Clear	3000	Type III	100	7030	7374	71.5	960	4800	2-3-2	150-175
601DPP4AC310040	Acrylic Clear	4000	Type III	100	7030	7989	82.7	960	4800	2-3-2	150-175
601DPP4AC510030	Acrylic Clear	3000	Type V	100	7030	7538	74.4	960	4800	2-3-2	150-175
601DPP4AC510040	Acrylic Clear	4000	Type V	100	7030	8079	83.6	960	4800	2-3-2	150-175
601DPP4NL310030	No Lens	3000	Type III	100	7030	7997	78.6	960	4800	2-0-2	150-175
601DSP4NL310040H	No Lens	4000	Type III	100	7030	10725	112	960	4800	2-0-2	150-175
601DPP4NL510030	No Lens	3000	Type V	100	7030	7986	76.6	960	4800	3-0-1	150-175
601DPP4NL510040	No Lens	4000	Type V	100	7030	8388	84.4	960	4800	3-0-1	150-175
In Testing	Acrylic Clear	3000	Type III	120	8060	N/A	N/A	600	6000	N/A	150-200
In Testing	Acrylic Clear	4000	Type III	120	8060	N/A	N/A	600	6000	N/A	150-200
In Testing	Acrylic Clear	3000	Type V	120	8060	N/A	N/A	600	6000	N/A	150-200
In Testing	Acrylic Clear	4000	Type V	120	8060	N/A	N/A	600	6000	N/A	150-200
In Testing	No Lens	3000	Type III	120	8060	N/A	N/A	600	6000	N/A	150-200
In Testing	No Lens	4000	Type III	120	8060	N/A	N/A	600	6000	N/A	150-200
In Testing	No Lens	3000	Type V	120	8060	N/A	N/A	600	6000	N/A	150-200
In Testing	No Lens	4000	Type V	120	8060	N/A	N/A	600	6000	N/A	150-200
In Testing	Acrylic Clear	3000	Type III	150	8084	N/A	N/A	500	7500	N/A	200-250
In Testing	Acrylic Clear	4000	Type III	150	8084	N/A	N/A	500	7500	N/A	200-250
In Testing	Acrylic Clear	3000	Type V	150	8084	N/A	N/A	500	7500	N/A	200-250
In Testing	Acrylic Clear	4000	Type V	150	8084	N/A	N/A	500	7500	N/A	200-250
In Testing	No Lens	3000	Type III	150	8084	N/A	N/A	500	7500	N/A	200-250
In Testing	No Lens	4000	Type III	150	8084	N/A	N/A	500	7500	N/A	200-250
In Testing	No Lens	3000	Type V	150	8084	N/A	N/A	500	7500	N/A	200-250
In Testing	No Lens	4000	Type V	150	8084	N/A	N/A	500	7500	N/A	200-250

P4 = 4th Generation Flat Array
[1]Color temperature is nominal, please see test report for specific chromaticity information
[2]Contact factory for TM21 information/Driver specification
[3]Due to the continuous advancements in LED technology, luminaire delivered lumen and efficacy is subject to change without notice at the discretion of King Luminaire
[4]Equivalence should always be confirmed by performing a photometric layout, due to the variability of performance requirements and application criteria

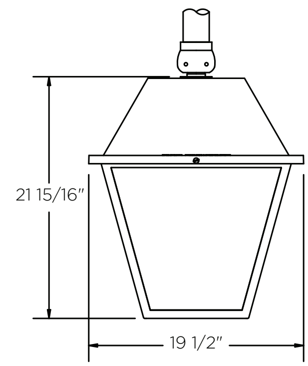
Fixture Formats



Post Top

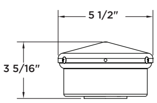


Side Mount



Pendant

Finial Options (Post Top/Side Mount)



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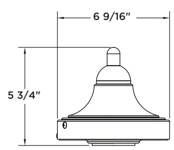
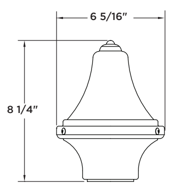


F2



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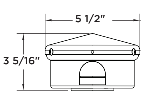
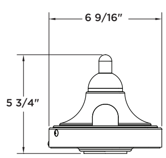


F4



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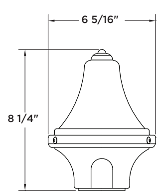
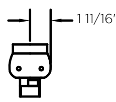
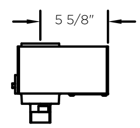


F6

Plumbizer/Mounting Options (Pendant)



KPL10



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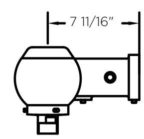
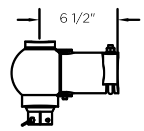
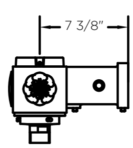


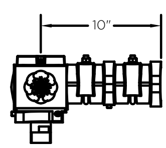
KPL20



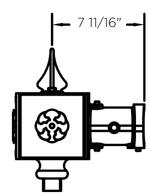
KPL21



KPL30



KPL31



KPL40

K601D - [ ] - [ ] - [ ] - [ ] - (SSL) - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

LUMINAIRE STYLE

K601D - Coach Lantern

LANTERN TYPE

T - Pole Top - 3 1/2" OD
P - Pendant
S - Side Mount

OPTICAL OPTIONS

P4 - P4 Optic (Flat Array)

IES LIGHTING CLASSIFICATION

II - Type 2
III - Type 3
IV - Type 4
V - Type 5

LENS OPTION

AC - Acrylic Clear
PC - Polycarbonate Clear
NL - No Lens

WATTAGE

40, 60, 75, 100, 120, 150

SOURCE

SSL - Solid State

SERIES

7030 (40 - 100W)
8060 (120W)
8084 (150W)

LINE VOLTAGE

120V (120-277V)
480V (347-480V)*

*Select wattages available within this range, contact King Luminaire

PLUMBIZER

KPL10, KPL11, KPL20, KPL21, KPL30, KPL31, KPL40

*leave blank if not required

PHOTO CONTROL OPTION

PR - Photo Receptacle, available with KPL11, KPL20, KPL21, KPL30, KPL31
PEBC - Photo Electric Buttoncell

*leave blank if not required

CCT

3K - 3000K
4K - 4000K

PAINT COLOR

GN - Federal Green
BE - Blue
GY - Gray
BN - Brown
BK - Black
BZ - Bronze

*Additional options available on website

COACH STYLE LANTERN
ARM-MOUNT

U.11.8.17

CSL-A
LED

Description:
The **CSL-A** luminaire is a classically styled cast aluminum four sided lantern that offers a choice of several optical systems.

Construction:
Die-cast aluminum housing ensures rigidity and longevity in application. The rooftop casting is hinged to the cage and opens with a simple quick-release fastener for ease of installation and maintenance.

Optical Module:
The luminaire utilizes up to four optical modules consisting of a high performance LED board with an acrylic (TIR) lens to deliver maximum spacing and uniformity. A choice of Type 2 (**T2**), Type 3 (**T3**), Type 4 (**T4**), or Type 5 (**T5**), IES distributions are available with the scalability to meet application criteria.

Electrical:
- 12 LEDs per module
- LED Board Drive Current 530ma
- Automatic AC incoming voltage sensing (120–277v)
- Operational Temp: -40°C/40°C
- Power consumption up to 80W
- 10kV/20kA surge protector
- 0-10v dimming is standard
- **347v** and **480v** options are available

Mounting:
Luminaire mounts to decorative scroll arm (supplied by others). The arm secures to the roof with four bolts, which are supplied with the luminaire.

Photo Control:
- A 3-pin twistlock photocell receptacle is standard.
- Both 5-pin (**5P**) and 7-pin (**7P**) twistlock photocell receptacles are available.
- The 3-pin Twistlock photocell is an accessory and must be specified (**TW-PCL**).

