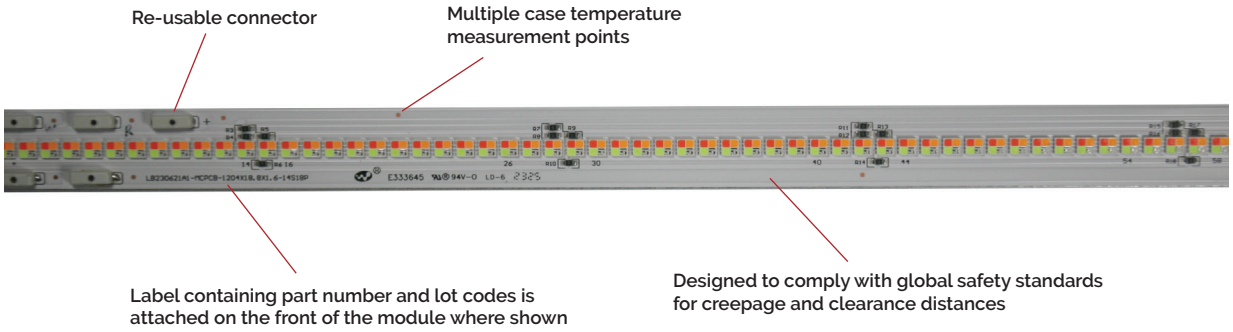
Bridgelux® Vesta® Series RGBW EB

Product Data Sheet DS583

FIVE YEAR Warranty™

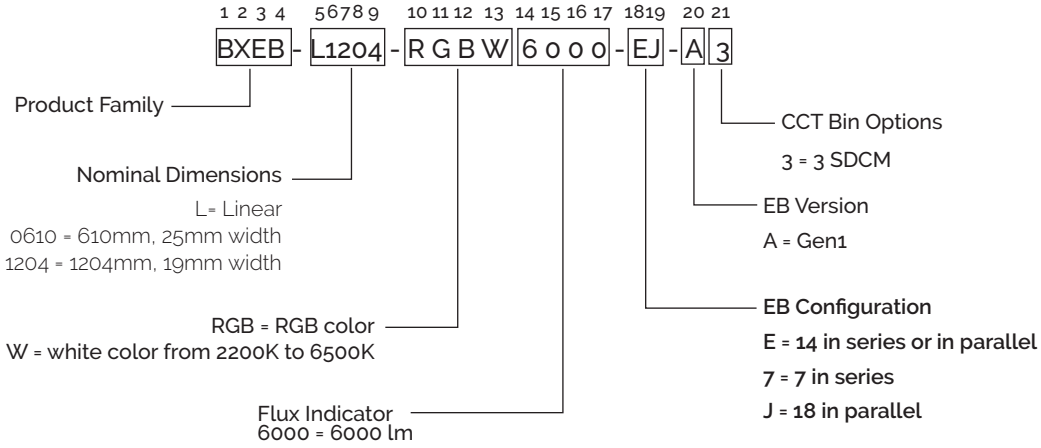
Product Feature Map

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-L0610-RGBW3000-7E-A3	2200	90	544	441	59	5	19.4	19.1	18.1	16.7	2531	20	126
	2700		584	324	112	30	19.4	18.9	18.3	17.5	2825	20	141
	3000		584	276	142	47	19.4	18.8	18.4	17.7	2909	20	146
	3500		584	217	176	72	19.4	18.6	18.5	17.8	3022	20	152
	4000		584	156	209	101	19.4	18.5	18.6	17.9	3122	20	157
	5000		525	112	260	152	19.3	18.3	18.7	18.1	3146	20	159
	5700		507	85	275	182	19.3	18.2	18.8	18.1	3185	20	161
	6500		470	67	300	213	19.2	18.2	18.8	18.2	3120	20	158
BXEB-L0610-RGBW3000-7E-A3	2200	95	489	481	73	6	19.2	19.2	18.2	16.9	2484	20	124
	2700		557	344	119	30	19.3	18.9	18.4	17.5	2784	20	139
	3000		552	302	148	47	19.3	18.8	18.5	17.7	2873	20	144
	3500		552	244	181	72	19.3	18.7	18.5	17.8	2975	20	150
	4000		521	209	219	100	19.3	18.6	18.6	17.9	3024	20	153
	5000		450	178	272	150	19.1	18.5	18.8	18.1	3015	20	153
	5700		426	158	288	178	19.1	18.5	18.3	18.1	2984	20	153
	6500		391	144	310	205	19.0	18.5	18.9	18.2	2980	20	152
BXEB-L1204-RGBW6000-EJ-A3	2200	90	544	441	59	5	38.2	37.9	36.0	32.6	4854	40	122
	2700		584	324	112	30	38.4	37.5	36.5	34.9	5436	40	137
	3000		584	276	142	47	38.4	37.3	36.7	35.3	5605	40	142
	3500		584	217	176	72	38.4	37.1	36.9	35.5	5823	40	147
	4000		584	156	209	101	38.3	36.7	37.0	35.7	6006	39	152
	5000		525	112	260	152	38.2	36.6	37.3	36.1	6072	39	154
	5700		507	85	275	182	38.2	36.4	35.3	36.2	6055	39	156
	6500		470	67	300	213	38.1	36.2	37.5	36.3	6019	39	153
BXEB-L1204-RGBW6000-EJ-A3	2200	95	489	481	73	6	38.1	38.2	36.3	33.8	4786	40	120
	2700		557	344	119	30	38.3	37.6	36.6	35.0	5360	40	135
	3000		552	302	148	47	38.2	37.4	36.7	35.3	5530	40	140
	3500		552	244	181	72	38.2	37.2	36.9	35.5	5727	39	145
	4000		521	209	219	100	38.1	37.0	37.1	35.7	5824	39	148
	5000		450	178	272	150	37.9	36.9	37.3	36.0	5809	39	148
	5700		426	158	288	178	37.8	36.8	37.3	36.1	5793	39	148
	6500		391	144	310	205	37.7	36.7	37.4	36.2	5745	39	147

Notes for Tables 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-L0610-RGBW3000-7E-A3	Red	1680	19.6	21	22.4	1401	618
	Green	1680	19.6	21	22.4	7546	535.2
	Blue	1680	19.6	21	22.4	794	457.5
	White	1680	19.6	21	22.4	5684	2500K 70CRI
BXEB-L1204-RGBW6000-EJ-A3	Red	2160	39.2	42	44.8	3604	618
	Green	2160	39.2	42	44.8	19404	535.2
	Blue	2160	39.2	42	44.8	2041	457.5
	White	2160	39.2	42	44.8	14616	2500K 70CRI

Notes for Tables 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

Vesta Series RGBW EB are tested to the specifications shown using the nominal drive currents in Tables 1 & 2. Vesta Series RGBW EB 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 9 & 10, and the relative luminous flux vs. current characteristics shown in Figures 3, 4, 5, 6, 7 & 8. The performance at commonly used drive currents is summarized in Tables 3, 4 & 5.

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-L0610-RGBW3000-7E-A3	2200	90	208	168	23	2	18.6	18.5	17.9	16.7	980	7	132
	2700		223	123	43	11	18.7	18.4	18.0	17.5	1096		148
	3000		223	105	54	18	18.7	18.3	18.1	17.6	1127		153
	3500		223	83	67	28	18.7	18.3	18.2	17.7	1172		159
	4000		223	59	80	38	18.7	18.1	18.2	17.8	1210		164
	5000		200	43	99	58	18.6	18.0	18.3	17.9	1224		167
	5700		193	32	105	69	18.6	18.0	18.3	18.0	1234		168
	6500		179	26	114	81	18.6	17.9	18.4	18.0	1210		165
BXEB-L0610-RGBW3000-7E-A3	2200	90	311	252	34	3	19.1	18.9	18.0	17.2	1484	11	131
	2700		334	185	64	17	19.1	18.7	18.2	17.7	1657		147
	3000		334	158	81	27	19.1	18.6	18.3	17.8	1705		151
	3500		334	124	101	41	19.1	18.5	18.4	17.9	1773		158
	4000		334	89	120	58	19.1	18.3	18.4	18.0	1826		162
	5000		300	64	149	87	18.9	18.2	18.5	18.1	1848		165
	5700		290	49	157	104	18.9	18.1	18.6	18.2	1863		167
	6500		268	38	171	122	18.9	18.0	18.6	18.2	1823		163
BXEB-L0610-RGBW3000-7E-A3	2200	90	415	336	45	4	19.1	18.9	18.0	16.3	1963	15	129
	2700		445	247	86	23	19.2	18.7	18.3	17.4	2193		145
	3000		445	211	108	36	19.2	18.7	18.4	17.6	2256		149
	3500		445	165	134	55	19.2	18.5	18.4	17.8	2340		155
	4000		445	119	159	77	19.2	18.4	18.5	17.8	2413		161
	5000		400	86	198	116	19.1	18.3	18.7	18.0	2444		163
	5700		386	65	210	139	19.1	18.2	17.7	18.1	2436		165
	6500		358	51	229	162	19.0	18.1	18.7	18.2	2423		162
BXEB-L0610-RGBW3000-7E-A3	2200	90	544	441	59	5	19.4	19.1	18.1	16.7	2531	20	126
	2700		584	324	112	30	19.4	18.9	18.3	17.5	2825		141
	3000		584	276	142	47	19.4	18.8	18.4	17.7	2909		146
	3500		584	217	176	72	19.4	18.6	18.5	17.8	3022		152
	4000		584	156	209	101	19.4	18.5	18.6	17.9	3122		157
	5000		525	112	260	152	19.3	18.3	18.7	18.1	3146		159
	5700		507	85	275	182	19.3	18.2	18.8	18.1	3185		161
	6500		470	67	300	213	19.2	18.2	18.8	18.2	3120		158

Notes for Table 3:

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.

