Bridgelux® Vesta® Series Thrive Triple CCT EB with SMD3838

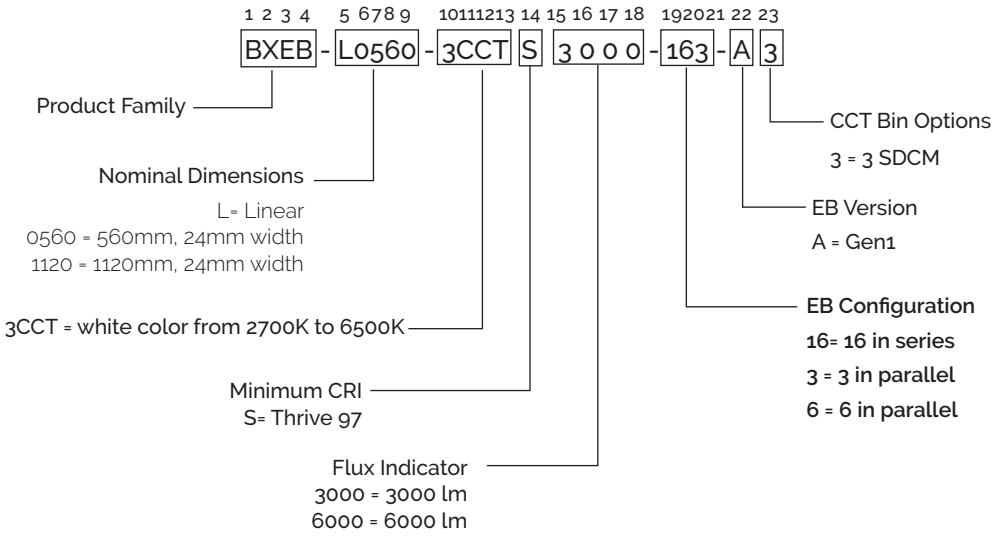
Product Data Sheet DS584

Product Feature Map

Bridgelux Vesta Series Thrive 97 Triple CCT EB are fully engineered devices that provide consistent thermal and optical performance on an engineered mechanical platform. The linear EB products incorporate several features to simplify design integration and assembly. Please visit www.bridgelux.com for more information on the Vesta Series family of products.

Product Nomenclature

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



Pb free RoHS

Product Selection Guide

The following product configurations are available:

Table 1: Selection Guide, White Pulsed Measurement Data (T_j=T_c=25°C)

Part Number	Nominal CCT[1] (K)	CRI[2]	Nominal If Total (mA)	Nominal Drive Current Per Channel (mA)				Forward Voltage[3] (V)	Typical Power (W)	Typical Pulsed Flux[3, 4, 5] (lm)	Typical Efficacy (lm/W)
				C1	C2	C3	C3				
BXEB-L0560-3CCTS 3000-163-A3	2700	97	450	212	212	13	13	46	21	2435	116
	3000			161	235	27	27	46	21	2529	121
	3500			118	239	46	46	46	21	2616	126
	4000			79	231	70	70	46	21	2696	130
	5000			49	173	114	114	46	21	2778	136
	5700			49	123	139	139	45	20	2792	137
	6500			51	68	166	166	46	21	2791	136
BXEB-L1120-3CCTS 6000-166-A3	2700	97	900	425	425	25	25	46	42	4870	116
	3000			322	470	54	54	46	42	5058	121
	3500			236	479	93	93	46	41	5232	126
	4000			158	462	140	140	46	41	5391	130
	5000			98	345	228	228	46	41	5556	136
	5700			98	247	277	277	45	41	5585	137
	6500			102	135	332	332	46	41	5582	136

Notes for Table 1:
1. Nominal CCT as defined by ANSI C78.377-2011.
2. Listed CRIs are minimum values and include test tolerance.
3. Products tested under pulsed condition (10ms pulse width) at nominal drive current where T_j (junction temperature) = T_c (case temperature) = 25°C.
4. Typical performance values are provided as a reference only and are not a guarantee of performance.
5. Bridgelux maintains a ±7.5% tolerance on flux measurements
6. C1, C2, and C3 refer to the three different CCTs (chips) used in the Triple CCT SMD3838.

