

# Bridgelux® SMD5050 2x6 and 2x8 EB Series™

Product Data Sheet DS3123

Lengths: 146mm, 223mm

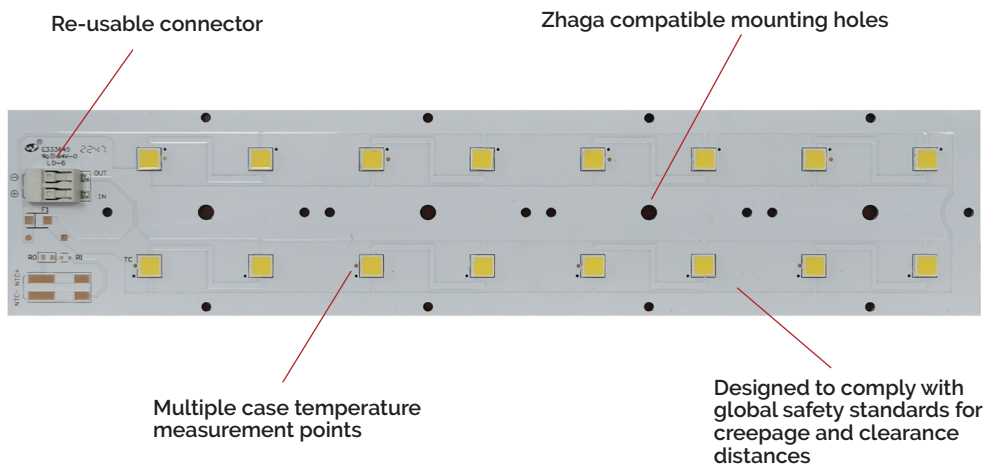
CRI: 70

CCTs: 2700K, 3000K, 4000K, 5000K, 5700K, 6500K



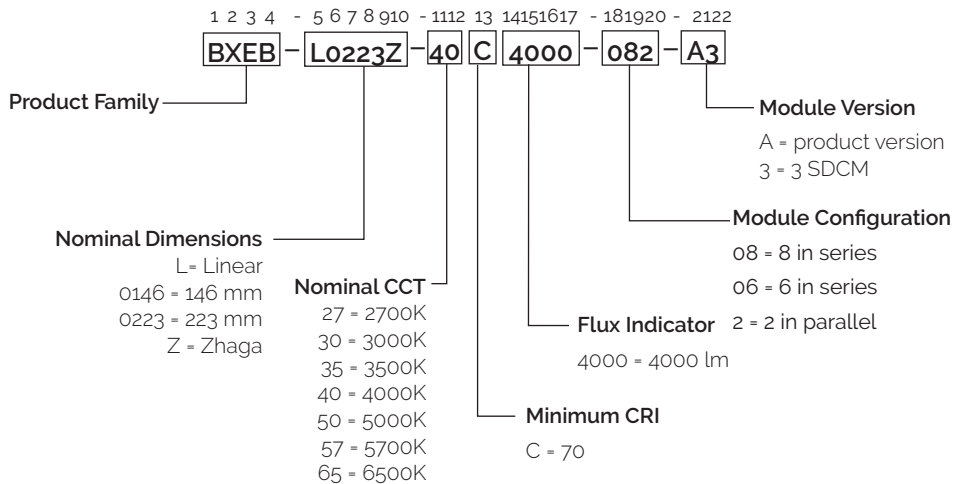
# Product Feature Map

Bridgelux EB Series SMD5050 2x6 and 2x8 Zhaga modules are fully engineered devices that provide consistent thermal and optical performance on an engineered mechanical platform. The linear products incorporate several features to simplify design integration and assembly. Please visit [www.bridgelux.com](http://www.bridgelux.com) for more information on the EB Series family of products.



