



Bridgelux® F90 EB Series™ Cuttable

Product Data Sheet DS532

Lengths: 1120mm

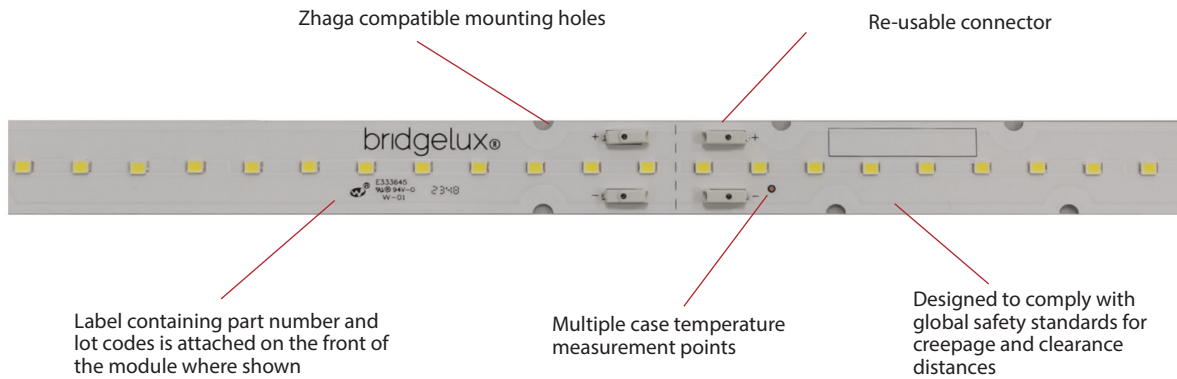
CRI: 90

CCTs: 2700K, 3000K, 3500K, 4000K, 5000K, 5700K, 6500K



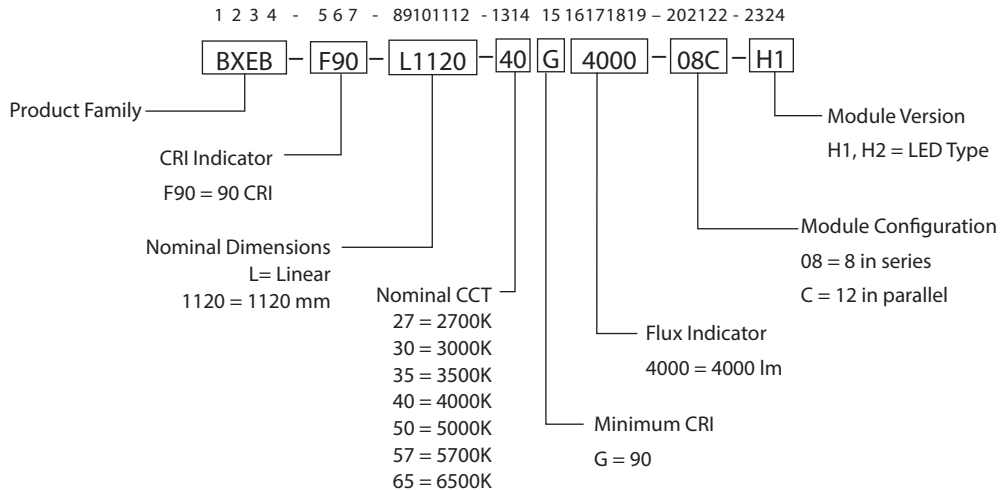
Product Feature Map

Bridgelux EB Series cuttable F90 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 for more information on the EB Series family of products.



Product Nomenclature

The part number designation for Bridgelux EB Series Cuttable F90 is explained as follows:



Product Selection Guide

Table 1: Selection Guide, Measurement Data ($T_c = 25^\circ\text{C}$)

