



LumeC RoadFocus LED reduced glare cobra head luminaires provide the benefits of LED technology, including energy savings and lower maintenance costs yet minimizes perceived glare and brightness associated with LED technology without sacrificing performance required for optimum roadway applications. Includes Service Tag, innovative way to provide assistance throughout the life of the product.

Project: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Cat.No: \_\_\_\_\_  
 Type: \_\_\_\_\_  
 Lumens: \_\_\_\_\_ Qty: \_\_\_\_\_  
 Notes: \_\_\_\_\_

### Ordering guide

example: RFM-RG-110W64LED3K-G2-R2/3M-UNV-DMG-HS-PH8-RCD7-GY3

Series	Application	LED module	CCT	Generation	Distribution	Voltage	Options		Finish
							Controls <sup>4</sup>	Options	
<b>RFM</b>	<b>RG</b>			<b>G2</b>	<b>R2/3M</b>				
RFM RoadFocus medium	RG Reduced glare	110W64LED 120W64LED 130W64LED 135W64LED 140W64LED 150W64LED 160W64LED 165W64LED 50W96LED <sup>7</sup> 55W96LED <sup>7</sup> 60W96LED <sup>7</sup> 65W96LED 70W96LED 75W96LED 80W96LED 85W96LED 90W96LED 95W96LED 100W96LED 110W96LED 120W96LED 130W96LED 135W96LED 140W96LED 150W96LED 160W96LED	4K 4000K 3K 3000K 2.7K" 2700K	G2 Generation 2	R2/3M Type II-III Medium (ASYM)	UNV 120-277V HVV 347-480V	D4I <sup>14</sup> Zhaga-D4i certified DALI Digitally addressable lighting interface DMG <sup>5</sup> 0-10V SRD Sensor ready driver, standard configuration SRD1 Sensor ready driver, alternate configuration	2C Two clamp with 4 bolts API Factory installed NEMA label, ANSI C136.15-2015 compliant FAWS <sup>7</sup> Field adjustable wattage selector FSS <sup>2,13</sup> Front Side Shield HS <sup>2,13</sup> House Side Shield NRC <sup>8</sup> No receptacle NYBC 4-position terminal block OMS <sup>15</sup> Outdoor Multi Sensor PH8 <sup>1,10</sup> Twist-lock photoelectric cell, UNV (120-277VAC) PH8/347 <sup>10,12</sup> Twist-lock photoelectric cell (347VAC) PH8/480 <sup>10,12</sup> Twist-lock photoelectric cell (480VAC) PHXL <sup>1,10</sup> Twist-lock photoelectric cell, extended life, UNV (120-277VAC) PH9 <sup>10</sup> Shorting cap RCD <sup>3,9</sup> Tool less receptacle for twist- lock photocell or shorting cap, 5-pin (optional) RCD7 <sup>3,5</sup> Tool less receptacle for twist- lock photocell or shorting cap, 7-pin (standard) SP2 20kV / 10kA Surge protector TLRSR <sup>6</sup> SR receptacle BAC <sup>16</sup> Meets the requirements of the Buy American Act of 1933 (BAA)	BK Black BR Bronze GY3 Gray WH White