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-L0610-RGBW3000-7E-A3	2200	90	700	567	76	6	19.7	19.4	18.2	17.6	3256	26	124
	2700		751	416	145	38	19.8	19.1	18.4	17.9	3583		137
	3000		751	355	183	61	19.8	19.0	18.5	17.9	3707		142
	3500		751	279	227	93	19.8	18.8	18.6	18.1	3841		148
	4000		751	200	269	129	19.8	18.6	18.7	18.3	3977		153
	5000		675	145	335	195	19.6	18.5	18.8	18.4	4010		156
	5700		652	110	354	234	19.6	18.3	18.9	18.5	4037		157
	6500		604	86	386	274	19.4	18.3	19.0	18.6	3961		154
BXEB-L0610-RGBW3000-7E-A3	2200	95	280	275	42	3	18.9	18.9	18.1	17.1	1439	11	124
	2700		318	197	68	17	19.0	18.7	18.2	17.6	1611		139
	3000		316	173	85	27	19.0	18.6	18.3	17.7	1672		144
	3500		316	139	104	41	19.0	18.5	18.4	17.9	1725		150
	4000		298	120	125	57	18.9	18.4	18.4	18.0	1752		153
	5000		257	102	156	86	18.8	18.4	18.5	18.1	1725		153
	5700		244	90	165	102	18.8	18.3	18.6	18.2	1746		153
	6500		223	82	177	117	18.8	18.3	18.6	18.2	1726		152
BXEB-L0610-RGBW3000-7E-A3	2200	95	489	481	73	6	19.2	19.2	18.2	16.9	2484	20	123
	2700		557	344	119	30	19.3	18.9	18.4	17.5	2784		138
	3000		552	302	148	47	19.3	18.8	18.5	17.7	2873		143
	3500		552	244	181	72	19.3	18.7	18.5	17.8	2975		148
	4000		521	209	219	100	19.3	18.6	18.6	17.9	3024		152
	5000		450	178	272	150	19.1	18.5	18.8	18.1	3015		150
	5700		426	158	288	178	19.1	18.5	18.3	18.1	2984		153
	6500		391	144	310	205	19.0	18.5	18.9	18.2	2980		150
BXEB-L0610-RGBW3000-7E-A3	2200	95	629	619	94	7	19.4	19.4	18.2	17.5	3218	26	123
	2700		716	442	153	38	19.6	19.1	18.4	17.8	3593		138
	3000		711	388	190	61	19.6	19.0	18.5	17.8	3709		143
	3500		711	314	233	92	19.6	18.9	18.5	18.0	3830		148
	4000		670	269	282	129	19.5	18.8	18.6	18.2	3899		152
	5000		579	228	350	193	19.3	18.9	18.8	18.4	3846		150
	5700		548	203	370	228	19.3	18.5	18.8	18.5	3895		153
	6500		502	185	398	264	19.2	18.5	18.9	18.6	3821		150

Notes for Table 3:

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.

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-L1204-RGBW6000-EJ-A3	2200	90	208	168	23	2	37.0	36.8	35.7	33.0	1892	15	128
	2700		223	123	43	11	37.1	36.7	35.9	34.8	2117		144
	3000		223	105	54	18	37.1	36.5	36.1	35.1	2177		148
	3500		223	83	67	28	37.1	36.4	36.2	35.3	2264		154
	4000		223	59	80	38	37.1	36.2	36.3	35.5	2339		159
	5000		200	43	99	58	37.0	36.0	36.5	35.7	2366		162
	5700		193	32	105	69	37.0	35.8	36.5	35.8	2385		163
	6500		179	26	114	81	37.0	35.7	36.6	35.9	2337		160
BXEB-L1204-RGBW6000-EJ-A3	2200	90	311	252	34	3	37.5	37.3	35.8	34.0	2850	22	127
	2700		334	185	64	17	37.6	37.0	36.2	35.1	3175		142
	3000		334	158	81	27	37.6	36.8	36.3	35.3	3269		147
	3500		334	124	101	41	37.6	36.7	36.5	35.5	3402		153
	4000		334	89	120	58	37.6	36.4	36.6	35.7	3505		158
	5000		300	64	149	87	37.5	36.2	36.8	36.0	3557		160
	5700		290	49	157	104	37.4	36.0	36.8	36.1	3586		162
	6500		268	38	171	122	37.4	35.9	36.9	36.2	3512		159
BXEB-L1204-RGBW6000-EJ-A3	2200	90	415	336	45	4	38.1	37.7	36.1	34.3	3802	30	126
	2700		445	247	86	23	38.2	37.3	36.5	35.3	4243		141
	3000		445	211	108	36	38.2	37.2	36.6	35.5	4361		145
	3500		445	165	134	55	38.2	36.9	36.7	35.8	4526		151
	4000		445	119	159	77	38.2	36.7	36.9	36.0	4672		156
	5000		400	86	198	116	37.9	36.4	37.1	36.2	4714		158
	5700		386	65	210	139	37.8	36.2	37.1	36.4	4773		160
	6500		358	51	229	162	37.7	36.1	37.2	36.5	4680		157
BXEB-L1204-RGBW6000-EJ-A3	2200	90	544	441	59	5	38.2	37.9	36.0	32.6	4854	40	122
	2700		584	324	112	30	38.4	37.5	36.5	34.9	5436		137
	3000		584	276	142	47	38.4	37.3	36.7	35.3	5605		142
	3500		584	217	176	72	38.4	37.1	36.9	35.5	5823		147
	4000		584	156	209	101	38.3	36.7	37.0	35.7	6006		152
	5000		525	112	260	152	38.2	36.6	37.3	36.1	6072		154
	5700		507	85	275	182	38.2	36.4	35.3	36.2	6055		156
	6500		470	67	300	213	38.1	36.2	37.5	36.3	6019		153

Notes for Table 3:

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.

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-L1204-RGBW6000-EJ-A3	2200	90	700	567	76	6	38.7	38.3	36.3	33.4	6222	51	120
	2700		751	416	145	38	38.8	37.8	36.7	35.1	6852		133
	3000		751	355	183	61	38.8	37.6	36.9	35.4	7088		138
	3500		751	279	227	93	38.8	37.3	37.1	35.6	7352		143
	4000		751	200	269	129	38.8	37.0	37.2	35.8	7614		149
	5000		675	145	335	195	38.6	36.7	37.5	36.1	7695		151
	5700		652	110	354	234	38.5	36.5	37.6	36.3	7739		152
	6500		604	86	386	274	38.4	36.3	37.7	36.4	7595		149
BXEB-L1204-RGBW6000-EJ-A3	2200	95	280	275	42	3	37.4	37.4	35.9	34.0	2761	22	123
	2700		318	197	68	17	37.5	37.0	36.2	35.0	3096		139
	3000		316	173	85	27	37.5	36.9	36.4	35.3	3215		144
	3500		316	139	104	41	37.5	36.7	36.5	35.5	3318		149
	4000		298	120	125	57	37.5	36.6	36.6	35.7	3371		152
	5000		257	102	156	86	37.3	36.5	36.8	36.0	3321		150
	5700		244	90	165	102	37.3	36.4	36.9	36.1	3362		152
	6500		223	82	177	117	37.2	36.4	36.9	36.2	3325		151
BXEB-L1204-RGBW6000-EJ-A3	2200	95	489	481	73	6	38.1	38.2	36.3	33.8	4786	40	120
	2700		557	344	119	30	38.3	37.6	36.6	35.0	5360		135
	3000		552	302	148	47	38.2	37.4	36.7	35.3	5530		140
	3500		552	244	181	72	38.2	37.2	36.9	35.5	5727		145
	4000		521	209	219	100	38.1	37.0	37.1	35.7	5824		148
	5000		450	178	272	150	37.9	36.9	37.3	36.0	5809		148
	5700		426	158	288	178	37.8	36.8	37.3	36.1	5793		148
	6500		391	144	310	205	37.7	36.7	37.4	36.2	5745		147
BXEB-L1204-RGBW6000-EJ-A3	2200	95	629	619	94	7	38.5	38.4	36.4	33.8	6197	51	120
	2700		716	442	153	38	38.7	37.9	36.7	35.1	6913		134
	3000		711	388	190	61	38.7	37.7	36.9	35.4	7137		139
	3500		711	314	233	92	38.7	37.4	37.1	35.6	7374		144
	4000		670	269	282	129	38.5	37.3	37.3	35.8	7511		147
	5000		579	228	350	193	38.3	37.1	37.5	36.1	7394		146
	5700		548	203	370	228	38.2	37.0	36.6	36.3	7451		148
	6500		502	185	398	264	38.1	36.9	37.7	36.4	7357		145

Notes for Table 3:

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.