Part Number	Nominal CCT ¹ (K)	CRI ²	Nominal Drive Current (mA)	Forward Voltage (V)	Typical Power (W)	Typical Pulsed Flux ^{3,4} (lm)	Typical Efficacy (lm/W)
BXEB-F90-L1120-27G4000-08C-H1	2700	90	956	23.7	22.7	3662	162
BXEB-F90-L1120-30G4000-08C-H1	3000					3837	169
BXEB-F90-L1120-35G4000-08C-H1	3500					3837	169
BXEB-F90-L1120-40G4000-08C-H1	4000					4011	177
BXEB-F90-L1120-50G4000-08C-H1	5000					4011	177
BXEB-F90-L1120-57G4000-08C-H1	5700					3924	173
BXEB-F90-L1120-65G4000-08C-H1	6500					3924	173
BXEB-F90-L1120-27G4000-08C-H2	2700	90	956	22.9	21.9	3790	173
BXEB-F90-L1120-30G4000-08C-H2	3000					3971	182
BXEB-F90-L1120-35G4000-08C-H2	3500					3971	182
BXEB-F90-L1120-40G4000-08C-H2	4000					4151	190
BXEB-F90-L1120-50G4000-08C-H2	5000					4151	190
BXEB-F90-L1120-57G4000-08C-H2	5700					4061	186
BXEB-F90-L1120-65G4000-08C-H2	6500					4061	186

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_c (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 $\pm 7\%$ tolerance on typical flux measurements

Performance at Commonly Used Drive Currents

EB series cuttable F90 modules are tested to the specifications shown using the nominal drive currents in Table 1. EB series cuttable F90 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 ¹ (mA)	Typical V_f (V)	Typical Power (W)	Typical Pulsed Flux ² (lm)	Typical Efficacy (lm/W)
BXEB-F90-L1120-27G4000-08C-H1	90	356	22.0	7.8	1430	183
		717	23.1	16.6	2918	176
		956	23.7	22.7	3662	162
		1496	25.0	37.4	5518	148
		1796	25.7	46.2	6496	141
BXEB-F90-L1120-30G4000-08C-H1 BXEB-F90-L1120-35G4000-08C-H1	90	356	22.0	7.8	1498	191
		717	23.1	16.6	3057	185
		956	23.7	22.7	3837	169
		1496	25.0	37.4	5781	155
		1796	25.7	46.2	6806	147
BXEB-F90-L1120-40G4000-08C-H1 BXEB-F90-L1120-50G4000-08C-H1	90	356	22.0	7.8	1566	200
		717	23.1	16.6	3196	193
		956	23.7	22.7	4011	177
		1496	25.0	37.4	6044	162
		1796	25.7	46.2	7115	154
BXEB-F90-L1120-57G4000-08C-H1 BXEB-F90-L1120-65G4000-08C-H1	90	356	22.0	7.8	1532	196
		717	23.1	16.6	3127	189
		956	23.7	22.7	3924	173
		1496	25.0	37.4	5913	158
		1796	25.7	46.2	6960	151

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 ¹ (mA)	Typical V_f (V)	Typical Power (W)	Typical Pulsed Flux ² (lm)	Typical Efficacy (lm/W)
BXEB-F90-L1120-27G4000-08C-H2	90	356	21.5	7.7	1438	188
		716	22.5	16.1	2913	181
		956	22.9	21.9	3790	173
		1496	23.9	35.7	5775	162
		1796	24.4	43.9	6893	157
BXEB-F90-L1120-30G4000-08C-H2 BXEB-F90-L1120-35G4000-08C-H2	90	356	21.5	7.7	1507	197
		716	22.5	16.1	3051	189
		956	22.9	21.9	3971	182
		1496	23.9	35.7	6050	169
		1796	24.4	43.9	7221	165
BXEB-F90-L1120-40G4000-08C-H2 BXEB-F90-L1120-50G4000-08C-H2	90	356	21.5	7.7	1575	206
		716	22.5	16.1	3190	198
		956	22.9	21.9	4151	190
		1496	23.9	35.7	6325	177
		1796	24.4	43.9	7549	172
BXEB-F90-L1120-57G4000-08C-H2 BXEB-F90-L1120-65G4000-08C-H2	90	356	21.5	7.7	1541	201
		716	22.5	16.1	3121	193
		956	22.9	21.9	4061	186
		1496	23.9	35.7	6188	173
		1796	24.4	43.9	7385	168

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 ² (T _c)	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-F90-L1120-xxG4000-08C-H1	BXEB-F90-L1120-xxG4000-08C-H2
Maximum Drive Current	1800mA	1800mA

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.

