



Bridgelux® Gen 7 V13 Array Series

Product Data Sheet DS101







Introduction

The V Series™ LED Array products deliver high quality light in a compact and cost-effective solid-state lighting package. These chip on board (CoB) arrays can be efficiently driven at twice the nominal drive current, enabling design flexibility not previously possible. This high flux density light source is designed to support a wide range of high quality, low cost directional luminaires and replacement lamps for commercial and residential applications.

The V13 LED Array is available in a variety of electrical, CCT and CRI combinations providing substantial design flexibility and energy efficiencies.

Lighting system designs incorporating these LED arrays deliver increased system level efficacy and longer service life. Typical applications include, replacement lamps, and task, accent, spot, track, wide area, security, wall pack and down lights.

Bridgelux Décor Series is our state of the art color line designed specifically for premium applications, producing unmatched LED light quality with brilliant color-rendering options and offer pleasing and inspiring lighting palettes. Bridgelux Décor Series color points are available on Vero® SE Series, Vero® Series, V Series™ and H Series™.

Décor Series Class A is based on human response testing, providing color points with a combined GAI and CRI metric.

Décor Series™ Ultra products provide a high CRI of 97 and a minimum R9 value of 93, which emphasizes the reds and color tones to which the human eye is most receptive - perfect for the most luxurious retail shops and world renowned museums. Décor Series Ultra is designed as a replacement for halogen lamps.

Décor Series™ Street and Landmark is designed to be a direct replacement for high pressure sodium lamps.

Décor Series™ Showcase is the optimal solution for replacing ceramic metal halide lamps, incorporating the same pure white light with enhanced spectrum coverage and higher efficacy.

Features

- Efficacy of 155 lm/W typical
- · Compact high flux density light source
- · Uniform high quality illumination
- · Minimum 65, 70, 80, 90 and 95 CRI options
- · Streamlined thermal path
- ENERGY STAR® / ANSI compliant color binning structure with 3 SDCM and 4 SDCM options
- · More energy efficient than incandescent, halogen and fluorescent lamps
- Low voltage DC operation
- · Instant light with unlimited dimming
- · V, bin code backside marking

Benefits

- · Enhanced optical control
- · Clean white light without pixilation
- · High quality true color reproduction
- Significantly reduced thermal resistance and increased operating temperatures
- · Uniform consistent white light
- Lower operating costs
- · Easy to use with daylight and motion detectors to enable increased energy savings
- · Reduced maintenance costs
- · Environmentally friendly, no disposal issue









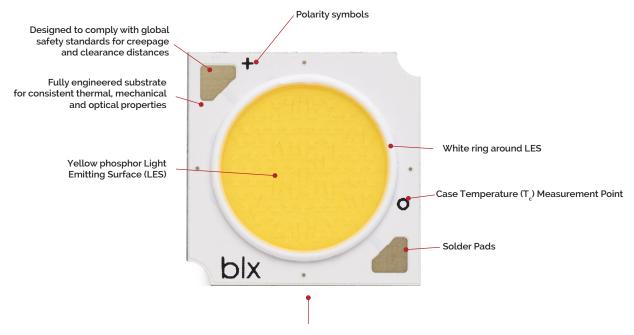
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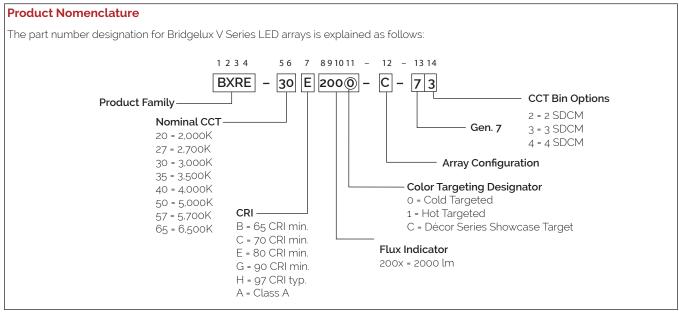
Product Feature Map

Bridgelux arrays are fully engineered devices that provide consistent thermal and optical performance on an engineered mechanical platform. The V Series arrays are the most compact chip-on-board devices across all of

Bridgelux's LED Array products. The arrays incorporate several features to simplify design integration and assembly. Please visit www.bridgelux.com for more information on the V Series family of products.



Note: Part number and lot codes are scribed on back of array



The following product configurations are available:

