



Bridgelux® OLM™ Series

Product Data Sheet DS60



OLMB-40X000

50X000

57X000

Introduction



Bridgelux OLM™ Series modules enable a simple and easy way to develop outdoor luminaires. The modules deliver high quality, energy efficient lighting for commercial, industrial, and exterior applications. Designed for rapid product development and integration, OLM modules mechanically attach with four screws. Soldering, glues, and epoxies are removed from the assembly process and replaced with a robust electrical connection. The integration of optics and environmental protection further simplify luminaire design.

OLM modules contain IP66 rated protection and proprietary optics to enable the long life and stable performance required from luminaires used in outdoor lighting. OLM Series modules leverage the seventh generation Vero® Series product family, the latest generation of Bridgelux LED arrays, to deliver lumen output levels to replace high pressure sodium (HPS) and metal halide technologies used in outdoor luminaires.

Features

- Typical efficacy of up to 156 lm/W at 70° C
- Typical lumen output ranges from 1600 to 4600 lumens
- Broad range of CCT options from 4000K to 5700K
- Minimum 70, 80 CRI options available
- Asymmetric and symmetric lighting patterns
- IP66 rated for reliable outdoor use
- High level of component integration

Benefits

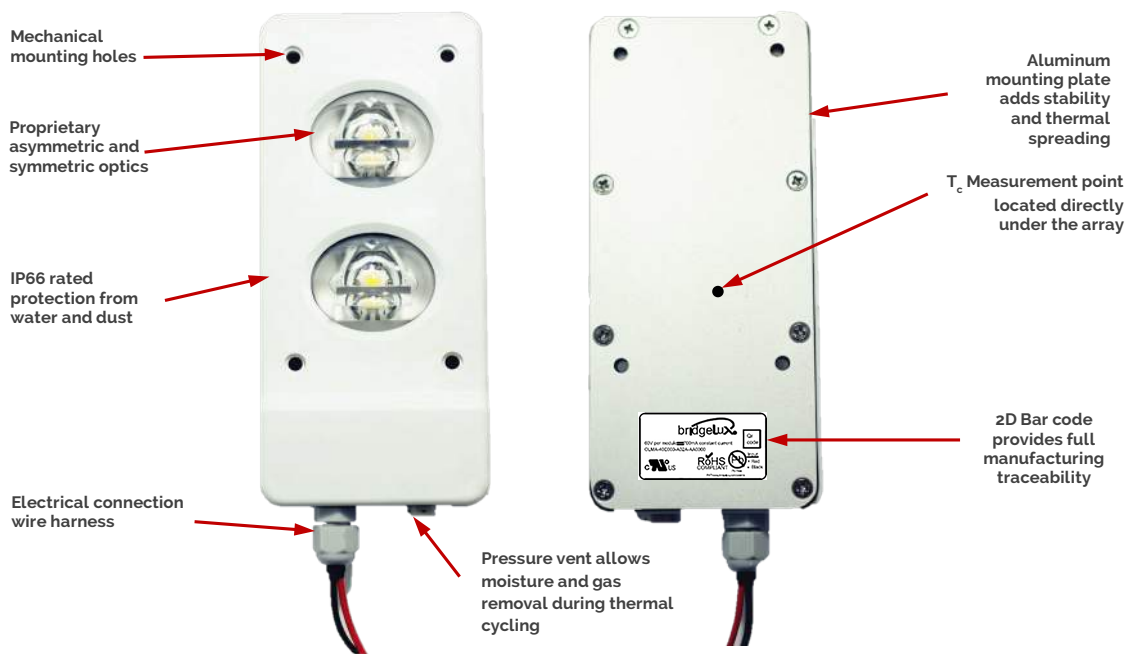
- Designed to replace HPS bulbs in outdoor luminaires
- Optimized for color and efficacy
- Long lifetime with a strong return on investment
- Uniform lighting patterns designed for targeted applications
- Improved thermal management
- Simplified robust luminaire design and assembly
- Improved inventory management and quality control