## Product Nomenclature

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



# Product Selection Guide

**Table 1: Selection Guide, Measurement Data (T<sub>c</sub> = 25° C)**

Part Number	Nominal CCT <sup>1</sup> (K)	CRI <sup>2</sup>	Nominal DriveCurrent (mA)	Forward Voltage (V)	Typical Power (W)	Typical Pulsed Flux <sup>3,4</sup> (lm)	Typical Efficacy (lm/W)
BXEB-L0146Z-27C3000-062-A3	2700	70	400	32.9	13.1	2460	187
BXEB-L0146Z-30C3000-062-A3	3000					2535	193
BXEB-L0146Z-40C3000-062-A3	4000					2694	205
BXEB-L0146Z-50C3000-062-A3	5000					2694	205
BXEB-L0146Z-57C3000-062-A3	5700					2661	202
BXEB-L0146Z-65C3000-062-A3	6500					2661	202
BXEB-L0223Z-27C4000-082-A3	2700	70	400	43.8	17.5	3280	187
BXEB-L0223Z-30C4000-082-A3	3000					3381	193
BXEB-L0223Z-40C4000-082-A3	4000					3591	205
BXEB-L0223Z-50C4000-082-A3	5000					3591	205
BXEB-L0223Z-57C4000-082-A3	5700					3547	202
BXEB-L0223Z-65C4000-082-A3	6500					3547	202

Notes for Table 1:

1. Nominal CCT as defined by ANSI C78.377-2011.
2. CRI Values are minimums.
3. Drive current is referred to as nominal drive current.
4. Products tested under pulsed condition (10ms pulse width) at nominal drive current where T<sub>c</sub> (case temperature) = 25°C. Values may vary depending on the thermal design of the luminaire and/or the exposed environment to which the product is subjected.
5. Typical performance values are provided as a reference only and are not a guarantee of performance.
6. Bridgelux maintains a ± 7% tolerance on typical flux measurements

# Performance at Commonly Used Drive Currents

EB series SMD5050 2x6 and 2x8 Zhaga modules are tested to the specifications shown using the nominal drive currents in Table 1. EB series SMD5050 2x6 and 2x8 Zhaga modules may also be driven at other drive currents dependent on specific application design requirements. The performance at any drive current can be derived from the current vs. voltage characteristics shown in Figures 1 & 3, and the flux vs. current characteristics shown in Figures 2 & 4. The performance at commonly used drive currents is summarized in Table 2.

**Table 2: Performance at Commonly Used Drive Currents ( $T_c = 25^\circ\text{C}$ )**

Part Number	CRI	Drive Current <sup>1</sup> (mA)	Typical $V_f$ (V)	Typical Power (W)	Typical Pulsed Flux <sup>2</sup> (lm)	Typical Efficacy (lm/W)
BXEB-L0146Z-27C3000-062-A3	70	300	32.4	9.7	1867	192
		400	32.9	13.1	2460	187
		550	33.4	18.4	3319	180
		800	34.4	27.5	4696	171
		1100	35.6	39.1	6248	160
BXEB-L0146Z-30C3000-062-A3	70	300	32.4	9.7	1924	198
		400	32.9	13.1	2535	193
		550	33.4	18.4	3421	186
		800	34.4	27.5	4841	176
		1100	35.6	39.1	6440	165
BXEB-L0146Z-40C3000-062-A3 BXEB-L0146Z-50C3000-062-A3	70	300	32.4	9.7	2044	210
		400	32.9	13.1	2694	205
		550	33.4	18.4	3634	198
		800	34.4	27.5	5142	187
		1100	35.6	39.1	6842	175
BXEB-L0146Z-57C3000-062-A3 BXEB-L0146Z-65C3000-062-A3	70	300	32.4	9.7	2019	207
		400	32.9	13.1	2661	202
		550	33.4	18.4	3590	195
		800	34.4	27.5	5079	185
		1100	35.6	39.1	6758	173

Notes for Table 2:

1. Alternate drive currents are provided for reference only and are not a guarantee of performance.
2. Bridgelux maintains a  $\pm 7\%$  tolerance on flux measurements.

# Performance at Commonly Used Drive Currents

**Table 2: Performance at Commonly Used Drive Currents ( $T_c = 25^\circ \text{C}$ )**

Part Number	CRI	Drive Current <sup>1</sup> (mA)	Typical $V_f$ (V)	Typical Power (W)	Typical Pulsed Flux <sup>2</sup> (lm)	Typical Efficacy (lm/W)
BXEB-L0223Z-27C4000-082-A3	70	300	43.2	13.0	2489	192
		400	43.8	17.5	3280	187
		550	44.6	24.5	4425	180
		800	45.9	36.7	6261	171
		1100	47.4	52.2	8330	160
BXEB-L0223Z-30C4000-082-A3	70	300	43.2	13.0	2565	198
		400	43.8	17.5	3381	193
		550	44.6	24.5	4561	186
		800	45.9	36.7	6454	176
		1100	47.4	52.2	8587	165
BXEB-L0223Z-40C4000-082-A3 BXEB-L0223Z-50C4000-082-A3	70	300	43.2	13.0	2725	210
		400	43.8	17.5	3591	205
		550	44.6	24.5	4845	198
		800	45.9	36.7	6856	187
		1100	47.4	52.2	9122	175
BXEB-L0223Z-57C4000-082-A3 BXEB-L0223Z-65C4000-082-A3	70	300	43.2	13.0	2692	207
		400	43.8	17.5	3547	202
		550	44.6	24.5	4786	195
		800	45.9	36.7	6773	185
		1100	47.4	52.2	9011	173

