



Lumec **RX2** is the perfect LED solution for roadway lighting and is the ideal luminaire for both new and retrofit installations. The performance, energy savings, and uniformity of this luminaire allow for it to be a one to one replacement for standard HID cobra-head style luminaires.

Project: \_\_\_\_\_

Location: \_\_\_\_\_

Cat.No: \_\_\_\_\_

Type: \_\_\_\_\_

Lamps: \_\_\_\_\_ Qty: \_\_\_\_\_

Notes: \_\_\_\_\_

### Ordering guide

example: RX2-160-G2-A-3-N-A-5-RCD-PHXL-DMG-SP2-H

Luminaire	LED Module	Finish	Optical System	Color temp. (CCT) <sup>2</sup>	Voltage	Drive current	Twist-Lock Receptacle	Luminaire Options	Driver and Dimming	Surge Protection	Luminaire Accessories
<b>RX2</b>				<b>N</b>							
<b>RX2</b> RX2 medium	<b>80-G2</b> or <b>96-G2</b> or <b>112-G2</b> or <b>160-G2</b>	<b>A</b> Black finish <b>B</b> White finish <b>H</b> Bronze finish <b>I</b> Gray finish	<b>2</b> Type II <b>3</b> Type III <b>4</b> Type IV <b>5</b> Type V	<b>N</b> 4000K	<b>A</b> 120-277VAC <b>B</b> 347-480VAC	<b>3</b> 350mA 80 LED 96 LED 112 LED <b>5</b> 530mA 80 LED 96 LED 112 LED 160 LED <b>7</b> 700mA 80 LED 96 LED 112 LED	<i>Standard:</i> <b>RCD</b> <sup>1,3,7</sup> Receptacle for twist-lock photocell or shorting cap, 5-pin (standard) <i>Optional:</i> <b>RCD7</b> <sup>3,7</sup> Receptacle for twist-lock photocell or shorting cap, 7-pin (optional)	<b>PH8</b> <sup>3</sup> Twist-lock Photoelectric Cell, A (120-277VAC) <b>PH8/480</b> <sup>3</sup> Twist-lock Photoelectric Cell, B (480VAC) <b>PHXL</b> <sup>3</sup> Twist-lock Photoelectric Cell, extended life, A (120-277VAC) <b>PH9</b> <sup>3</sup> Shorting cap	<i>Standard:</i> <b>DMG</b> <sup>1</sup> Dimmable driver 0-10V <i>Optional:</i> <b>Dynadimmer</b> Economy mode <b>DA</b> <sup>*2,4,5</sup> <b>DB</b> <sup>*2,4,5</sup> <b>DC</b> <sup>*2,4,5</sup> Median mode <b>DD</b> <sup>*2,4,5</sup> <b>DE</b> <sup>*2,4,5</sup> <b>DF</b> <sup>*2,4,5</sup> Safety mode <b>DG</b> <sup>*2,4,5</sup> <b>DH</b> <sup>*2,4,5</sup> <b>DJ</b> <sup>*2,4,5</sup> Custom dimming mode <b>DZ</b> <sup>*2,4,5</sup> (Consult factory) <sup>*Includes 0-10v dimming</sup>	<b>SP2</b> <sup>6</sup> 20kV / 20kA Surge Protector (optional)	<b>N</b> None - no accessory <b>H</b> House side shield, external, 1 per luminaire (field install)

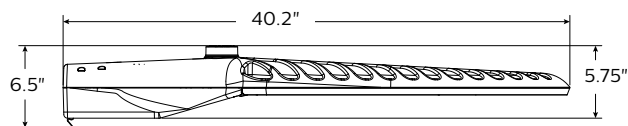
- Please note these integrated features come standard with RX2 luminaires.
- Denotes Dynadimmer module option. **A** (120-277VAC) only - not available with **B** (347-480VAC).
- Use of photoelectric cell or shorting cap is required to ensure proper illumination.
- Not available with **B** (347-480VAC).
- Dimming choices: Select either 1 of the 9 Dynadimmer module **DA-DJ** options or **DZ** for Dynadimmer module Custom Dimming Profile (consult factory).
- When **SP2** option is selected you will get **SP2** instead of standard **SP1**.
- When **RCD7** option is selected you will get 7-pin instead of standard **RCD** 5-pin.