Table 4: Cuttable Board Length Options and Max Drive Current

Length of board in foot	Length of board in mm	Max Drive Current in mA	Voltage in V
0.3	93.3	150	24.4
0.6	186.7	300	24.4
0.9	280	450	24.4
1.2	373.3	600	24.4
1.5	466.7	750	24.4
1.8	560	900	24.4
2.1	653.3	1050	24.4
2.4	746.7	1200	24.4
2.8	840	1350	24.4
3.1	933.3	1500	24.4
3.4	1026.7	1650	24.4
3.7	1120	1800	24.4

Performance Curves

Figure 1: H1 Version Current vs. Forward Voltage, $T_c=25^\circ\text{C}$

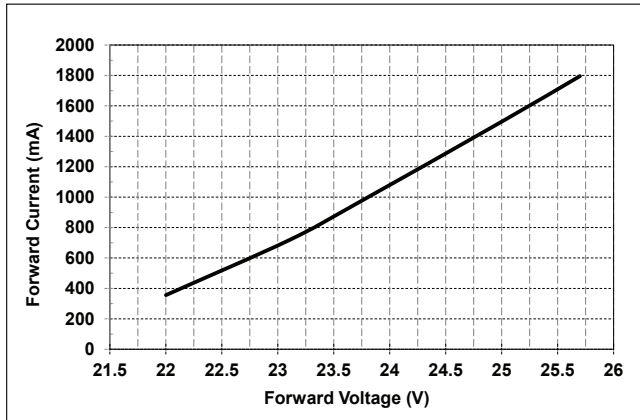