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

Part Number	Nominal CCT¹ (K)	CRI ²	Nominal Drive Current ³ (mA)	Typical Pulsed Flux ^{4.5.6} T _c = 25°C (lm)	Minimum Pulsed Flux ^{6,7} T _c = 25°C (lm)	Typical V _f (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-17E2000-C-74	1750	80	630	1879	1691	34.8	21.9	86
BXRE-20B2001-B-73	2000	65	450	2264	1992	34.8	15.6	145
BXRE-20B2001-C-73	2000	65	630	3170	2853	34.8	21.9	145
BXRE-25E2000-C-74	2500	80	630	3037	2733	34.8	21.9	139
BXRE-27E2000-B-7X	2700	80	450	2323	2090	34.8	15.6	149
BXRE-27E2000-C-7X	2700	80	630	3251	2926	34.8	21.9	149
BXRE-27G2000-B-7X	2700	90	450	1936	1742	34.8	15.6	124
BXRE-27G2000-C-7X	2700	90	630	2709	2438	34.8	21.9	124
BXRE-27H2000-B-7X	2700	97	450	1673	1506	34.8	15.6	107
BXRE-30E2000-B-7X	3000	80	450	2420	2178	34.8	15.6	155
BXRE-30E2000-C-7X	3000	80	630	3387	3048	34.8	21.9	155
BXRE-30G2000-B-7X	3000	90	450	2008	1807	34.8	15.6	128
BXRE-30G2000-C-7X	3000	90	630	2811	2530	34.8	21.9	128
BXRE-30G200C-B-73	3000	90	450	1877	1689	34.8	15.6	120
BXRE-30G200C-C-73	3000	90	630	2628	2365	34.8	15.6	120
BXRE-30A2001-B-73 ^{8,9}	3000	93	450	1810	1629	34.8	15.6	116
BXRE-30A2001-C-73 ^{8,9}	3000	93	630	2540	2286	34.8	21.9	116
BXRE-30H2000-B-7X	3000	97	450	1798	1618	34.8	15.6	115
BXRE-35E2000-B-7X	3500	80	450	2492	2243	34.8	21.9	159
BXRE-35E2000-C-7X	3500	80	630	3488	3140	34.8	15.6	159
BXRE-35G2000-B-7X	3500	90	450	2081	1873	34.8	15.6	133
BXRE-35G2000-C-7X	3500	90	630	2913	2621	34.8	21.9	133
BXRE-35A2001-B-73 ^{8.9}	3500	93	450	1986	1787	34.8	15.6	127
BXRE-35A2001-C-73 ^{8,9}	3500	93	630	2781	2503	34.8	21.9	127
BXRE-40E2000-B-7X	4000	80	450	2516	2265	34.8	15.6	161
BXRE-40E2000-C-7X	4000	80	630	3522	3170	34.8	21.9	161
BXRE-40G2000-B-7X	4000	90	450	2153	1938	34.8	15.6	138
BXRE-40G2000-C-7X	4000	90	630	3014	2713	34.8	21.9	138
BXRE-50C2001-B-7X	5000	70	450	2758	2482	34.8	15.6	176
BXRE-50C2001-C-7X	5000	70	630	3861	3475	34.8	21.9	176
BXRE-50E2001-B-7X	5000	80	450	2593	2334	34.8	15.6	166
BXRE-50E2001-C-7X	5000	80	630	3629	3266	34.8	21.9	166
BXRE-50G2001-B-7X	5000	90	450	2207	1986	34.8	15.6	141

- 1. Nominal CCT as defined by ANSI C78.377-2011. Products with a CCT of 5000K-6500K are hot targeted to Tc= 85°C.
- 2. CRI values are typical for Decor Series Ultra and Decor Series Class A products. CRI values are minimums for all other products. Minimum Rg value for 80 CRI products is 0, the minimum Rg values for 97 CRI products is 93. Bridgelux maintains a ± 3 tolerance on Rg values.
- 3. Drive current is referred to as nominal drive current.
- 4. Products tested under pulsed condition (10ms pulse width) at nominal test current where T_1 (junction temperature) = T_c (case temperature) = 25°C.
- 5. Typical performance values are provided as a reference only and are not a guarantee of performance.
- 6. Bridgelux maintains a ±7% tolerance on flux measurements.
- 7. Minimum flux values at the nominal test current are guaranteed by 100% test.
- 8. Nominal CCT is defined by the Lighting Research Center's Class A definition. The center of the Class A color bin is on the corresponding isothermal line.
- 9. GAI value is 80. To help ensure optimal fixture level performance, GAI is measured at the fixture level, on axis, at a case temperature of 70°C. GAI may vary 3 depending on fixture design and performance.

Table 1: Selection Guide, Pulsed Measurement Data (T; = Tc = 25°C) (continued)

Part Number	Nominal CCT¹ (K)	CRI²	Nominal Drive Current³ (mA)	Typical Pulsed Flux ⁴⁵⁶ T _c = 25°C (lm)	Minimum Pulsed Flux ^{6,7} T _c = 25°C (lm)	Typical V _f (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-50G2001-C-7X	5000	90	630	3089	2780	34.8	21.9	141
BXRE-57C2001-B-7X	5700	70	450	2662	2395	34.8	15.6	170
BXRE-57C2001-C-7X	5700	70	630	3725	3353	34.8	21.9	170
BXRE-57E2001-B-7X	5700	80	450	2637	237X	34.8	15.6	169
BXRE-57E2001-C-7X	5700	80	630	3692	3322	34.8	21.9	169
BXRE-65C2001-B-7X	6500	70	450	2710	2439	34.8	15.6	173
BXRE-65C2001-C-7X	6500	70	630	3793	3414	34.8	21.9	173
BXRE-65E2001-B-7X	6500	80	450	2686	2417	34.8	15.6	172
BXRE-65E2001-C-7X	6500	80	630	3759	3383	34.8	21.9	172

Notes for Table 1

- 1. Nominal CCT as defined by ANSI C78.377-2011. Products with a CCT of 5000K-6500K are hot targeted to T_c = 85°C.
- 2. CRI values are typical for Decor Series Ultra and Decor Series Class A products. CRI values are minimums for all other products. Minimum Rg value for 80 CRI products is 0, the minimum Rg values for 90 CRI products is 50, the minimum Rg values for 97 CRI products is 93. Bridgelux maintains a ± 3 tolerance on Rg values.
- 3. Drive current is referred to as nominal drive current.
- 4. Products tested under pulsed condition (10ms pulse width) at nominal test current where T_i (junction temperature) = T_c (case temperature) = 25°C.
- 5. Typical performance values are provided as a reference only and are not a guarantee of performance.
- 6. Bridgelux maintains a ±7% tolerance on flux measurements.
- 7. Minimum flux values at the nominal test current are guaranteed by 100% test.
- 8. Nominal CCT is defined by the Lighting Research Center's Class A definition. The center of the Class A color bin is on the corresponding isothermal line.
- 9. GAI value is 80. To help ensure optimal fixture level performance, GAI is measured at the fixture level, on axis, at a case temperature of 70°C. GAI may vary depending on fixture design and performance.