<sup>1</sup> Not available with HVU.  
<sup>2</sup> Refer to Accessories section to confirm compatibility of shields with optical distribution.  
<sup>3</sup> Use of photoelectric cell or shorting cap is required to ensure proper illumination.  
<sup>4</sup> Select one mandatory option.  
<sup>5</sup> Please note this integrated feature come standard with RoadFocus.  
<sup>6</sup> Only available with SRD or SRD1 Driver Options.  
<sup>7</sup> Only available with DMG Driver Options.  
<sup>8</sup> Not available with PH8, PH8/347, PH8/480, PHXL, PH9, DALI, SRD or SRD1 Driver Options.  
<sup>9</sup> Not available with SRD Driver Options.  
<sup>10</sup> Either RCD or RCD7 must be selected for this option.  
<sup>11</sup> Extended lead-time may apply. Consult factory.  
<sup>12</sup> Not available with UNV.  
<sup>13</sup> 1 shield provided per LED light engine.  
<sup>14</sup> TLRSR must be selected with D4I  
<sup>15</sup> TLRSR and D4I must be selected with OMS  
<sup>16</sup> Failure to properly select the "BAC" suffix could result in you receiving product that is not BAA compliant product with no recourse for an RMA or refund. This BAC designation hereunder does not address (i) the applicability of, or availability of a waiver under, the Trade Agreements Act, or (ii) the "Buy America" domestic content requirements imposed on states, localities, and other non-federal entities as a condition of receiving funds administered by the Department of Transportation or other federal agencies.  
<sup>17</sup> Consult Signify to confirm whether specific accessories are BAA-compliant.

### Accessories<sup>17</sup> (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.)

#### Shielding accessories

Description	Luminaire Option Code	Accessory Ordering Code
		32 LED version*
Front side shield	FSS	ACC-LG66V32LED-FSS
House side shield	HS	ACC-LG66V32LED-HS

\*Refer to Wattage table to confirm light engine configuration. Example, if configuration is 2x32LED, 2 of the desired shields must be ordered per luminaire.



# RFM-RG RoadFocus reduced glare

## LED Cobra head (medium)

### 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. L70 is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11 Addendum B. Published L70 hours limited to 6 times actual LED test hours.

Ambient Temperature °C	L70 per TM-21	Lumen Maintenance % at 78,000 hrs
25°C	>78,000 hours	>96.0%

### LED Wattage values

Ordering Code	Total LEDs	Light Engine Configuration	Average System Watts <sup>1</sup>	Wattage label <sup>2</sup>
RFM-RG-110W64LED	64	2x32LED	108	110
RFM-RG-120W64LED	64	2x32LED	118	120
RFM-RG-130W64LED	64	2x32LED	128	130
RFM-RG-135W64LED	64	2x32LED	133	130
RFM-RG-140W64LED	64	2x32LED	138	140
RFM-RG-150W64LED	64	2x32LED	149	150
RFM-RG-160W64LED	64	2x32LED	157	160
RFM-RG-165W64LED	64	2x32LED	162	160
RFM-RG-50W96LED	96	3x32LED	48	50
RFM-RG-55W96LED	96	3x32LED	54	50
RFM-RG-60W96LED	96	3x32LED	58	60
RFM-RG-65W96LED	96	3x32LED	62	60
RFM-RG-70W96LED	96	3x32LED	68	70
RFM-RG-75W96LED	96	3x32LED	72	70

Ordering Code	Total LEDs	Light Engine Configuration	Average System Watts <sup>1</sup>	Wattage label <sup>2</sup>
RFM-RG-80W96LED	96	3x32LED	78	80
RFM-RG-85W96LED	96	3x32LED	83	80
RFM-RG-90W96LED	96	3x32LED	87	90
RFM-RG-95W96LED	96	3x32LED	93	90
RFM-RG-100W96LED	96	3x32LED	98	100
RFM-RG-110W96LED	96	3x32LED	107	110
RFM-RG-120W96LED	96	3x32LED	118	120
RFM-RG-130W96LED	96	3x32LED	125	130
RFM-RG-135W96LED	96	3x32LED	132	130
RFM-RG-140W96LED	96	3x32LED	137	140
RFM-RG-150W96LED	96	3x32LED	147	150
RFM-RG-160W96LED	96	3x32LED	157	160