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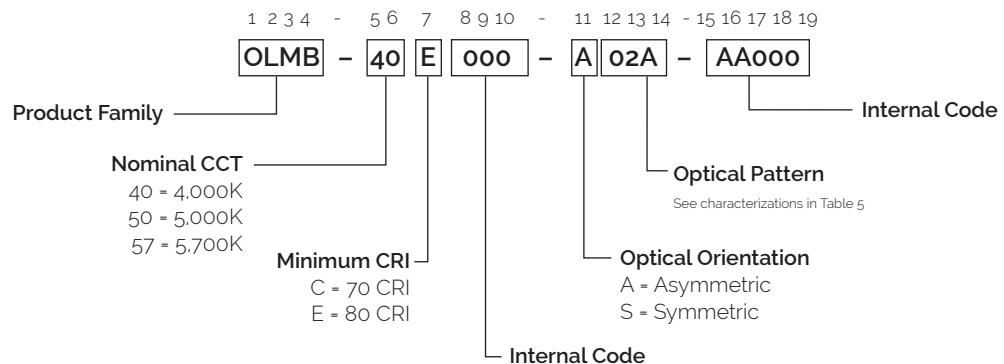
Product Feature Map

OLM incorporates several features to simplify the design integration and manufacturing process, accelerate time to market and reduce system costs. Please consult the Bridgelux OLM Series webpage at www.bridgelux.com for more information.



Product Nomenclature

The part number designation for Bridgelux OLM Series is explained as follows:



Product Selection Guide

The following product configurations are available:

Table 1: Selection Guide

Part Number	Nominal CCT(K)	CRI	Drive Current (mA)	Typical V_f^1 $T_c = 25^\circ\text{C}$ (V)	Typical Power $T_c = 25^\circ\text{C}$ (W)	Typical Pulsed Flux ^{2,3} $T_c = 25^\circ\text{C}$ (lm)	Typical Efficacy $T_c = 25^\circ\text{C}$ (lm/W)	Typical DC Flux ^{4,5} $T_c = 70^\circ\text{C}$ (lm)	Typical Efficacy $T_c = 70^\circ\text{C}$ (lm/W)
OLMB-40C000-xxxx-xx000	4000	70	500	21.9	11.0	1802	164	1676	154
			750	22.7	17.0	2649	156	2463	146
			900	23.1	20.8	3139	151	2918	142
			1500	24.4	36.6	4968	136	4619	127
			1800	24.8	44.7	5803	130	5395	122
OLMB-40E000-xxxx-xx000	4000	80	500	21.9	11.0	1659	151	1542	142
			750	22.7	17.0	2438	143	2266	135
			900	23.1	20.8	2889	139	2686	131
			1500	24.4	36.6	4572	125	4251	117
			1800	24.8	44.7	5341	119	4966	112
OLMB-50C000-xxxx-xx000	5000	70	500	21.9	11.0	1818	166	1691	156
			750	22.7	17.0	2672	157	2484	148
			900	23.1	20.8	3167	152	2944	143
			1500	24.4	36.6	5012	137	4660	129
			1800	24.8	44.7	5855	131	5443	123
OLMB-57C000-xxxx-xx000	5700	70	500	21.9	11.0	1755	160	1631	150
			750	22.7	17.0	2578	152	2397	142
			900	23.1	20.8	3056	147	2841	138
			1500	24.4	36.6	4836	132	4496	124
			1800	24.8	44.7	5649	126	5252	119

Notes for Table 1:

1. Bridgelux maintains a tolerance of ± 0.20 V on forward voltage for OLM modules.
2. Tested in pulsed conditions at $T_c = 25^\circ\text{C}$. Pulse width is 10 ms.
3. Bridgelux maintains a $\pm 10\%$ tolerance on flux values for OLM modules.
4. Typical performance when driven under DC (direct current) with OLM module case temperature (T_c) maintained at 70°C . OLM module is mounted to a heat sink with thermal interface material. Values may vary depending on the thermal design of the luminaire and/or the exposed environment to which the product is subjected.
5. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Electrical Characteristics

Table 2: Electrical Characteristics and Driver Selection Voltages

Part Number	Drive Current (mA)	Forward Voltage Pulsed, $T_c = 25^\circ\text{C}$ (V) ^{1, 2, 3}			Typical Coefficient of Forward Voltage ⁴ $\Delta V_f / \Delta T$ (mV/ $^\circ\text{C}$)	Typical Thermal Resistance Array case to Module case ($^\circ\text{C}/\text{W}$)	Driver Selection Voltages ⁵ (V)	
		Minimum	Typical	Maximum			V_f Min. Hot $T_c = 105^\circ\text{C}$ (V)	V_f Max. Cold $T_c = -40^\circ\text{C}$ (V)
OLMB-xxx000- xxxx-xx000	900	21.4	23.1	24.9	-5.4	0.42	21.0	25.2
	1800	23.0	24.9	26.7	-5.4	0.48	22.6	27.1