Table 2: Selection Guide, Stabilized DC Performance (T_c = 70°C) ^{7.8}

Part Number	Nominal CCT¹ (K)	GAI ²	CRI ³	Nominal Drive Current ⁴ (mA)	Typical DC Flux ⁵⁶ T _c = 70°C (lm)	Minimum DC Flux ^{6,9} T _c = 70°C (lm)	Typical V _f (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-30A2001-B-73	3000	80	93	450	1751	1576	34.4	15.5	113
BXRE-30A2001-C-73	3000	80	93	630	2452	2207	34.4	21.7	113
BXRE-35A2001-B-73	3500	80	93	450	1876	1688	34.4	15.5	121
BXRE-35A2001-C-73	3500	80	93	630	2622	2360	34.4	21.7	121

- 1. Nominal CCT is defined by the Lighting Research Center's Class A definition. The center of the Class A color bin is on the corresponding isothermal line.
- 2. To help ensure optimal fixture level performance, GAI is measured at the fixture level, on axis, at a case temperature of 70°C. GAI may vary depending on fixture design and performance.
- 3. All CRI values are measured at T_i = T_c = 25°C. CRI Values are specified as typical.
- 4. Drive current is referred to as nominal drive current.
- 5. Typical performance values are provided as a reference only and are not a guarantee of performance.
- 6. Bridgelux maintains a ±7% tolerance on flux measurements.
- 7. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.
- 8. Typical performance is estimated based on operation under DC (direct current) with LED array mounted onto a heat sink with thermal interface material and the case temperature maintained at specified temperature. Based on Bridgelux test setup, values may vary depending on the thermal design of the luminaire and/or the exposed environment to which the product is subjected.
- 9. Minimum flux values at elevated temperatures are provided for reference only and are not guaranteed by 100% production testing. Based on Bridgelux test setup, values may vary depending on the thermal design of the luminaire and/or the exposed environment to which the product is subjected.

Table 3: Selection Guide, Stabilized DC Performance (T₂ = 85°C) 45

Part Number	Nominal CCT ¹ (K)	CRI ²	Nominal Drive Current³ (mA)	Typical DC Flux ^{4,5} T _c = 85°C (lm)	Minimum DC Flux ⁶ T _c = 85°C (lm)	Typical V _f (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-17E2000-C-74	1750	80	630	1691	1522	33.9	21.4	79
BXRE-20B2001-B-73	2000	65	450	2038	1793	33.9	15.3	134
BXRE-20B2001-C-73	2000	65	630	2853	2568	33.9	21.4	134
BXRE-25E2000-C-74	2500	80	630	2733	2460	33.9	21.4	128
BXRE-27E2000-B-7X	2700	80	450	2090	1881	33.9	15.3	137
BXRE-27E2000-C-7X	2700	80	630	2926	2633	33.9	21.4	137
BXRE-27G2000-B-7X	2700	90	450	1742	1568	33.9	15.3	114
BXRE-27G2000-C-7X	2700	90	630	2438	2194	33.9	21.4	114
BXRE-27H2000-B-7X	2700	97	450	1506	1355	33.9	15.3	99
BXRE-30E2000-B-7X	3000	80	450	2178	1960	33.9	15.3	143
BXRE-30E2000-C-7X	3000	80	630	3048	2743	33.9	21.4	143
BXRE-30G2000-B-7X	3000	90	450	1807	1626	33.9	15.3	118
BXRE-30G2000-C-7X	3000	90	630	2530	2277	33.9	21.4	118
BXRE-30G200C-B-73	3000	90	450	1689	1520	33.9	15.3	111
BXRE-30G200C-C-73	3000	90	630	2365	2129	33.9	21.4	111
BXRE-30A2001-B-73 ^{7.8}	3000	93	450	1629	1466	33.9	15.3	107
BXRE-30A2001-C-73 ^{7.8}	3000	93	630	2286	2057	33.9	21.4	107
BXRE-30H2000-B-7X	3000	97	450	1618	1457	33.9	15.3	106
BXRE-35E2000-B-7X	3500	80	450	2243	2019	33.9	15.3	147
BXRE-35E2000-C-7X	3500	80	630	3140	2826	33.9	21.4	147
BXRE-35G2000-B-7X	3500	90	450	1873	1686	33.9	15.3	123
BXRE-35G2000-C-7X	3500	90	630	2621	2359	33.9	21.4	123
BXRE-35A2001-B-73 ^{7,8}	3500	93	450	1787	1609	33.9	15.3	117
BXRE-35A2001-C-73 ^{7.8}	3500	93	630	2503	2253	33.9	21.4	117
BXRE-40E2000-B-7X	4000	80	450	2265	2039	33.9	15.3	148
BXRE-40E2000-C-7X	4000	80	630	3170	2853	33.9	21.4	148
BXRE-40G2000-B-7X	4000	90	450	1938	1744	33.9	15.3	127
BXRE-40G2000-C-7X	4000	90	630	2713	2442	33.9	21.4	127
BXRE-50C2001-B-7X	5000	70	450	2482	2234	33.9	15.3	163
BXRE-50C2001-C-7X	5000	70	630	3475	3128	33.9	21.4	163
BXRE-50E2001-B-7X	5000	80	450	2334	2101	33.9	15.3	153
BXRE-50E2001-C-7X	5000	80	630	3266	2939	33.9	21.4	153
BXRE-50G2001-B-7X	5000	90	450	1986	1787	33.9	15.3	130