# RX2 LEDGINE, Cobrahead (medium)

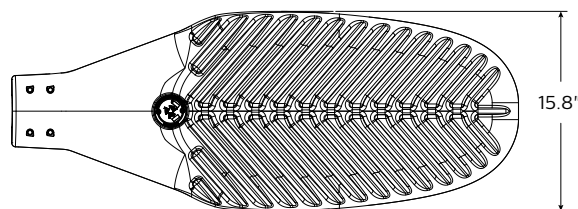
## Roadway

### Dimensions

Side View



Top View

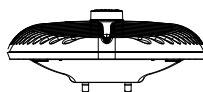


### Weight

32 lbs (14.5kg)

### EPA

0.82 sq. ft. (0.076 m<sup>2</sup>)



### Specifications

#### Housing

The housing is constructed of low copper die-cast aluminum for a high resistance to corrosion, with a traditional cobra-head style, low profile and EPA. The housing is a unique thermal dissipating design with wide angular channels that allow for natural removal of dirt and debris. Two tool-less clips allow for access to the driver and wiring compartment; the hinged door opens downward and is removable for serviceability and upgradability, and it includes a safety feature to prevent accidental disengagement.

Designed with slip-fitter capable of mounting to a 1.5" to 2.5" O.D. or 1.25" to 2" NPS horizontal tenon or arm (minimum 6" long). Integral cast-in stop. A bubble level is built in as well as mounting steps that allow for a +5° to -5° tilt in 2.5° increments. Dual (2) clamp mounting system. Mounting clamps are made of HSLA steel and are zinc plated. Tenon guard protects against birds and similar intruders. ANSI label to identify wattage and source included in box.

#### Light Engine

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

**LED Module:** Composed of high performance white LEDs. Color temperature as per ANSI bin neutral white, 4000 Kelvin nominal (3985K +/- 275K), CRI 70 Min. 75 Typical.

**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. Tempered glass lens with gasketed lens frame (lens gasket robotically applied) achieves IP66 rating. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance. Dark Sky compliant with 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.

**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

*Note: RX1 and RX2 LED Cobra Head luminaires will be shipped controls ready with 0-10V dimming driver and 5-pin receptacle standard (or select 7-pin receptacle option). Contact your local Sales Representative for more information and for help with putting together the entire system solution.*

**DMG:** Dimmable driver 0-10V.

**RCD\*:** Receptacle with 5 pins enabling dimming, can be used with a twist lock control 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 RX1 and RX2 luminaires.*

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

#### Driver and Luminaire Options

##### Safety mode:

**DA:** 4 hours, 25% power dimming

**DB:** 4 hours 50% power dimming

**DC:** 4 hours 75% power dimming

##### Median mode:

**DD:** 6 hours 25% power dimming

**DE:** 6 hours 50% power dimming

**DF:** 6 hours 75% power dimming

##### Economy mode:

**DG:** 8 hours 25% power dimming

**DH:** 8 hours 50% power dimming

**DJ:** 8 hours 75% power dimming

##### Custom dimming mode:

**DZ:** (consult factory)

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

**RCD7\*:** Receptacle with 7 pins enabling dimming and additional functionality (to be determined), can be used with a twist lock control node or photoelectric cell or a shorting cap.

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

**PH8\*:** Twist-lock Photoelectric Cell, A (120-277VAC).

**PH8/480\*:** Twist-lock Photoelectric Cell, B (480VAC).

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

**PH9\*:** Shorting cap.

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

#### Luminaire Accessory

**HS:** House side shield, external, 1 per luminaire (field installed).

# RX2 LEDGINE, Cobrahead (medium)

## Roadway

### Specifications (continued)

#### 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, System Reliability Tool, driver data and LED LM-80/TM-21 data, expected to reach 100,000 + hours with >L<sub>70</sub> 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 time-delay or slow blow fuse to avoid unnecessary and unwanted fuse blowing that can occur with fast acting fuses.