Finish:
Premium quality thermoset polyester powdercoat for a durable finish in the following colors:

BLK - Satin Black
CLB - Classic Bronze
GBZ - Gloss Textured Bronze
GTB - Gloss Textured Black
Custom - ____________

EPA: 2.23

Approx. Shipping Wt: 37lb (16.7kg)

ORDERING #

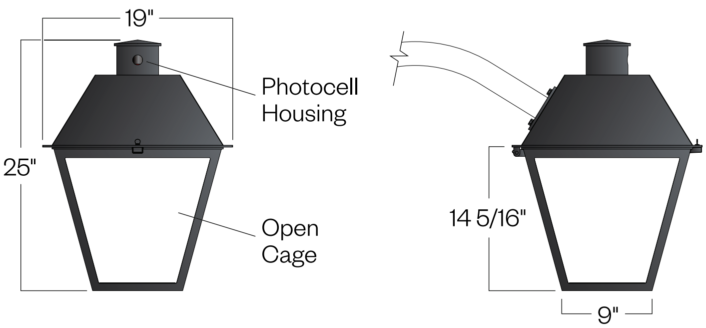
PROJECT:

TYPE:

DATE:

PREPARED BY:

COMMENTS:



Ordering Information:

Model	LED Modules	CCT	Light Distribution	Voltage	Photocell Receptacle	Finish	Accessory
CSL-A	**1M** **2M** **3M** **4M**	**3K** (3,000K) **4K** (4,000K)	**T2** (Type II) **T3** (Type III) **T4** (Type IV) **T5** (Type V)	120-277v (Standard) **347v** **480v**	3-pin (Standard) **5P** (5-pin) **7P** (7-pin)	**BLK** **CLB** **GBZ** **GTB** Custom	**TW-PCL**

Ordering options shown as **BOLD**. Example: **CSL-A/4M/4K/T5/BLK/TW-PCL** See next page for more complete LED information

10 year limited warranty
AMERLUX LED

POWDER COATED TOUGH™

ARRA COMPLIANT

Amerlux reserves the right to change details that do not affect overall function and performance.

amerlux

COACH STYLE LANTERN
ARM-MOUNT

CSL-A
LED

Power

LED Modules	1M	2M	3M	4M
Power	19W	40W	59W	80W
Amperage Draw @ 120v	.15	.35	.50	.68
Amperage Draw @ 277v	.06	.15	.21	.29

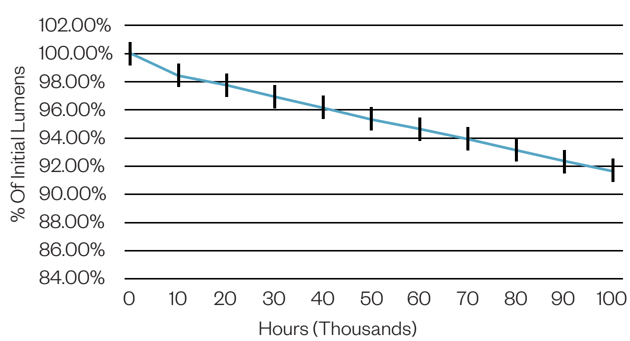
Driver Output	System Watts	Light Distribution	CCT	Lumens	BUG Rating
1M	19W	T2	3,000K	2,330	B1-U0-G1
			4,000K	2,453	B1-U0-G1
		T3	3,000K	2,247	B1-U0-G1
			4,000K	2,366	B1-U0-G1
		T4	3,000K	2,284	B1-U0-G1
			4,000K	2,405	B1-U0-G1
		T5	3,000K	2,371	B1-U0-G1
			4,000K	2,497	B1-U0-G1
2M	40W	T2	3,000K	4,547	B1-U0-G1
			4,000K	4,788	B1-U0-G1
		T3	3,000K	4,441	B1-U0-G1
			4,000K	4,676	B1-U0-G1
		T4	3,000K	4,508	B1-U0-G2
			4,000K	4,747	B1-U0-G2
		T5	3,000K	4,722	B3-U0-G1
			4,000K	4,972	B3-U0-G1
3M	59W	T2	3,000K	6,821	B1-U0-G1
			4,000K	7,183	B1-U0-G1
		T3	3,000K	6,644	B1-U0-G1
			4,000K	6,996	B1-U0-G1
		T4	3,000K	6,748	B2-U0-G3
			4,000K	7,106	B2-U0-G3
		T5	3,000K	6,943	B3-U0-G1
			4,000K	7,311	B3-U0-G1
4M	80W	T2	3,000K	9,173	B2-U0-G2
			4,000K	9,688	B2-U0-G2
		T3	3,000K	8,983	B2-U0-G2
			4,000K	9,459	B2-U0-G2
		T4	3,000K	8,850	B2-U0-G3
			4,000K	9320	B2-U0-G3
		T5	3,000K	9,349	B3-U1-G2
			4,000K	9,844	B3-U1-G2

*Approximate lumens delivered from raw light engine.

Lumen Maintenance

Ambient Temperature	50,000 Hours*	70,000 Hours*	90,000 Hours*	100,000 Hours*	Theoretical L70 Hours
25ºC	>95.4%	>93.9%	>92.4%	>91.6%	>200,000

* Per IESNA TM-21 data.



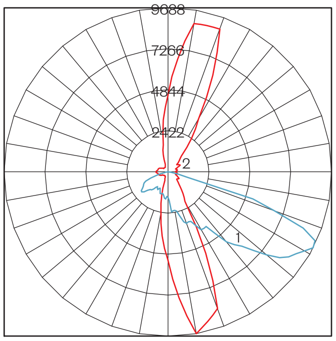
Lumen maintenance values apply to all output levels and distributions.

COACH STYLE LANTERN
ARM-MOUNT

CSL-A
LED

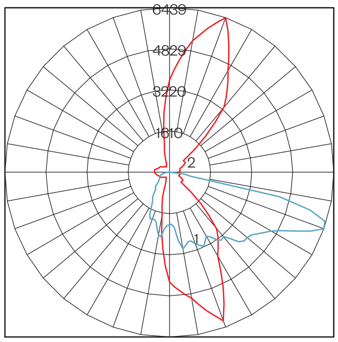
Performance Detail:

POLAR GRAPH: **CSL-A-4M-4K-T2**



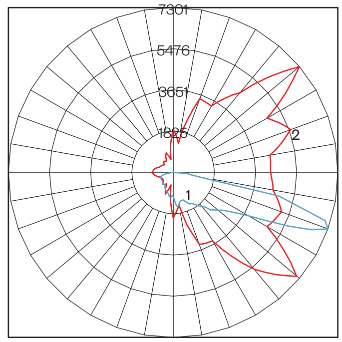
Maximum Candela = 9688 Located At Horizontal Angle = 280, Vertical Angle = 62.5
1 - Vertical Plane Through Horizontal Angles (280 - 100) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (62.5) (Through Max. Cd.)

POLAR GRAPH: **CSL-A-4M-4K-T3**



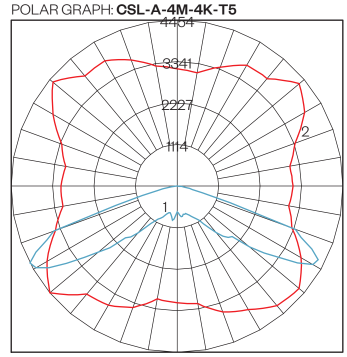
Maximum Candela = 6439 Located At Horizontal Angle = 70, Vertical Angle = 70
1 - Vertical Plane Through Horizontal Angles (70 - 250) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (70) (Through Max. Cd.)

POLAR GRAPH: **CSL-A-4M-4K-T4**



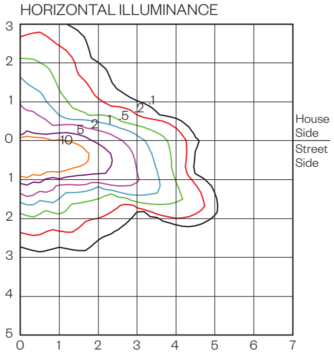
Maximum Candela = 7301 Located At Horizontal Angle = 40, Vertical Angle = 70
1 - Vertical Plane Through Horizontal Angles (40 - 220) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (70) (Through Max. Cd.)