Figure 2: H1 Version Relative Flux vs. Current, $T_c=25^\circ\text{C}$

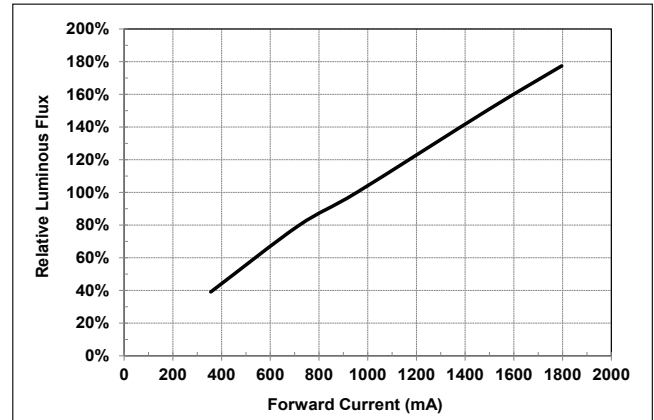


Figure 3: H2 Version Current vs. Forward Voltage, $T_c=25^\circ\text{C}$

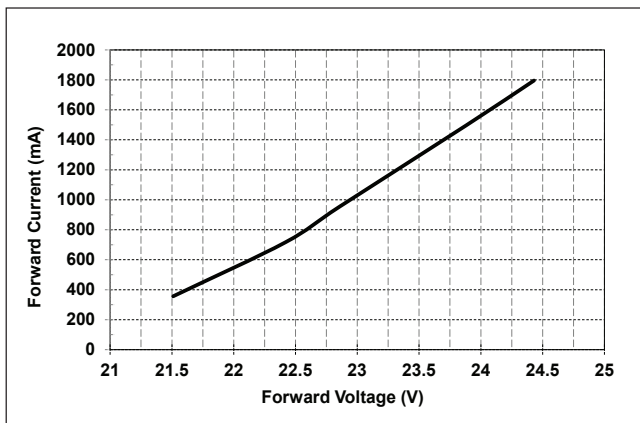


Figure 4: H2 Version Relative Flux vs. Current, $T_c=25^\circ\text{C}$

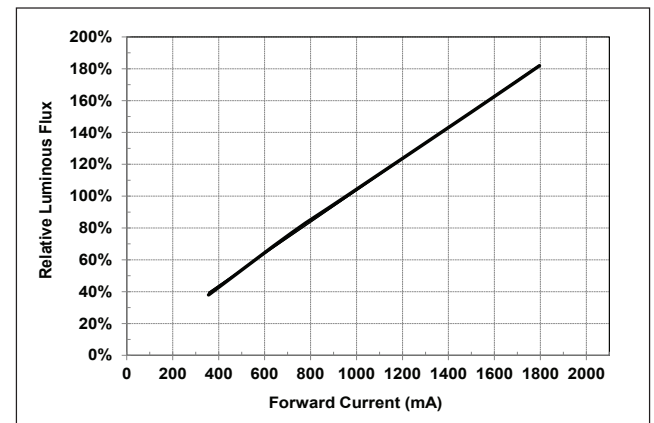


Figure 5: Relative Voltage vs. Case Temperature

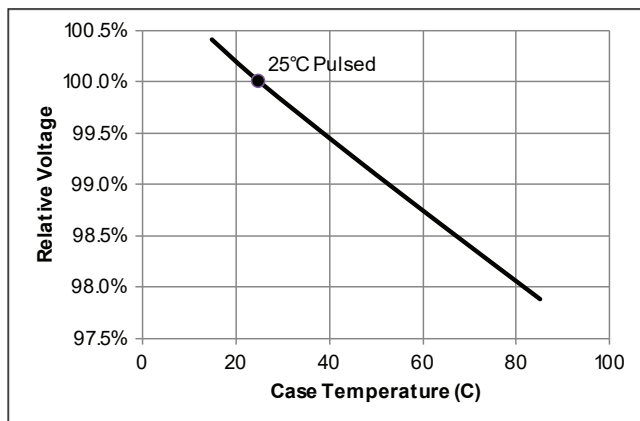
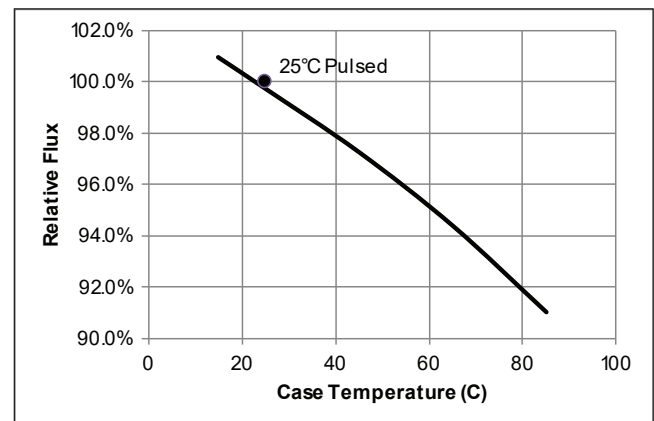
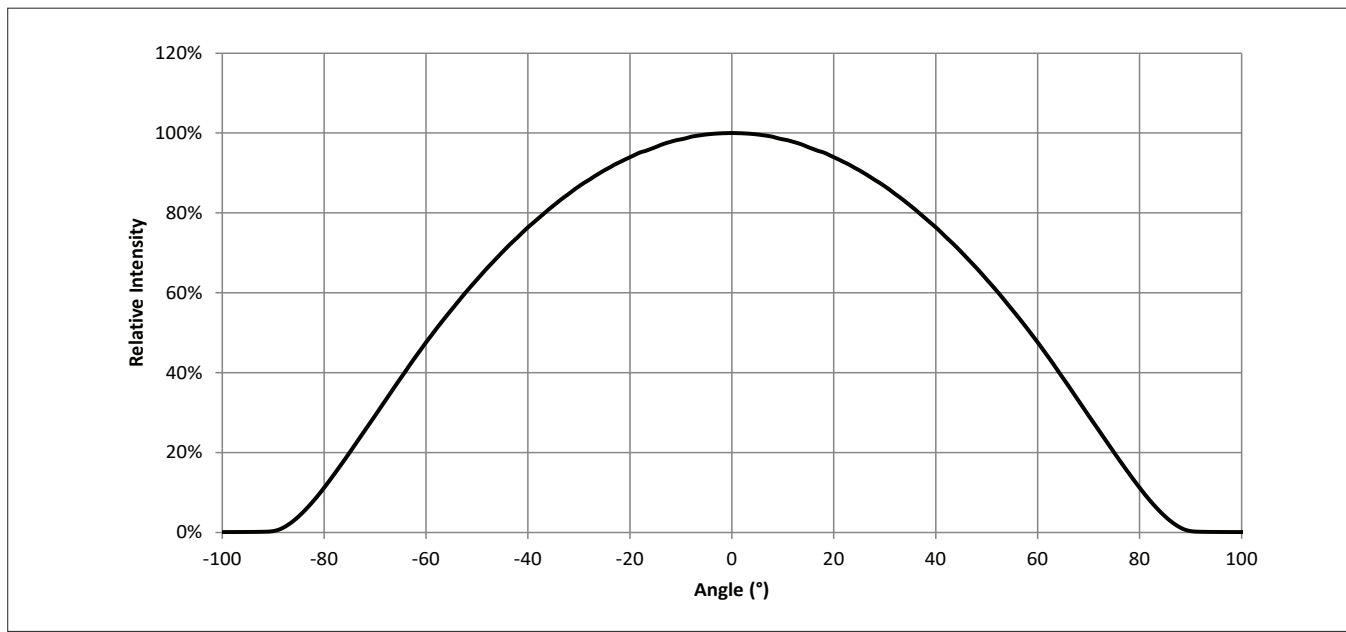