- 1. Nominal CCT as defined by ANSI C78.377-2011. Products with a CCT of 5000K-6500K are hot targeted to T_c * 85°C.
- 2. All CRI values are measured at T₁ = T₂ = 25°C. CRI values are typical for Decor Series Ultra and Decor Series Class A products. CRI values are minimums for all other products. Minimum Rg value for 80 CRI products is 0, the minimum Rg values for 90 CRI products is 50, the minimum Rg values for 97 CRI products is 93. Bridgelux maintains a ± 3 tolerance on R9 values.
- 3. Drive current is referred to as nominal drive current.
- 4. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.
- 5. Typical performance is estimated based on operation under DC (direct current) with LED array mounted onto a heat sink with thermal interface material and the case temperature maintained at 85°C. Based on Bridgelux test setup, values may vary depending on the thermal design of the luminaire and/or the exposed environment to which the product is subjected.
- 6. Minimum flux values at elevated temperatures are provided for reference only and are not guaranteed by 100% production testing. Based on Bridgelux test setup, values may vary depending on the thermal design of the luminaire and/or the exposed environment to which the product is subjected.
- 7. Nominal CCT is defined by the Lighting Research Center's Class A definition. The center of the Class A color bin is on the corresponding isothermal line.
- 8. GAI value is 80. To help ensure optimal fixture level performance, GAI is measured at the fixture level, on axis, at a case temperature of 70°C. GAI may vary depending on fixture design and performance.

Table 3: Selection Guide, Stabilized DC Performance (T_c = 85°C) 4.5 (continued)

Part Number	Nominal CCT ¹ (K)	CRI²	Nominal Drive Current³ (mA)	Typical DC Flux ^{4,5} T _c = 85°C (lm)	Minimum DC Flux ⁶ T _c = 85°C (lm)	Typical V _f (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-50G2001-C-7X	5000	90	630	2780	2502	33.9	21.4	130
BXRE-57C2001-B-7X	5700	70	450	2395	2156	33.9	15.3	157
BXRE-57C2001-C-7X	5700	70	630	3353	3018	33.9	21.4	157
BXRE-57E2001-B-7X	5700	80	450	2374	2137	33.9	15.3	156
BXRE-57E2001-C-7X	5700	80	630	3322	2990	33.9	21.4	156
BXRE-65C2001-B-7X	6500	70	450	2439	2195	33.9	15.3	160
BXRE-65C2001-C-7X	6500	70	630	3414	3073	33.9	21.4	160
BXRE-65E2001-B-7X	6500	80	450	2417	2175	33.9	15.3	158
BXRE-65E2001-C-7X	6500	80	630	3383	3045	33.9	21.4	158

- 1. Nominal CCT as defined by ANSI C78.377-2011. Products with a CCT of 5000K-6500K are hot targeted to T_c * 85°C.
- 2. All CRI values are measured at T, = T, = 25°C. CRI values are typical for Decor Series Ultra and Decor Series Class A products. CRI values are minimums for all other products. Minimum Rg value for 80 CRI products is 0, the minimum Rg values for 90 CRI products is 50, the minimum Rg values for 97 CRI products is 93. Bridgelux maintains a ± 3 tolerance on Rg values.
- 3. Drive current is referred to as nominal drive current.
- 4. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.
- 5. Typical performance is estimated based on operation under DC (direct current) with LED array mounted onto a heat sink with thermal interface material and the case temperature maintained at 85°C. Based on Bridgelux test setup, values may vary depending on the thermal design of the luminaire and/or the exposed environment to which the product is subjected.
- 6. Minimum flux values at elevated temperatures are provided for reference only and are not guaranteed by 100% production testing. Based on Bridgelux test setup, values may vary depending on the thermal design of the luminaire and/or the exposed environment to which the product is subjected.
- 7. Nominal CCT is defined by the Lighting Research Center's Class A definition. The center of the Class A color bin is on the corresponding isothermal line.
- 8. GAI value is 80. To help ensure optimal fixture level performance, GAI is measured at the fixture level, on axis, at a case temperature of 70°C. GAI may vary depending on fixture design and performance.

V Series LED arrays are tested to the specifications shown using the nominal drive currents in Table 1. V Series 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 & 2 and the flux vs. current characteristics shown in Figures 3 & 4. The performance at commonly used drive currents is summarized in Table 4.

 Table 4: Product Performance at Commonly Used Drive Currents

Part Number	CRI	Drive Current¹ (mA)	Typical V _f T _c = 25°C (V)	Typical Power T _c = 25°C (W)	Typical Flux² T _c = 25°C (lm)	Typical DC Flux³ T _c = 85°C (lm)	Typical Efficacy T _c = 25°C (lm/W)
		158	32.3	5.1	511	484	100
		315	33.2	10.4	986	929	94
BXRE-17E2000-C-74	80	630	34.8	21.9	1879	1691	86
		945	36.1	34.1	2700	2525	79
		1260	37.3	47.0	3445	3211	73
		113	32.3	3.6	620	573	171
		225	33.2	7.5	1197	1099	160
BXRE-20B2001-B-7x	65	450	34.8	15.6	2264	1992	145
		675	36.0	24.3	3276	2973	135
		900	37.2	33.5	4177	3773	125
		158	32.3	5.1	862	816	169
		315	33.2	10.4	1663	1568	159
BXRE-20B2001-C-73	65	630	34.8	21.9	3170	2853	145
		945	36.1	34.1	4555	4260	134
		1260	37.3	47.0	5812	5417	124
		158	32.3	5.1	826	782	162
	80	315	33.2	10.4	1594	1502	153
BXRE-25E2000-C-74		630	34.8	21.9	3037	2733	139
		945	36.1	34.1	4364	4081	128
		1260	37.3	47.0	5569	5190	118
		113	32.3	3.6	637	588	175
		225	33.2	7.5	1228	1127	165
BXRE-27E2000-B-7x	80	450	34.8	15.6	2323	2090	149
		675	36.0	24.3	3361	3050	138
		900	37.2	33.5	4286	3871	128
		158	32.3	5.1	884	837	174
		315	33.2	10.4	1706	1608	163
BXRE-27E2000-C-7x	80	630	34.8	21.9	3251	2926	149
		945	36.1	34.1	4672	4369	137
		1260	37.3	47.0	5961	5556	127
		113	32.3	3.6	530	490	146
		225	33.2	7.5	1024	939	137
BXRE-27G2000-B-7x	90	450	34.8	15.6	1936	1742	124
2, L, GLOOD D / A		675	36.0	24.3	2801	2542	115
		900	37.2	33.5	3571	3226	107
		158	32.3	5.1	737	698	145
		315	33.2	10.4	1422	1340	136
BXRE-27G2000-C-7x	90	630	34.8	21.9	2709	2438	124
,		945	36.1	34.1	3893	3641	114
		1260	37.3	47.0	4968	4630	106