Notes for Table 2:

1. Alternate drive currents are provided for reference only and are not a guarantee of performance.
2. Bridgelux maintains a  $\pm 7\%$  tolerance on flux measurements.

# Absolute Maximum Ratings

**Table 3: Maximum Ratings**

Parameter	Maximum Rating	
Storage Temperature	-40°C to +85°C	
Operating Case Temperature <sup>2</sup> (T <sub>c</sub> )	85°C	
Soldering Temperature	350°C or lower for a maximum of 5 seconds	
Maximum Reverse Voltage	Modules are not designed to be driven in reverse bias	
	BXEB-L0146Z-xxC3000-062-A3	BXEB-L0223Z-xxC4000-082-A3
Maximum Drive Current	1100mA	1100mA

Notes for Table 3:

1. For IEC 62717 requirement, please consult your Bridgelux sales representative.
2. 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 the SMDs used in the modules. Contact your Bridgelux sales representatives for LM-80 report.

# Performance Curves

Figure 1: 2x6 Version Current vs. Forward Voltage,

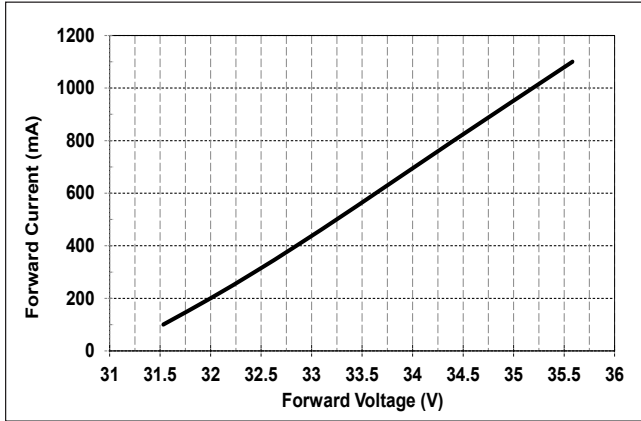


Figure 2: 2x6 Version Relative Flux vs. Current,  $T_c=25^\circ\text{C}$

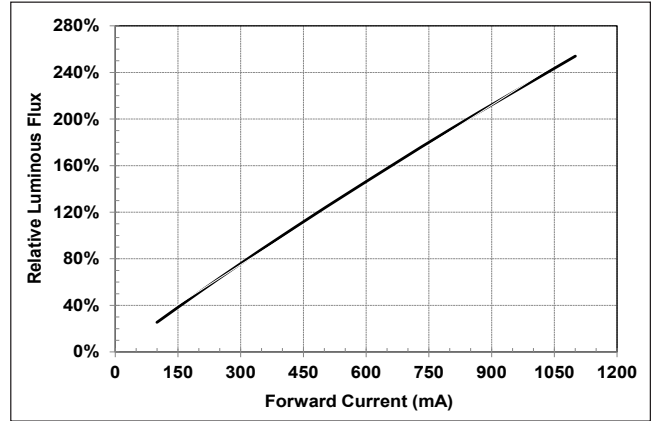


Figure 3: 2x8 Version Current vs. Forward Voltage,

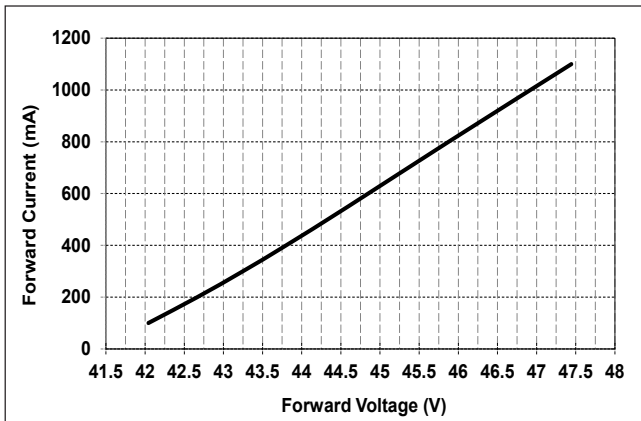


Figure 4: 2x8 Version Relative Flux vs. Current,  $T_c=25^\circ\text{C}$

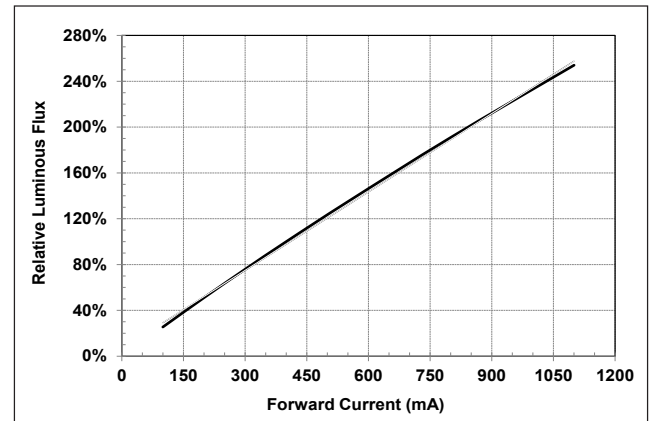


Figure 5: Relative Voltage vs. Case Temperature

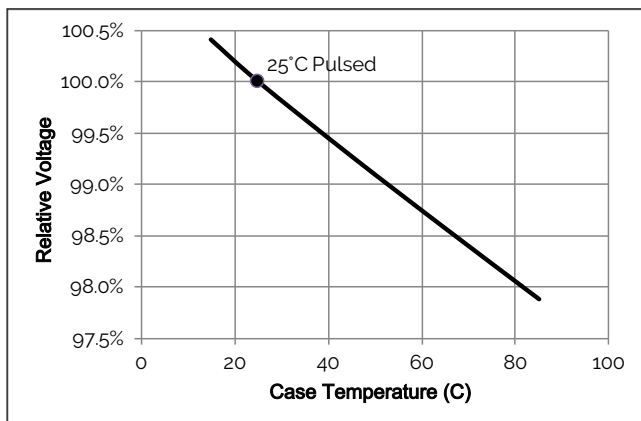
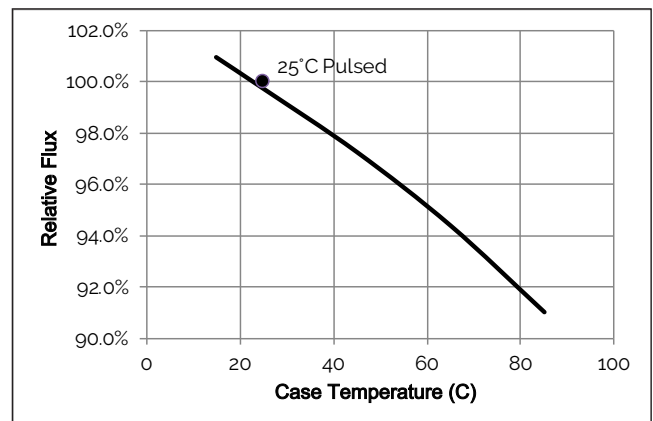
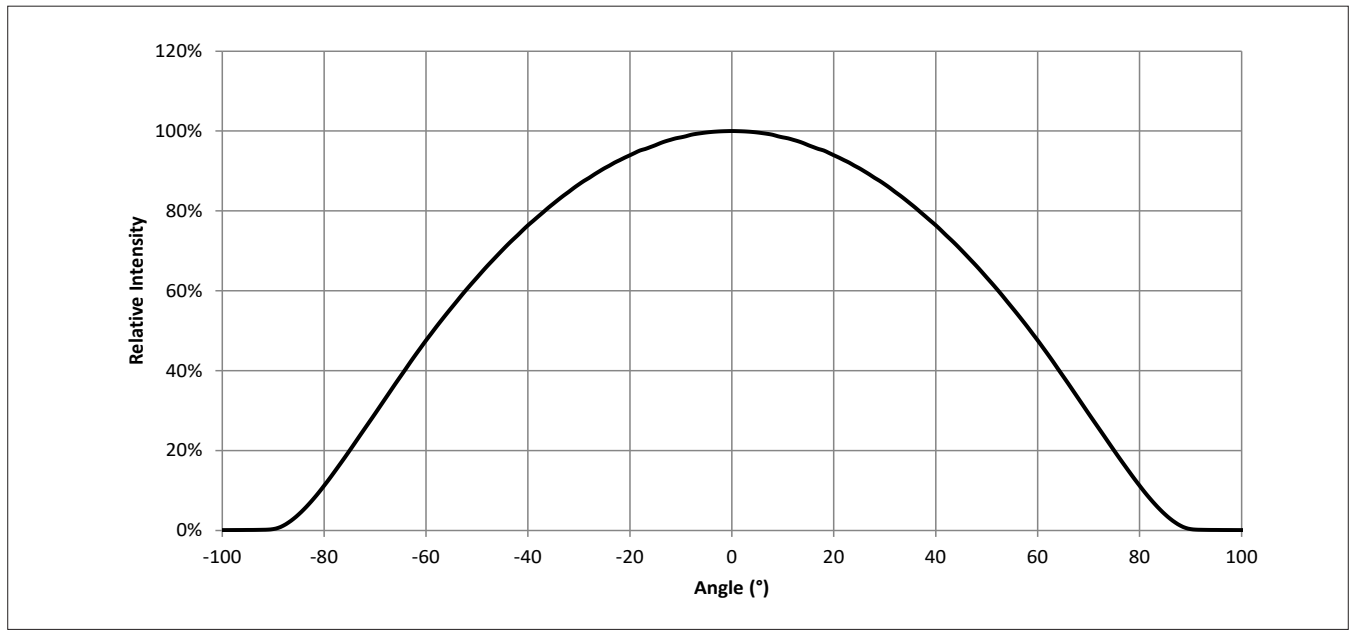