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

### 4000K LED Lumen values

Ordering Code	Color Temp.	Type R2M/3M		
		Lumen Output	Efficacy (LPW)	BUG Rating
RFM-RG-110W64LED	4000	17043	158	B3-U0-G2
RFM-RG-120W64LED	4000	18275	155	B3-U0-G2
RFM-RG-130W64LED	4000	19420	152	B3-U0-G2
RFM-RG-135W64LED	4000	19971	150	B3-U0-G2
RFM-RG-140W64LED	4000	20539	149	B3-U0-G2
RFM-RG-150W64LED	4000	21494	144	B3-U0-G2
RFM-RG-160W64LED	4000	22274	142	B3-U0-G2
RFM-RG-165W64LED	4000	22708	140	B2-U0-G1
RFM-RG-50W96LED	4000	8744	182	B3-U0-G2
RFM-RG-55W96LED	4000	9558	179	B3-U0-G2
RFM-RG-60W96LED	4000	10168	176	B3-U0-G2
RFM-RG-65W96LED	4000	10982	177	B3-U0-G2
RFM-RG-70W96LED	4000	11592	170	B3-U0-G2
RFM-RG-75W96LED	4000	12406	172	B3-U0-G2
RFM-RG-80W96LED	4000	13016	167	B3-U0-G2
RFM-RG-85W96LED	4000	14440	174	B3-U0-G2
RFM-RG-90W96LED	4000	15253	175	B3-U0-G2
RFM-RG-95W96LED	4000	15863	171	B3-U0-G2
RFM-RG-100W96LED	4000	16677	170	B3-U0-G2
RFM-RG-110W96LED	4000	17695	165	B3-U0-G2
RFM-RG-120W96LED	4000	19525	165	B3-U0-G2
RFM-RG-130W96LED	4000	20339	163	B3-U0-G2
RFM-RG-135W96LED	4000	21559	163	B3-U0-G2
RFM-RG-140W96LED	4000	22372	163	B4-U0-G2
RFM-RG-150W96LED	4000	23594	161	B4-U0-G2
RFM-RG-160W96LED	4000	24627	157	157

### 3000K LED Lumen values

Ordering Code	Color Temp.	Type R2M/3M		
		Lumen Output	Efficacy (LPW)	BUG Rating
RFM-RG-110W64LED	3000	16231	150	B3-U0-G2
RFM-RG-120W64LED	3000	17405	148	B3-U0-G2
RFM-RG-130W64LED	3000	18495	144	B3-U0-G2
RFM-RG-135W64LED	3000	19020	143	B3-U0-G2
RFM-RG-140W64LED	3000	19561	142	B3-U0-G2
RFM-RG-150W64LED	3000	20470	137	B3-U0-G2
RFM-RG-160W64LED	3000	21213	135	B3-U0-G2
RFM-RG-165W64LED	3000	21627	134	B3-U0-G2
RFM-RG-50W96LED	3000	8328	174	B2-U0-G1
RFM-RG-55W96LED	3000	9103	170	B2-U0-G2
RFM-RG-60W96LED	3000	9684	167	B3-U0-G2
RFM-RG-65W96LED	3000	10459	169	B3-U0-G2
RFM-RG-70W96LED	3000	11040	162	B3-U0-G2
RFM-RG-75W96LED	3000	11815	164	B3-U0-G2
RFM-RG-80W96LED	3000	12396	159	B3-U0-G2
RFM-RG-85W96LED	3000	13752	166	B3-U0-G2
RFM-RG-90W96LED	3000	14527	167	B3-U0-G2
RFM-RG-95W96LED	3000	15108	162	B3-U0-G2
RFM-RG-100W96LED	3000	15883	162	B3-U0-G2
RFM-RG-110W96LED	3000	16852	157	B3-U0-G2
RFM-RG-120W96LED	3000	18595	158	B3-U0-G2
RFM-RG-130W96LED	3000	19370	155	B3-U0-G2
RFM-RG-135W96LED	3000	20532	156	B3-U0-G2
RFM-RG-140W96LED	3000	21307	156	B3-U0-G2
RFM-RG-150W96LED	3000	22470	153	B3-U0-G2
RFM-RG-160W96LED	3000	23454	149	B3-U0-G2