Notes for Table 2:

1. Parts are tested in pulsed conditions, $T_c = 25^\circ\text{C}$. Pulse width is 10 ms.
2. Voltage minimum and maximum are provided for reference only and are not a guarantee of performance.
3. Bridgelux maintains a tolerance of ± 0.20 V on forward voltage for OLM modules.
4. Typical coefficient of forward voltage tolerance is ± 0.1 mV.
5. V_f min hot and max cold values are provided as reference only and are not guaranteed. These values are provided to aid in driver design and selection over the operating range of the product.

Absolute Maximum Ratings

Table 3: Maximum Drive Current and Reverse Voltage Ratings

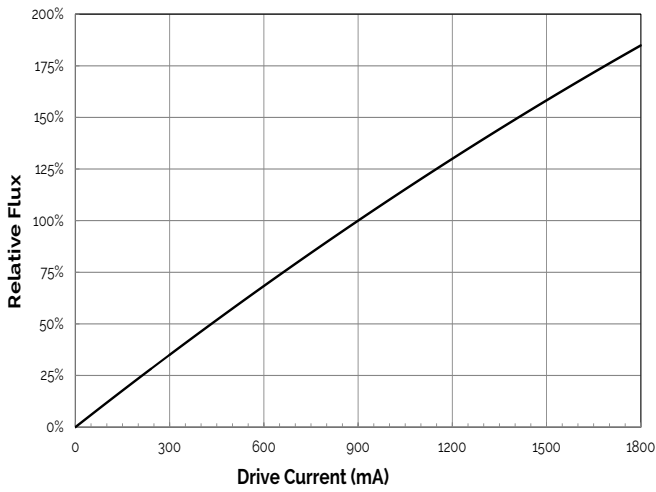
Parameter	Maximum Rating
Storage Temperature	-40°C to +55°C
Ambient Temperature (T_a)	55°C
Operating Module Case Temperature (T_c)	70°C
Maximum Drive Current ^{1,2}	1800 mA
Maximum Peak Pulsed Drive Current ³	2580 mA
Maximum Reverse Voltage ⁴	-20 V

Notes for Table 3:

1. Lumen maintenance (L70) and lifetime predictions are valid for drive current and case temperature conditions used for LM-80 testing as included in the applicable LM-80 test report for these arrays. Contact your Bridgelux sales representatives for LM-80 report.
2. OLM modules may be driven at higher currents. However, lumen maintenance may be reduced.
3. Bridgelux recommends a maximum duty cycle of 10% and pulse width of 20 ms when operating OLM modules at maximum peak pulsed current specified. Maximum peak pulsed currents indicate values where LED Arrays can be driven without catastrophic failures.
4. OLM modules are not designed to be driven in reverse voltage and will not produce light under this condition. Maximum rating provided for reference only.

Performance Curves

Figure 1: Typical Relative Luminous Flux vs. Drive Current ($T_c = 25^\circ\text{C}$)



Notes for Figure 1.