- 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.
- 3. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Table 4: Product Performance at Commonly Used Drive Currents (Continued)

Part Number	CRI	Drive Current¹ (mA)	Typical V _f T _c = 25°C (V)	Typical Power T _c = 25°C (W)	Typical Flux² T _c = 25°C (lm)	Typical DC Flux³ T _c = 85°C (lm)	Typical Efficacy T _c = 25°C (lm/W)
		113	32.3	3.6	459	423	126
		225	33.2	7.5	885	812	119
BXRE-27H2000-B-7X	97	450	34.8	15.6	1673	1506	107
		675	36.0	24.3	2421	2197	99
		900	37.2	33.5	3087	2788	92
		113	32.3	3.6	663	612	182
		225	33.2	7.5	1280	1174	171
BXRE-30E2000-B-7X	80	450	34.8	15.6	2420	2178	155
		675	36.0	24.3	3501	3177	144
		900	37.2	33.5	4464	4032	133
		158	32.3	5.1	921	872	181
		315	33.2	10.4	1777	1675	170
BXRE-30E2000-C-7X	80	630	34.8	21.9	3387	3048	155
		945	36.1	34.1	4867	4551	143
		1260	37.3	47.0	6210	5788	132
		113	32.3	3.6	550	508	151
		225	33.2	7.5	1062	974	142
BXRE-30G2000-B-7X	90	450	34.8	15.6	2008	1807	128
		675	36.0	24.3	2906	2637	119
		900	37.2	33.5	3705	3347	111
		158	32.3	5.1	764	724	150
		315	33.2	10.4	1475	1390	141
BXRE-30G2000-C-7X	90	630	34.8	21.9	2811	2530	128
	90	945	36.1	34.1	4039	3778	118
		1260	37.3	47.0	5154	4804	110
		113	32.3	3.6	514	475	141
		225	33.2	7.5	993	911	133
BXRE-30G200C-B-73	90	450	34.8	15.6	1877	1689	120
		675	36.0	24.3	2716	2465	112
		900	37.2	33.5	3463	3128	103
		158	32.3	5.1	720	665	141
		315	33.2	10.4	1390	1275	133
BXRE-30G200C-C-73	90	630	34.8	21.9	2628	2365	120
		945	36.1	34.1	3802	3451	111
		1260	37.3	47.0	4849	4380	103
		113	32.3	3.6	496	458	136
		225	33.2	7.5	957	878	128
BXRE-30A2001-B-73	93	450	34.8	15.6	1810	1629	116
. 5		675	36.0	24.3	2619	2377	108
		900	37.2	33.5	3340	3016	100
		158	32.3	5.1	696	642	137
		315	33.2	10.4	1343	1233	129
BXRE-30A2001-C-73	93	630	34.8	21.9	2540	2286	116
3 , 0		945	36.1	34.1	3675	3336	108
		1260	37.3	47.0	4687	4233	100

- 1. Alternate drive currents are provided for reference only and are not a guarantee of performance.
- 2. Bridgelux maintains a ± 7% tolerance on flux measurements.
- 3. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Table 4: Product Performance at Commonly Used Drive Currents (Continued)

Part Number	CRI	Drive Current¹ (mA)	Typical V _f T _c = 25°C (V)	Typical Power T _c = 25°C (W)	Typical Flux² T _c = 25°C (lm)	Typical DC Flux³ T _c = 85°C (lm)	Typical Efficacy T _c = 25°C (lm/W)
		113	32.3	3.6	493	455	136
		225	33.2	7.5	951	873	127
BXRE-30H2000-B-7X	97	450	34.8	15.6	1798	1618	115
		675	36.0	24.3	2602	2362	107
		900	37.2	33.5	3318	2997	99
		113	32.3	3.6	683	630	188
		225	33.2	7.5	1318	1209	177
BXRE-35E2000-B-7X	80	450	34.8	15.6	2492	2243	159
		675	36.0	24.3	3606	3273	148
		900	37.2	33.5	4598	4153	137
		158	32.3	5.1	948	898	186
		315	33.2	10.4	1831	1726	175
BXRE-35E2000-C-7X	80	630	34.8	21.9	3488	3140	159
		945	36.1	34.1	5013	4688	147
		1260	37.3	47.0	6396	5962	136
		113	32.3	3.6	570	526	157
		225	33.2	7.5	1100	1010	147
BXRE-35G2000-B-7X	90	450	34.8	15.6	2081	1873	133
		675	36.0	24.3	3011	2733	124
		900	37.2	33.5	3839	3468	115
		158	32.3	5.1	792	750	156
		315	33.2	10.4	1528	1441	146
BXRE-35G2000-C-7X	90	630	34.8	21.9	2913	2621	133
		945	36.1	34.1	4185	3914	123
		1260	37.3	47.0	5340	4978	114
		113	32.3	3.6	544	502	150
		225	33.2	7.5	1050	964	141
BXRE-35A2001-B-73	93	450	34.8	15.6	1986	1787	127
		675	36.0	24.3	2873	2608	118
		900	37.2	33.5	3664	3310	109
		158	32.3	5.1	756	716	149
		315	33.2	10.4	1459	1376	140
BXRE-35A2001-C-73	93	630	34.8	21.9	2781	2503	127
		945	36.1	34.1	3996	3737	117
		1260	37.3	47.0	5099	4753	108
		113	32.3	3.6	690	636	190
		225	33.2	7.5	1331	1221	178
BXRE-40E2000-B-7X	80	450	34.8	15.6	2516	2265	161
		675	36.0	24.3	3641	3305	150
		900	37.2	33.5	4643	4193	139
		158	32.3	5.1	958	907	188
		315	33.2	10.4	1848	1742	177
BXRE-40E2000-C-7X	80	630	34.8	21.9	3522	3170	161
		945	36.1	34.1	5061	4733	148
	1	1260	37.3	47.0	6458	6019	137

