



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.

## Ordering guide

example: RFM-108W32LED3K-G2-R3M-UNV-DMG-RCD-GY3

Example: RFL100W32LED3K-02-R3M-UNV-DMG-RCD-01

| Prefix                                 | LED module              | Series          | Distribution                                | Voltage                        | Options  |   | Finish    |
|--|-------------------------|-----------------|---|--------------------------------|--|---|-----------|
|  |                         |                 |   |                                | Controls   | Luminaire   |           |
| RFM                                    |                         | G2              |   |                                |  |   |           |
| RFM<br>RoadFocus<br>Roadway,<br>medium | 3000K                   | G2 Generation 2 | Type 2                                      | UNV 120-277V<br>HVU 347-480VAC | AST <sup>1,4</sup> Pre-set driver for progressive start-up                               | API Factory installed NEMA label, ANSI C136.15 compliant                                | Textured  |
|  | 35W32LED3K <sup>7</sup> |                 | R2S Type II short (ASYM)                    |                                | CDMGE25 <sup>1,4</sup> 8 hrs. 25% reduction  | FAWS <sup>6</sup> Field adjustable wattage selector                                     | BK Black  |
|  | 55W32LED3K <sup>7</sup> |                 | R2M Type II Medium (ASYM)                   |                                | CDMGE50 <sup>1,4</sup> 8 hrs. 50% reduction  | HS House Side Shield, shield, 1 per 16 LED light engine                                 | BZ Bronze |
|  | 55W48LED3K <sup>7</sup> |                 | Type 3                                      |                                | CDMGE75 <sup>1,4</sup> 8 hrs. 75% reduction  | PH8 <sup>1</sup> Twist-lock Photoelectric Cell, UNV (120-277VAC)                        | GY3 Gray  |
|  | 72W32LED3K              |                 |   |                                | CDMGM25 <sup>1,4</sup> 6 hrs. 25% reduction  | PH8/347 <sup>1</sup> Twist-lock Photoelectric Cell, 347VAC                              | WH White  |
|  | 80W48LED3K              |                 | R3S Type III short (ASYM)                   |                                | CDMGM50 <sup>1,4</sup> 6 hrs. 50% reduction  | PH8/480 <sup>1</sup> Twist-lock Photoelectric Cell, 480VAC                              |           |
|  | 108W32LED3K             |                 | R3M Type III Medium (ASYM)                  |                                | CDMGM75 <sup>1,4</sup> 6 hrs. 75% reduction  | PHXL <sup>1</sup> Twist-lock Photoelectric Cell, extended life, UNV (120-277VAC)        |           |
|  | 108W48LED3K             |                 |   |                                | CDMGS25 <sup>1,4</sup> 4 hrs. 25% reduction  | PH9 Shorting cap  |           |
|  | 160W48LED3K             |                 | CDMGS50 <sup>1,4</sup> 4 hrs. 50% reduction |                                | RCD <sup>3,5</sup> Receptacle for twist-lock photocell or shorting cap, 5-pin (standard) |   |           |
|  | 4000K                   |                 | Type 4                                      |                                | CDMGS75 <sup>1,4</sup> 4 hrs. 75% reduction  | RCD7 <sup>3</sup> Receptacle for twist-lock photocell or shorting cap, 7-pin (optional) |           |
|  | 35W32LED4K <sup>7</sup> |                 |   |                                | CLO <sup>1,4</sup> Pre-set driver to manage lumen depreciation                           | SP2 20kV / 20kA Surge Protector (optional)  |           |
|  | 55W32LED4K <sup>7</sup> |                 | 4 Type IV (ASYM)                            |                                | DALI <sup>1,4</sup> Digitally addressable lighting interface                             |   |           |
|  | 55W48LED4K <sup>7</sup> |                 |   |                                | DMG <sup>5</sup> 0-10V   |   |           |
|  | 72W32LED4K              |                 | Type 5                                      |                                | OTL <sup>1,4</sup> Pre-set driver to signal end of life of the lamp                      |   |           |
|  | 80W48LED4K              |                 |   |                                |  |   |           |
|  | 108W32LED4K             |                 |   |                                |  |   |           |
|  | 108W48LED4K             |                 |   |                                |  |   |           |
|  | 160W48LED4K             |                 |   |                                |  |   |           |

1. **347V** and **480V** not available.

2. Not available with **HS** option.

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

4. Dimming choices: Select either **DMG**, **DALI** or one of the **CDMG** options.

5. Please note this integrated feature come standard with RoadFocus.

6. **FAWS** not available with **CDMG** options, **DALI** or **CLO**.