1. Tested in pulsed conditions at $T_c = 25^\circ\text{C}$. Pulse width is 10 ms.

Figure 2: Typical DC Flux vs. Case Temperature

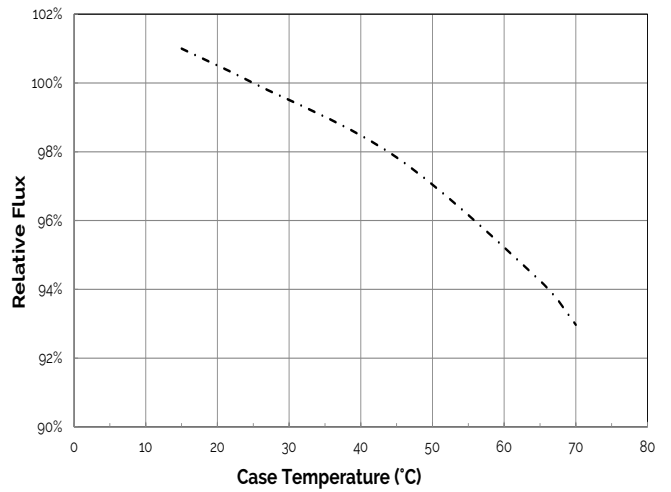


Figure 3: Typical DC ccy Shift vs. Case Temperature

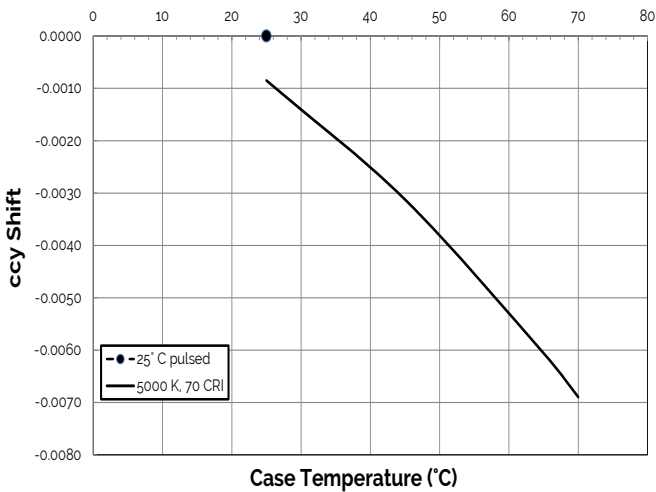
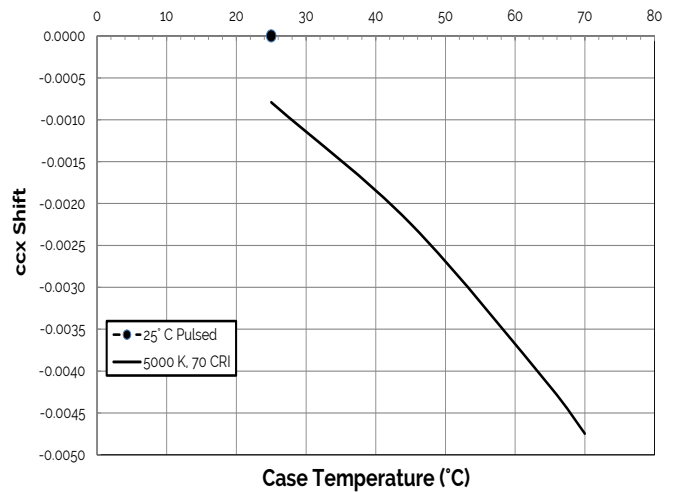


Figure 4: Typical DC ccx Shift vs. Case Temperature



Optical Characteristics

Table 4: Optical Pattern Descriptions

Optical Code	Description	IES Classification	NEMA Classification	EN 13-201 Guidance
A01A	Asymmetric: Narrow, Short Width	Type II, Med	7H x 7V	ME2 - ME4
A06A	Asymmetric: Medium, Short Width	Type III, Short	7H x 7V	ME2 - ME4

Figure 5: Photometric Performance (Optical Code: A01A)

