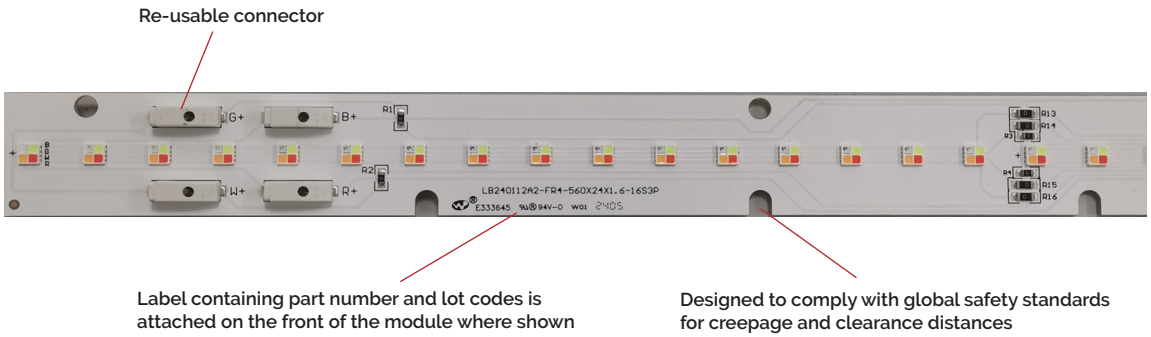
Bridgelux® Vesta® Series RGBW EB
(Mounting Holes & BLX Driver Compatible)

Product Data Sheet DS3109

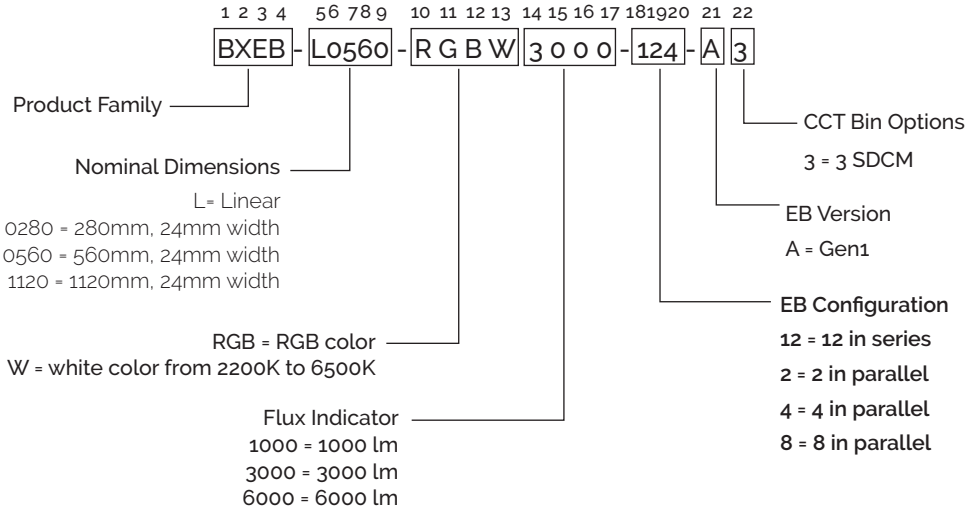
Product Feature Map

Bridgelux Vesta Series RGBW 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:



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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 Drive Current Per Channel (mA)				Forward Voltage[3] (V)				Typical Pulsed Flux[3, 4, 5] (lm)	Typical Power (W)	Typical Efficacy (lm/W)
			White	Red	Green	Blue	White	Red	Green	Blue			
BXEB-L0280-RGBW 1000-122-A3	2200	95	138	139	23	1	33	33	31	29	1231	10	125
	2700		151	105	38	7	33	32	32	30	1384	10	142
	3000		151	91	47	12	33	32	32	30	1441	10	148
	3500		151	75	56	18	33	32	32	31	1500	10	154
	4000		142	66	67	25	33	32	32	31	1532	10	158
	5000		128	53	82	38	33	32	32	31	1554	10	161
	5700		115	53	88	45	33	32	31	31	1535	10	160
	6500		105	49	94	53	33	32	32	31	1532	10	159
BXEB-L0560-RGBW 3000-124-A3	2200	95	275	277	46	2	33	33	31	29	2462	20	125
	2700		302	209	75	14	33	32	32	30	2767	20	142
	3000		302	182	93	23	33	32	32	30	2881	20	148
	3500		302	150	112	36	33	32	32	31	2999	19	154
	4000		284	132	134	50	33	32	32	31	3063	19	158
	5000		255	106	163	76	33	32	32	31	3108	19	161
	5700		230	105	175	90	33	32	31	31	3069	19	160
	6500		210	97	187	106	33	32	32	31	3063	19	159
BXEB-L1120-RGBW 6000-128-A3	2200	95	550	554	92	4	33	33	31	29	4923	39	126
	2700		605	419	149	28	33	32	31	30	5533	39	142
	3000		605	365	185	46	33	32	31	30	5761	39	149
	3500		605	301	223	71	33	32	32	30	5997	39	155
	4000		568	264	268	99	33	32	32	31	6126	39	159
	5000		510	212	325	153	32	32	32	31	6216	38	162
	5700		460	209	350	180	32	32	32	31	6139	38	160
	6500		420	194	375	211	32	31	32	31	6126	38	160

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

Product Selection Guide

The following product configurations are available:

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

Part Number	Color	Nominal Drive Current (mA)	Forward Voltage[3] (V)			Typical Pulsed Flux[3,4,5] (lm)	Dominant Wavelength (nm)
			Min	Typical	Max		
BXEB-L0280-RGBW1000-122-A3	Red	240	33.6	36	38.4	343	618
	Green	240	33.6	36	38.4	1848	535.2
	Blue	240	33.6	36	38.4	194.5	457.5
	White	240	33.6	36	38.4	1392	2500K 70CRI
BXEB-L0560-RGBW3000-124-A3	Red	480	33.6	36	38.4	686	618
	Green	480	33.6	36	38.4	3696	535.2
	Blue	480	33.6	36	38.4	389	457.5
	White	480	33.6	36	38.4	2784	2500K 70CRI
BXEB-L1120-RGBW6000-128-A3	Red	960	33.6	36	38.4	1373	618
	Green	960	33.6	36	38.4	7392	535.2
	Blue	960	33.6	36	38.4	778	457.5
	White	960	33.6	36	38.4	5568	2500K 70CRI

Notes for Table 2:
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. White color is targeted at CCT of 2500K, 70CRI.

Performance at Commonly Used Drive Currents

Table 3: White Performance at Commonly Used Drive Currents (T_j=T_C=25˚C)

Part Number	Nominal CCT[1] (K)	CRI[2]	Nominal Drive Current Per Channel (mA)				Forward Voltage[3] (V)				Typical Pulsed Flux[3, 4, 5] (lm)	Typical Power (W)	Typical Efficacy (lm/W)
			White	Red	Green	Blue	White	Red	Green	Blue			
BXEB-L0280-RGBW 1000-122-A3	2200	95	81	81	14	1	32	32	31	29	720	6	127
	2700		89	61	22	4	33	32	31	30	806		143
	3000		89	54	27	7	33	32	31	30	836		149
	3500		89	44	33	11	33	32	32	31	863		153
	4000		83	39	39	15	32	32	32	31	876		157
	5000		75	31	48	23	32	32	32	31	863		155
	5700		67	31	51	27	32	31	32	31	873		156
	6500		62	29	55	31	32	31	32	31	863		155
BXEB-L0280-RGBW 1000-122-A3	2200	95	140	141	24	1	33	33	31	29	1242	10	124
	2700		154	107	38	7	33	32	32	30	1392		140
	3000		154	93	47	12	33	32	32	30	1437		145
	3500		154	77	57	18	33	32	32	31	1488		151
	4000		145	67	68	25	33	32	32	31	1512		153
	5000		130	54	83	39	33	32	32	31	1508		154
	5700		117	53	89	46	33	32	31	31	1492		153
	6500		107	50	95	54	33	32	32	31	1490		152
BXEB-L0280-RGBW 1000-122-A3	2200	95	180	181	30	1	33	33	31	30	1609	13	124
	2700		198	137	49	9	34	33	32	31	1797		139
	3000		198	119	61	15	34	33	32	31	1855		144
	3500		198	99	73	24	34	32	32	31	1915		149
	4000		186	86	88	33	33	32	32	31	1950		152
	5000		167	70	107	50	33	32	32	32	1923		151
	5700		151	69	115	59	33	32	32	32	1948		153
	6500		137	64	123	69	33	32	32	32	1911		151

Notes for Table 3:

1. Alternate drive currents in Table 3 are provided for reference only and are not a guarantee of performance.
2. Bridgelux maintains a ± 7.5% tolerance on flux measurements.

Performance at Commonly Used Drive Currents

Table 4: White Performance at Commonly Used Drive Currents (T_j=T_C=25˚C)

Part Number	Nominal CCT[1] (K)	CRI[2]	Nominal Drive Current Per Channel (mA)				Forward Voltage[3] (V)				Typical Pulsed Flux[3, 4, 5] (lm)	Typical Power (W)	Typical Efficacy (lm/W)
			White	Red	Green	Blue	White	Red	Green	Blue			
BXEB-L0560-RGBW 3000-124-A3	2200	95	161	162	27	1	32.4	32.4	31	29.3	1439	11	127
	2700		177	122	44	8	32.6	32.1	31.2	30.2	1611		143
	3000		177	107	54	13	32.6	31.9	31.4	30.3	1672		149
	3500		177	88	65	21	32.6	31.7	31.5	30.7	1725		153
	4000		166	77	78	29	32.4	31.5	31.5	30.9	1752		157
	5000		149	62	95	45	32.2	31.5	31.7	31	1725		155
	5700		134	61	102	53	32.2	31.4	31.9	31.2	1746		156
	6500		123	57	110	62	32.2	31.4	31.9	31.2	1726		155
BXEB-L0560-RGBW 3000-124-A3	2200	95	279	281	47	2	32.9	32.9	31.2	29	2484	20	124
	2700		307	213	76	14	33.1	32.4	31.5	30	2784		140
	3000		307	185	94	23	33.1	32.2	31.7	30.3	2873		145
	3500		307	153	113	36	33.1	32.1	31.7	30.5	2975		151
	4000		289	134	136	50	33.1	31.9	31.9	30.7	3024		153
	5000		259	108	165	78	32.7	31.7	32.2	31	3015		154
	5700		234	106	178	92	32.7	31.7	31.4	31	2984		153
	6500		213	99	190	107	32.6	31.7	32.4	31.2	2980		152
BXEB-L0560-RGBW 3000-124-A3	2200	95	360	362	60	2	33.3	33.3	31.2	30	3218	26	124
	2700		395	274	98	18	33.6	32.7	31.5	30.5	3593		139
	3000		395	238	121	30	33.6	32.6	31.7	30.5	3709		144
	3500		395	197	146	47	33.6	32.4	31.7	30.9	3830		149
	4000		371	172	175	65	33.4	32.2	31.9	31.2	3899		152
	5000		333	139	213	100	33.1	32.4	32.2	31.5	3846		151
	5700		301	137	229	118	33.1	31.7	32.2	31.7	3895		153
	6500		274	127	245	138	32.9	31.7	32.4	31.9	3821		151

Notes for Table 4:

1. Alternate drive currents in Table 3 are provided for reference only and are not a guarantee of performance.
2. Bridgelux maintains a ± 7.5% tolerance on flux measurements.