Performance at Commonly Used Drive Currents

Table 4: RGBW Performance at Commonly Used Drive Currents for BXEB-L0610-RGBW3000-7E-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	420	18.7	8	402	374	51
	840	19.6	16	765	707	47
	1260	20.3	26	1096	1009	43
	1680	21.1	35	1401	1284	40
	2100	21.7	45	1684	1536	37
Green	420	18.7	8	2072	1812	264
	840	19.5	16	4012	3456	244
	1260	20.3	26	5837	4976	228
	1680	21.0	35	7546	6329	213
	2100	21.7	46	9148	7600	201
Blue	420	18.5	8	235	247	30
	840	19.3	16	438	455	27
	1260	20.1	25	623	641	25
	1680	21.0	35	794	809	22
	2100	21.8	46	953	966	21
White	420	18.7	8	1559	1437	198
	840	19.5	16	3019	2775	184
	1260	20.3	26	4390	4014	172
	1680	21.0	35	5684	5165	161
	2100	21.7	46	6909	6251	152

Notes for Table 4:

1. Alternate drive currents in Table 6 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 5: RGBW Performance at Commonly Used Drive Currents for BXEB-L1204-RGBW6000-EJ-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	540	37.4	20	1033	960	51
	1080	39.1	42	1968	1817	47
	1620	40.7	66	2819	2594	43
	2160	42.1	91	3604	3303	40
	2700	43.3	117	4331	3951	37
Green	540	37.4	20	5328	4659	264
	1080	39.1	42	10315	8888	244
	1620	40.6	66	15008	12795	228
	2160	42.1	91	19404	16276	213
	2700	43.3	117	23525	19542	201
Blue	540	36.9	20	604	635	30
	1080	38.5	42	1126	1169	27
	1620	40.3	65	1601	1649	25
	2160	42.1	91	2041	2080	22
	2700	43.6	118	2451	2484	21
White	540	37.4	20	4008	3696	198
	1080	39.1	42	7764	7135	184
	1620	40.6	66	11289	10323	172
	2160	42.1	91	14616	13282	161
	2700	43.4	117	17766	16073	152

Notes for Table 5:

1. Alternate drive currents in Table 6 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 6: 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-L0610-RGBW3000-7E-A3				BXEB-L1204-RGBW6000-EJ-A3			
	White	Red	Green	Blue	White	Red	Green	Blue
Maximum Drive Current Per Color	2100mA	2100mA	2100mA	2100mA	2700mA	2700mA	2700mA	2700mA
Maximum Peak Pulsed Forward Current[1]	2800mA	2800mA	3080mA	3080mA	3600mA	3600mA	3960mA	3960mA

Note for Table 6:

1. Bridgelux recommends a maximum duty cycle of 10% and pulse width of 20ms when operating RGBW EB at the maximum peak pulsed current specified. Maximum peak pulsed currents indicate values where the RGBW EB can be driven without catastrophic failures.

Table 7: Dimming White with CRI90 Ratio

CCT / Color	2200K	2700K	3000K	3500K	4000K	5000K	5700K	6500K
W	51.9%	55.6%	55.6%	55.6%	55.6%	50.0%	48.3%	44.7%
R	42.0%	30.8%	26.3%	20.7%	14.9%	10.7%	8.1%	6.4%
G	5.6%	10.7%	13.5%	16.8%	19.9%	24.8%	26.2%	28.6%
B	0.5%	2.8%	4.5%	6.9%	9.6%	14.5%	17.4%	20.3%

Table 8: Dimming White with CRI95 Ratio

CCT / Color	2200K	2700K	3000K	3500K	4000K	5000K	5700K	6500K
W	46.6%	53.0%	52.6%	52.6%	49.6%	42.9%	40.6%	37.2%
R	45.9%	32.8%	28.8%	23.2%	19.9%	16.9%	15.0%	13.7%
G	7.0%	11.4%	14.1%	17.3%	20.9%	25.9%	27.4%	29.5%
B	0.5%	2.8%	4.5%	6.8%	9.5%	14.3%	16.9%	19.5%

Performance Curves

Figure 1: Relative Current Ratio vs. CCT at CRI 90 (T_c= 25˚C)

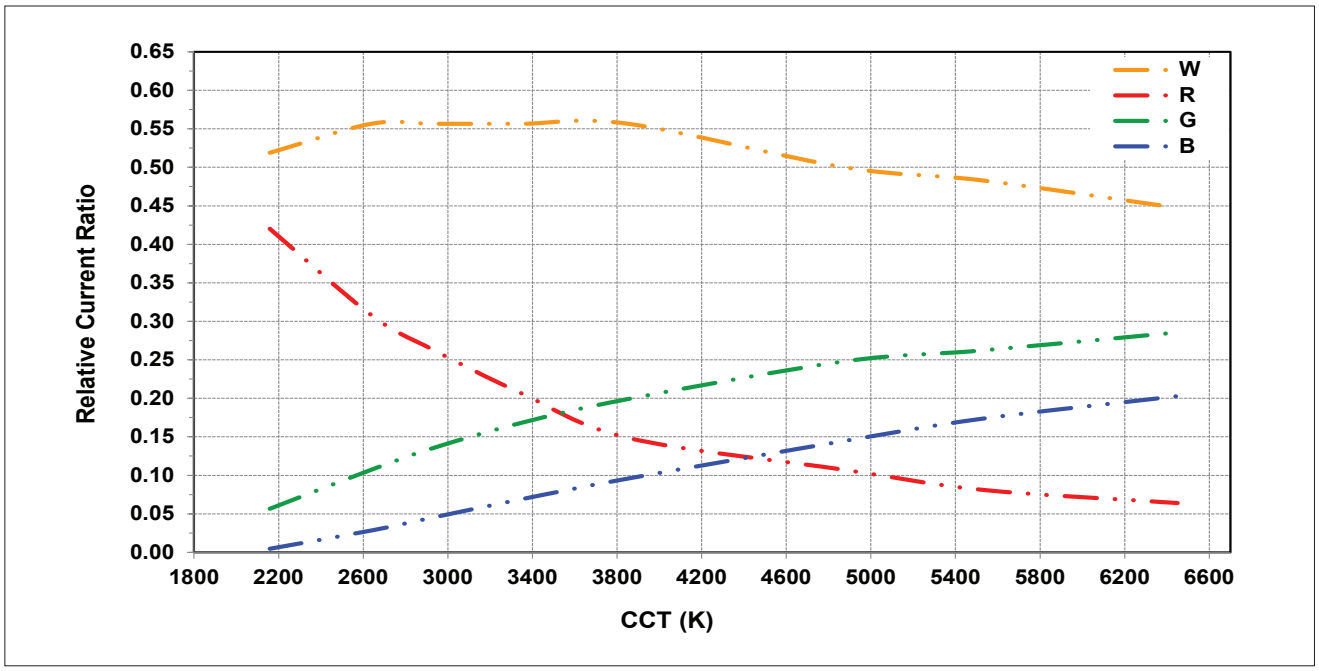
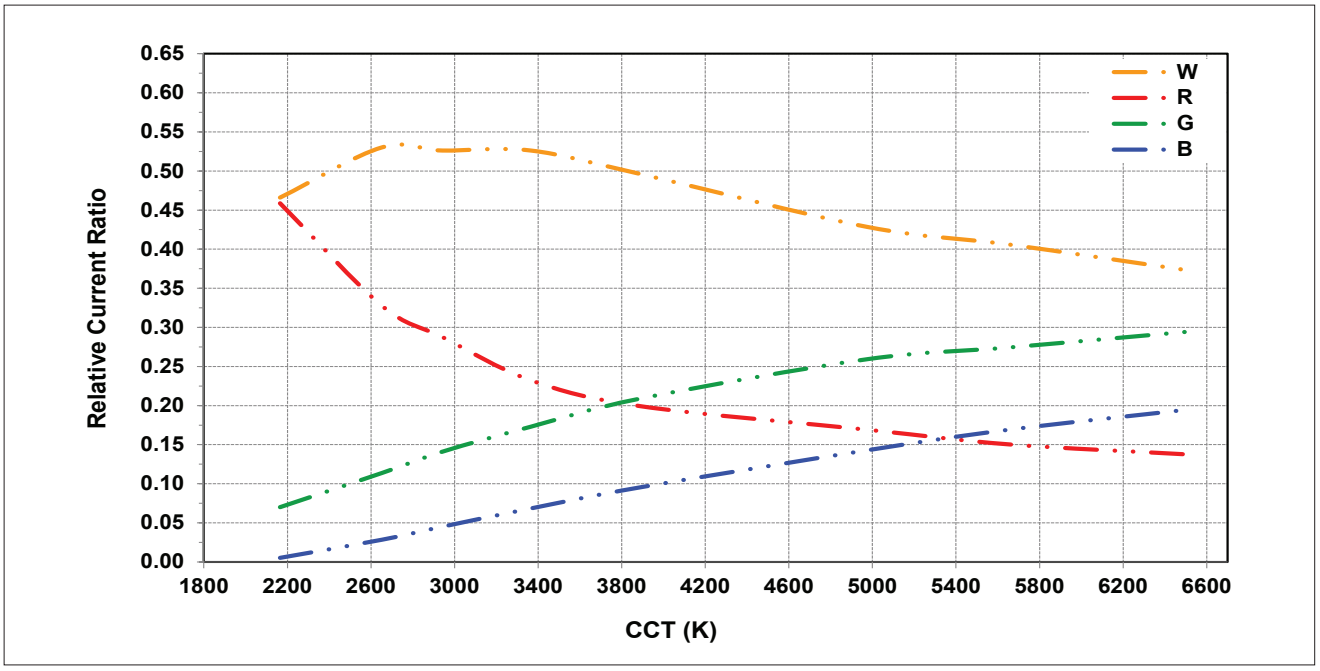


Figure 2: Relative Current Ratio vs. CCT at CRI 95 (T_c= 25˚C)



Performance Curves

Figure 3: Typical Relative Luminous Flux (White CCT) vs. Drive Current Per Channel at CRI 90 (T_c=25˚C) for BXEB-L0610