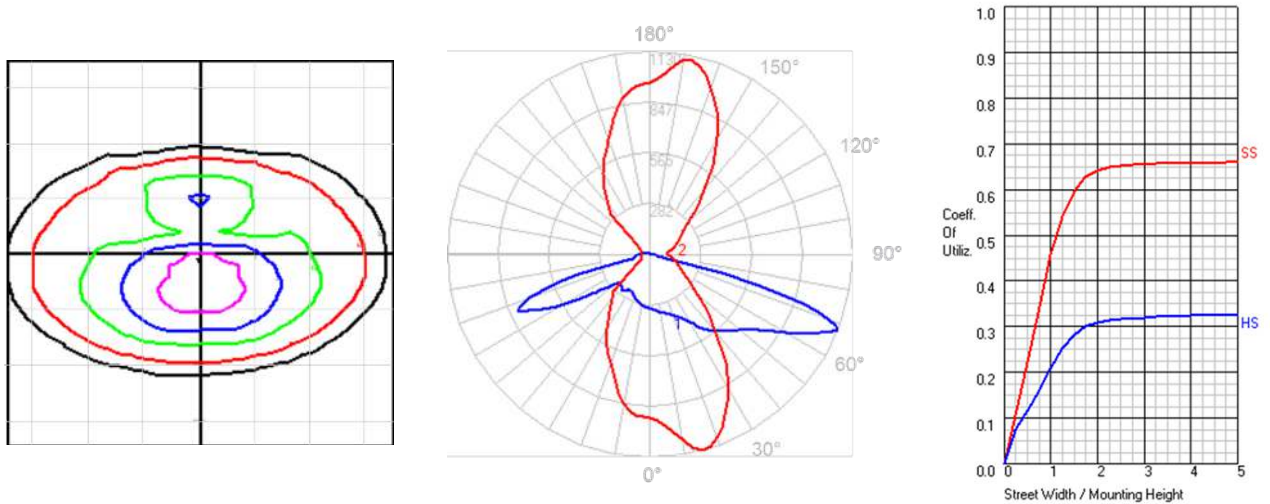
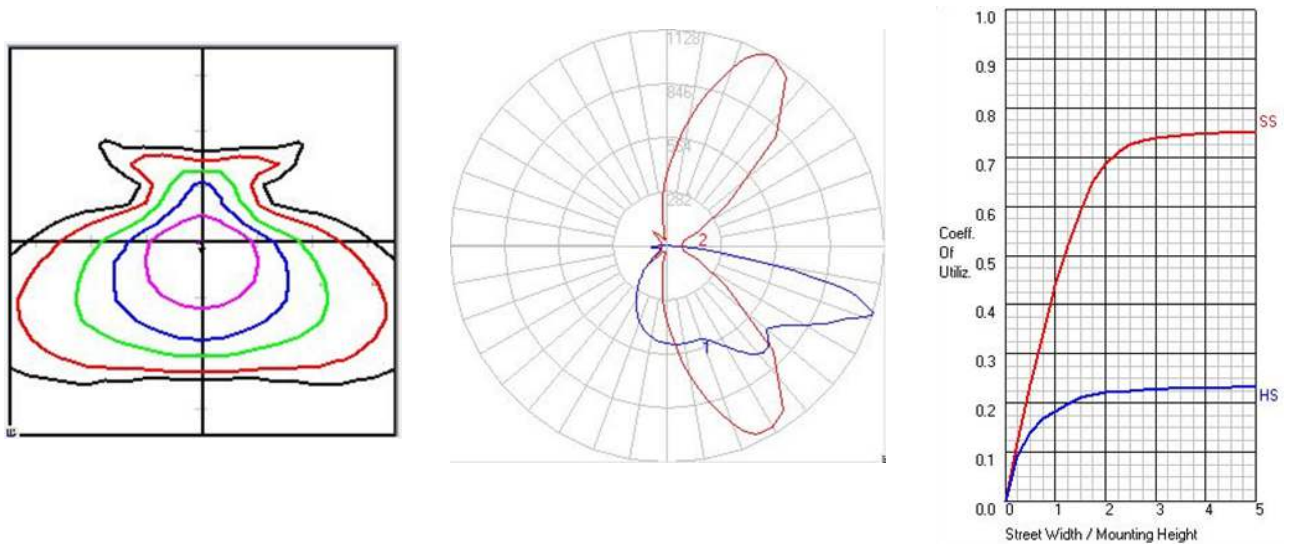
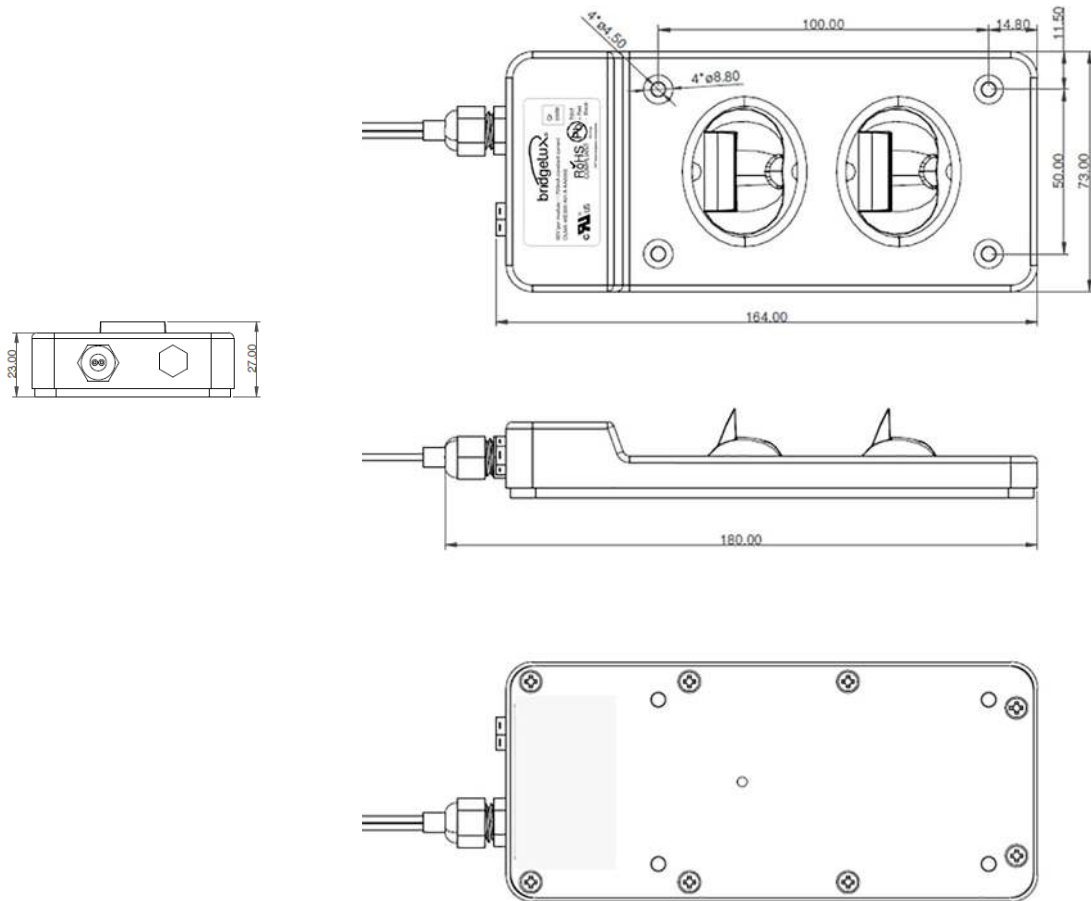