- 1. Alternate drive currents are provided for reference only and are not a guarantee of performance.
- 2. Bridgelux maintains a ± 7% tolerance on flux measurements.
- 3. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Table 4: Product Performance at Commonly Used Drive Currents (Continued)

Part Number	CRI	Drive Current¹ (mA)	Typical V _f T _c = 25°C (V)	Typical Power T _c = 25°C (W)	Typical Flux² T _c = 25°C (lm)	Typical DC Flux³ T _c = 85°C (lm)	Typical Efficacy T _c = 25°C (lm/W)
		113	32.3	3.6	590	545	162
		225	33.2	7.5	1139	1045	153
BXRE-40G2000-B-7X	90	450	34.8	15.6	2153	1938	138
		675	36.0	24.3	3116	2828	128
		900	37.2	33.5	3973	3589	119
		158	32.3	5.1	820	776	161
		315	33.2	10.4	1582	1491	151
BXRE-40G2000-C-7X	90	630	34.8	21.9	3014	2713	138
		945	36.1	34.1	4331	4051	127
		1260	37.3	47.0	5527	5151	118
		113	32.3	3.6	756	698	208
		225	33.2	7.5	1459	1338	195
BXRE-50C2001-B-7X	70	450	34.8	15.6	2758	2482	176
		675	36.0	24.3	3991	3622	164
		900	37.2	33.5	5089	4597	152
		158	32.3	5.1	1050	994	206
		315	33.2	10.4	2026	1910	194
BXRE-50C2001-C-7X	70	630	34.8	21.9	3861	3475	176
	/ 0	945	36.1	34.1	5548	5189	163
		1260	37.3	47.0	7079	6598	151
		113	32.3	3.6	711	656	195
		225	33.2	7.5	1371	1258	184
BXRE-50E2001-B-7X	80	450	34.8	15.6	2593	2334	166
0 ,		675	36.0	24.3	3751	3405	154
		900	37.2	33.5	4784	4321	143
		158	32.3	5.1	987	935	194
		315	33.2	10.4	1904	1795	182
BXRE-50E2001-C-7X	80	630	34.8	21.9	3629	3266	166
2,112 3022001 0 7,1		945	36.1	34.1	5215	4877	153
		1260	37.3	47.0	6655	6202	142
		113	32.3	3.6	605	558	166
		225	33.2	7.5	1167	1071	156
BXRE-50G2001-B-7X	90	450	34.8	15.6	2207	1986	141
		675	36.0	24.3	3193	2898	131
		900	37.2	33.5	4071	3677	122
		158	32.3	5.1	840	795	165
		315	33.2	10.4	1621	1528	155
BXRE-50G2001-C-7X	90	630	34.8	21.9	3089	2780	141
	30	945	36.1	34.1	4438	4151	130
		1260	37.3	47.0	5663	5279	120
		113	32.3	3.6	729	673	201
	-	225	33.2	7.5	1408	1291	189
BXRE-57C2001-B-7X	70	450	34.8	15.6	2662	2395	170
D///C 3/02001 D-//	'	675	36.0		3851		158
		900	37.2	24.3 33.5	2021	3495 4435	150

- 1. Alternate drive currents are provided for reference only and are not a guarantee of performance.
- 2. Bridgelux maintains a ± 7% tolerance on flux measurements.
- 3. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Table 4: Product Performance at Commonly Used Drive Currents (Continued)

Part Number	CRI	Drive Current¹ (mA)	Typical V _r T _c = 25°C (V)	Typical Power T _c = 25°C (W)	Typical Flux² T _c = 25°C (lm)	Typical DC Flux³ T _c = 85°C (lm)	Typical Efficacy T _c = 25°C (lm/W)	
		158	32.3	5.1	1013	959	199	
		315	33.2	10.4	1955	1843	187	
BXRE-57C2001-C-7X	70	630	34.8	21.9	3725	3353	170	
		945	36.1	34.1	5353	5007	157	
		1260	37.3	47.0	6831	6367	145	
		113	32.3	3.6	723	667	199	
		225	33.2	7.5	1395	1280	187	
BXRE-57E2001-B-7X	80	450	34.8	15.6	2637	2374	169	
		675	36.0	24.3	3816	3463	157	
		900	37.2	33.5	4866	4395	145	
		158	32.3	5.1	1004	951	197	
		315	33.2	10.4	1937	1826	185	
BXRE-57E2001-C-7X	80	630	34.8	21.9	3692	3322	169	
		945	36.1	34.1	5305	4961	155	
		1260	37.3	47.0	6769	6309	144	
	70	113	32.3	3.6	743	685	204	
		225	33.2	7.5	1433	1315	192	
BXRE-65C2001-B-7X		70	450	34.8	15.6	2710	2439	173
		675	36.0	24.3	3921	3559	161	
		900	37.2	33.5	5000	4516	149	
		158	32.3	5.1	1031	977	203	
		315	33.2	10.4	1990	1876	191	
BXRE-65C2001-C-7X	70	630	34.8	21.9	3793	3414	173	
		945	36.1	34.1	5451	5098	160	
		1260	37.3	47.0	6955	6482	148	
		113	32.3	3.6	736	679	202	
		225	33.2	7.5	1420	1303	190	
BXRE-65E2001-B-7X	80	450	34.8	15.6	2686	2417	172	
		675	36.0	24.3	3886	3527	160	
		900	37.2	33.5	4955	4476	148	
		158	32.3	5.1	1022	968	201	
		315	33.2	10.4	1973	1860	189	
BXRE-65E2001-C-7X	80	630	34.8	21.9	3759	3383	172	
,		945	36.1	34.1	5402	5052	158	
		1260	37.3	47.0	6893	6425	147	