POLAR GRAPH: **CSL-A-4M-4K-T5**



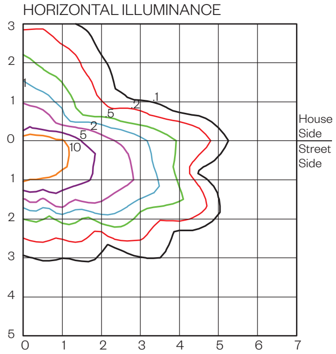
Maximum Candela = 4454 Located At Horizontal Angle = 220, Vertical Angle = 62.5
1 - Vertical Plane Through Horizontal Angles (220 - 40) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (62.5) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



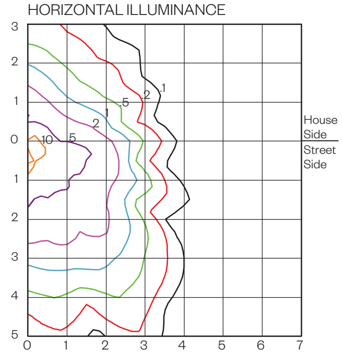
Distance In Units Of Mounting Height

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



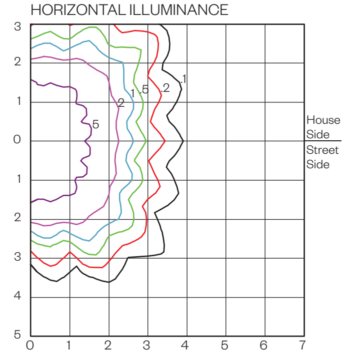
Distance In Units Of Mounting Height

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



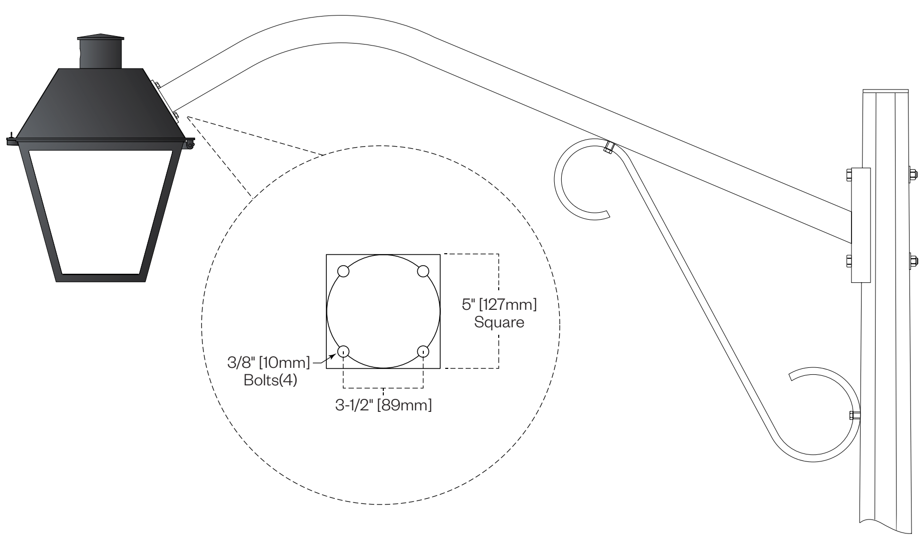
Distance In Units Of Mounting Height

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



Distance In Units Of Mounting Height

Mounting Arm Provided By Others



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Amerlux reserves the right to change details that do not affect overall function and performance.

COACH STYLE LANTERN

POST-TOP-MOUNT

U.11.8.17

CSL-P

LED

Description:
The **CSL-P** luminaire is a classically styled post-top lantern that offers a choice of several optical systems.

Construction:
Die-cast aluminum housing ensures rigidity and longevity in application. The rooftop casting is hinged to the cage and opens with a simple quick-release fastener for ease of installation and maintenance.

Optical Module:
The luminaire utilizes up to four optical modules consisting of a high performance LED board with an acrylic (TIR) lens to deliver maximum spacing and uniformity. A choice of Type 2 (T2), Type 3 (T3), Type 4 (T4), or Type 5 (T5), IES distributions are available with the scalability to meet application criteria.

Electrical:
- 12 LEDs per module
- LED Board Drive Current 530ma
- Automatic AC incoming voltage sensing (120–277v)
- Operational Temp: -40°C/40°C
- Power consumption up to 80W
- 10kV/20kA surge protector
- 0-10v dimming is standard
- **347v** and **480v** options are available

Photo Control:
- A 3-pin twistlock photocell receptacle is standard.
- Both 5-pin (**5P**) and 7-pin (**7P**) twistlock photocell receptacles are available.
- The 3-pin Twistlock photocell is an accessory and must be specified (**TW-PCL**).

Finish:
Premium quality thermoset polyester powdercoat for a durable finish in the following colors:

BLK - Satin Black
CLB - Classic Bronze
GBZ - Gloss Textured Bronze
GTB - Gloss Textured Black
Custom - ____________

Mounting: Slip fits Ø3" tenon

EPA: 2.23

Approx. Shipping Wt: 37lb (16.7kg)

ORDERING #

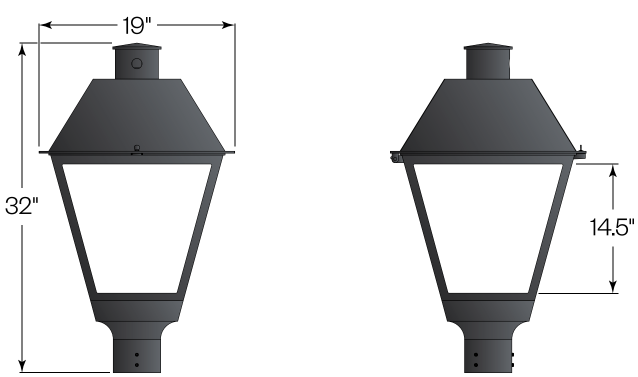
PROJECT:

TYPE:

DATE:

PREPARED BY:

COMMENTS:



Ordering Information:

Model	LED Modules	CCT	Light Distribution	Voltage	Photocell Receptacle	Finish	Accessory
CSL-P	**1M** **2M** **3M** **4M**	**3K** (3,000K) **4K** (4,000K)	**T2** (Type II) **T3** (Type III) **T4** (Type IV) **T5** (Type V)	120-277v (Standard) **347v** **480v**	3-pin (Standard) **5P** (5-pin) **7P** (7-pin)	**BLK** **CLB** **GBZ** **GTB** Custom	**TW-PCL**

Ordering options shown as **BOLD**. Example: **CSL-A/4M/4K/T5/BLK/TW-PCL** See next page for more complete LED information

10 year limited warranty
AMERLUX LED

POWDER COATED TOUGH™

ARRA COMPLIANT

Power

LED Modules	1M	2M	3M	4M
Power	19W	40W	59W	80W
Amperage Draw @ 120v	.15	.35	.50	.68
Amperage Draw @ 277v	.06	.15	.21	.29

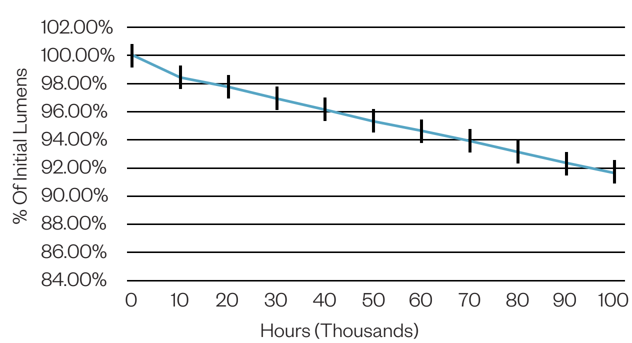
Driver Output	System Watts	Light Distribution	CCT	Lumens	BUG Rating
1M	19W	T2	3,000K	2,330	B1-U0-G1
			4,000K	2,453	B1-U0-G1
		T3	3,000K	2,247	B1-U0-G1
			4,000K	2,366	B1-U0-G1
		T4	3,000K	2,284	B1-U0-G1
			4,000K	2,405	B1-U0-G1
		T5	3,000K	2,371	B1-U0-G1
			4,000K	2,497	B1-U0-G1
2M	40W	T2	3,000K	4,547	B1-U0-G1
			4,000K	4,788	B1-U0-G1
		T3	3,000K	4,441	B1-U0-G1
			4,000K	4,676	B1-U0-G1
		T4	3,000K	4,508	B1-U0-G2
			4,000K	4,747	B1-U0-G2
		T5	3,000K	4,722	B3-U0-G1
			4,000K	4,972	B3-U0-G1
3M	59W	T2	3,000K	6,821	B1-U0-G1
			4,000K	7,183	B1-U0-G1
		T3	3,000K	6,644	B1-U0-G1
			4,000K	6,996	B1-U0-G1
		T4	3,000K	6,748	B2-U0-G3
			4,000K	7,106	B2-U0-G3
		T5	3,000K	6,943	B3-U0-G1
			4,000K	7,311	B3-U0-G1
4M	80W	T2	3,000K	9,173	B2-U0-G2
			4,000K	9,688	B2-U0-G2
		T3	3,000K	8,983	B2-U0-G2
			4,000K	9,459	B2-U0-G2
		T4	3,000K	8,850	B2-U0-G3
			4,000K	9320	B2-U0-G3
		T5	3,000K	9,349	B3-U1-G2
			4,000K	9,844	B3-U1-G2

*Approximate lumens delivered from raw light engine.