Figure 6: Relative Flux vs. Case Temperature



# Typical Radiation Pattern

**Figure 7: Typical Spatial Radiation Pattern**

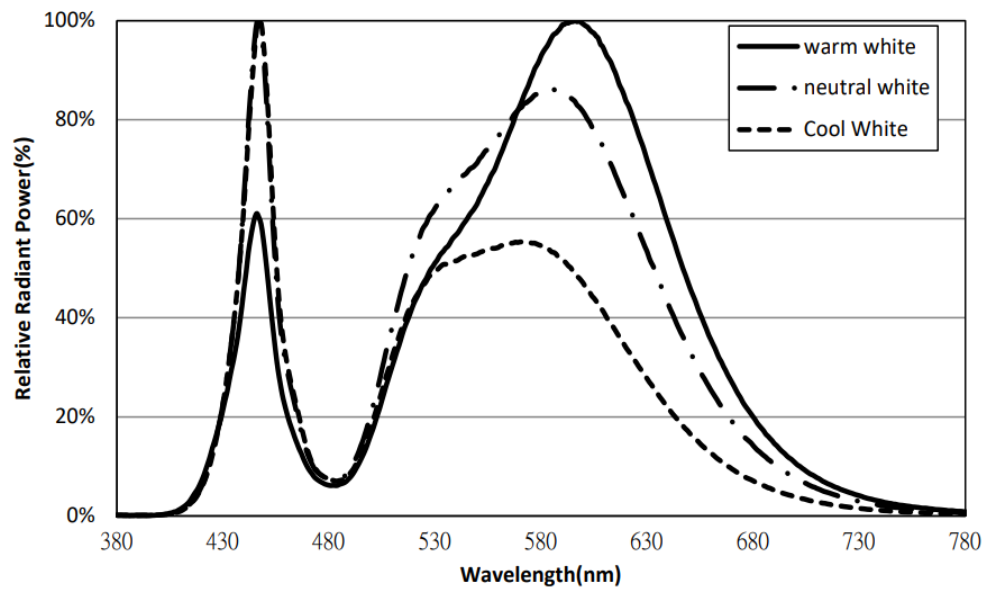


Notes for Figure 7:

1. Typical viewing angle is 120°.
2. The viewing angle is defined as the off axis angle from the centerline where  $I_v$  is  $\frac{1}{2}$  of the peak value.