- 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.
- 3. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Electrical Characteristics

Table 5: Electrical Characteristics

Part Number			Forward Voltage Pulsed, T _c = 25°C (V) ^{1,2,3,8}			Typical Thermal	Driver Selection Voltages ⁷ (V)	
	Drive Current (mA)	Minimum	Typical	Maximum	of Forward Voltage⁴ ∆V _₹ ∕∆T _c (mV∕°C)	Resistance Junction to Case ^{5,6} R _{j-c} (°C/W)	V _r Min. Hot T _c = 105°C (V)	' V, Max. Cold T _c = -40°C (V)
DVDE	450	32.1	34.8	37.4	-14.1	0.28	31.0	38.3
BXRE-xxx200x-B-7x	900	34.4	37.2	40.0	-14.1	0.34	33.3	40.9
BXRE-xxx200x-C-7x	630	32.1	34.8	37.4	-14.1	0.20	31.0	38.3
	1260	34.5	37.3	40.1	-14.1	0.24	33.4	41.0

- 1. Parts are tested in pulsed conditions, T_c = 25°C. Pulse width is 10ms.
- 2. Voltage minimum and maximum are provided for reference only and are not a guarantee of performance.
- 3. Bridgelux maintains a tester tolerance of ± 0.10V on forward voltage measurements.
- 4. Typical coefficient of forward voltage tolerance is ± 0.1mV for nominal current.
- 5. Thermal resistance values are based from test data of a 3000K 80 CRI product.
- 6. Thermal resistance value was calculated using total electrical input power; optical power was not subtracted from input power. The thermal interface material used during testing is not included in the thermal resistance value.
- 7. V_r min hot and max cold values are provided as reference only and are not guaranteed by test. These values are provided to aid in driver design and selection over the operating range of the product.
- 8. This product has been designed and manufactured per IEC 62031:2014. This product has passed dielectric withstand voltage testing at 1160 V. The working voltage designated for the insulation is 80V d.c. The maximum allowable voltage across the array must be determined in the end product application.

Eye Safety

Table 6: Eye Safety Risk Group (RG) Classifications

Part Novellan	Drive	CCT ^{1,5}				
Part Number	Current ⁵ (mA)	2700K/3000K	4000K²	5000K³	6500K⁴	
BXRE-xxx200x-B-7x	450	RG1	RG1	RG1	RG1	
	675	RG1	RG1	RG1	RG2	
	900	RG1	RG1	RG2	RG2	
BXRE-xxx200x-C-7x	630	RG1	RG1	RG1	RG1	
	945	RG1	RG1	RG2	RG2	
	1260	RG1	RG2	RG2	RG2	

- 1. Eye safety classification for the use of Bridgelux V Series LED arrays is in accordance with specification IEC/TR 62778: Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires.
- 2. For products classified as RG2 at 4000K, $\rm E_{thr}$ = 1847.5 $\rm lx.$
- 3. For products classified as RG2 at 5000K E_{thr} = 1315.8 kx. 4. For products classified as RG2 at 6500K, E_{thr} = 1124.5 kx.
- 5. Please contact your Bridgelux sales representative for E_{thr} values at specific drive currents and CCTs not listed.

Absolute Maximum Ratings

Table 7: Maximum Ratings

Parameter	Maximum Rating		
LED Junction Temperature (T _j)	125°C		
Storage Temperature	-40°C to +105°C		
Operating Case Temperature¹ (T _c)	105°C		
Soldering Temperature ²	300°C or lower for a maximum of 6 seconds		
	BXRE-xxx200x-B-7x	BXRE-xxx200x-C-7x	
Maximum Drive Current ³	900mA	1260mA	
Maximum Peak Pulsed Drive Current⁴	1290mA	1800mA	
Maximum Reverse Voltage⁵	-6oV	-6oV	

- 1. For IEC 62717 requirement, please consult your Bridgelux sales representative.
- 2. Refer to Bridgelux Application Note AN101: Handling and Assembly of Bridgelux V Series LED Arrays
- 3. Arrays may be driven at higher currents however lumen maintenance may be reduced.
- 4. Bridgelux recommends a maximum duty cycle of 10% and pulse width of 20 ms when operating LED Arrays at maximum peak pulsed current specified. Maximum peak pulsed currents indicate values where LED Arrays can be driven without catastrophic failures.
- 5. Light emitting diodes are not designed to be driven in reverse voltage and will not produce light under this condition. Maximum rating provided for reference only.