7. **FAWS** table accuracy +/- 15% on these models.

# RFM RoadFocus

Medium, LED Cobrahead

**RFM108W48LED4KG2-R3M-UNV-PH9/RCD7-GY3**  
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**Accessories** (must be ordered as separate line items – quickly and easily installed in the field)

**CPC or CPCD<sup>1</sup>**

CityTouch Connector Node.

1. 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<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 1050 mA | >100,000 hours                   | >60,000 hours             | >88%                              |

## LED Wattage and Lumen Values: 3000K

| Ordering Code      | Total LEDs | LED Current (mA) | Color Temp. | Average System Watts | Type R2S     |                |            | Type R2M     |                |            | Type R3S     |                |            | Type R3M     |                |            |
|--------------------|------------|------------------|-------------|----------------------|--------------|----------------|------------|--------------|----------------|------------|--------------|----------------|------------|--------------|----------------|------------|
|                    |            |                  |             |                      | 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-35W32LED3K-G2  | 32         | 350              | 3000        | 37                   | 4,555        | 123            | B1-U0-G1   | 4,406        | 119            | B1-U0-G1   | 4,401        | 119            | B1-U0-G1   | 4,411        | 119            | B1-U0-G1   |
| RFM-55W32LED3K-G2  | 32         | 530              | 3000        | 54                   | 6,552        | 121            | B2-U0-G1   | 6,339        | 117            | B2-U0-G1   | 6,331        | 117            | B1-U0-G2   | 6,345        | 118            | B2-U0-G1   |
| RFM-72W32LED3K-G2  | 32         | 700              | 3000        | 73                   | 8,294        | 114            | B2-U0-G1   | 8,024        | 110            | B2-U0-G2   | 8,015        | 110            | B1-U0-G2   | 8,033        | 110            | B2-U0-G2   |
| RFM-108W32LED3K-G2 | 32         | 1050             | 3000        | 108                  | 11,542       | 107            | B3-U0-G1   | 11,166       | 103            | B2-U0-G2   | 11,153       | 103            | B2-U0-G2   | 11,178       | 104            | B2-U0-G2   |
| RFM-55W48LED3K-G2  | 48         | 350              | 3000        | 55                   | 6,832        | 124            | B2-U0-G1   | 6,610        | 120            | B2-U0-G1   | 6,602        | 120            | B1-U0-G2   | 6,617        | 120            | B2-U0-G1   |
| RFM-80W48LED3K-G2  | 48         | 530              | 3000        | 81                   | 9,828        | 122            | B2-U0-G2   | 9,508        | 118            | B2-U0-G2   | 9,497        | 118            | B1-U0-G2   | 9,518        | 118            | B2-U0-G2   |
| RFM-108W48LED3K-G2 | 48         | 700              | 3000        | 106                  | 12,441       | 117            | B3-U0-G2   | 12,036       | 114            | B3-U0-G2   | 12,022       | 113            | B2-U0-G2   | 12,049       | 114            | B3-U0-G2   |
| RFM-160W48LED3K-G2 | 48         | 1050             | 3000        | 161                  | 17,313       | 108            | B3-U0-G2   | 16,749       | 104            | B3-U0-G3   | 16,730       | 104            | B2-U0-G3   | 16,768       | 104            | B3-U0-G3   |

| Ordering Code      | Total LEDs | LED Current (mA) | Color Temp. | Average System Watts | Type 4       |                |            | Type 5       |                |            |
|--------------------|------------|------------------|-------------|----------------------|--------------|----------------|------------|--------------|----------------|------------|
|                    |            |                  |             |                      | Lumen Output | Efficacy (LPW) | BUG Rating | Lumen Output | Efficacy (LPW) | BUG Rating |
| RFM-35W32LED3K-G2  | 32         | 350              | 3000        | 37                   | 4,388        | 119            | B1-U0-G1   | 4,528        | 122            | B3-U0-G1   |
| RFM-55W32LED3K-G2  | 32         | 530              | 3000        | 54                   | 6,312        | 117            | B1-U0-G2   | 6,513        | 121            | B3-U0-G1   |
| RFM-72W32LED3K-G2  | 32         | 700              | 3000        | 73                   | 7,990        | 109            | B1-U0-G2   | 8,245        | 113            | B3-U0-G2   |
| RFM-108W32LED3K-G2 | 32         | 1050             | 3000        | 108                  | 11,119       | 103            | B2-U0-G2   | 11,474       | 106            | B4-U0-G2   |
| RFM-55W48LED3K-G2  | 48         | 350              | 3000        | 55                   | 6,582        | 119            | B1-U0-G2   | 6,791        | 123            | B3-U0-G2   |
| RFM-80W48LED3K-G2  | 48         | 530              | 3000        | 81                   | 9,468        | 118            | B2-U0-G2   | 9,769        | 121            | B4-U0-G2   |
| RFM-108W48LED3K-G2 | 48         | 700              | 3000        | 106                  | 11,985       | 113            | B2-U0-G2   | 12,367       | 117            | B4-U0-G2   |
| RFM-160W48LED3K-G2 | 48         | 1050             | 3000        | 161                  | 16,679       | 104            | B2-U0-G3   | 17,210       | 107            | 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](mailto:outdoorlighting.applications@philips.com).