Performance at Commonly Used Drive Currents

Table 5: White Performance at Commonly Used Drive Currents (T_j=T_C=25˚C)

Part Number	Nominal CCT[1] (K)	CRI[2]	Nominal Drive Current Per Channel (mA)				Forward Voltage[3] (V)				Typical Pulsed Flux[3, 4, 5] (lm)	Typical Power (W)	Typical Efficacy (lm/W)
			White	Red	Green	Blue	White	Red	Green	Blue			
BXEB-L1120-RGBW 6000-128-A3	2200	95	320	322	54	2	32.1	32.1	30.8	29.1	2761	22	124
	2700		352	244	87	16	32.1	31.7	31	30	3096		139
	3000		352	212	108	27	32.1	31.6	31.2	30.3	3215		145
	3500		352	175	130	41	32.1	31.5	31.3	30.4	3318		150
	4000		331	154	156	58	32.1	31.4	31.4	30.6	3371		152
	5000		297	123	189	89	32	31.3	31.5	30.9	3321		150
	5700		268	122	204	105	32	31.2	31.6	30.9	3362		152
	6500		244	113	218	123	31.9	31.2	31.6	31	3325		151
BXEB-L1120-RGBW 6000-128-A3	2200	95	561	565	94	4	32.7	32.7	31.1	29	4786	40	120
	2700		617	427	152	28	32.8	32.2	31.4	30	5360		135
	3000		617	372	189	46	32.7	32.1	31.5	30.3	5530		140
	3500		617	307	228	73	32.7	31.9	31.6	30.4	5727		145
	4000		580	269	274	101	32.7	31.7	31.8	30.6	5824		148
	5000		520	216	332	156	32.5	31.6	32	30.9	5809		148
	5700		469	214	357	184	32.4	31.5	32	30.9	5793		148
	6500		428	198	382	215	32.3	31.5	32.1	31	5745		147
BXEB-L1120-RGBW 6000-128-A3	2200	95	722	726	121	5	33	32.9	31.2	29	6197	51	120
	2700		793	549	196	36	33.2	32.5	31.5	30.1	6913		135
	3000		793	478	243	60	33.2	32.3	31.6	30.3	7137		139
	3500		793	395	293	93	33.2	32.1	31.8	30.5	7374		144
	4000		745	346	352	130	33	32	32	30.7	7511		148
	5000		668	278	426	201	32.8	31.8	32.1	30.9	7394		146
	5700		603	274	459	237	32.7	31.7	31.4	31.1	7451		148
	6500		550	255	492	277	32.7	31.6	32.3	31.2	7357		146

Notes for Table 5:

1. Alternate drive currents in Table 3 are provided for reference only and are not a guarantee of performance.
2. Bridgelux maintains a ± 7.5% tolerance on flux measurements.

Performance at Commonly Used Drive Currents

Table 6: RGBW Performance at Commonly Used Drive Currents for BXEB-L0280-RGBW1000-122-A3

Color	Drive Current Per Channel (mA)	Forward Voltage (V) T_c = 25˚C	Typical Power (W) T_c = 25˚C	Typical Pulsed Flux[2] (lm) T_c = 25˚C	Typical Pulsed Flux[2] (lm) T_c = 85˚C	Typical Efficacy (lm/W) T_c = 25˚C
Red	60	32	2	99	92	51
	120	34	4	188	173	46
	180	35	6	269	247	43
	240	36	9	343	315	40
	300	38	11	413	376	37
Green	60	32	2	508	444	264
	120	34	4	983	847	245
	180	35	6	1430	1219	228
	240	36	9	1848	1550	214
	300	38	11	2241	1861	201
Blue	60	32	2	58	61	30
	120	33	4	108	112	27
	180	35	6	153	157	25
	240	36	8	195	198	23
	300	38	11	234	237	21
White	60	32	2	382	352	198
	120	34	4	740	680	184
	180	35	6	1075	983	172
	240	36	9	1392	1265	161
	300	38	11	1692	1531	152

Notes for Table 6:

1. Alternate drive currents in Table 4 are provided for reference only and are not a guarantee of performance.
2. Bridgelux maintains a ± 7.5% tolerance on flux measurements.
3. Please refer to Table 6 for maximum current ratings for each color.