Figure 6: Photometric Performance (Optical Code: A06A)



Mechanical Dimensions

Figure 7: Mechanical Dimensions



Notes for Figure 7:

1. Mounting holes (4x) accommodate M4 or #8 screws.
2. Screws with flat shoulders (pan, dome, button, round, truss, mushroom) provide optimal torque control. Do NOT use flat, countersink, or raised head screws.
3. Drawing dimensions are in millimeters.
4. Unless otherwise specified, tolerances are $\pm 1.00\text{mm}$.
5. Refer to Application Note AN61 for product handling, mounting and heat sink recommendations.

Design Resources

Application Notes

Bridgelux has developed a comprehensive set of application notes and design resources to assist customers in successfully designing with the OLM modules. For a list of resources under development, visit www.bridgelux.com.

Optical Files

Far field optical files are available in .IES and .LDT format. Contact your Bridgelux sales representative for details. Please use appropriate precautions. It is important that users working with LEDs are trained to use them safely.

Precautions

CAUTION: CHEMICAL EXPOSURE HAZARD

Exposure to some chemicals commonly used in luminaire manufacturing and assembly can cause damage to the LED array. Please consult Bridgelux Application Note AN61 for additional information.

CAUTION: EYE SAFETY

Please contact your Bridgelux sales representative for Eye safety classification and IEC specifications.

3D CAD Models

Three dimensional CAD models depicting the product outline are available in both IGS and STP formats. Please contact your Bridgelux sales representative for assistance.

CAUTION: RISK OF BURN

Do not touch the module lens during operation. Allow the module to cool for a sufficient period of time before handling.

CAUTION

CONTACT WITH OPTICAL AREA

The OLM is manufactured with molded polycarbonate lenses. The lens is extremely durable, but not indestructible. Excessive force on the lens may cause damage to the module.

Disclaimers

MINOR PRODUCT CHANGE POLICY

The rigorous qualification testing on products offered by Bridgelux provides performance assurance. Slight cosmetic changes that do not affect form, fit, or function may occur as Bridgelux continues product optimization.

About Bridgelux: We Build Light That Transforms

At Bridgelux, we help companies, industries and people experience the power and possibility of light. Since 2002, we've designed LED solutions that are high performing, energy efficient, cost effective and easy to integrate. Our focus is on light's impact on human behavior, delivering products that create better environments, experiences and returns—both experiential and financial. And our patented technology drives new platforms for commercial and industrial luminaires.

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