#### Hardware

All exposed screws shall be stainless steel for 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 2000 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.

The RX1 and RX2 meet 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. RX1 and RX2 LED Cobra Head luminaires are DesignLights Consortium qualified. Luminaire complies with or exceeds the following ANSI C136 standards: .2, .3, .10, .14, .15, .22, .25, .31, .37, .41.

#### Limited Warranty

10-year limited warranty. See [signify.com/warranties](https://www.signify.com/warranties) for details and restrictions.

#### Brackets/Arms

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

### Vibration Resistance

### 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<sub>70</sub> is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L<sub>70</sub> hours limited to 6 times actual LED test hours

Ambient Temperature °C	Driver mA	Calculated L <sub>70</sub> Hours	L <sub>70</sub> per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	up to 700 mA	>100,000 hours	>60,000 hours	>94%

# RX2 LEDGINE, Cobrahead (medium)

## Roadway

### LED light engine technical information (wattage and lumen values)

LED CRI = 70, CCT = 4000K nominal (3985K +/- 275K or 3710K to 4260K), System (LED + driver) rated life = 100,000 hrs<sup>1</sup>

LED Module	Typical delivered lumens	Typical system wattage (W) <sup>2</sup>	LED current (mA)	Typical System Current (A) @						Luminaire Efficacy Rating (Lm/W)	BUG rating
				120V	208V	240V	277V	347V	480V		
RX280-G2-2NA3	9,318	87	350	0.81	0.47	0.40	0.35	0.28	0.20	107	B2-U0-G2
RX280-G2-3NA3	9,097	87	350	0.81	0.47	0.40	0.35	0.28	0.20	104	B2-U0-G2
RX280-G2-4NA3	8,983	87	350	0.80	0.46	0.40	0.35	0.28	0.20	103	B2-U0-G2
RX280-G2-5NA3	8,716	87	350	0.80	0.46	0.40	0.35	0.28	0.20	100	B3-U0-G2
RX280-G2-2NA5	13,229	128	530	1.18	0.68	0.59	0.51	0.41	0.30	104	B3-U0-G2
RX280-G2-3NA5	13,118	128	530	1.18	0.68	0.59	0.51	0.41	0.30	103	B2-U0-G2
RX280-G2-4NA5	12,961	128	530	1.18	0.68	0.59	0.51	0.41	0.30	102	B2-U0-G2
RX280-G2-5NA5	12,575	128	530	1.18	0.68	0.59	0.51	0.41	0.30	99	B4-U0-G2
RX280-G2-2NA7	16,881	177	700	1.64	0.94	0.82	0.71	0.57	0.41	96	B3-U0-G2
RX280-G2-3NA7	16,480	177	700	1.64	0.94	0.82	0.71	0.57	0.41	93	B2-U0-G2
RX280-G2-4NA7	16,282	176	700	1.63	0.94	0.82	0.71	0.56	0.41	92	B2-U0-G3
RX280-G2-5NA7	15,459	176	700	1.63	0.94	0.82	0.71	0.56	0.41	88	B4-U0-G2
RX296-G2-2NA3	11,425	103	350	0.96	0.55	0.48	0.41	0.33	0.24	111	B2-U0-G2
RX296-G2-3NA3	11,154	103	350	0.96	0.55	0.48	0.41	0.33	0.24	108	B2-U0-G2
RX296-G2-4NA3	11,066	103	350	0.95	0.55	0.48	0.41	0.33	0.24	107	B2-U0-G2
RX296-G2-5NA3	10,736	103	350	0.95	0.55	0.48	0.41	0.33	0.24	104	B4-U0-G2
RX296-G2-2NA5	16,455	152	530	1.41	0.81	0.70	0.61	0.49	0.35	108	B3-U0-G2
RX296-G2-3NA5	16,085	152	530	1.40	0.81	0.70	0.61	0.49	0.35	106	B3-U0-G2
RX296-G2-4NA5	15,955	152	530	1.40	0.81	0.70	0.61	0.49	0.35	105	B2-U0-G3
RX296-G2-5NA5	15,480	152	530	1.40	0.81	0.70	0.61	0.49	0.35	102	B4-U0-G2
RX296-G2-2NA7	20,698	210	700	1.94	1.12	0.97	0.84	0.67	0.49	99	B3-U0-G2
RX296-G2-3NA7	20,207	210	700	1.94	1.12	0.97	0.84	0.67	0.48	96	B3-U0-G3
RX296-G2-4NA7	20,049	209	700	1.94	1.12	0.97	0.84	0.67	0.48	96	B3-U0-G3
RX296-G2-5NA7	19,452	209	700	1.94	1.12	0.97	0.84	0.67	0.48	93	B5-U0-G3
RX2112-G2-2NA3	13,455	124	350	1.15	0.66	0.57	0.50	0.40	0.29	109	B3-U0-G2
RX2112-G2-3NA3	13,027	124	350	1.15	0.66	0.57	0.50	0.40	0.29	105	B2-U0-G2
RX2112-G2-4NA3	12,914	124	350	1.15	0.66	0.57	0.50	0.40	0.29	104	B2-U0-G2
RX2112-G2-5NA3	12,529	124	350	1.15	0.66	0.57	0.50	0.40	0.29	101	B4-U0-G2
RX2112-G2-2NA5	19,158	182	530	1.68	0.97	0.84	0.73	0.58	0.42	105	B3-U0-G2
RX2112-G2-3NA5	18,598	182	530	1.68	0.97	0.84	0.73	0.58	0.42	102	B3-U0-G3