Performance at Commonly Used Drive Currents

Table 7: RGBW Performance at Commonly Used Drive Currents for BXEB-L0560-RGBW3000-124-A3

Color	Drive Current Per Channel (mA)	Forward Voltage (V) T_c = 25˚C	Typical Power (W) T_c = 25˚C	Typical Pulsed Flux[2] (lm) T_c = 25˚C	Typical Pulsed Flux[2] (lm) T_c = 85˚C	Typical Efficacy (lm/W) T_c = 25˚C
Red	120	32	4	197	183	51
	240	34	8	375	346	46
	360	35	12	537	494	43
	480	36	17	686	629	40
	600	38	23	825	752	37
Green	120	32	4	1015	888	264
	240	34	8	1965	1693	245
	360	35	12	2859	2437	228
	480	36	17	3696	3100	214
	600	38	23	4481	3722	201
Blue	120	32	4	115	121	30
	240	33	8	215	223	27
	360	35	12	305	314	25
	480	36	17	389	396	23
	600	38	23	467	473	21
White	120	32	4	764	704	198
	240	34	8	1479	1359	184
	360	35	12	2150	1966	172
	480	36	17	2784	2530	161
	600	38	23	3384	3062	152

Notes for Table 7:

1. Alternate drive currents in Table 4 are provided for reference only and are not a guarantee of performance.
2. Bridgelux maintains a ± 7.5% tolerance on flux measurements.
3. Please refer to Table 6 for maximum current ratings for each color.

Performance at Commonly Used Drive Currents

Table 8: RGBW Performance at Commonly Used Drive Currents for BXEB-L1120-RGBW6000-128-A3

Color	Drive Current Per Channel (mA)	Forward Voltage (V) T_c = 25˚C	Typical Power (W) T_c = 25˚C	Typical Pulsed Flux[2] (lm) T_c = 25˚C	Typical Pulsed Flux[2] (lm) T_c = 85˚C	Typical Efficacy (lm/W) T_c = 85˚C
Red	240	32	8	394	366	51
	480	34	16	749	693	46
	720	35	25	1074	988	43
	960	36	35	1372	1258	40
	1200	38	45	1650	1505	37
Green	240	32	8	2030	1775	264
	480	34	16	3930	3385	245
	720	35	25	5718	4874	228
	960	36	35	7392	6200	214
	1200	38	45	8961	7445	201
Blue	240	32	8	230	242	30
	480	33	16	429	446	27
	720	35	25	610	628	25
	960	36	35	778	792	23
	1200	38	45	934	946	21
White	240	32	8	1527	1408	198
	480	34	16	2957	2718	184
	720	35	25	4300	3932	172
	960	36	35	5568	5060	161
	1200	38	45	6768	6123	152

Notes for Table 8:

1. Alternate drive currents in Table 5 are provided for reference only and are not a guarantee of performance.
2. Bridgelux maintains a ± 7.5% tolerance on flux measurements.
3. Please refer to Table 6 for maximum current ratings for each color.

Absolute Maximum Ratings

Table 9: 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-L0280-RGBW1000-122-A3				BXEB-L0560-RGBW3000-124-A3				BXEB-L1120-RGBW6000-128-A3			
	White	Red	Green	Blue	White	Red	Green	Blue	White	Red	Green	Blue
Maximum Drive Current Per Color	300mA				600mA				1200mA			

Table 10: Dimming White with CRI90 Ratio

CCT / Color	2200K	2700K	3000K	3500K	4000K	5000K	5700K	6500K
W	45.86%	50.38%	50.38%	50.38%	47.37%	42.48%	38.35%	34.96%
R	46.13%	34.89%	30.38%	25.08%	21.99%	17.67%	17.44%	16.20%
G	7.71%	12.44%	15.45%	18.61%	22.37%	27.11%	29.17%	31.24%
B	0.30%	2.29%	3.80%	5.94%	8.27%	12.74%	15.04%	17.59%

Performance Curves

Figure 1: Relative Current Ratio vs. CCT at CRI 95 (T_c = 25˚C)