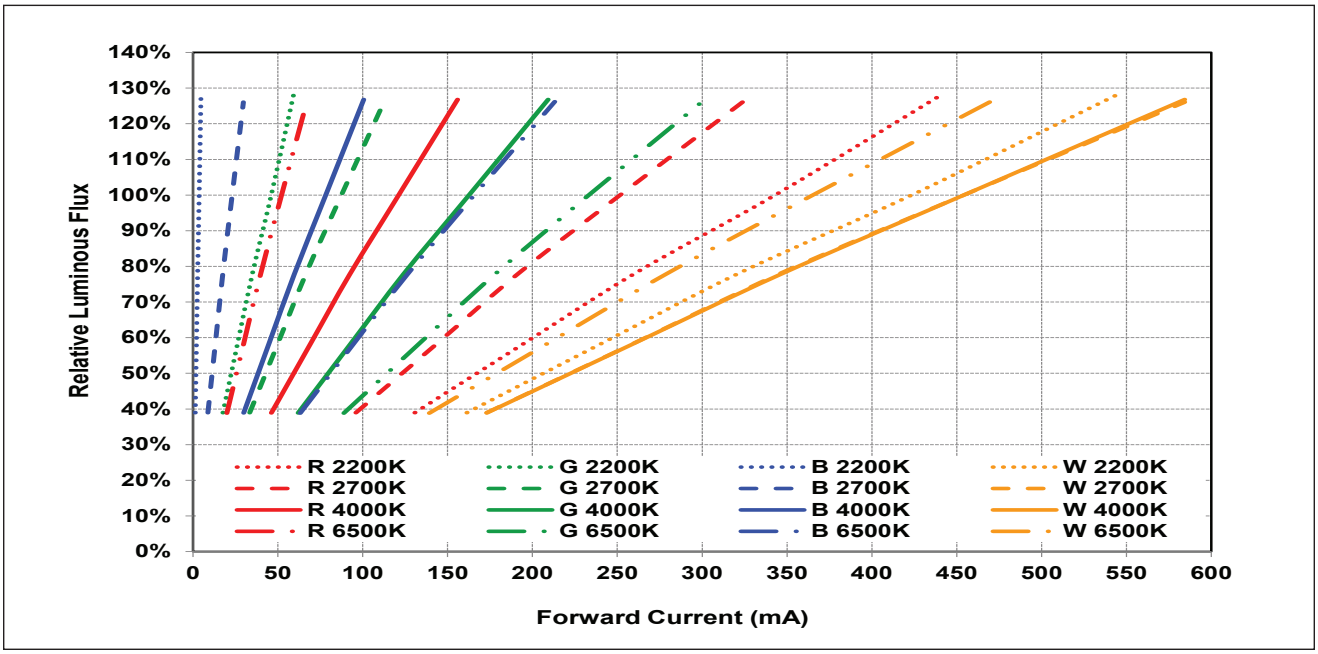
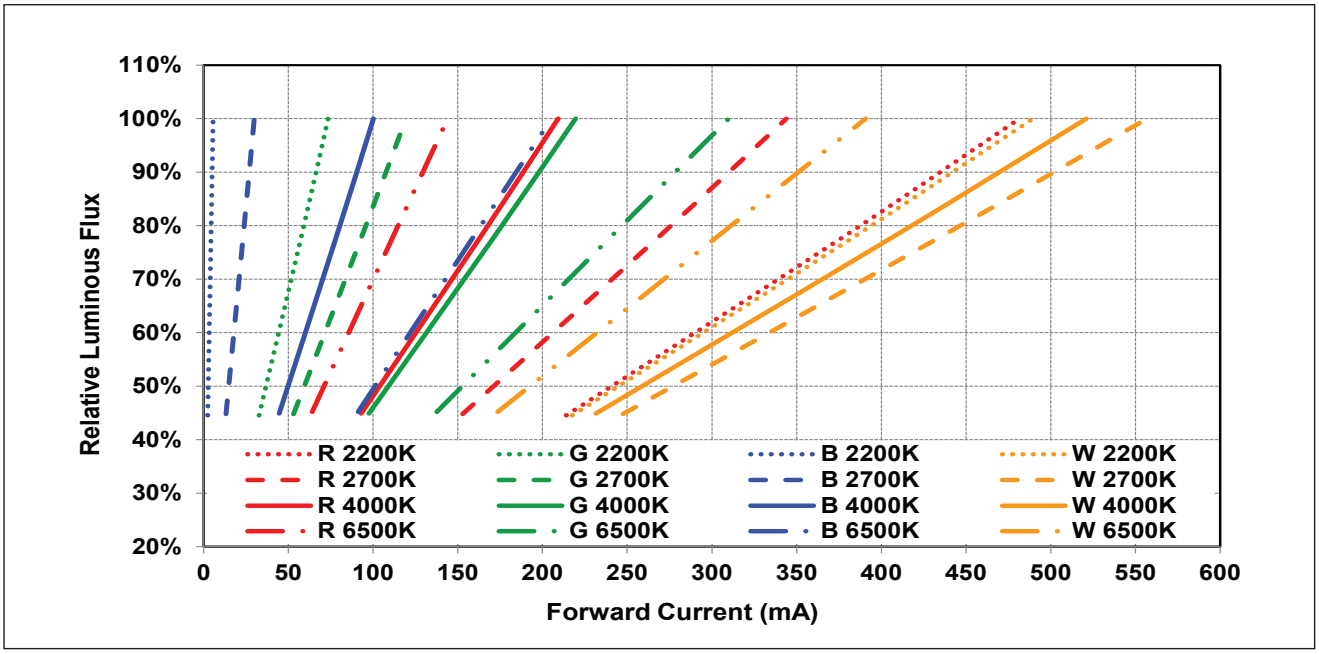


Figure 4: Typical Relative Luminous Flux (White CCT) vs. Drive Current Per Channel at CRI 95 (T_c=25˚C) for BXEB-L0610



Note for Figures 3 & 4:

1. Bridgelux does not recommend driving LEDs at low currents. Doing so may produce unpredictable results. Pulse width modulation (PWM) is recommended for dimming effects

Performance Curves

Figure 5: Typical Relative Luminous Flux (White CCT) vs. Drive Current Per Channel at CRI 90 (T_c=25˚C) for BXEB-L1204

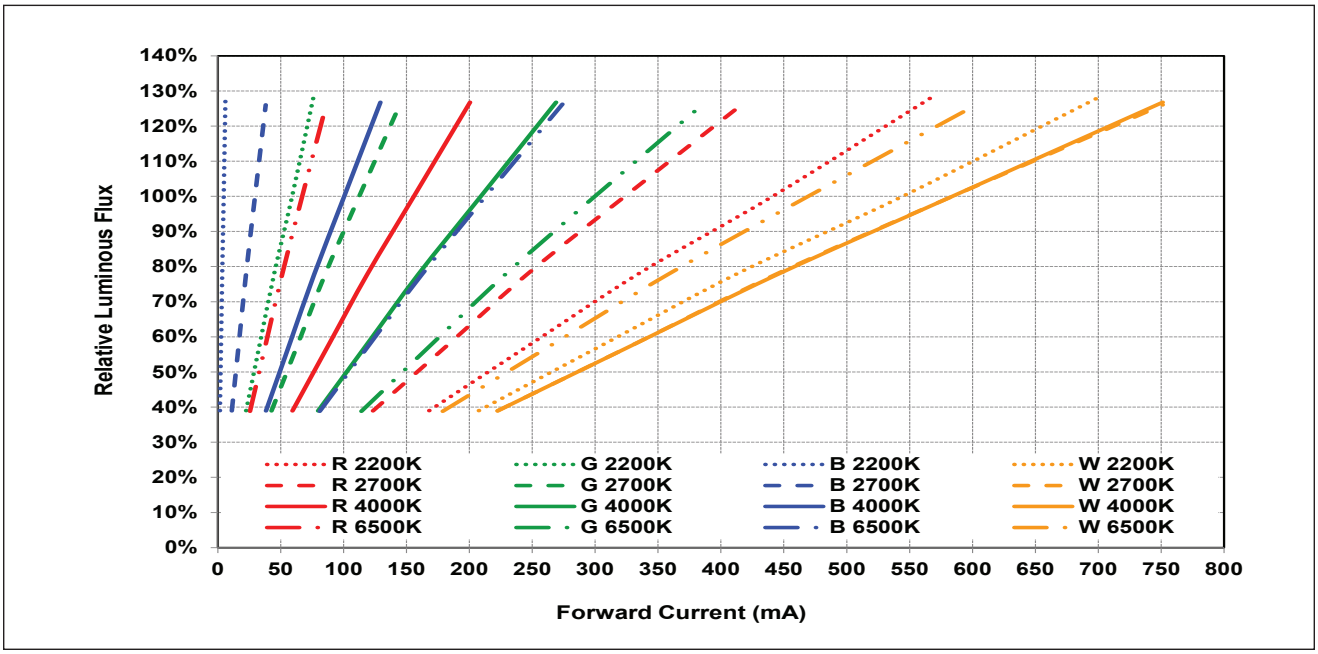
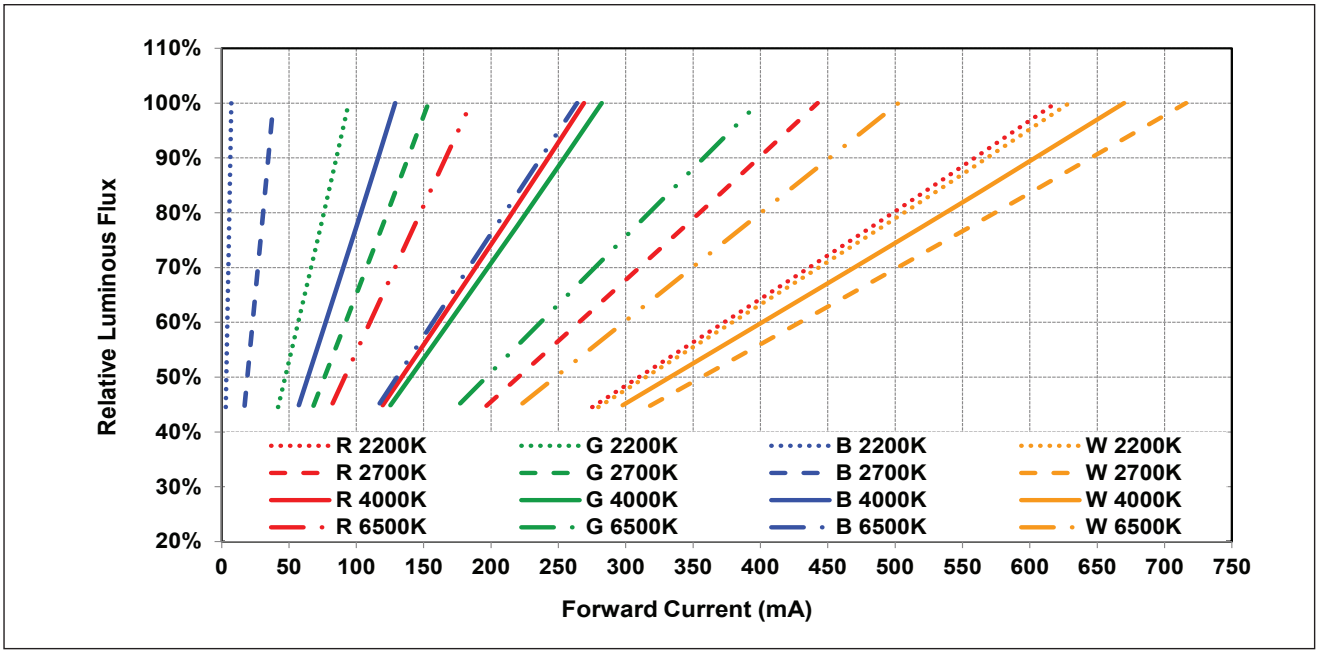