Lumen Maintenance

Ambient Temperature	50,000 Hours*	70,000 Hours*	90,000 Hours*	100,000 Hours*	Theoretical L70 Hours
25°C	>95.4%	>93.9%	>92.4%	>91.6%	>200,000

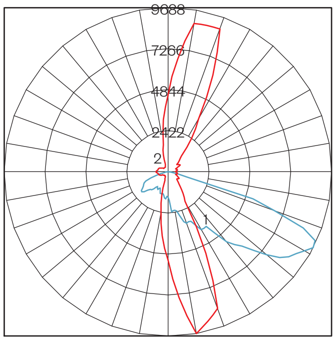
* Per IESNA TM-21 data.



Lumen maintenance values apply to all output levels and distributions.

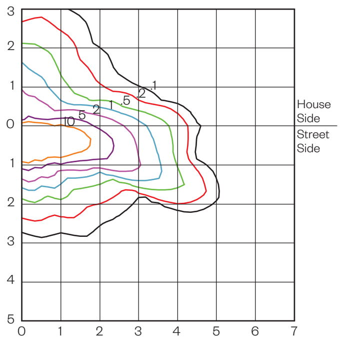
Performance Detail:

POLAR GRAPH: **CSL-P-4M-T2-4K**



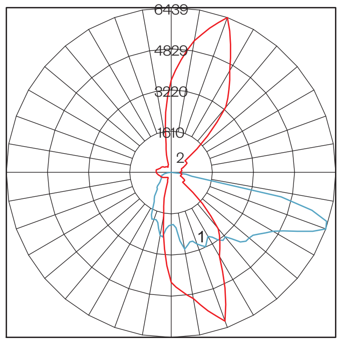
Maximum Candela = 9688 Located At Horizontal Angle = 280, Vertical Angle = 62.5
\# 1 - Vertical Plane Through Horizontal Angles (280 - 100) (Through Max. Cd.)
\# 2 - Horizontal Cone Through Vertical Angle (62.5) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF
HORIZONTAL ILLUMINANCE



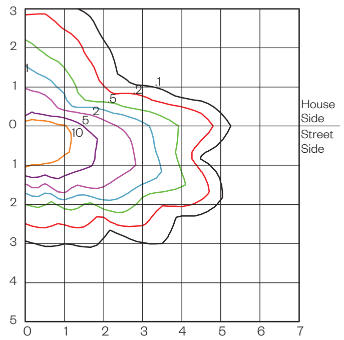
Distance In Units Of Mounting Height

POLAR GRAPH: **CSL-P-4M-T3-4K**



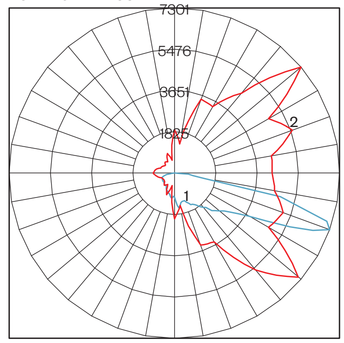
Maximum Candela = 6439 Located At Horizontal Angle = 70, Vertical Angle = 70
\# 1 - Vertical Plane Through Horizontal Angles (70 - 250) (Through Max. Cd.)
\# 2 - Horizontal Cone Through Vertical Angle (70) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF
HORIZONTAL ILLUMINANCE



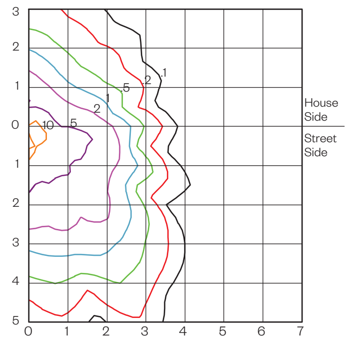
Distance In Units Of Mounting Height

POLAR GRAPH: **CSL-P-4M-T4-4K**



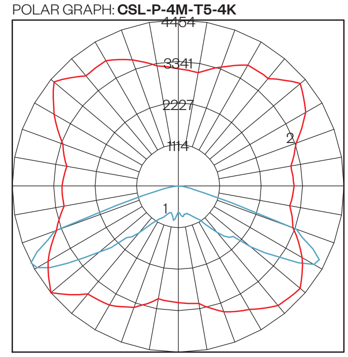
Maximum Candela = 7301 Located At Horizontal Angle = 40, Vertical Angle = 70
\# 1 - Vertical Plane Through Horizontal Angles (40 - 220) (Through Max. Cd.)
\# 2 - Horizontal Cone Through Vertical Angle (70) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF
HORIZONTAL ILLUMINANCE



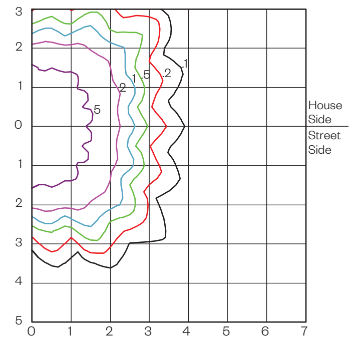
Distance In Units Of Mounting Height

POLAR GRAPH: **CSL-P-4M-T5-4K**



Maximum Candela = 4454 Located At Horizontal Angle = 220, Vertical Angle = 62.5
\# 1 - Vertical Plane Through Horizontal Angles (220 - 40) (Through Max. Cd.)
\# 2 - Horizontal Cone Through Vertical Angle (62.5) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF
HORIZONTAL ILLUMINANCE



Distance In Units Of Mounting Height

C

Appendix C
Photocell Controllers

Catalog Number:	Date:	Project:

OVERVIEW

With a design life of 20+ years and superior in-rush current and surge-protection features, the DLL Elite support the extended life and low maintenance benefits associated with LED fixtures.

FEATURES

APPLICATIONS

- LED lighting fixtures that require dusk to dawn control
- High inrush current fixtures
- Designed to last as long as your LED lighting system, 20+ years
- LED inrush protection with TRIAC assisted relay
- Extreme surge protection of 1280J/40kA utility or 2120J/40kA UL listed
- Double thick enclosure and lens with additional UV inhibitor
- High temp base plastic tested to 140°C
- Long life capacitors
- Full wave rectified power supply
- Dual zener diodes for long life
- Solid brass contact blades
- Double sided, thru hole plated .062" FR4 circuit board
- Conformal coated printed circuit board
- Sealed packaging for extended storage

DTL DARK TO LIGHT

DLL Elite
Electronic Locking Type Photocontrol

Standard

Low Profile

DLL STANDARD COLORS		
	Non-UL	UL
120-277V	Green	Blue
347V	Green	Green
480V	Yellow	Yellow

SPECIFICATIONS

REGULATORY LISTINGS

- ANSI C136.10
- ROHS compliant
- UL listed to U.S. and Canadian safety standards
- Surge rated in excess of ANSI C136.10 to 20kV/10kA

OPERATING CHARACTERISTICS

- Operating Levels: Turn-on at 1.5 FC and turn-off at 2.25 FC (On:Off ratio of 1:1.5)
- Operating temperature: -40C to 70C
- Voltage 120 to 480 VAC, 60Hz
- Load rating: 1000 watts, 1800 VA ballast
    - UL Load Rating: 1000VA
- Average power consumption: <0.5 watts @ 120V

Warranty
Ten-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice

ORDERING INFORMATION

DLL PHOTOCONTROL — **Example: DLL127 1.5 J50**

Series & Voltage	Failure Mode	Turn-On Level (fc)	Housing	Filter	Certification	Cover Color	Pkg. Qty.
DLL127 120-277V DLL347 347V[1] DLL480 480V[1]	[blank] Fail On F Fail Off	1.5 ANSI Standard	[blank] Standard height LP Low Profile[2]	[blank] Silicon Sensor IR IR filtered silicon sensor	[blank] Standard CUL cULus listed[3]	[blank] See standard colors table above BK Black[4] BR Brown[4] GR Green[4] GY Gray[4] BL Blue[4] YL Yellow[4]	JU 1 Unit J12 12 Units J50 50 Units

NOTES
1. Only available with CUL certification option.
2. Not available with DLL347, DLL480, or CUL certification.
3. Color substitutions not allowed for cULus models.
4. Non-standard custom colors are non-stock items. Available in J12 and J50 only. Consult customer service.