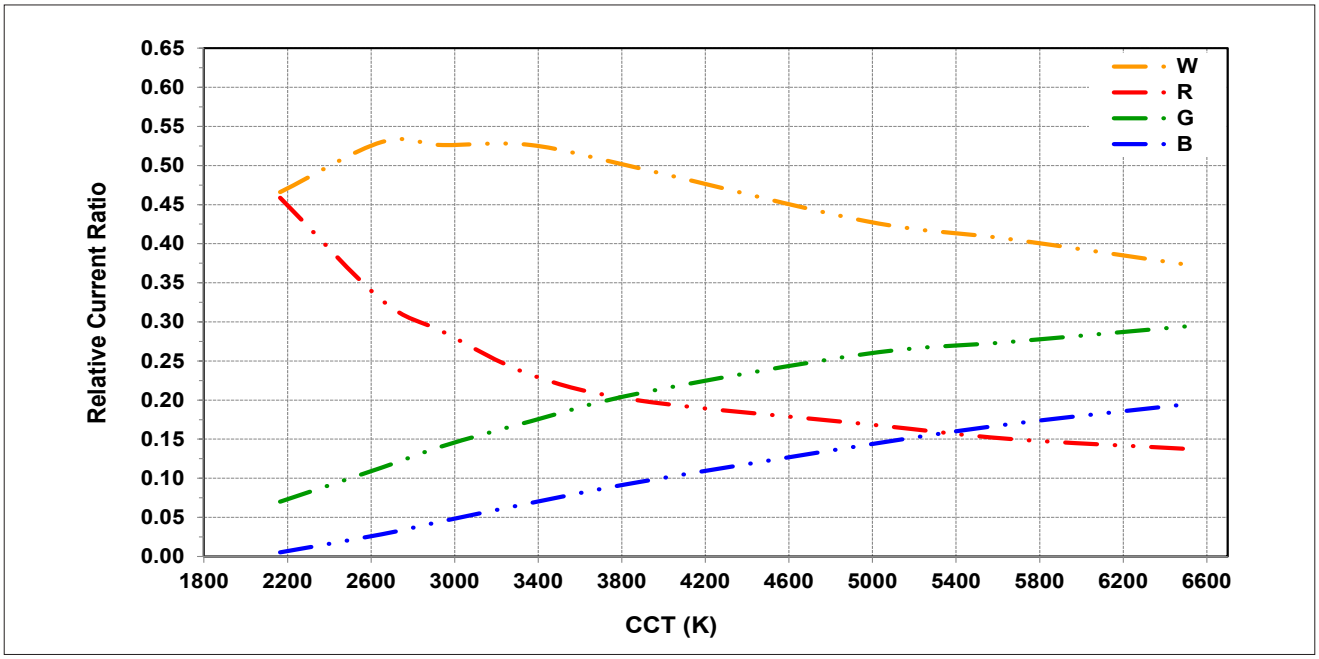
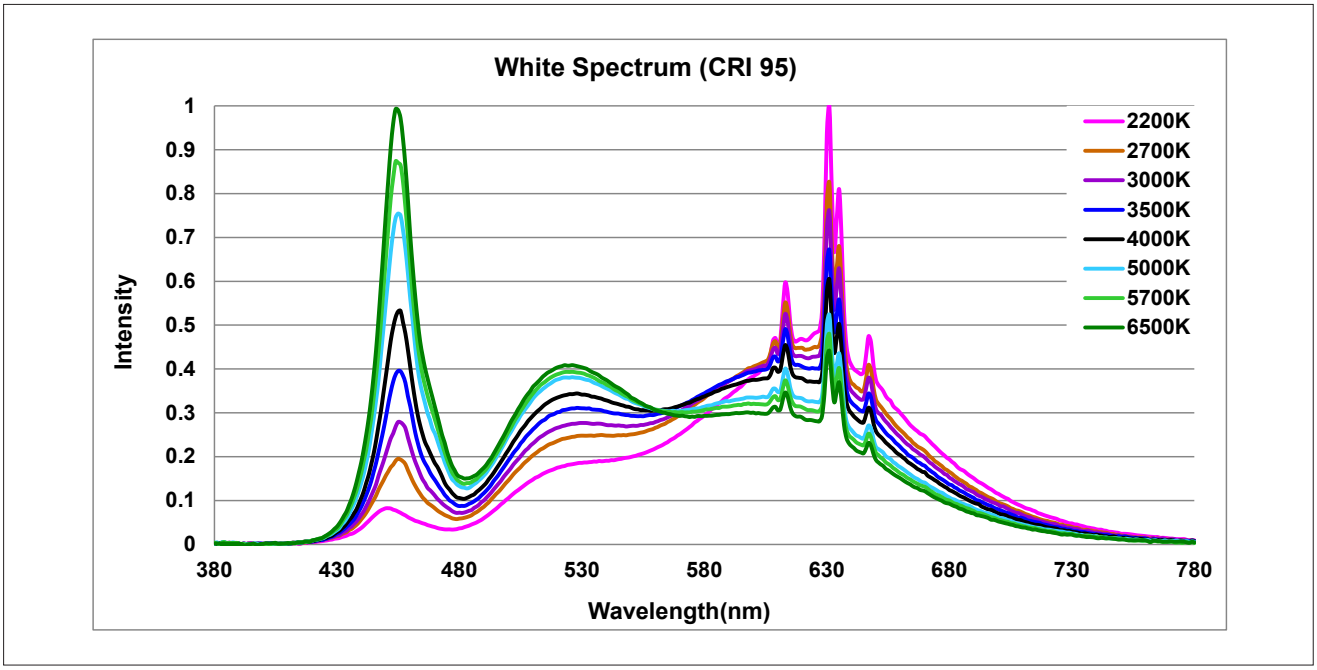


Figure 2: Typical Color Spectrum (White CCT, at Tc = 25˚C)



Note for Figure 2:

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

Typical Color Spectrum

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

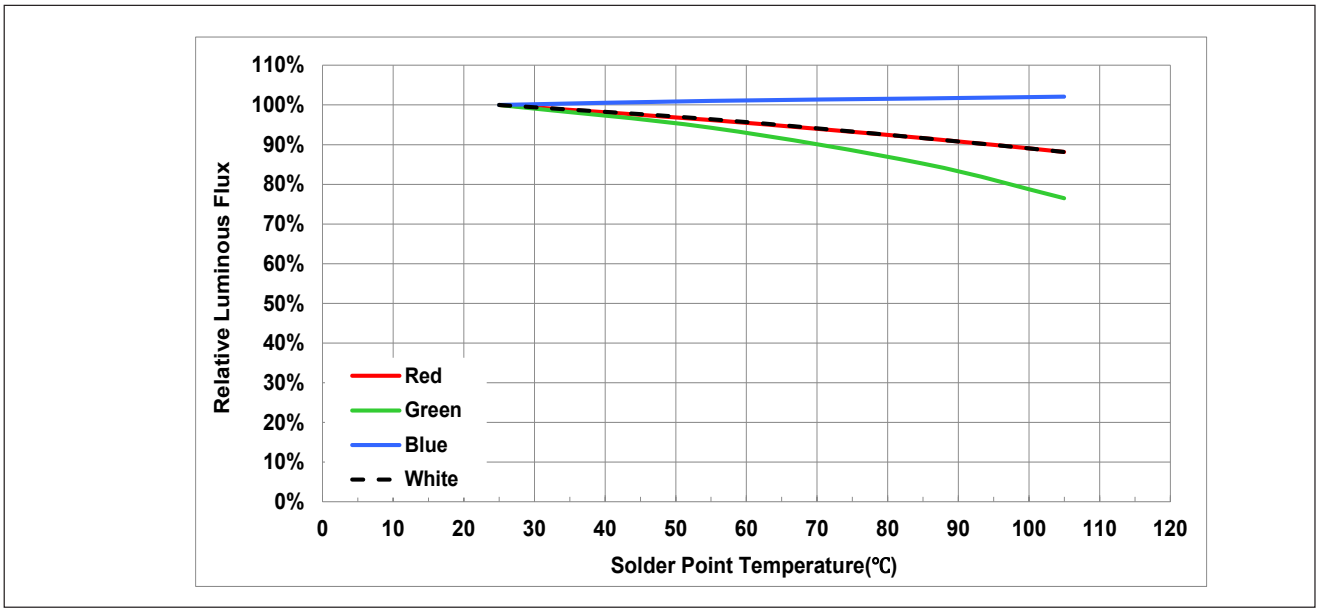
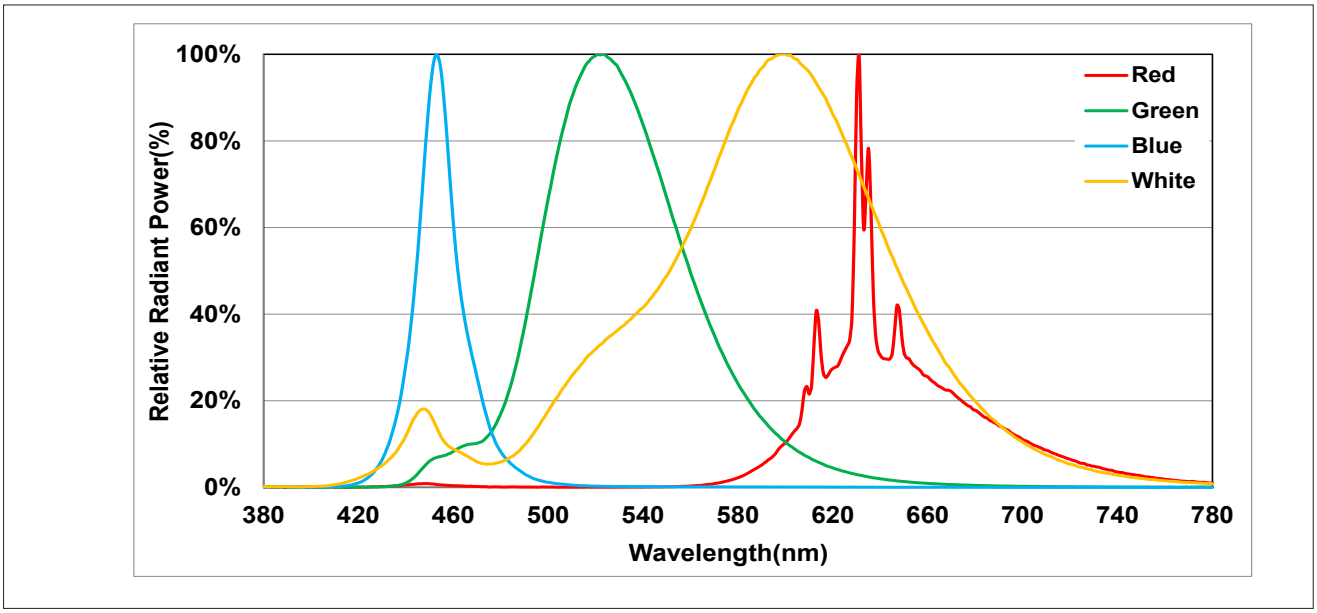


Figure 4: Typical Color Spectrum (RGBW)