Figure 6: Typical Relative Luminous Flux (White CCT) vs. Drive Current Per Channel at CRI 95 (T_c=25˚C) for BXEB-L1204



Note for Figures 5 & 6:

1. Bridgelux does not recommend driving LEDs at low currents. Doing so may produce unpredictable results. Pulse width modulation (PWM) is recommended for dimming effects

Performance Curves

Figure 7: Typical Relative Luminous Flux (RGBW) vs. Drive Current Per Color (T_c=25˚C) for BXEB-L0610

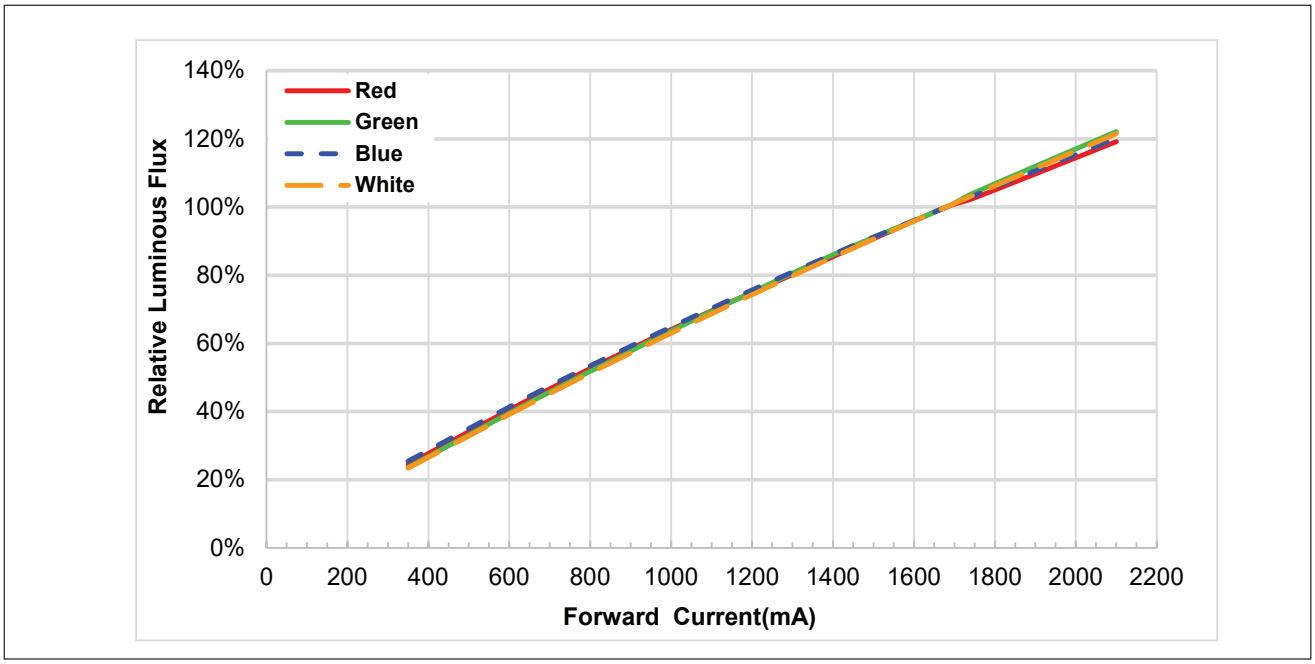
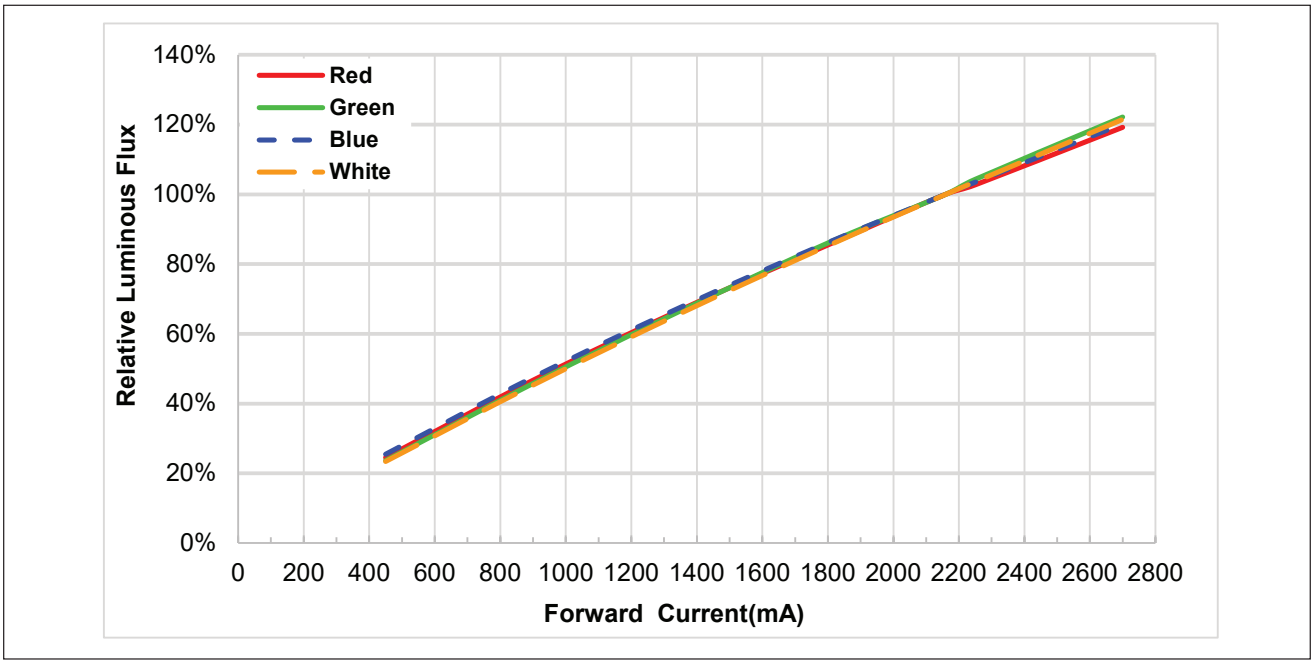


Figure 8: Typical Relative Luminous Flux (RGBW) vs. Drive Current Per Color (T_c=25˚C) for BXEB-L1204



Notes for Figure 7 & 8:

1. Bridgelux does not recommend driving LEDs at low currents. Doing so may produce unpredictable results. Pulse width modulation (PWM) is recommended for dimming effects.
2. Please refer to Table 6 for maximum current ratings for each color.