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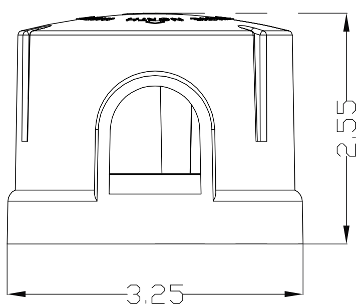
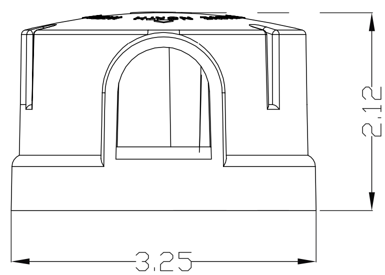
DIMENSIONS





STOCKED MODEL NUMBERS

Model #	Description	Pkg. Qty.
DLL127 1.5	120-277V Fail- On (non-UL)	J50
DLL127 1.5 BL	120-277V Fail- On (non-UL) Blue	J50
DLL127 1.5 GY	120-277V Fail- On (non-UL) Gray	J50
DLL127 1.5 BK	120-277V Fail- On (non-UL) Black	J50
DLL127F 1.5	120-277V Fail- Off (non-UL)	J50
DLL127F 1.5 BL	120-277V Fail- Off (non-UL) Blue	J50
DLL127 1.5 LP	120-277V Fail- On (non-UL) Low Profile	J50
DLL127F 1.5 CUL	120-277V Fail- Off	J50
DLL127 1.5 CUL	120-277V Fail- On	J50
DLL347F 1.5 CUL	347V Fail- Off	J50
DLL347 1.5 CUL	347V Fail- On	J50
DLL480F 1.5 CUL	480V Fail- Off	J50
DLL480 1.5 CUL	480V Fail- On	J50

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FP Outdoor Lighting Controls
Quality Electrical Products

BrownBetty®
Monitor/Control Remote Devices through
STREETLIGHT CONTROLS

Sun - Tech
Sunrise Technologies, Inc.

TRS Series

Unsurpassed Features for Ultra Long Life

Unsurpassed construction, electrical, process, and environmental protections make the TRS Series the highest grade twistlock photocontrol on the market today. No aspect of design was overlooked, thus eliminating any potential weak point. It is designed to exceed the life expectancy of LED and Induction lights. The TRS is the best value photocontrol available.

Electrical

Model Numbers: **Operating Voltage Range**	TRS-1: 105-130 VAC, 50/60 Hz - Nominal Voltage 120V TRS-2: 105-305 VAC, 50/60 Hz - Nominal Voltage 120/208/240/277V TRS-1-FO: 105-130 VAC, 50/60 Hz - Nominal Voltage 120V Fail OFF TRS-2-FO: 105-305 VAC, 50/60 Hz - Nominal Voltage 120/208/240/277V Fail Off		
Load Rating	1,000W/1,800 VA		15 Amp relay tested to 15,000 operations at 1,000 watts. AIR GAP load break has no voltage leakage
Operating Temperature	-40ºC to +70ºC		(-40ºF to +158º)
Surge Protection:	40,000 Amps		640 Joule
Power Consumption	<0.5 Watts		@ 120 V
Dielectric Strength	5,000 Volts		Between current carrying parts

Mechanical

Photocell	Silicon Sensor in Glass and Metal Hermetic Enclosure		MIL STD202D, Method 112A Test Condition B
Printed Circuit Board	Glass Epoxy, Ionic Cleaning and Decontamination, Conformal Coated		MIL-1-24768/2/27-GEE, GEF MIL-PRF-55110F MIL-I-46058C
Cover & Window	Black Xenoy by Sabic		No. X5600WX-Series
Base	Polycarbonate 140ºC		UL94HB Flame Class Rating
Gasket	Neoprene		ASTM D 1056
Operating Light Levels	Turn-on: 1.5 FC, 1.5:1 Off/On Ratio		+/- .25 FC, 3-5 Sec Turn-off Delay

FP Outdoor Lighting Controls
Quality Electrical Products

BrownBetty®
Monitor/Control Remote Devices through
STREETLIGHT CONTROLS

Sun-Tech
Sunrise Technologies, Inc.

ELL (Extra Long Life) Series

Upgraded Features for Extra Long Life

Numerous feature upgrades extends the life expectancy of the already long life twistlock product line. Features exceed those of competitive long life designs. The ELL is an excellent choice when an extended life expectancy is desired.

Electrical

Model Numbers: Operating Voltage Range	ELL-120: 105-130 VAC, 50/60 Hz – Nominal 120V ELL-124: 105-305 VAC, 50/60 Hz – Nominal 120/208/240/277V Fail Off versions available	
Load Rating	1,000W/1,800 VA	15 Amp relay tested to 15,000 operations on maximum available LED or Induction load*
Operating Temperature	-40ºC to +70ºC	(-40ºF to +158º)
Surge Protection:	40,000 Amps	640 Joule*
Power Consumption	<0.5 Watts	@ 120 V
Dielectric Strength	5,000 Volts	Between current carrying parts

Mechanical

Photocell	Silicon Sensor	<0.5% Drift over 10 Years*
Printed Circuit Board	Plated Thru-hole Glass Epoxy	0.35 Maximum Moisture
Cover:	Polypropylene	Long Life Green Cover Formula with UV Inhibitor and Antioxidant Additives*
Base & Window	Polycarbonate	140ºC, UL94HB Flame Class Rating*
Gasket	Neoprene	ASTM D 1056*
Operating Light Levels	Turn-on: 1.5 FC, 1.5:1 Off/On Ratio	+/- .25 FC, 3-5 Sec Turn-off Delay

*Denotes significant upgrade over standard twistlock controls

54 Commercial St. * Raynham, MA 02767 USA
Ph:(508) 821-1597 * Fax:(508) 822-0593 * www.sun-tech.biz * www.fpolc.com

D

Appendix D
Poles and Arms

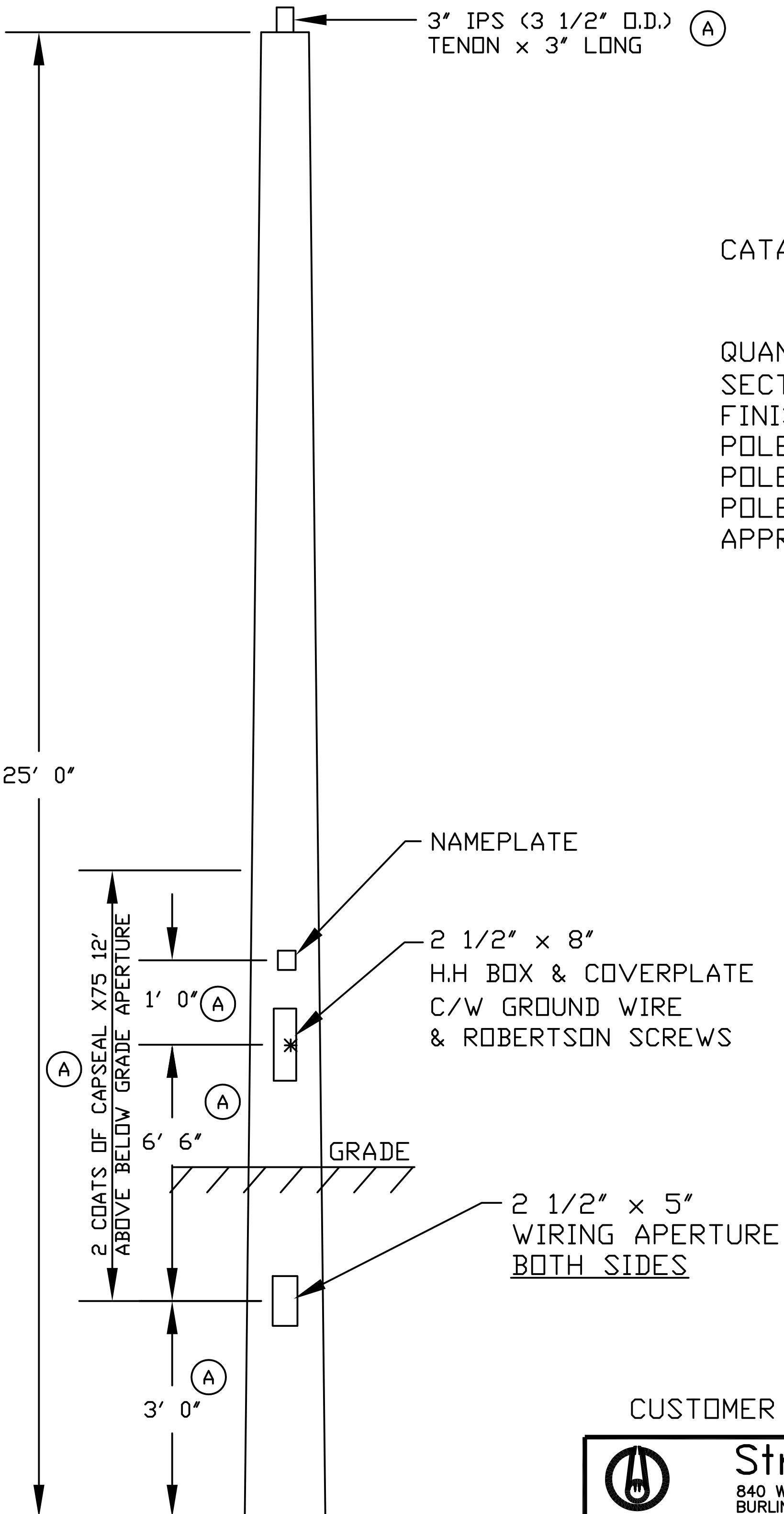
REV.	ALTERATION	E.C.N.	DATE	BY
A	CHANGES AS PER REVISION 95-01-06		04/06/97	A.A.