Product Selection Guide

The following product configurations are available:

Table 2: Selection Guide, Triple CCT Pulsed Measurement Data (T_j=T_c=25˚C)

Part Number	Color	Nominal Drive Current (mA)	Forward Voltage[3] (V)			Typical Power (W)	Typical Pulsed Flux[3,4] (lm)	Typical Efficacy (lm/W)
			Min	Typical	Max			
BXEB-L0560-3CCTS3000-163-A3	C1	180	44.5	46.7	53	8.4	827	98
	C2	180	44.5	46.7	53	8.4	1087	129
	C3	180	44.5	46.7	53	8.4	1143	136
BXEB-L1120-3CCTS6000-166-A3	C1	360	44.5	46.7	53	16.8	1654	98
	C2	360	44.5	46.7	53	16.8	2174	129
	C3	360	44.5	46.7	53	16.8	2286	136

Notes for Table 2:
1. C1, C2, and C3 refer to the three different CCTs (chips) used in the Triple CCT SMD3838.
2. Products tested under pulsed condition (10ms pulse width) at nominal drive current where T_j (junction temperature) = T_c (case temperature) = 25˚C.
3. Typical performance values are provided as a reference only and are not a guarantee of performance.
4. Bridgelux maintains a ±7.5% tolerance on flux measurements

Absolute Maximum Ratings

Table 3: Maximum Ratings

Parameter	Maximum Rating					
Storage Temperature	-40˚C to +85˚C					
Operating Case Temperature (T_c)	85˚C					
Soldering Temperature	350˚C or lower for a maximum of 5 seconds					
	BXEB-L0560-3CCTS3000-163-A3			BXEB-L1120-3CCTS6000-166-A3		
	C1	C2	C3	C1	C2	C3
Maximum Drive Current Per Color	480mA	480mA	480mA	960mA	960mA	960mA

Table 4: Tunable White Ratio

CCT / Color	2700K	3000K	3500K	4000K	5000K	5700K	6500K
C1	47.17%	35.82%	26.22%	17.58%	10.90%	10.90%	11.28%
C2	47.17%	52.24%	53.18%	51.37%	38.35%	27.44%	15.04%
C3	2.83%	5.97%	10.30%	15.53%	25.38%	30.83%	36.84%
C3	2.83%	5.97%	10.30%	15.53%	25.38%	30.83%	36.84%

Performance Curves

Figure 1: Relative Current Ratio vs. CCT at CRI 97 (T_c = 25˚C)