Performance Curves

Figure 9: Drive Current Per channel vs. Voltage (T_c= 25˚C) for BXEB-L0610

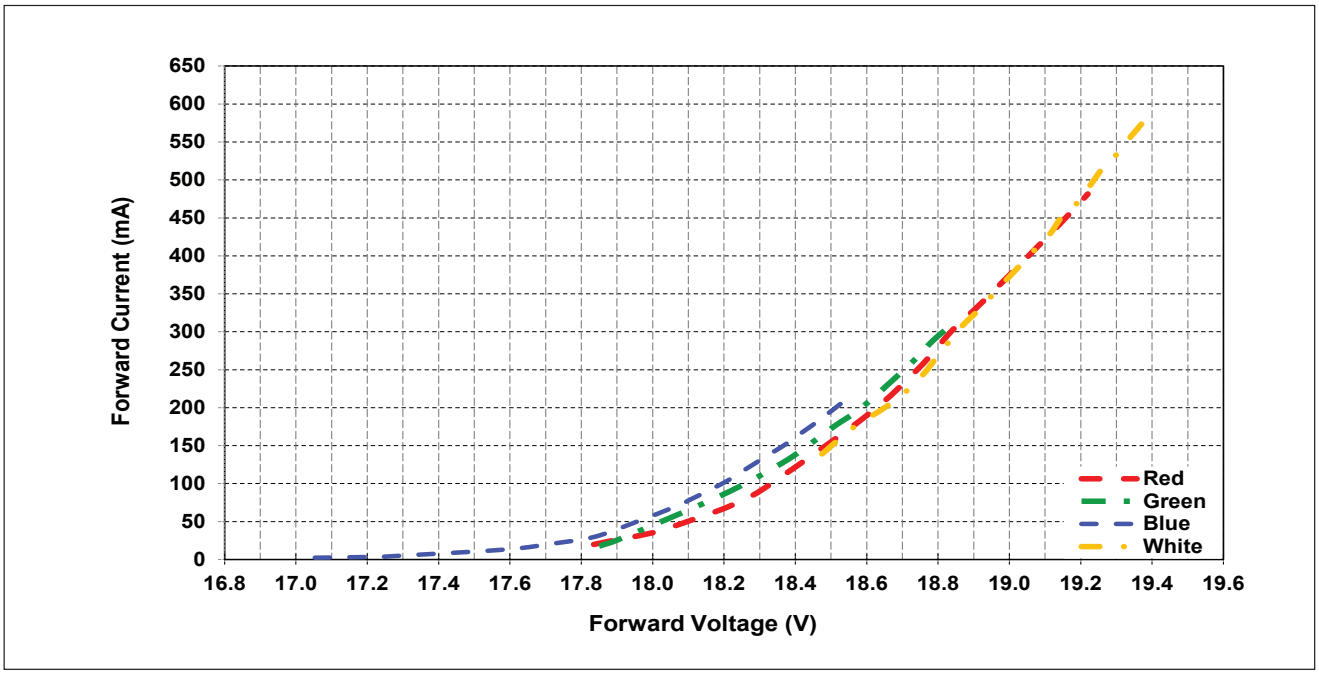
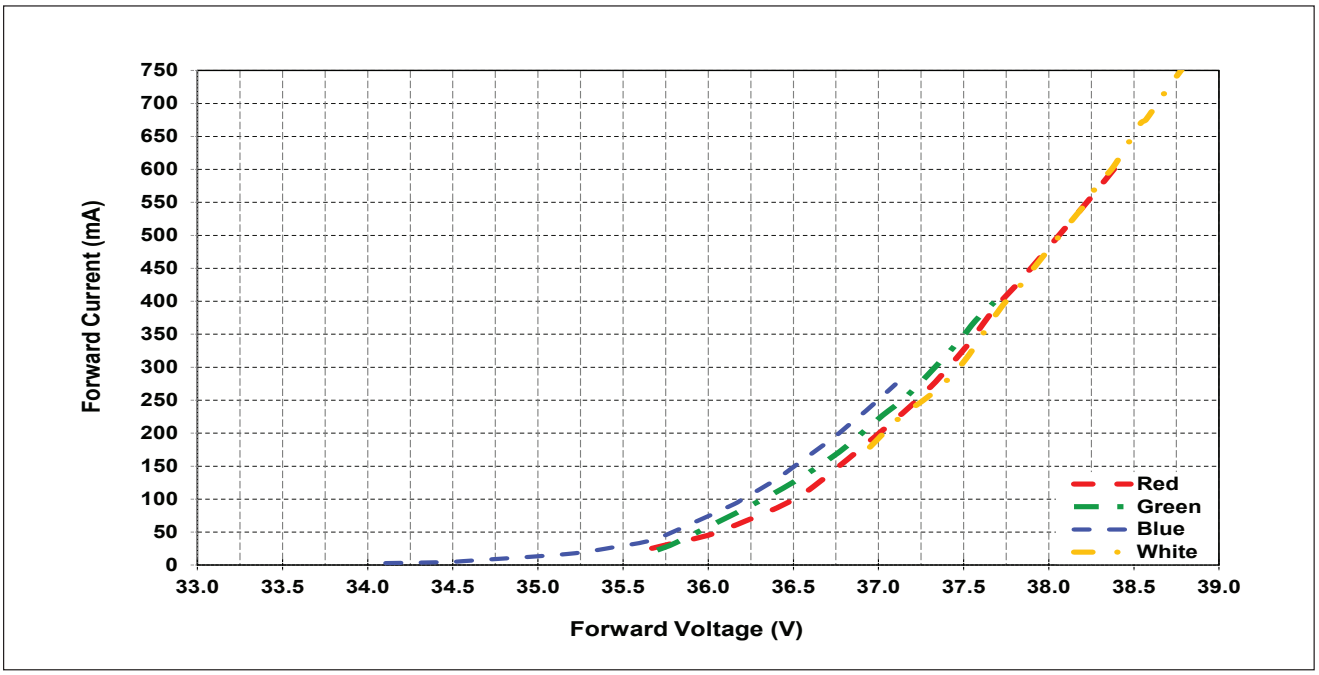


Figure 10: Drive Current Per channel vs. Voltage (T_c= 25˚C) for BXEB-L1204



Typical Color Spectrum

Figure 11: Typical Relative Luminous Flux (RGBW) vs. Solder Point Temperature

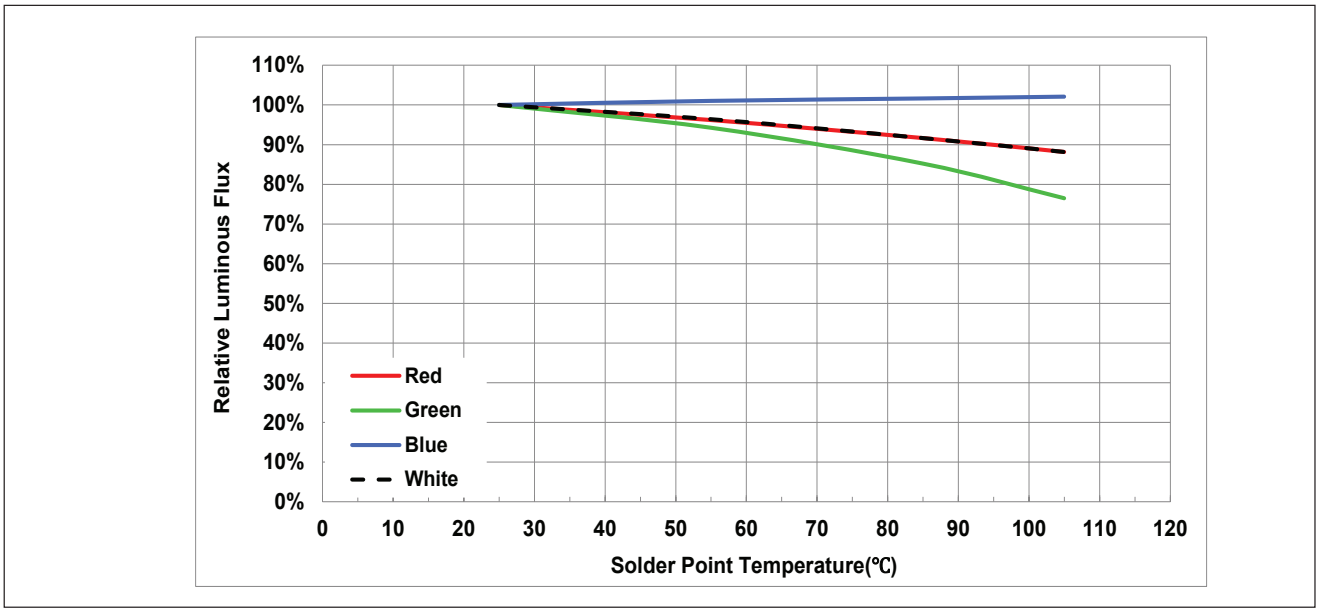
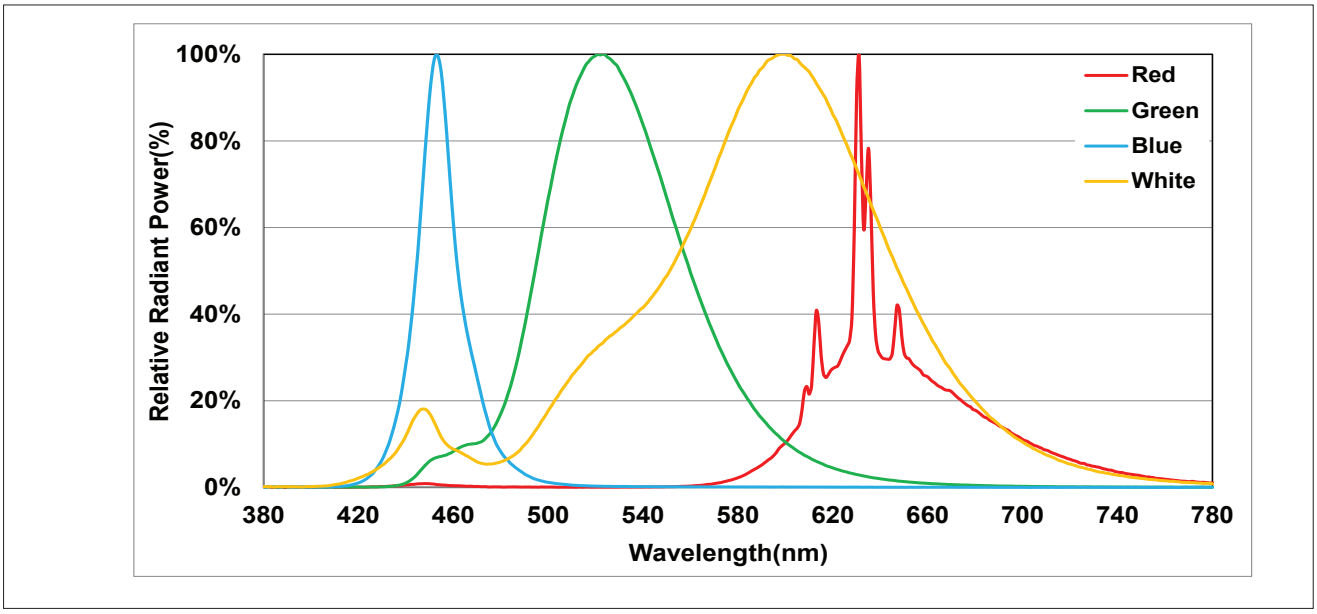