TOP DIA.: 4 3/4"

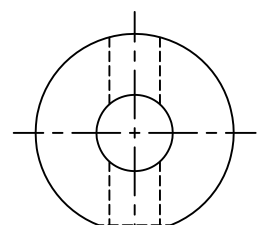
PROD. E250APR-CALEDON

OUR ORDER NO.:

CUSTOMER ORDER NO.:



CATALOGUE NO.:	E250-APR-G-MOO C/W 140-40/30 & CAPSEAL
QUANTITY:	
SECTION:	ROUND
FINISH:	MOULD FINISH
POLE TOP:	4 3/4" DIA.
POLE BUTT:	9 1/4" DIA.
POLE LENGTH:	25' 0"
APPROX. WGT.:	915 LBS



NAMEPLATE, H.H.BOX, & THRU APERTURE

TOP VIEW

For Reference Purposes Only.
Actual length should be selected per lighting design plan

CUSTOMER APPROVAL: ____________________

StressCrete Limited
840 WALKER'S LINE, P.O. BOX 7
BURLINGTON, ONTARIO CANADA L7R 3X9

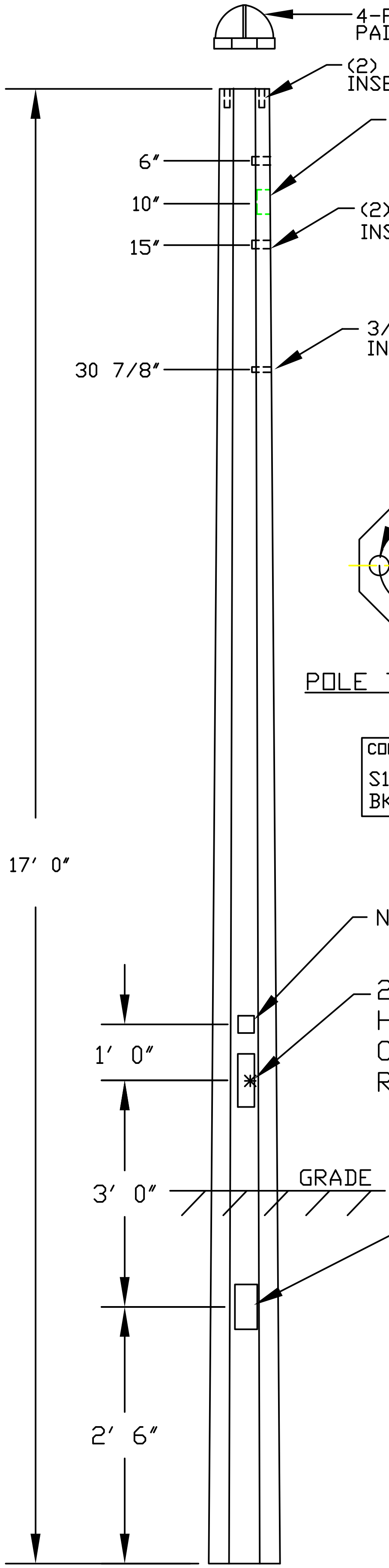
DRAWING NAME:	DWG. NUMBER:	DATE:	DWG BY:	REV.
APPROVAL DRAWING	CAL25APR	07/08/96	A.A.	

PROJECT/CUSTOMER:
CALEDON HYDRO
SPEC DWG# 5-29
(REV. 95-01-06)

\SPEC\CAL25APR

REV.	ALTERATION	E.C.N.	DATE	BY

POLE TOP: 5 3/8" FL/FL

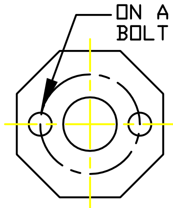


PROD. E170APO-CAL170

OUR ORDER NO.:

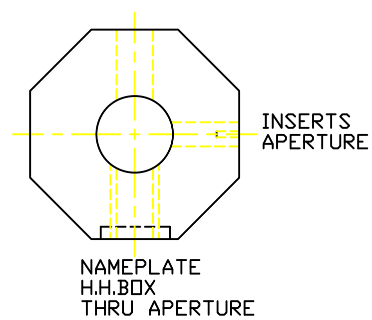
CUSTOMER ORDER NO.:

CATALOGUE NO.:	E170-APO-G-S11 C/W FC S/F 170
SECTION:	OCTAGONAL
COLOUR:	ECLIPSE
FINISH:	POLISHED
POLE LENGTH:	17' 0"
POLE TOP:	5 3/8" FL/FL
POLE BUTT:	7 1/2" FL/FL
APPROX. WGT.:	600 LBS
QUANTITY:	



POLE TOP DETAIL

COLOUR & FINISH:
S11 ECLIPSE
BK5599-3.5-100-BF



TOP VIEW

For Reference Purposes Only.
Actual length should be selected per lighting design plan