Figure 6: Relative Flux vs. Case Temperature



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: H1 Version Typical Color Spectra, 90 CRI

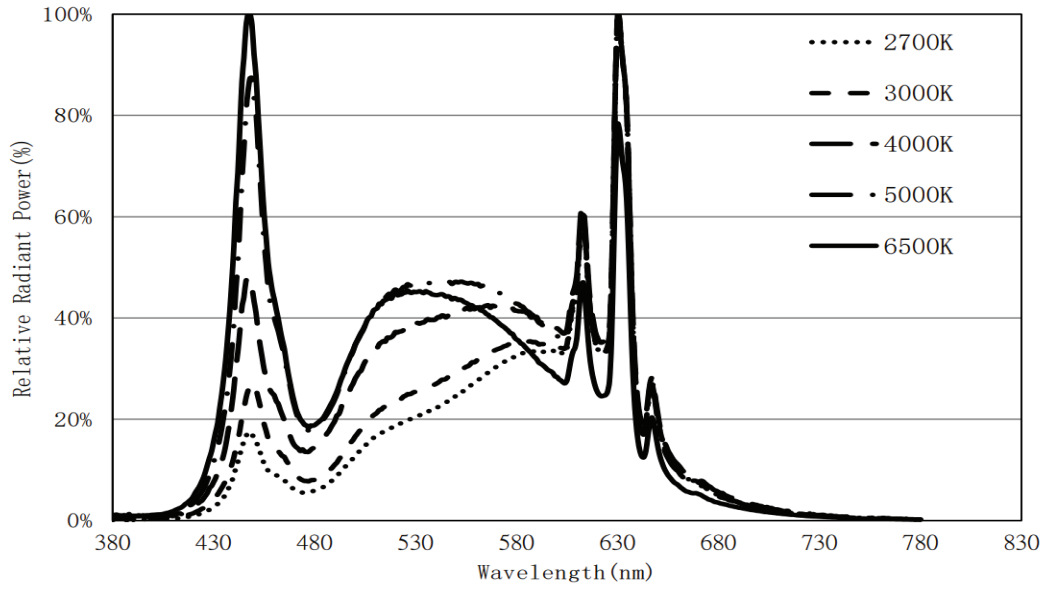
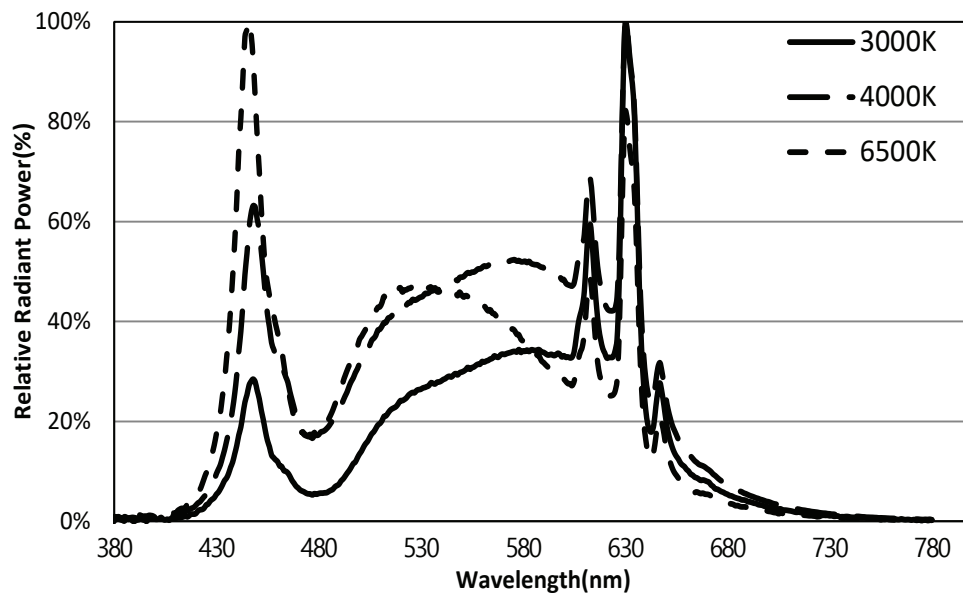