Figure 12: Typical Color Spectrum (RGBW)

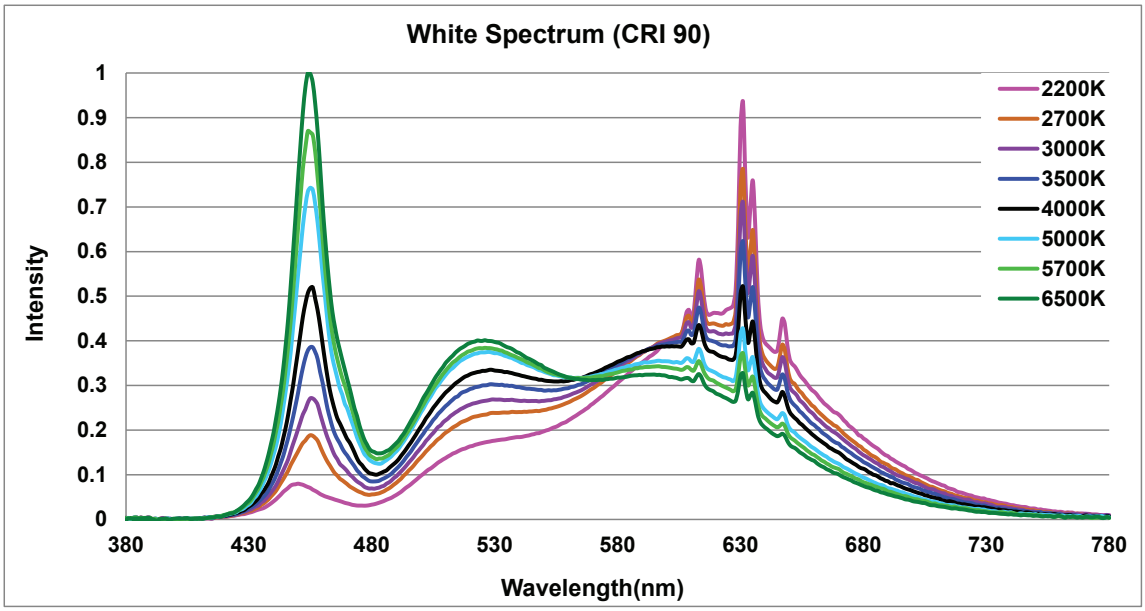


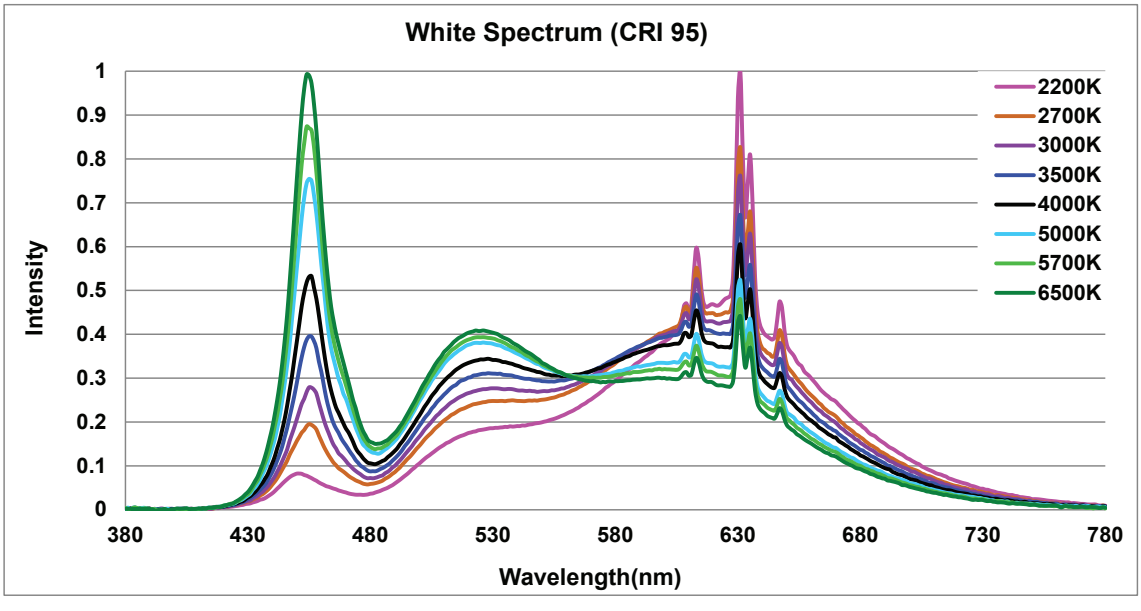
Note for Figures 12:

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

Performance Curves

Figure 13: Typical Color Spectrum (White CCT, at T_c= 25˚C)