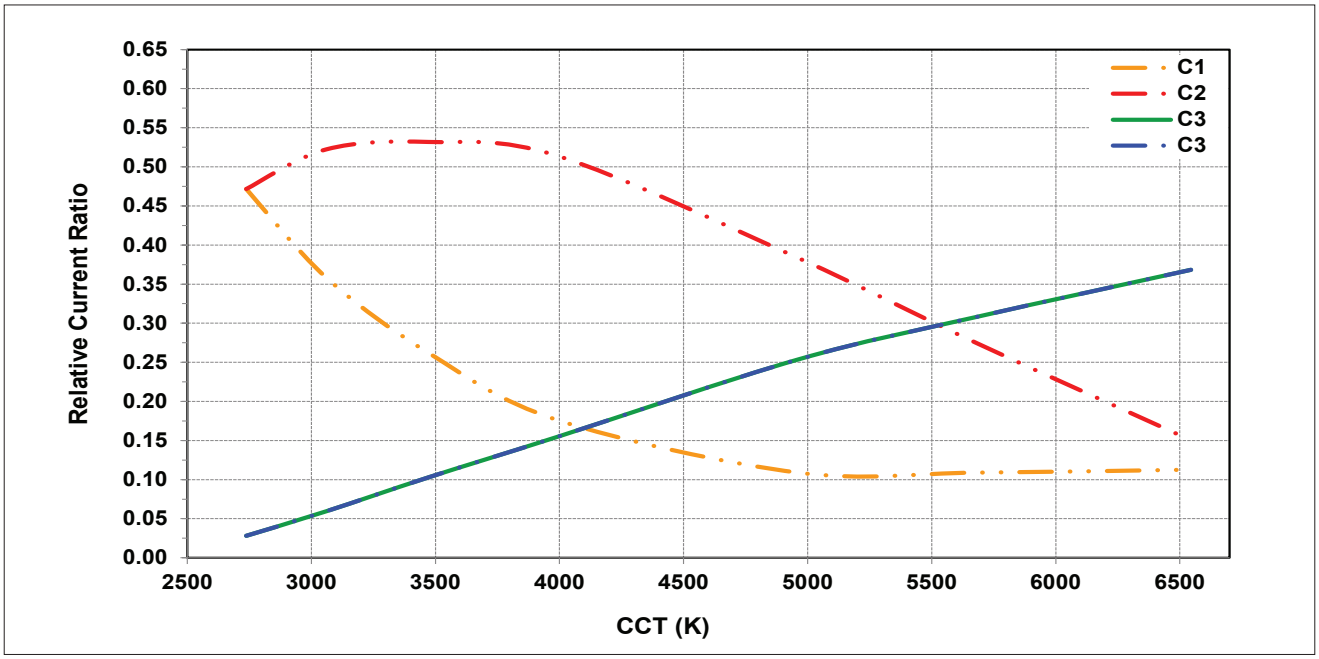
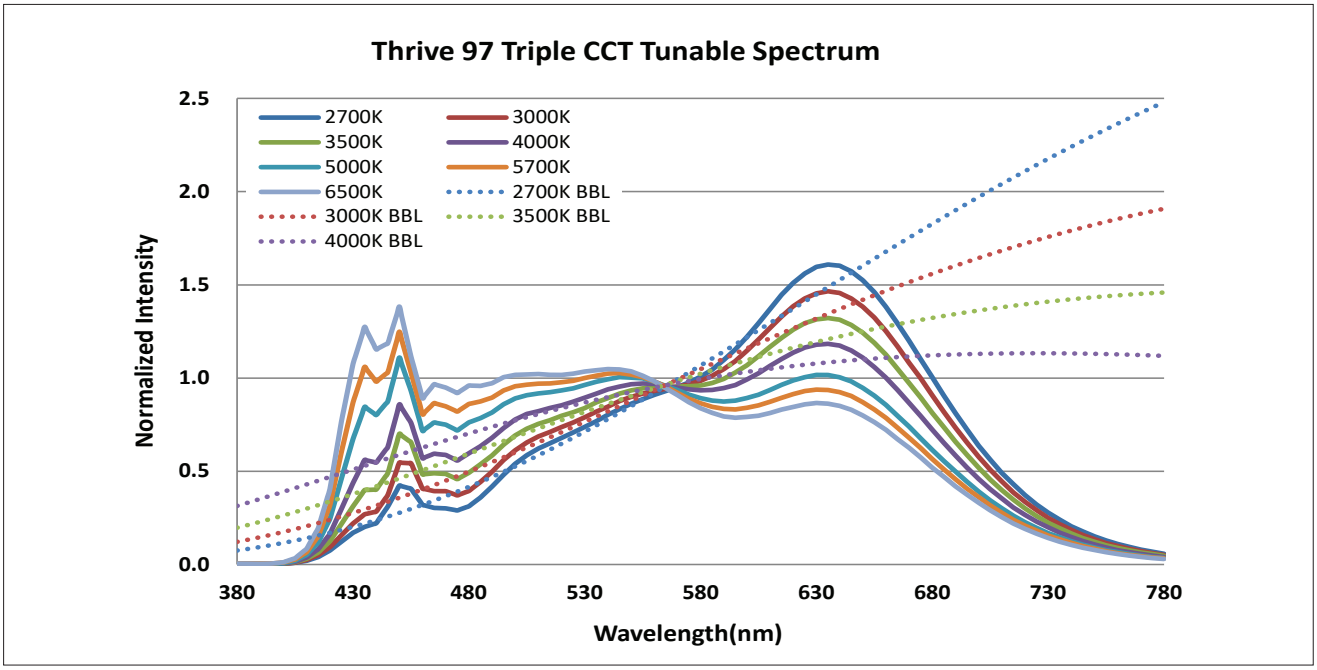


Figure 2: Typical Color Spectrum (White CCT, at Tc = 55˚C)



Note for Figure 2:

1. Color spectra measured at nominal current for Tc = 55˚C.

Typical Color Spectrum

Figure 3: Typical Relative Luminous Flux vs. Solder Point Temperature

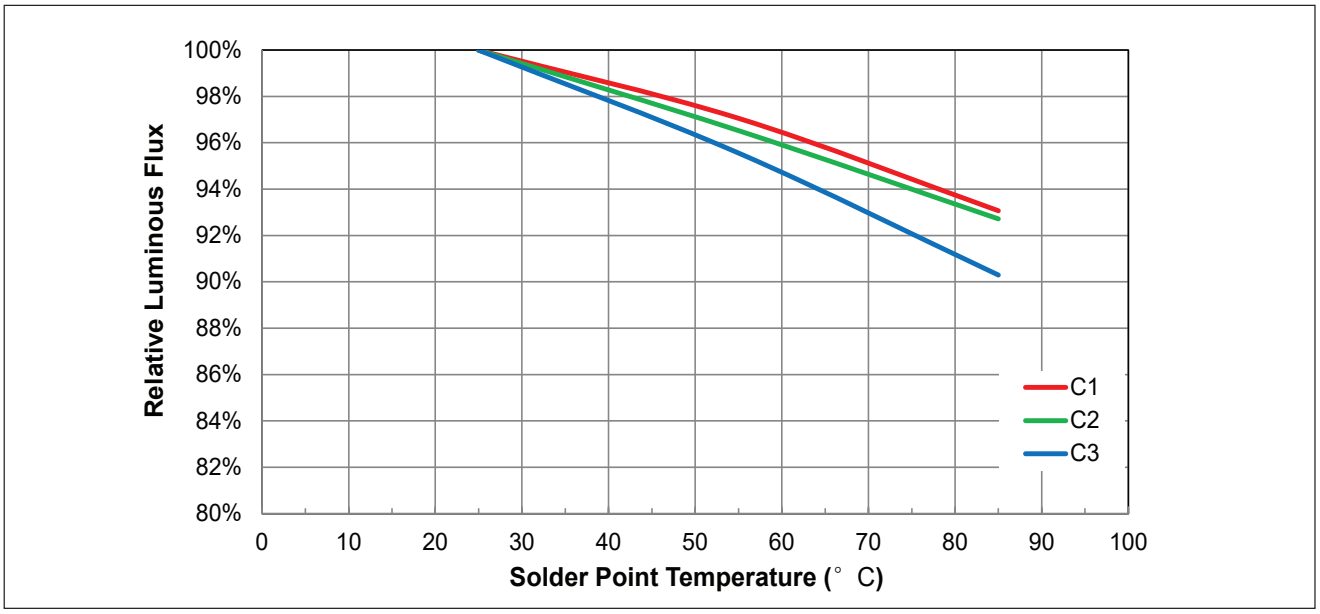
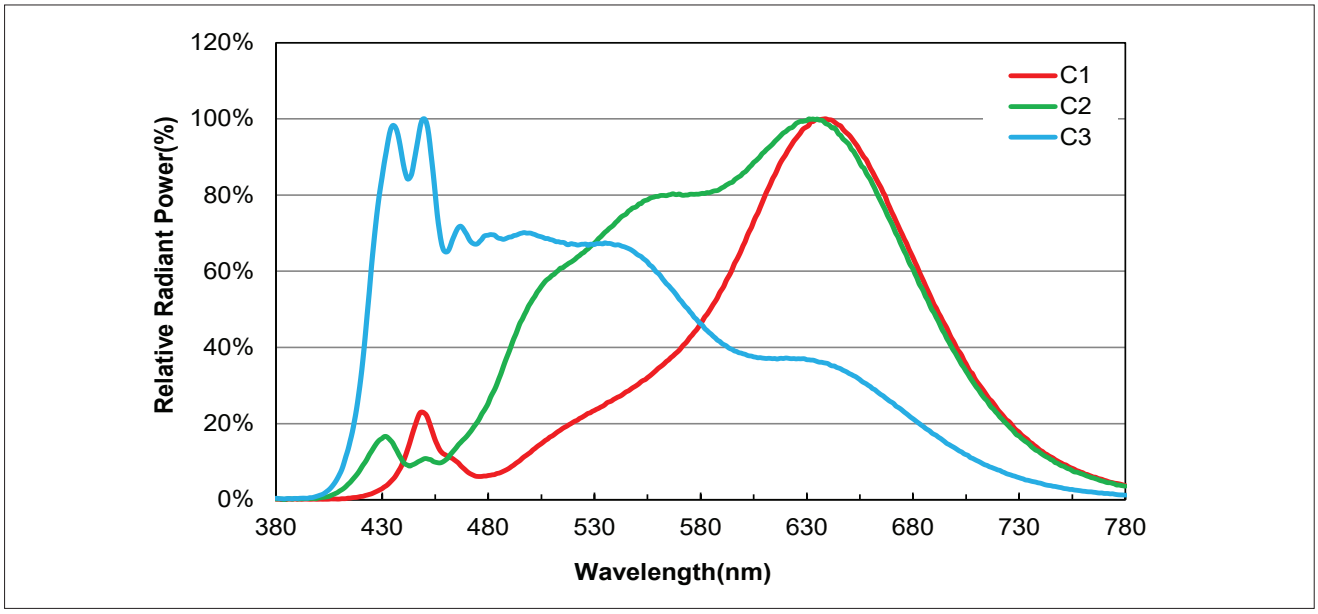