1. L<sub>70</sub> = 100,000 hrs (at ambient temperature = 25°C)

2. System wattage includes the lamp and the LED driver

Note: Due to rapid and continuous advances in LED technology, LED luminaire data is subject to change without notice and at the discretion of Signify. IES files with HS external house side shield option are also available – contact the factory.

# RX2 LEDGINE, Cobrahead (medium)

## Roadway

### LED light engine technical information (wattage and lumen values) *continued*

LED CRI = 70, CCT = 4000K nominal (3985K +/- 275K or 3710K to 4260K), System (LED + driver) rated life = 100,000 hrs<sup>1</sup>

LED Module	Typical delivered lumens	Typical system wattage (W) <sup>2</sup>	LED current (mA)	Typical System Current (A) @						Luminaire Efficacy Rating (Lm/W)	BUG rating
				120V	208V	240V	277V	347V	480V		
RX2112-G2-4NA5	18,622	182	530	1.68	0.97	0.84	0.73	0.58	0.42	102	B3-U0-G3
RX2112-G2-5NA5	18,068	182	530	1.68	0.97	0.84	0.73	0.58	0.42	99	B5-U0-G3
RX2112-G2-2NA7	24,166	243	700	2.25	1.30	1.12	0.97	0.78	0.56	100	B3-U0-G3
RX2112-G2-3NA7	23,601	243	700	2.25	1.30	1.12	0.97	0.78	0.56	97	B3-U0-G3
RX2112-G2-4NA7	23,394	243	700	2.25	1.30	1.12	0.97	0.78	0.56	96	B3-U0-G4
RX2112-G2-5NA7	22,698	243	700	2.25	1.30	1.12	0.97	0.78	0.56	94	B5-U0-G3
RX2160-G2-2NA5	27,059	255	530	2.36	1.36	1.18	1.02	0.82	0.59	106	B3-U0-G3
RX2160-G2-3NA5	26,581	255	530	2.36	1.36	1.18	1.02	0.82	0.59	104	B3-U0-G3
RX2160-G2-4NA5	26,249	255	530	2.36	1.36	1.18	1.02	0.82	0.59	103	B3-U0-G4
RX2160-G2-5NA5	25,467	255	530	2.36	1.36	1.18	1.02	0.82	0.59	100	B5-U0-G3

1. L<sub>70</sub> = 100,000 hrs (at ambient temperature = 25°C)

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