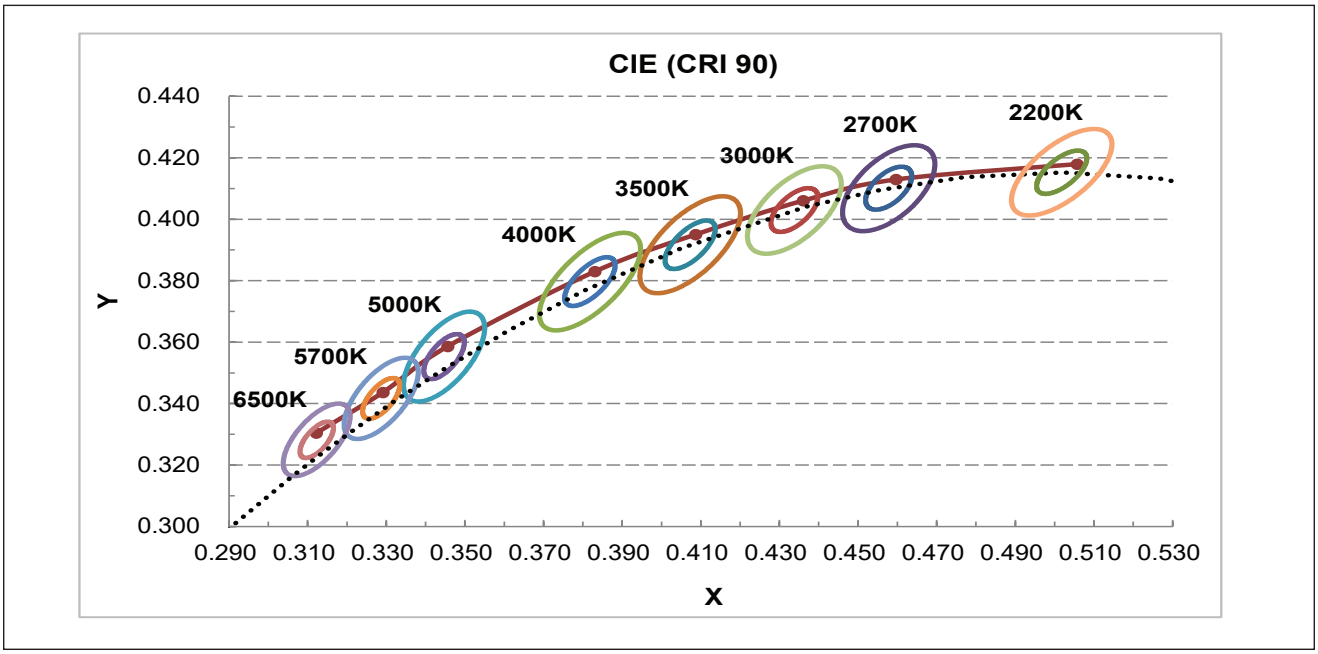


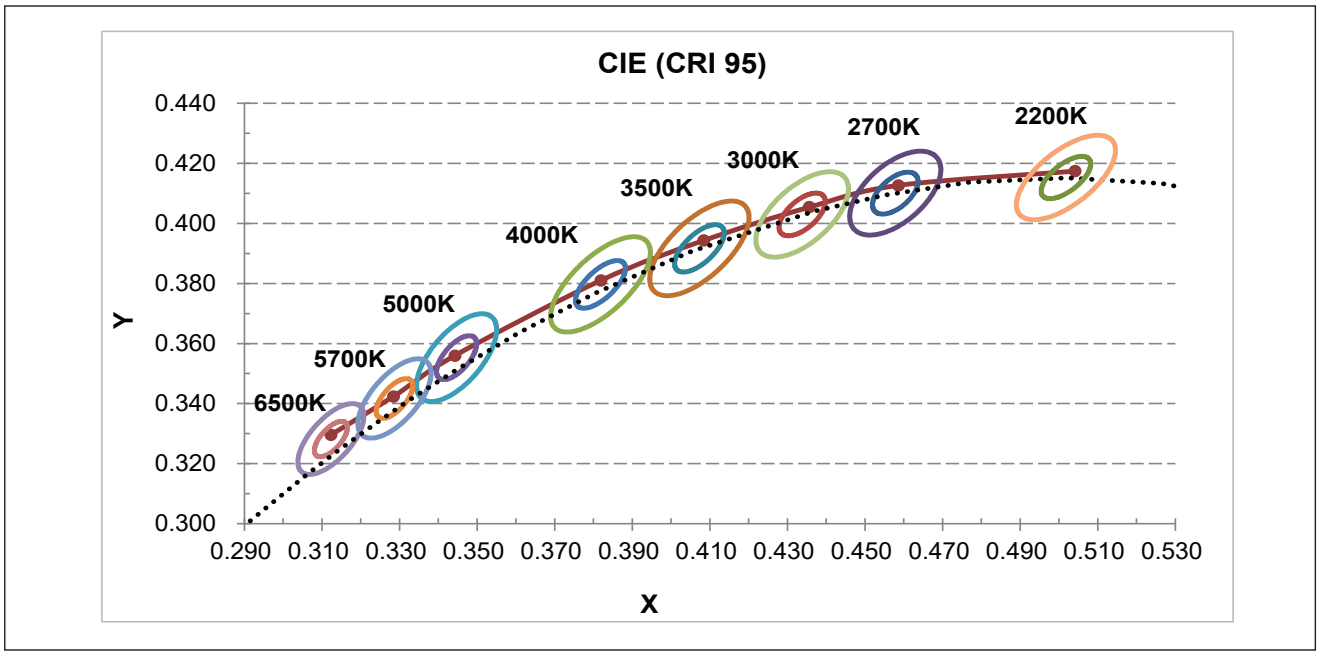
Note for Figures 13:

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

Performance Curves

Figure 14: Chromaticity Coordinate Group (Color Targeted at T_c= 55˚C)





Product Bin Definitions

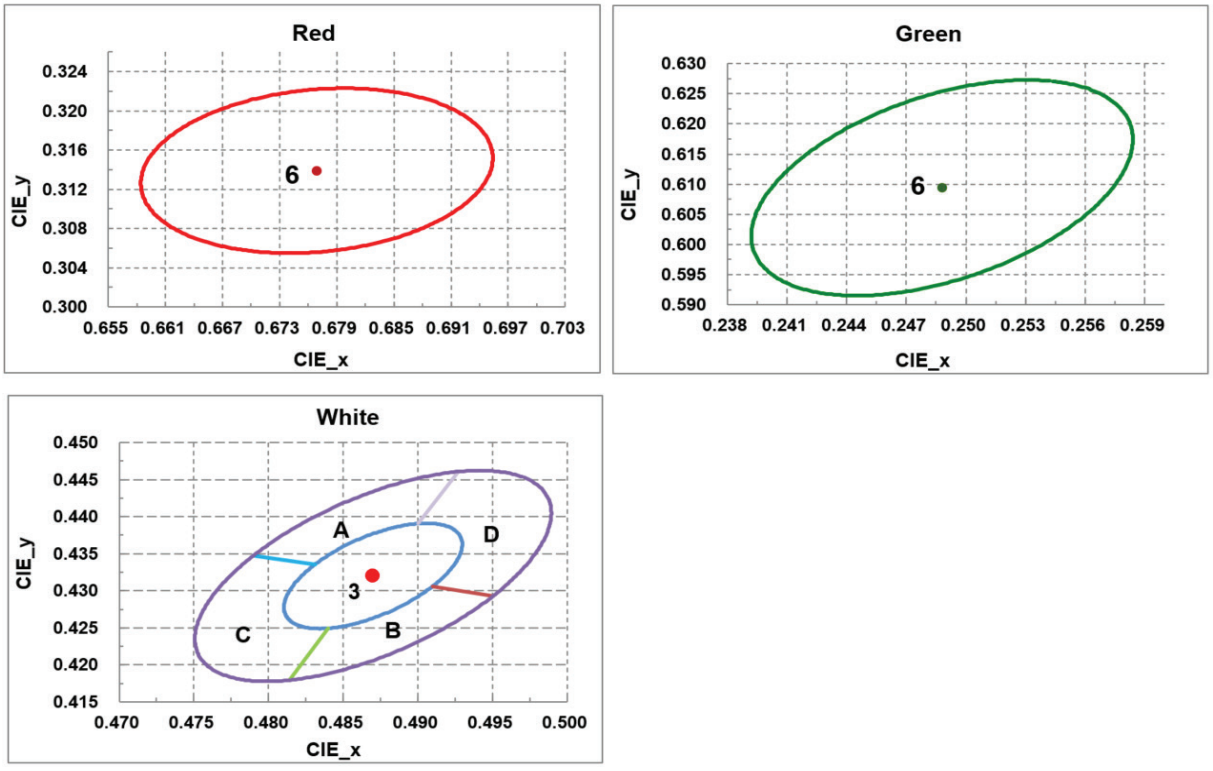
Table 9: RGW MacAdam Ellipse Color Bin Definitions

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 Tables 9

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



Mechanical Dimensions

Figure 16: Drawing Overview for 610mm

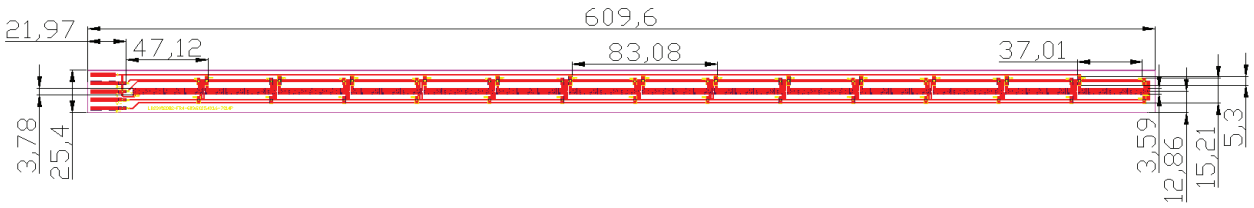
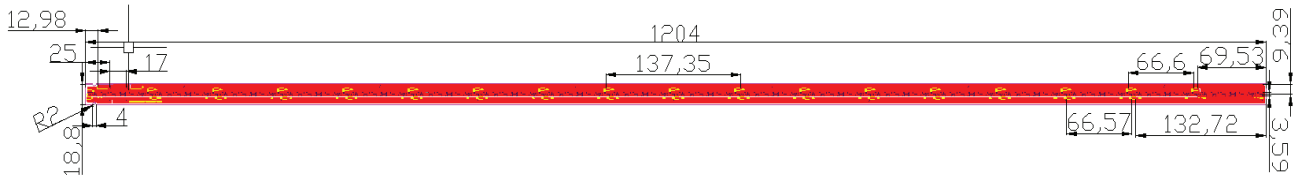


Figure 17: Drawing Overview for 1204mm



Notes for Figures 16 & 17:

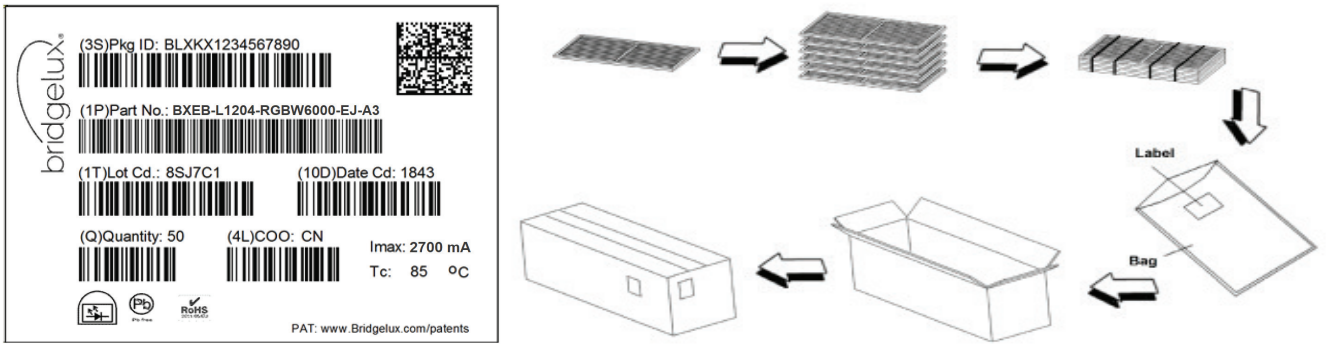
1. Solder pads are labeled "+" to denote positive polarity, and "-" to denote negative polarity.
2. Drawing dimensions are in millimeters.

Table 10: Module Dimensions & Connector Wiring

Parameter	BXEB-L0610-RGBW3000-7E-A3	BXEB-L1204-RGBW6000-EJ-A3
Linear length	609.6 mm	1204.0 mm
Linear width	25.4 mm	18.8 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 18: 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 11: Packaging Structure

Box Parameter	L0610 modules	L1204 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 19: 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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46410 Fremont Blvd
Fremont, CA 94538 USA
Tel (925) 583-8400
www.bridgelux.com

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Bridgelux Vesta Series RGBW EB Product Data Sheet DS583 Rev. A (11/2023)