Figure 4: Typical Color Spectrum

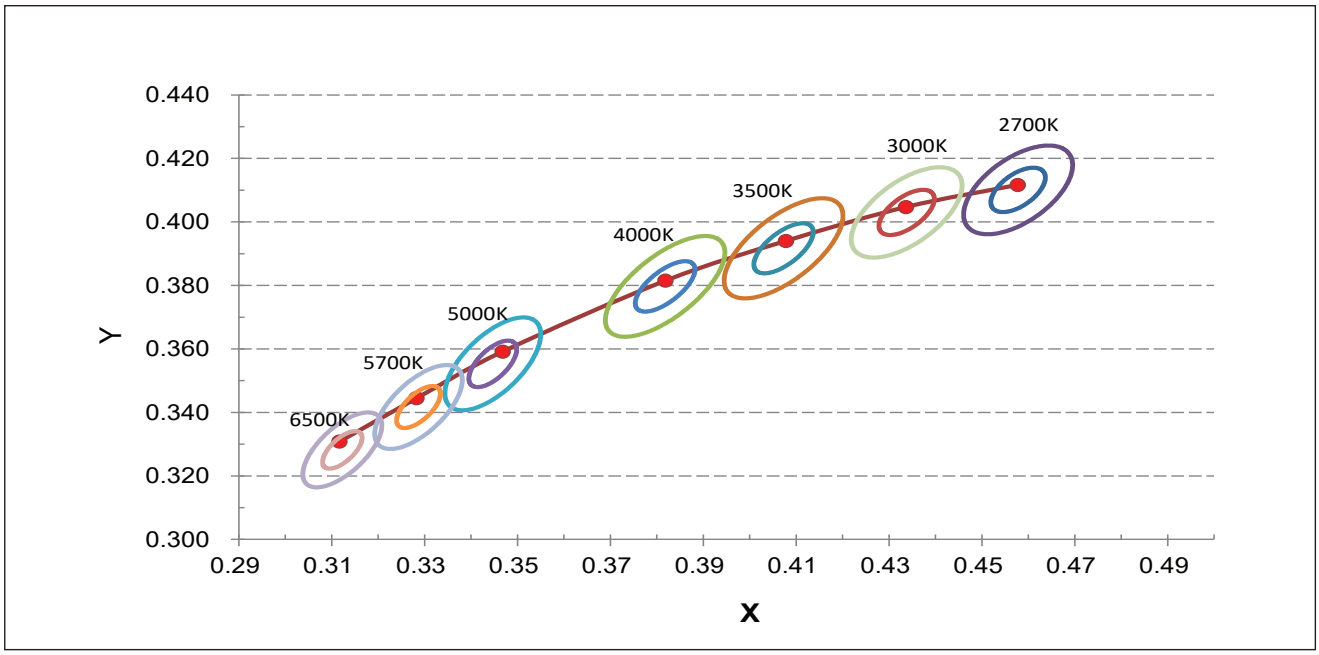


Note for Figure 4:

1. Color spectra measured at nominal current for Tc = 25°C.

Performance Curves

Figure 5: Chromaticity Coordinate Group (Color Targeted at T_c = 55˚C)



Product Bin Definitions

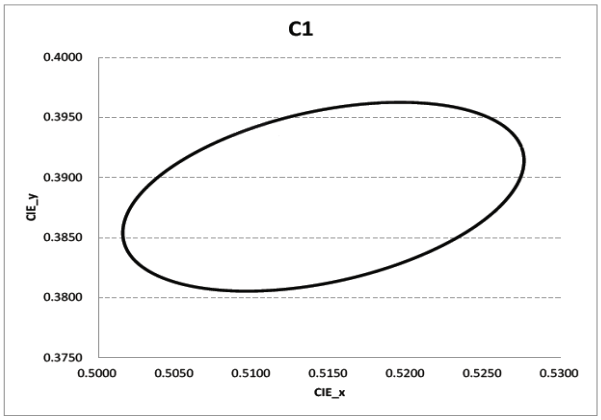
Table 5: MacAdam Ellipse Color Bin Definitions