### 2700K LED Lumen values

Ordering Code	Color Temp.	Type R2M/3M		
		Lumen Output	Efficacy (LPW)	BUG Rating
RFM-RG-110W64LED	2700	14608	135	B3-U0-G2
RFM-RG-120W64LED	2700	15665	133	B3-U0-G2
RFM-RG-130W64LED	2700	16646	130	B3-U0-G2
RFM-RG-135W64LED	2700	17118	129	B3-U0-G2
RFM-RG-140W64LED	2700	17605	128	B3-U0-G2
RFM-RG-150W64LED	2700	18423	124	B3-U0-G2
RFM-RG-160W64LED	2700	19092	122	B3-U0-G2
RFM-RG-165W64LED	2700	19464	120	B3-U0-G2
RFM-RG-50W96LED	2700	7495	156	B2-U0-G1
RFM-RG-55W96LED	2700	8193	153	B2-U0-G1
RFM-RG-60W96LED	2700	8716	151	B2-U0-G1
RFM-RG-65W96LED	2700	9413	152	B2-U0-G2
RFM-RG-70W96LED	2700	9936	146	B3-U0-G2
RFM-RG-75W96LED	2700	10634	148	B3-U0-G2
RFM-RG-80W96LED	2700	11156	143	B3-U0-G2
RFM-RG-85W96LED	2700	12377	149	B3-U0-G2
RFM-RG-90W96LED	2700	13074	150	B3-U0-G2
RFM-RG-95W96LED	2700	13597	146	B3-U0-G2
RFM-RG-100W96LED	2700	14295	146	B3-U0-G2
RFM-RG-110W96LED	2700	15167	142	B3-U0-G2
RFM-RG-120W96LED	2700	16736	142	B3-U0-G2
RFM-RG-130W96LED	2700	17433	139	B3-U0-G2
RFM-RG-135W96LED	2700	18479	140	B3-U0-G2
RFM-RG-140W96LED	2700	19176	140	B3-U0-G2
RFM-RG-150W96LED	2700	20223	138	B3-U0-G2
RFM-RG-160W96LED	2700	21109	134	B3-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 [signify.com/outdoorluminaires](mailto:signify.com/outdoorluminaires). Consult DLC QPL to confirm your specific fixture selection is DLC approved.

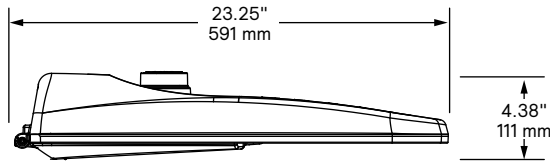
**Note:** Some data may be scaled based on tests of similar but not identical luminaires.

# RFM-RG RoadFocus reduced glare

## LED Cobra head (medium)

### Dimensions

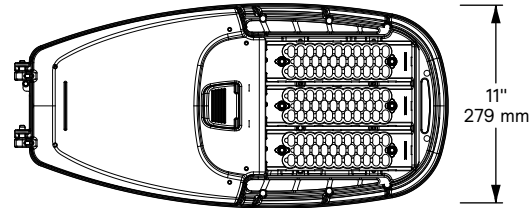
#### Side View



Weight: 12.2 Lbs

EPA: 0.53 sq. ft.

#### Bottom View



### 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%

### 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 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), 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 +50°C / +122°F unless otherwise specified, refer to LED Wattages Values Table.

**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-RG RoadFocus reduced glare

## LED Cobra head (medium)

### Specifications (continued)

#### Driver and Luminaire Options

**D4I:** Zhaga-D4i certified fixture

**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.

**OMS:** Outdoor Multi Sensor

**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.

**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.

#### Factory Installed Shield Options (One per Light Engine)

**FSS:** Front Side Shield. Shields light output on the front side of fixture.

**HS:** House Side Shield. Shields light output to the back side of fixture.

#### 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, 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 5000 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 C136.31-2018, 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 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](http://philips.com/servicetag)

#### Limited Warranty

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

#### Brackets/Arms

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