# Typical Color Spectrum

Figure 8: Typical Color Spectra

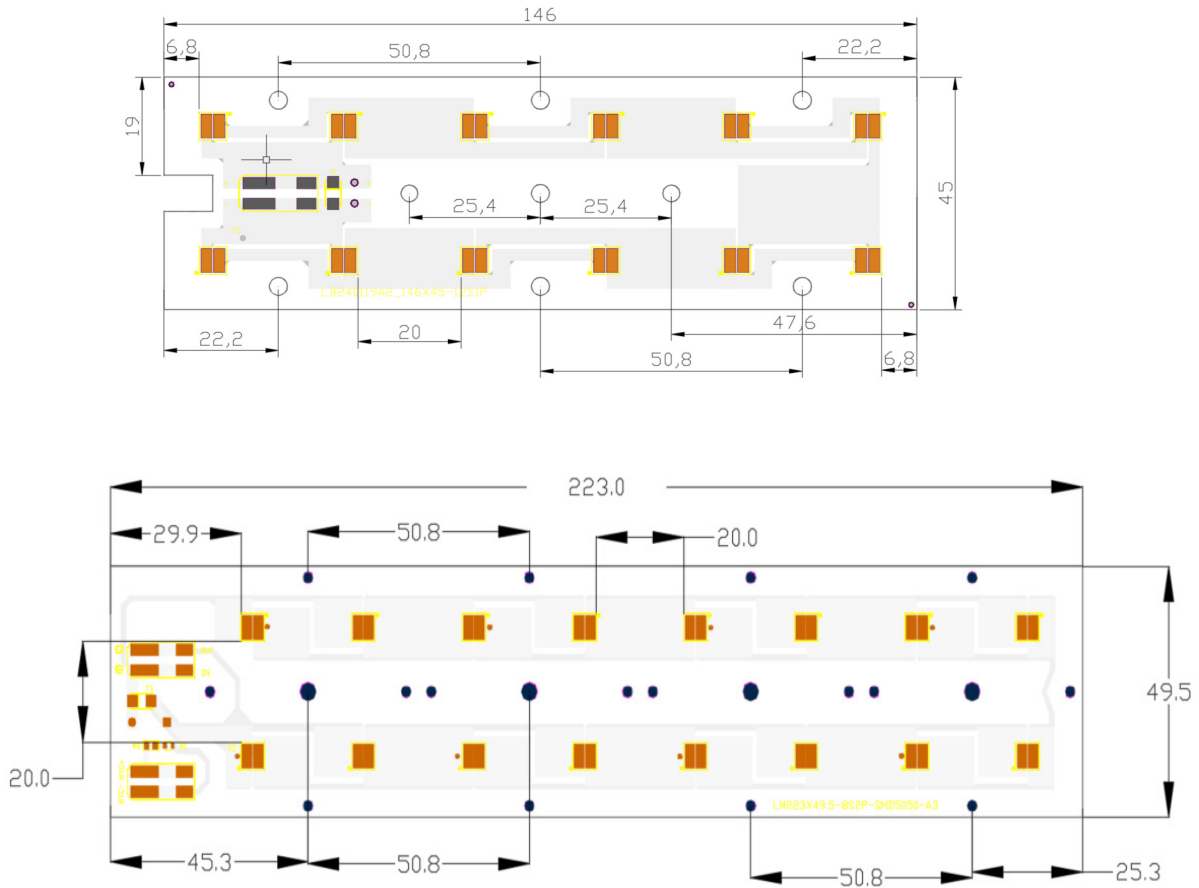


Note for Figure 8:

1. Color spectra measured at nominal current for  $T_c = 25^\circ\text{C}$

# Mechanical Dimensions and Handling Guide

**Figure 9: Drawing Overview for 2x6 and 2x8**



Notes for Figure 9:

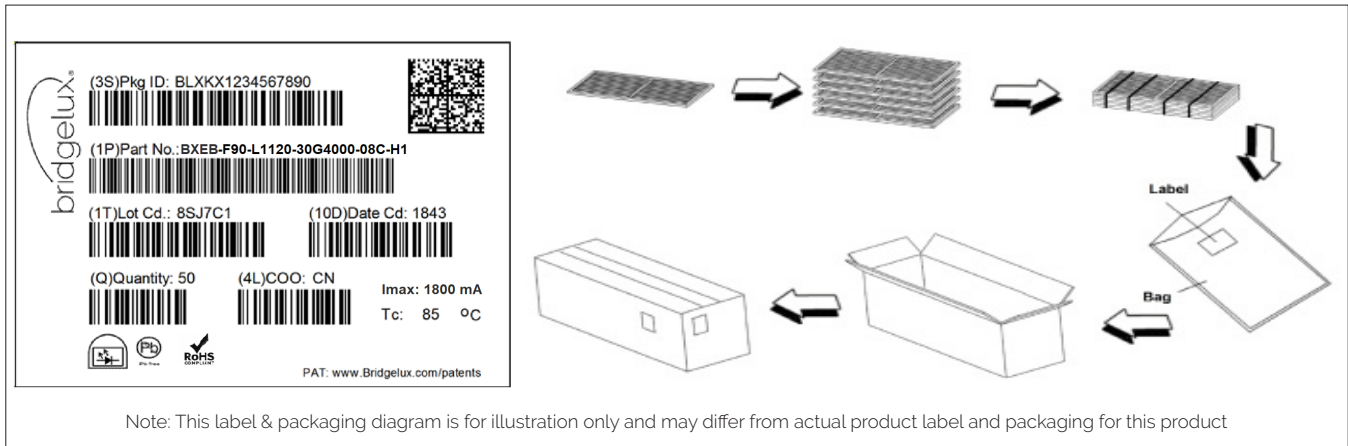
1. Solder pads are labeled "+" to denote positive polarity, and "-" to denote negative polarity.
2. Drawing dimensions are in millimeters.
3. Unless otherwise specified, tolerances are  $\pm 0.1$  mm.

**Table 4: Module Dimensions & Connector Wiring**

Parameter	2x6 and 2x8 modules
Linear length	146mm (2x6 module) and 223mm (2x8 module)
Linear width	45mm (2x6 module) and 49.5mm (2x8 module)
Overall thickness	6.1 mm
PCB thickness	1.6 mm
Input wire cross-section	18-24 AWG
Wire strip length	7-9 mm

# Packaging and Labeling

**Figure 10: EB Series Packaging and Labeling**



**Table 5: Packaging Structure**

Box Parameter	2x6 and 2x8 modules
Quantity	200
Dimension	60.0 cm x 19.4 cm x 16.9 cm

**Figure 11: Product Labeling**

Bridgelux EB Series modules contain a label on the front to help with product identification. In addition to the product identification markings, Bridgelux EB Series modules also contain markings for internal Bridgelux manufacturing use only. The image below shows which markings are for customer use and which ones are for Bridgelux internal use only. The Bridgelux internal manufacturing markings are subject to change without notice, however these will not impact the form, function or performance of the module.



2x8 Zhaga Module  
223mm 4000lm 400mA

Customer Use- 2D Barcode  
Scannable barcode provides product part number and other Bridgelux internal production information.

# Design Resources

## Application Notes

Bridgelux has developed a comprehensive set of application notes and design resources to assist customers in successfully designing with the EB Series product family. For a list of resources under development, visit [www.bridgelux.com](http://www.bridgelux.com).

## Optical Source Models

Optical source models and ray set files are available for all Bridgelux products. For a list of available formats, visit [www.bridgelux.com](http://www.bridgelux.com).

## 3D CAD Models

Three dimensional CAD models depicting the product outline of all Bridgelux EB Series LED linears are available in both IGES and STEP formats. Please contact your Bridgelux sales representative for assistance.

# Precautions

## CAUTION: CHEMICAL EXPOSURE HAZARD

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

## CAUTION: EYE SAFETY

Eye safety classification for the use of Bridgelux EB Series is in accordance with IEC/TR62778: Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires. EB Series linears are classified as Risk Group 1 (TBD) when operated at or below the maximum drive current. Please use appropriate precautions. It is important that employees working with LEDs are trained to use them safely.

## CAUTION: RISK OF BURN

Do not touch the EB Series linears during operation. Allow the linear to cool for a sufficient period of time before handling. The EB Series linears may reach elevated temperatures such that could burn skin when touched.

## CAUTION

### CONTACT WITH LIGHT EMITTING SURFACE (LES)

Avoid any contact with the LES. Do not touch the LES of the linear or apply stress to the LES (yellow phosphor resin area). Contact may cause damage to the linear.

Optics and reflectors must not be mounted in contact with the LES (yellow phosphor resin area).

Optical devices may be mounted on the top surface of the EB Series linear. Use the mechanical features of the linear housing, edges and/or mounting holes to locate and secure optical devices as needed.

# Disclaimers

## STANDARD TEST CONDITIONS

Unless otherwise stated, linear testing is performed at the nominal drive current.

## 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: Bridging Light and Life™

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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**Bridgelux EB Series 2x6 and 2x8 Zhaga Module Data Sheet DS3123 Rev. A (05/2026)**