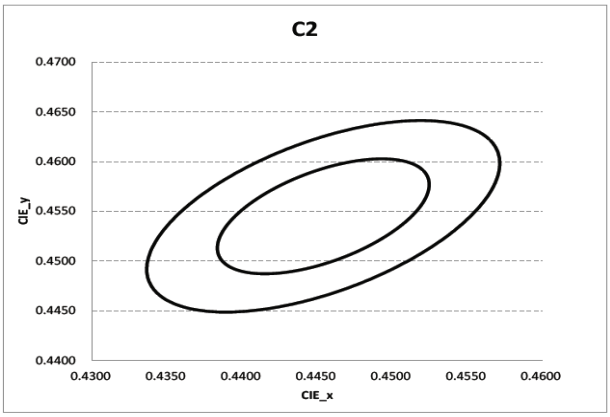
Color	Color Space	Center Point		Major Axis	Minor Axis	Ellipse Rotation Angle	Color Bin
		X	Y				
C1	5 SDCM	0.5146	0.3884	0.0135	0.0070	53.70	5
C2	3 SDCM	0.4454	0.4545	0.0081	0.0042	35	3
	6 SDCM	0.4454	0.4545	0.0162	0.0084	35	6
C3	3 SDCM	0.2747	0.3091	0.0162	0.0084	70	3
	6 SDCM	0.2747	0.3091	0.0162	0.0084	70	6

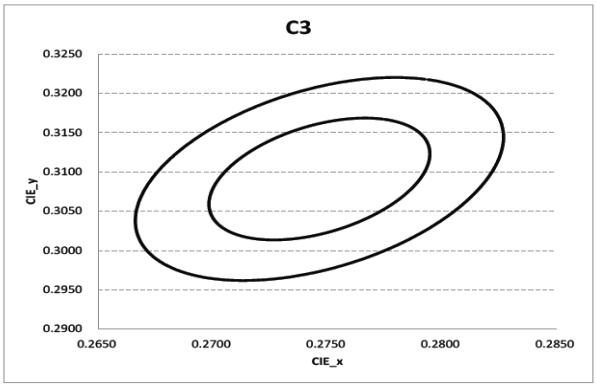
Notes for Table 5:

1. Color binning at T_c = 25˚C unless otherwise specified
2. Bridgelux maintains a tolerance of ± 0.007 on x and y color coordinates.

Figure 6: Chromaticity Coordinate Group (Color Targeted at T_c=25˚C)







Mechanical Dimensions

Figure 7: Drawing Overview for 560mm EB

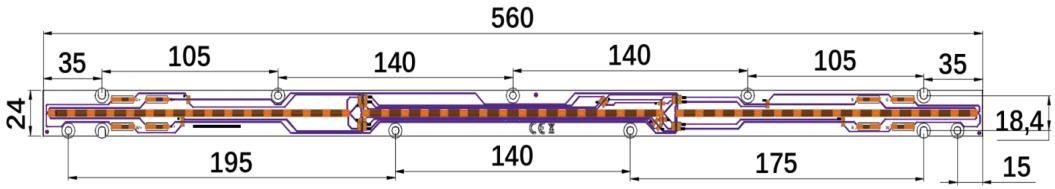
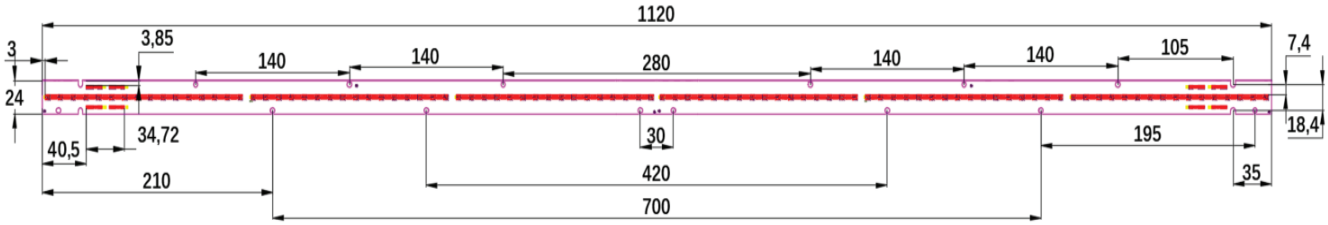