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

# RFM RoadFocus

Medium, LED Cobrahead

RFM108W48LED4KG2-R3M-UNV-PH9/RCD7-GY3  
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## LED Wattage and Lumen Values: 4000K

| Ordering Code      | Total LEDs | LED Current (mA) | Color Temp. | Average System Watts | Type R25     |                |            | Type R2M     |                |            | Type R3S     |                |            | Type R3M     |                |            |
|--------------------|------------|------------------|-------------|----------------------|--------------|----------------|------------|--------------|----------------|------------|--------------|----------------|------------|--------------|----------------|------------|
|                    |            |                  |             |                      | 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-35W32LED4K-G2  | 32         | 350              | 4000        | 37                   | 4,826        | 131            | B1-U0-G1   | 4,670        | 126            | B1-U0-G1   | 4,665        | 126            | B1-U0-G1   | 4,675        | 126            | B1-U0-G1   |
| RFM-55W32LED4K-G2  | 32         | 530              | 4000        | 54                   | 6,942        | 129            | B2-U0-G1   | 6,718        | 124            | B2-U0-G1   | 6,711        | 124            | B1-U0-G2   | 6,726        | 125            | B2-U0-G1   |
| RFM-72W32LED4K-G2  | 32         | 700              | 4000        | 73                   | 8,788        | 120            | B2-U0-G1   | 8,505        | 117            | B2-U0-G2   | 8,495        | 116            | B1-U0-G2   | 8,514        | 117            | B2-U0-G2   |
| RFM-108W32LED4K-G2 | 32         | 1050             | 4000        | 108                  | 12,229       | 113            | B3-U0-G2   | 11,835       | 110            | B2-U0-G2   | 11,822       | 109            | B2-U0-G2   | 11,848       | 110            | B3-U0-G2   |
| RFM-55W48LED4K-G2  | 48         | 350              | 4000        | 55                   | 7,239        | 131            | B2-U0-G1   | 7,006        | 127            | B2-U0-G1   | 6,998        | 127            | B1-U0-G2   | 7,013        | 127            | B2-U0-G2   |
| RFM-80W48LED4K-G2  | 48         | 530              | 4000        | 81                   | 10,413       | 129            | B2-U0-G2   | 10,077       | 125            | B2-U0-G2   | 10,066       | 125            | B2-U0-G2   | 10,088       | 125            | B2-U0-G2   |
| RFM-108W48LED4K-G2 | 48         | 700              | 4000        | 106                  | 13,182       | 124            | B3-U0-G2   | 12,757       | 120            | B3-U0-G2   | 12,743       | 120            | B2-U0-G2   | 12,771       | 120            | B3-U0-G2   |
| RFM-160W48LED4K-G2 | 48         | 1050             | 4000        | 161                  | 18,344       | 114            | B3-U0-G2   | 17,753       | 110            | B3-U0-G3   | 17,733       | 110            | B2-U0-G3   | 17,772       | 111            | B3-U0-G3   |