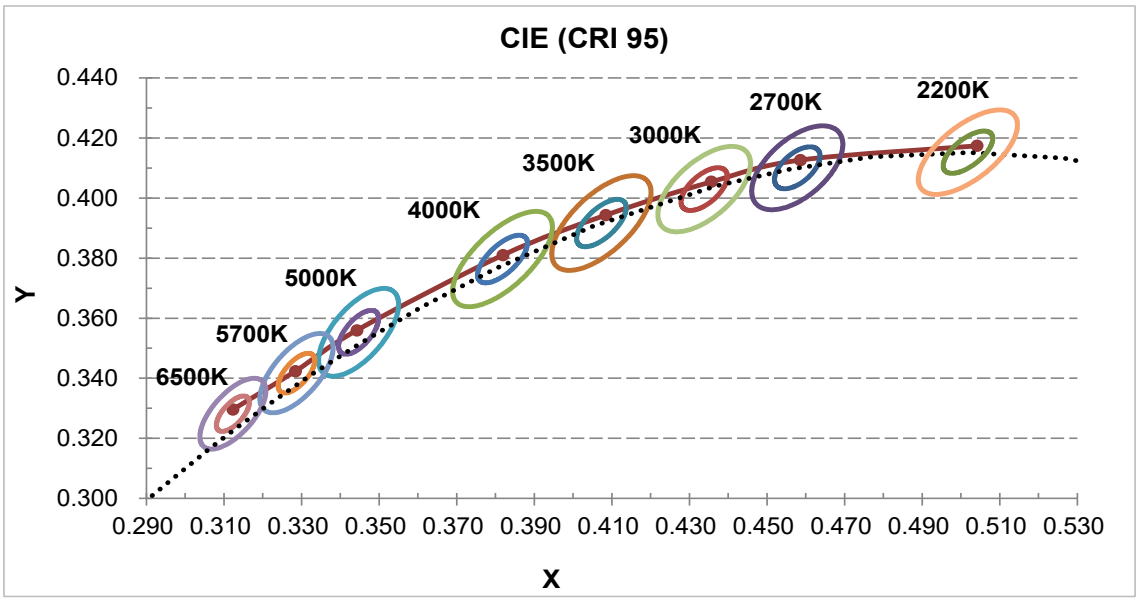


Note for Figure 4:

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

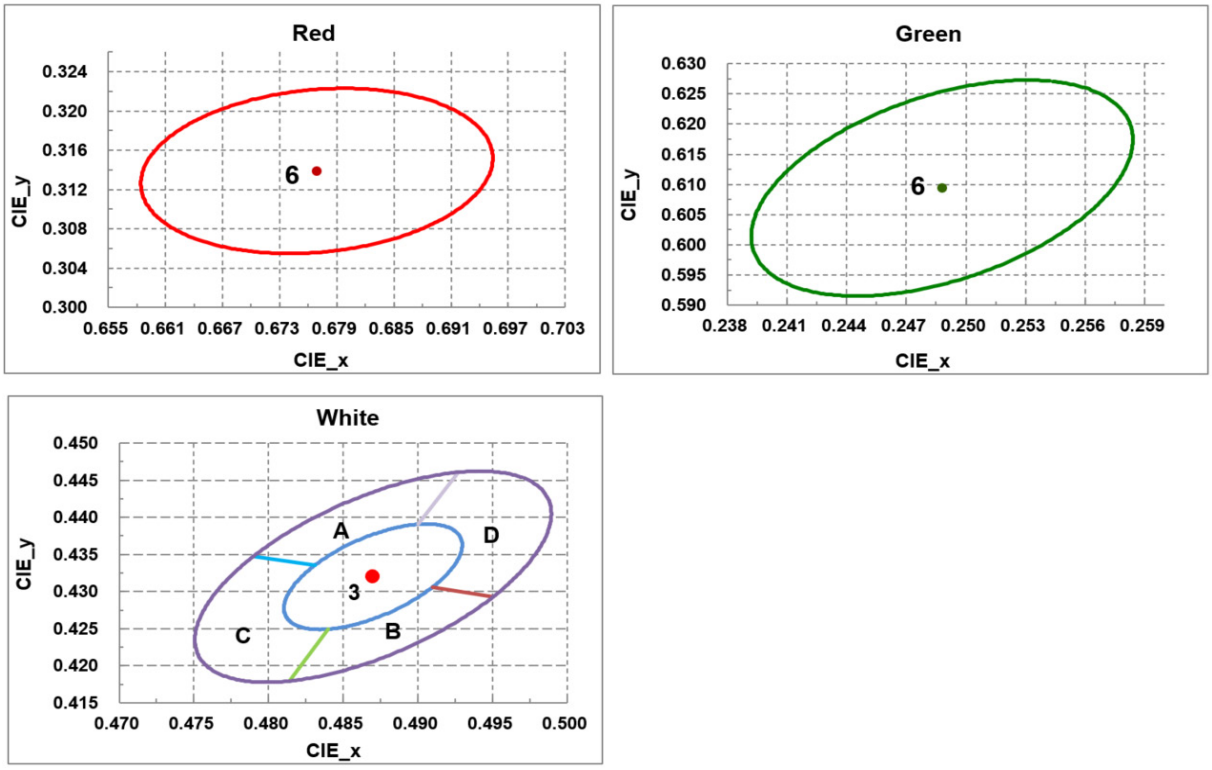
Table 11: RGW MacAdam Ellipse Color Bin Definitions

Color	Center Point		Major Axis	Minor Axis	Ellipse Rotation Angle	Color Bin
	X	Y				
R	0.6769	0.3139	0.01854	0.00828	5.0	6
G	0.2488	0.6094	0.03084	0.00960	73.0	6
W	0.4870	0.4320	0.00810	0.00420	53.7	3
			0.01620	0.00840	53.7	3/A/B/C/D

Notes for Table 11:

1. Color binning at T_c = 85°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 280mm EB

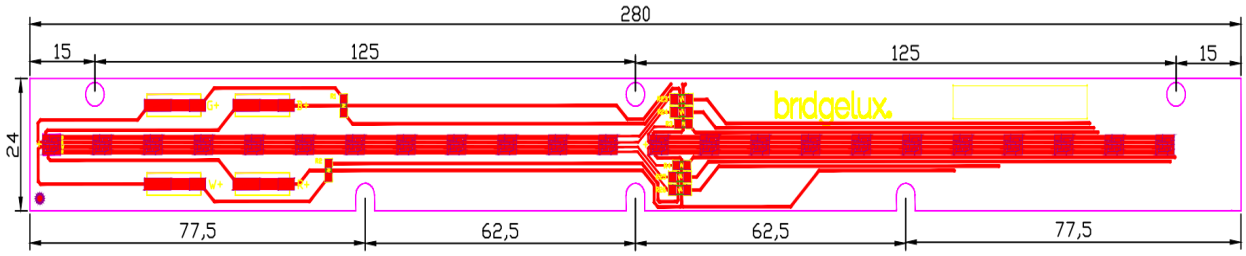


Figure 8: Drawing Overview for 560mm EB

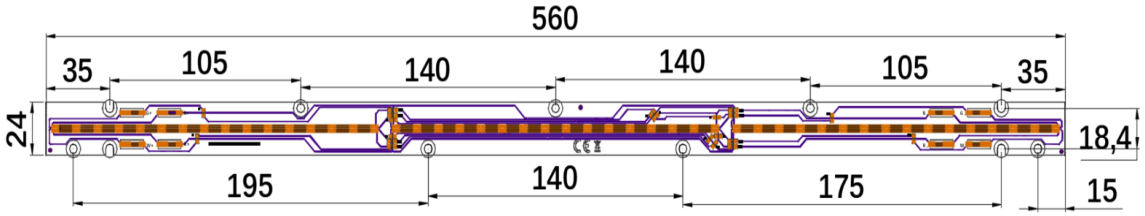
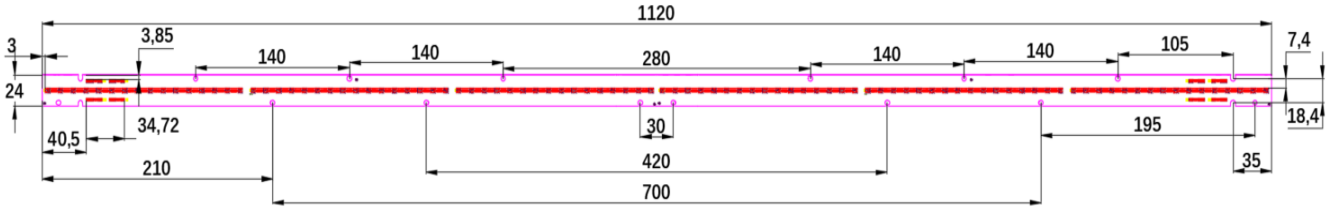


Figure 9: Drawing Overview for 1120mm EB



Notes for Figures 7, 8 & 9:

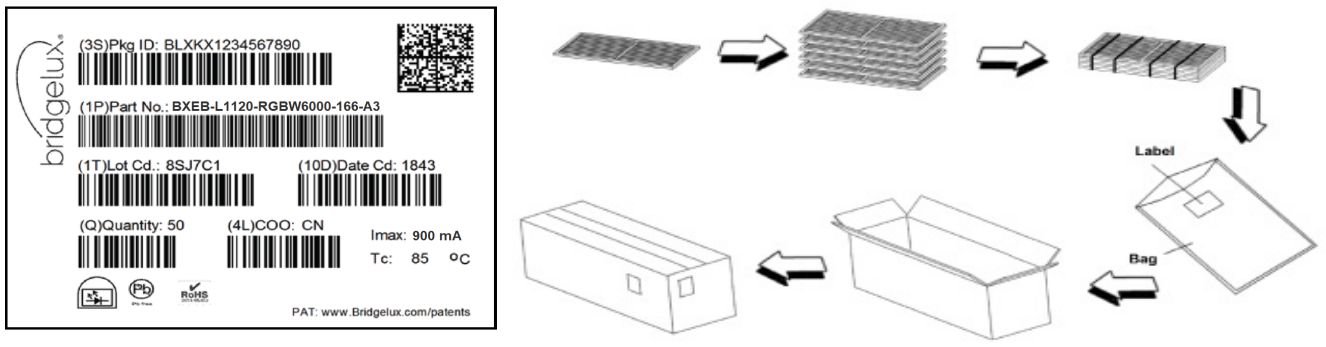
1. Connectors are labeled "+" to denote positive polarity, and "-" to denote negative polarity.
2. Drawing dimensions are in millimeters.

Table 12: Module Dimensions & Connector Wiring

Parameter	BXEB-L0280-RGBW1000-122-A3	BXEB-L0560-RGBW3000-124-A3	BXEB-L1120-RGBW6000-128-A3
Linear length	280 mm	560 mm	1120 mm
Linear width	24 mm	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 10: 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 13: Packaging Structure

Box Parameter	L0280 modules	L0560 modules	L1120 modules
Quantity	200	100	100
Dimension	60.0 cm x 19.4 cm x 16.9 cm	65.0 cm x 19.4 cm x 16.9 cm	120.8 cm x 19.4 cm x 16.9 cm

Figure 11: Product Labeling

Bridgelux Vesta Series RGBW EB modules contain a label on the front to help with product identification. In addition to the product identification markings, Bridgelux Vesta Series RGBW 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 RGBW 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 RGBW 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 RGBW 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 RGBW EB. Please consult Bridgelux Application Note for additional information.

CAUTION: EYE SAFETY

The Bridgelux Vesta series RGBW 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 RGBW EB during operation. Allow the RGBW EB to cool for a sufficient period of time before handling. The Vesta Series RGBW 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 RGBW EB or apply stress to the LES (yellow phosphor resin area). Contact may cause damage to the RGBW 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 RGBW EB. Use the mechanical features of the RGBW EB housing, edges and/or mounting holes to locate and secure optical devices as needed.

Disclaimers

STANDARD TEST CONDITIONS

Unless otherwise stated, RGBW 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
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Bridgelux Vesta Series RGBW EB (Mounting Holes & BLX Driver Compatible) Product Data Sheet DS3109 Rev. A (03/2026)