Figure 8: Drawing Overview for 1120mm EB



Notes for Figures 7 & 8:

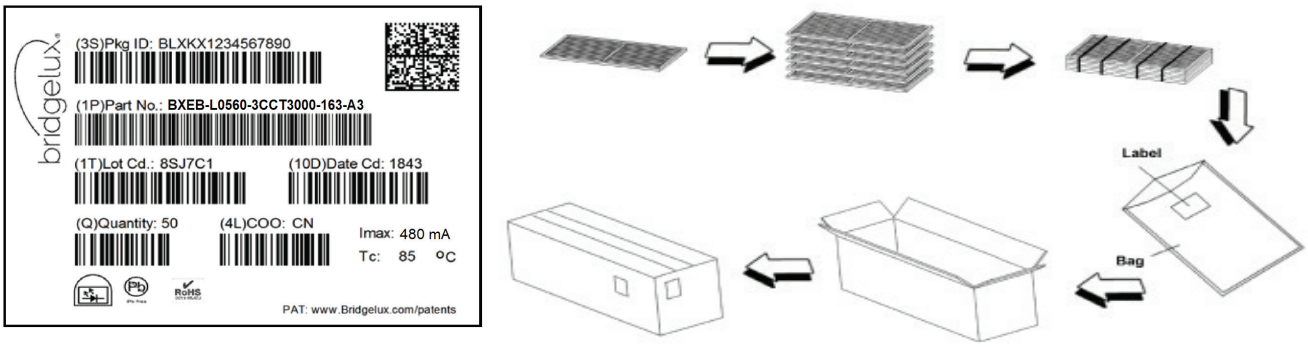
1. Connectors are labeled "+" to denote positive polarity, and "-" to denote negative polarity.
2. Drawing dimensions are in millimeters.

Table 6: Module Dimensions & Connector Wiring

Parameter	BXEB-L0560-3CCTS3000-163-A3	BXEB-L1120-3CCTS6000-166-A3
Linear length	560 mm	1120 mm
Linear width	24 mm	24 mm
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 9: EB Series Packaging and Labeling



Note: This label & packaging diagram is for illustration only and may differ from actual product label and packaging for this product

Table 7: Packaging Structure

Box Parameter	L0560 modules	L1120 modules
Quantity	100	100
Dimension	65.0 cm x 19.4 cm x 16.9 cm	120.8 cm x 19.4 cm x 16.9 cm

Figure 10: Product Labeling

Bridgelux Vesta Series Thrive 97 Triple CCT EB modules contain a label on the front to help with product identification. In addition to the product identification markings, Bridgelux Vesta Series Triple CCT EB 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.

Design Resources

Application Notes

Vesta Series Triple CCT EB are intended for use in dry, indoor applications. Bridgelux has developed a comprehensive set of application notes and design resources to assist customers in successfully designing with the Vesta Series product family of Triple CCT EB products. 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 Vesta Series Triple CCT EB are available in both IGS and STEP formats. Please contact your Bridgelux sales representative for assistance.

LM80

Please contact your Bridgelux sales representative for more information.

Precautions

CAUTION: CHEMICAL EXPOSURE HAZARD

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

CAUTION: EYE SAFETY

The Bridgelux Vesta series Triple CCT EB 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 Vesta Series Triple CCT EB during operation. Allow the Triple CCT EB to cool for a sufficient period of time before handling. The Vesta Series Triple CCT EB 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 Triple CCT EB or apply stress to the LES (yellow phosphor resin area). Contact may cause damage to the Triple CCT EB.

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 Vesta Series Triple CCT EB. Use the mechanical features of the Triple CCT EB housing, edges and/or mounting holes to locate and secure optical devices as needed.

Disclaimers

STANDARD TEST CONDITIONS

Unless otherwise stated, Triple CCT EB 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
bridgelux.com
twitter.com/Bridgelux
facebook.com/Bridgelux
youtube.com/user/Bridgelux
linkedin.com/company/bridgelux
WeChat ID: BridgeluxInChina

46410 Fremont Blvd
Fremont, CA 94538 USA
Tel (925) 583-8400
www.bridgelux.com

Bridgelux Vesta Series Thrive Triple CCT EB with SMD3838 Product Data Sheet DS584 Rev. A (11/2024)