| Ordering Code      | Total LEDs | LED Current (mA) | Color Temp. | Average System Watts | Type 4       |                |            | Type 5       |                |            |
|--------------------|------------|------------------|-------------|----------------------|--------------|----------------|------------|--------------|----------------|------------|
|                    |            |                  |             |                      | Lumen Output | Efficacy (LPW) | BUG Rating | Lumen Output | Efficacy (LPW) | BUG Rating |
| RFM-35W32LED4K-G2  | 32         | 350              | 4000        | 37                   | 4,651        | 126            | B1-U0-G2   | 4,799        | 130            | B3-U0-G1   |
| RFM-55W32LED4K-G2  | 32         | 530              | 4000        | 54                   | 6,690        | 124            | B1-U0-G2   | 6,903        | 128            | B3-U0-G2   |
| RFM-72W32LED4K-G2  | 32         | 700              | 4000        | 73                   | 8,469        | 116            | B1-U0-G2   | 8,739        | 120            | B3-U0-G2   |
| RFM-108W32LED4K-G2 | 32         | 1050             | 4000        | 108                  | 11,785       | 109            | B2-U0-G2   | 12,161       | 113            | B4-U0-G2   |
| RFM-55W48LED4K-G2  | 48         | 350              | 4000        | 55                   | 6,976        | 127            | B1-U0-G2   | 7,198        | 131            | B3-U0-G2   |
| RFM-80W48LED4K-G2  | 48         | 530              | 4000        | 81                   | 10,035       | 125            | B2-U0-G2   | 10,355       | 129            | B4-U0-G2   |
| RFM-108W48LED4K-G2 | 48         | 700              | 4000        | 106                  | 12,703       | 120            | B2-U0-G3   | 13,109       | 124            | B4-U0-G2   |
| RFM-160W48LED4K-G2 | 48         | 1050             | 4000        | 161                  | 17,678       | 110            | B3-U0-G3   | 18,242       | 113            | B4-U0-G2   |

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

## Field Adjustable Wattage (FAWS) Multiplier Chart

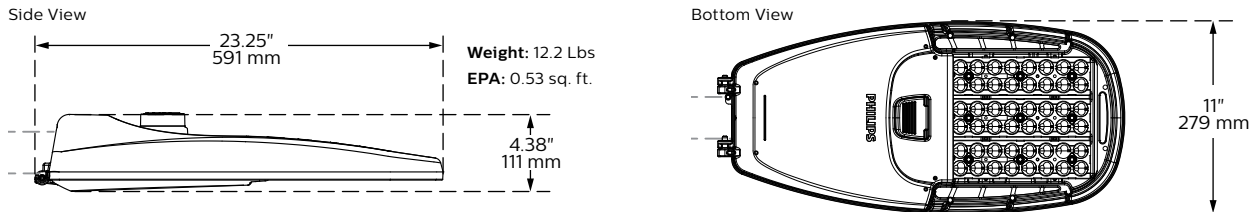
| FAWS Position | Typical Delivered Lumens Multiplier | Typical System wattage |
|---------------|-------------------------------------|------------------------|
| 1             | 0.31                                | 0.28                   |
| 2             | 0.53                                | 0.50                   |
| 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%

# RFM RoadFocus

Medium, LED Cobrahead

## Dimensions



## 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 2.5° 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 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 Neutral White, 3000 Kelvin nominal (3045K +/- 175K) or 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. 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.

**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.

**RCD\*:** Receptacle with 5 pins enabling dimming, can be used with a twist lock Starsense 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

RFM108W48LED3KG2-R3M-UNV-PH9/RCD-GY3  
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### Specifications (continued)

#### Driver and Luminaire Options

**AST\***: Pre-set driver for progressive start-up of the LED module(s) to optimize energy management and enhance visual comfort at start-up.

**CLO\***: Pre-set driver to manage the lumen depreciation by adjusting the power given to the LEDs offering the same lighting intensity during the entire lifespan of the LED module.

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

**OTL\***: Pre-set driver to signal end of life of the LED module(s) for better fixture management.

**CDMG\***: Dynadimmer standard dimming functionalities including pre-programmed scenarios to suit many applications and needs from safety to maximum energy savings.

#### Safety Mode:

CDMG525: 4 hours, 25% power dimming  
CDMG550: 4 hours 50% power dimming  
CDMG575: 4 hours 75% power dimming

#### Median Mode:

CDMG25: 6 hours 25% power dimming  
CDMG50: 6 hours 50% power dimming  
CDMG75: 6 hours 75% power dimming

#### Economy Mode:

CDMG25: 8 hours 25% power dimming  
CDMG50: 8 hours 50% power dimming  
CDMG75: 8 hours 75% power dimming

\* Not available with HVU (347-480V)

**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 / 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 Starsense node or photoelectric cell or a shorting cap.

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

**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 compliant

*\* 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 Philips Lumileds 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  $\pm 1$  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. RoadFocus LED Cobrahead 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 [philips.com/warranties](http://philips.com/warranties) for details and restrictions.

#### Brackets/Arms

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