Figure 9: H2 Version Typical Color Spectra, 90 CRI

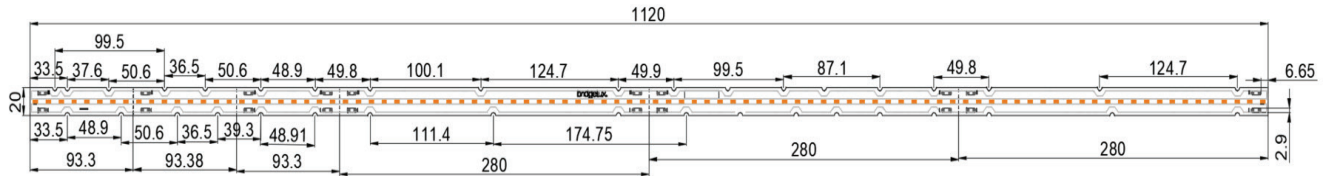


Note for Figures 8 & 9:

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

Mechanical Dimensions and Handling Guide

Figure 10: Drawing Overview for 1120mm



Notes for Figure 10:

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 ± 0.1 mm.

Table 5: Module Dimensions & Connector Wiring

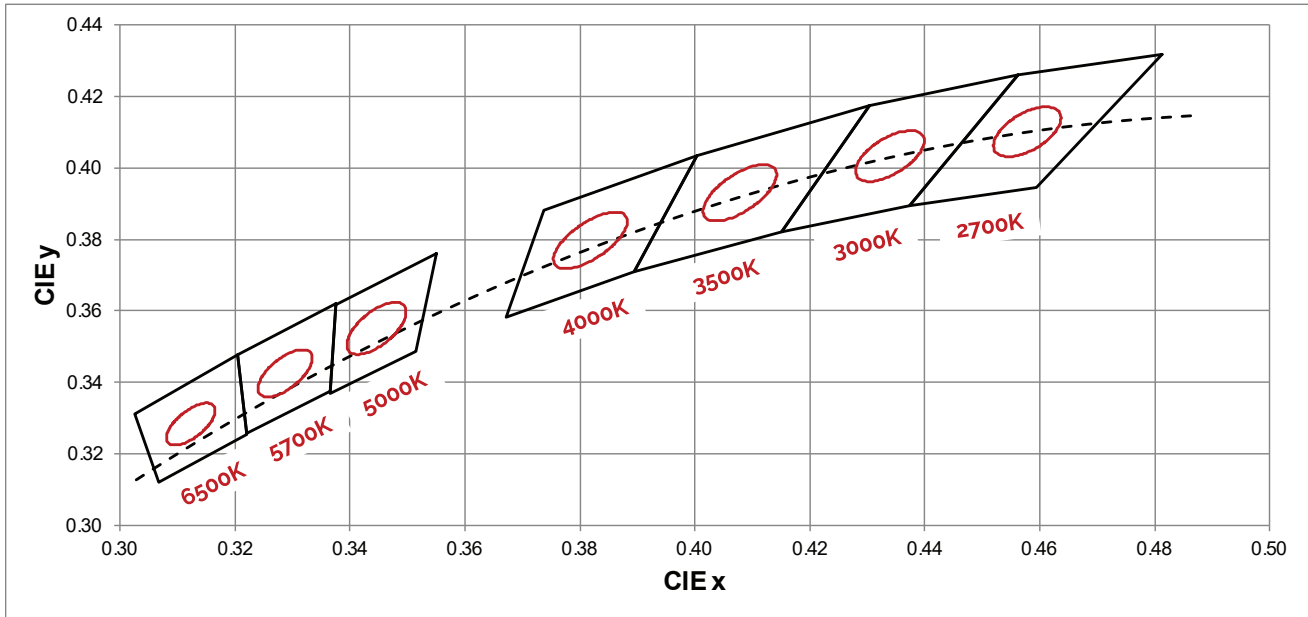
Parameter	BXEB-F90-L1120-xxG4000-08C-H1 BXEB-F90-L1120-xxG4000-08C-H2
Linear length	1120.0 mm
Linear width	20.0 mm
Overall thickness	6.1 mm
PCB thickness	1.6 mm
Input wire cross-section	18-24 AWG
Wire strip length	7-9 mm

Handling Guide

- * Please use antistatic gloves or other ESD protection methods when handling this cuttable board to prevent ESD damage or contamination of LEDs.
- * Customers should use proper tools, such as dremel rotary cutting tool, and not use hands when they separate this cuttable board. It is not allowed to bend PCB and touch LED.
- * Cutting pressure should be applied as close as possible to the separation line. Keep your fingers away from the LEDs as much as possible to avoid damage to the LEDs.
- * It is very important to follow above guidelines when separating the cuttable board to ensure that the product warranty is not voided.