CUSTOMER APPROVAL: ____________

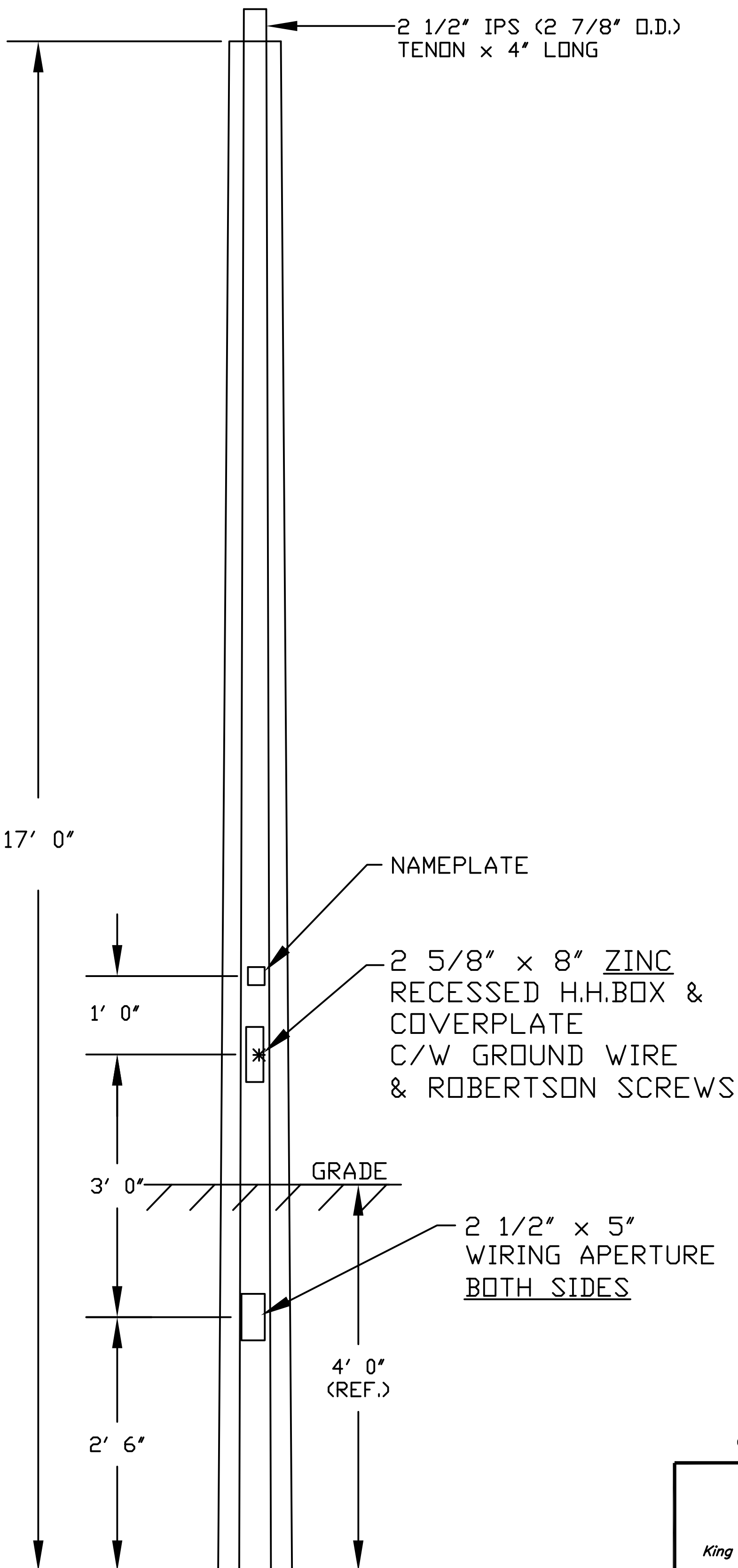
StressCrete Limited
840 WALKER'S LINE, P.O. BOX 7
BURLINGTON, ONTARIO CANADA L7R 3X9

DRAWING NAME:	DWG. NUMBER:	DATE:	DWG BY:	REV.
OCT. APPROVAL	CAL17APO	01/24/97	A.A.	

PROJECT/CUSTOMER:
TOWN OF CALEDON

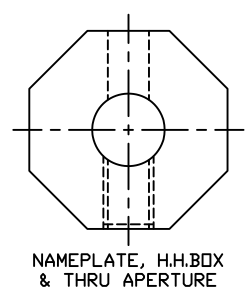
\SPEC\CAL17APO

REV.	ALTERATION	DATE	BY



CATALOGUE NO.:	E170-BPO-G-S11 C/W 140-30/40
SECTION:	OCTAGONAL
COLOUR:	ECLIPSE
FINISH:	POLISHED
POLE LENGTH:	17' 0"
POLE TOP:	5 3/8" FL/FL
POLE BUTT:	7 1/2" FL/FL
APPROX. WGT.:	585 LBS
QUANTITY:	

COATINGS REQUIRED:
-2 COATS ACRYLIC (JB)
FULL LENGTH



TOP VIEW

For Reference Purposes Only.
Actual length should be selected
per lighting design plan

CUSTOMER APPROVAL & DATE: ____________________

King Luminaire • StressCrete • Est. 1953
STRESSCRETE GROUP

Manufacturing Locations:
Burlington, Ontario 1-800-268-7809
Northport, Alabama 1-800-435-6563
Atchison, Kansas 1-800-837-1024
Jefferson, Ohio 1-800-268-7809

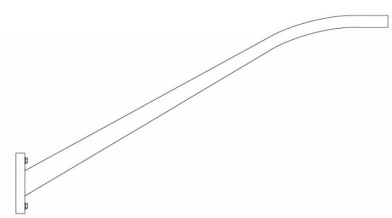
CUSTOMER ORDER No:
STRESSCRETE ORDER No:
STOCK CODE ORDER No: E0170BPO05.375-CALEDON

PROJECT/CUSTOMER: CALEDON

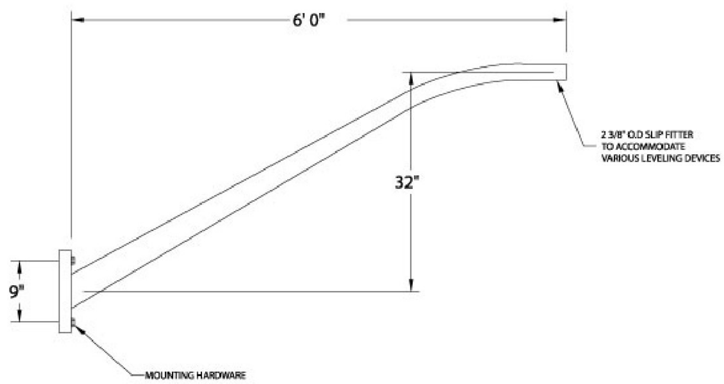
DRAWN BY:	AT:	CHECKED BY:	DATE:	REVISION:
A. ALVELA	SC1		03/03/11	

DRAWING TYPE: APPROV./MFG. DWG.
DRAWING NUMBER: CAL17BPO-2

KA120



A vast selection of arms are available to complete the design of the luminaire to seamlessly integrate it to the pole. To us, ornamental lighting does not just mean a pole and luminaire, it is meticulous attention to design and detail.



KA120

Resources

For Reference Purposes Only. Actual length should be selected per lighting design plan

Finishing | Brochure | Warranty

King Luminaires, Arms & Accessories Brochure

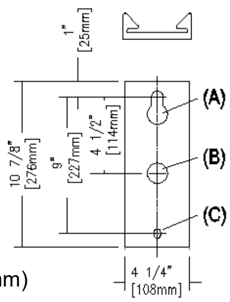
Conventional Elliptical Arm

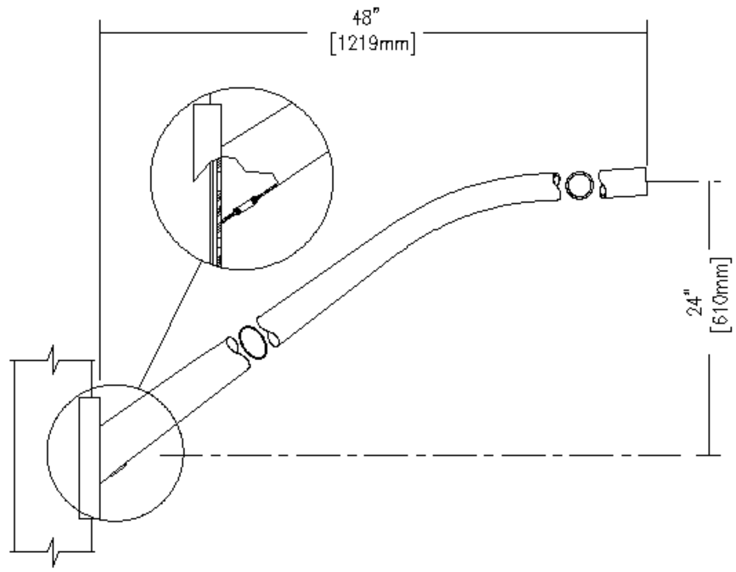
Anchoring details

(A).: 1 key slot orifice
11/16"(17mm)Ø
1 1/2"(38mm)Ø
for anchoring

(B).: 1 orifice
1 1/2"(38mm)Ø
for wireway

(C).: 1 slot
11/16x1"(17x25mm)
for anchoring





Qty	**1**	Bracket	**ELW-4-1A-GY3**

Description of Components:

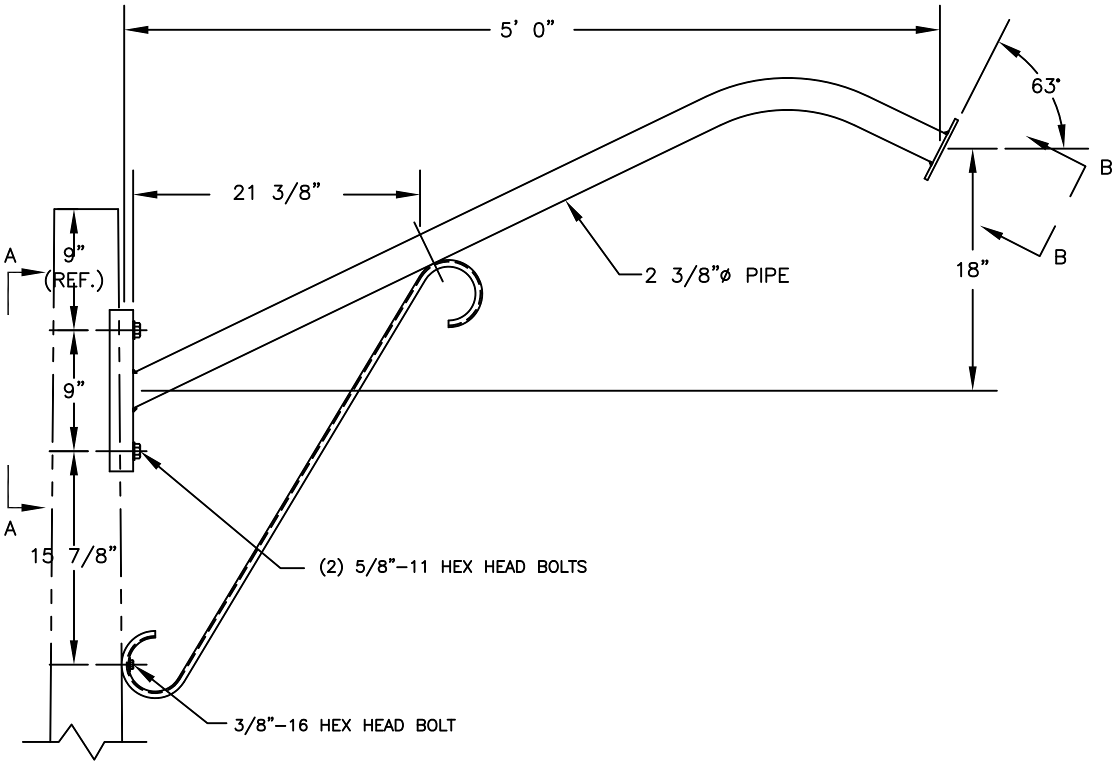
Arm: Spun from a 4" (102mm) aluminum round tube, wall thickness of 0.125" (3mm), tapered and ovalized, ending in a straight 2 3/8" (60mm) diameter tenon, 6" (152mm) long.

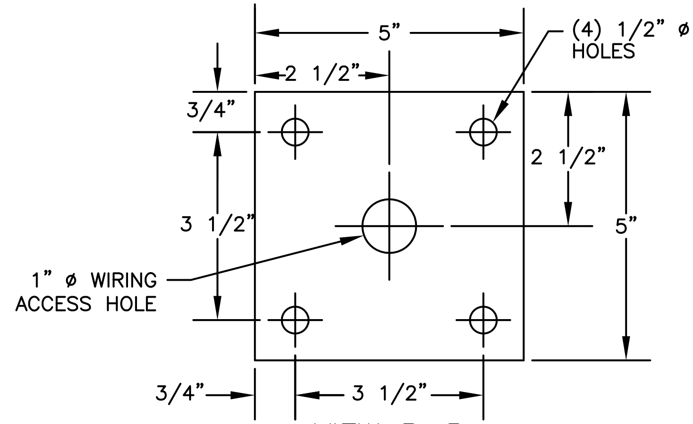
Mounting Plate: Universal aluminum mounting plate to adapt on square or round poles, wood or metal.

Bracket Properties (Weight and EPA): 8 lbs (3.6 kg), 1.46 ft²

For Reference Purposes Only.
Actual length should be selected
per lighting design plan

REV.	ALTERATION	DATE	BY



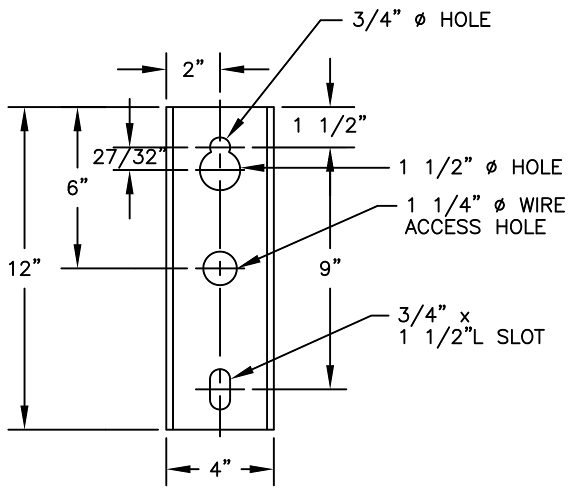


VIEW B–B

ARM SPECIFICATIONS

CATALOGUE NO.: KA175
QUANTITY:
MATERIAL: ALUMINUM
PAINT: TEXTURED BLACK

For Reference Purposes Only.
Actual length should be selected
per lighting design plan



VIEW A–A

CUSTOMER APPROVAL: ____________________

King Luminaire • StressCrete • Est. 1953
STRESSCRETE GROUP

Manufacturing Locations:
Burlington, Ontario 1–800–268–7809
Northport, Alabama 1–800–435–6563
Atchison, Kansas 1–800–837–1024
Jefferson, Ohio 1–800–268–7809

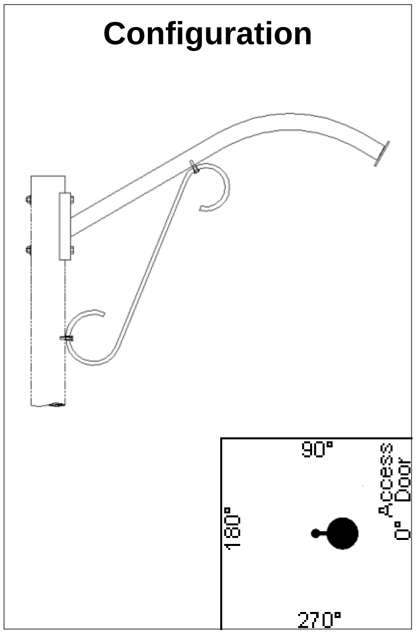
CUSTOMER ORDER No:

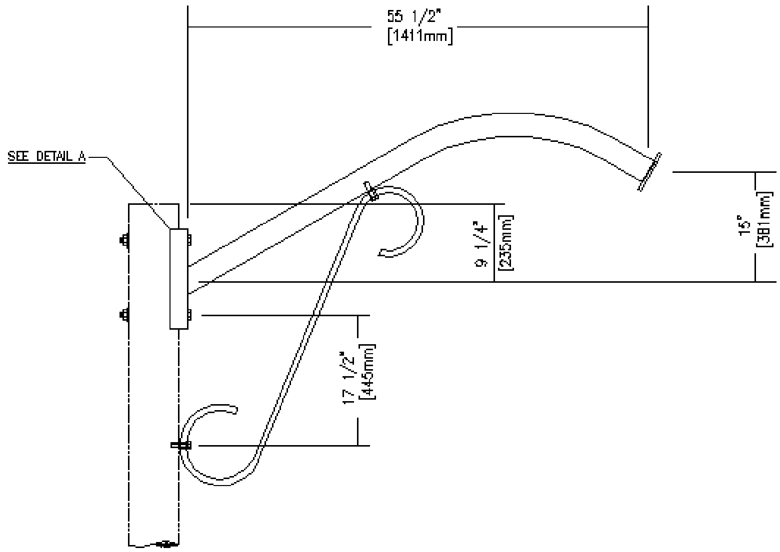
STRESSCRETE ORDER No:

PROJECT/CUSTOMER: CALEDON, ON

QUANTITY:			PAINT COLOUR:	
DRAWN BY: A. ALVELA	AT: SC1	CHECKED BY:	DATE: 07/23/12	REVISION:
DRAWING TYPE: APPROVAL DRAWING			DRAWING NUMBER: CALDEON–KA175	

Decorative Arm





Qty	1	Bracket	**S25AU5-1A-BKTX**

Description of Components:

Arm: Made of aluminium tubing, 2 7/8" (73mm) outside diameter, welded.

Decorative Element: Bent aluminum 6063-T5 decorative channel scroll mechanically assembled.

Mounting Plate: Made of aluminum, mechanically fastened to the pole.

Bracket Properties (Weight and EPA): 14 lbs (6.4 kg), 1.98 ft²

For Reference Purposes Only.
Actual length should be selected
per lighting design plan