Color Binning Information

Figure 11: 3 SDCM Color Bins in CIE 1931 xy Color Space



Note for Figure 11:

1. Quadrangular ANSI bins shown for reference only
2. Bridgelux maintains a tolerance of ± 0.007 on x and y color coordinates in the CIE 1931 color space

Table 6: Bin Coordinates and Associated Typical CCT

CCT	Color Consistency	CIE Center Point (x, y)	Corresponding CCT Range
2700K	3 SDCM	(0.458, 0.410)	2651K - 2794K
3000K	3 SDCM	(0.434, 0.403)	2968K - 3136K
3500K	3 SDCM	(0.407, 0.392)	3369K - 3586K
4000K	3 SDCM	(0.382, 0.380)	3851K - 4130K
5000K	3 SDCM	(0.3445, 0.355)	4835K - 5215K
5700K	3 SDCM	(0.329, 0.342)	5490K - 5820K
6500K	3 SDCM	(0.312, 0.328)	6250K - 6745K

Notes for Table 6:

1. Color binning at solder point temperature T_{sp} of SMDs at 60°C.
2. Bridgelux maintains a tolerance of ± 0.007 on x and y color coordinates in the CIE 1931 color space

Packaging and Labeling

Figure 12: EB Series Packaging and Labeling

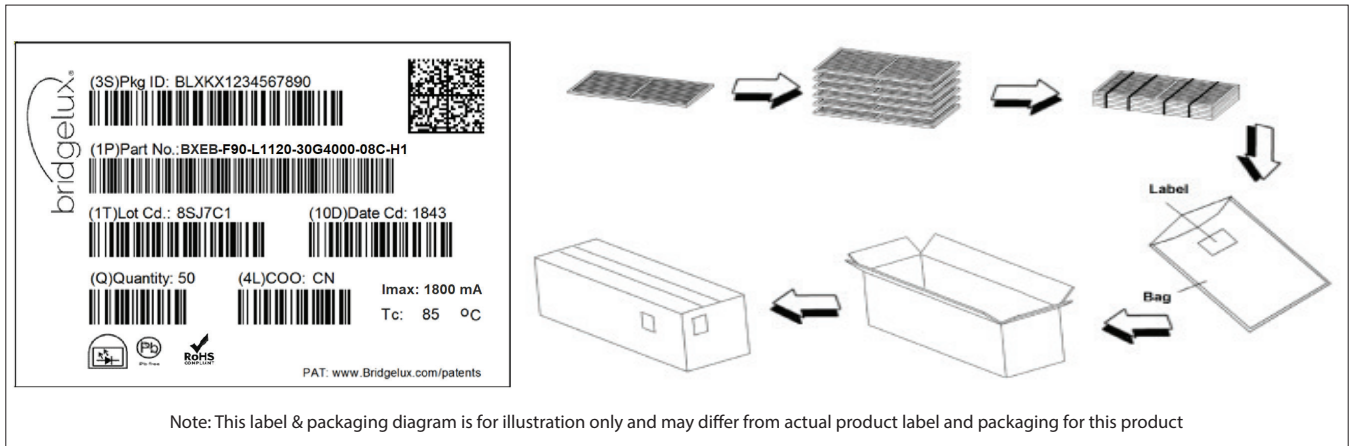


Table 7: Packaging Structure

Box Parameter	L1120 modules
Quantity	100
Dimension	115.9 cm x 19.4 cm x 16.9 cm

Figure 13: 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.



EB Series Cuttable F90
4ft 4000lm 956mA

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.

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.

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

The Bridgelux EB series emits visible light, that, under certain circumstances, could be harmful to the eye. Proper safeguards must be used.

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.

For more information about the company, please visit

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Bridgelux EB Series Cutable F90 Data Sheet DS532 Rev. A (01/2024)