Performance Curves

Figure 1: V13B Drive Current vs. Voltage

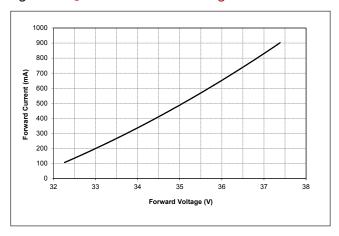


Figure 2: V13C Drive Current vs. Voltage

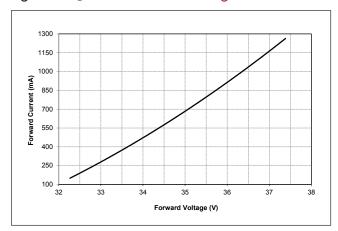


Figure 3: V13B Drive Current vs. Voltage

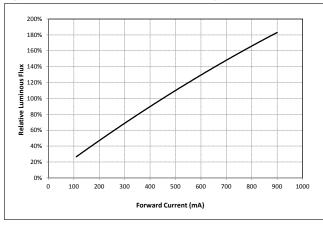
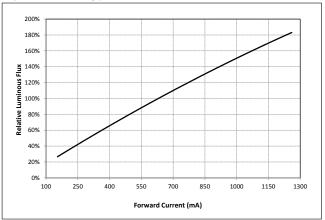


Figure 4: V13C Typical Relative Flux vs. Current



Notes for Figures 1-4:

- 1. Bridgelux does not recommend driving high power LEDs at low currents. Doing so may produce unpredictable results. Pulse width modulation (PWM) is recommended for dimming effects.
- 2. Products tested under pulsed condition (10ms pulse width) at nominal test current where T_1 (junction temperature) = T_c (case temperature) = 25°C.

Performance Curves

Figure 5: Typical DC Flux vs. Case Temperature

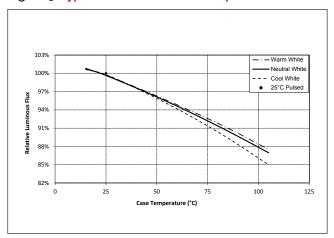


Figure 6: Typical DC ccy Shift vs. Case Temperature

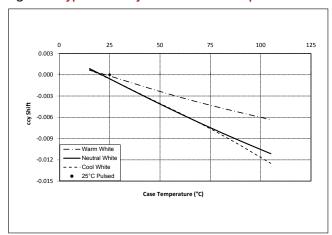
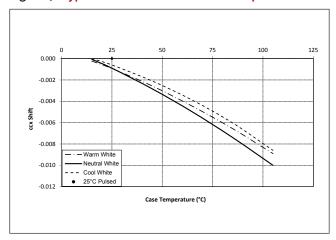


Figure 7: Typical DC ccx Shift vs. Case Temperature



Notes for Figures 5-7:

- 1. Characteristics shown for warm white based on 3000K and 80 CRI.
- 2. Characteristics shown for neutral white based on 4000K and 80 CRI.
- 3. Characteristics shown for cool white based on 5000K and 70 CRI.
- 4. Characteristics shown for warm white includes Decor Series Class $\ensuremath{\mathsf{A}}$
- 5. For other color SKUs, the shift in color will vary. Please contact your Bridgelux Sales Representative for more information.

Performance Curves

Figure 8: 2000K, 65 CRI Color Shift vs. Case Temperature

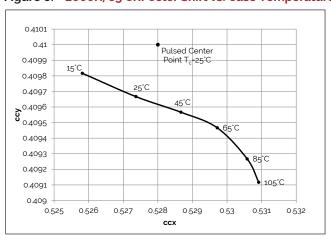


Figure 10: 2700K, 97 CRI Color Shift vs. Case Temperature¹

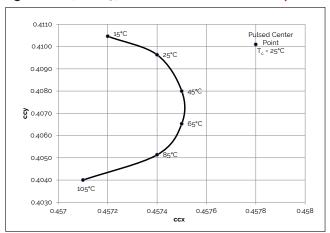
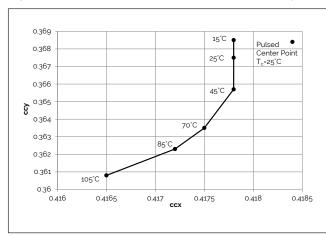


Figure 12: 3000K Class A Color Shift vs. Case Temperature¹



Note for Figures 8-12:

- 1. Measurements made under DC test conditions at the nominal drive current.
- 2. Typical color shift is shown with a tolerance of ±0.002.
- 3. Characteristics shown for Decor Series Showcase products, BXRE-30G200C-x-73

Figure 9: 3000K, 90 CRI Color Shift vs. Case Temperature^{1,3}

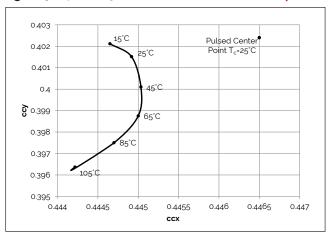


Figure 11: 3000K, 97 CRI Color Shift vs. Case Temperature¹

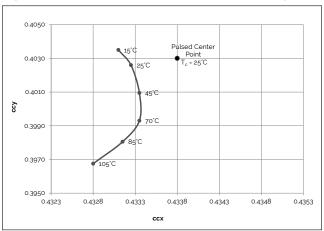
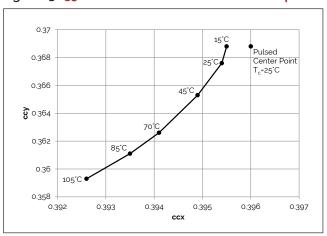
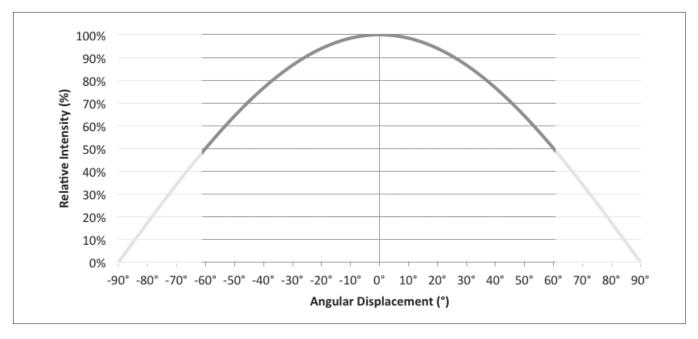


Figure 13: 3500K Class A Color Shift vs. Case Temperature¹



Typical Radiation Pattern

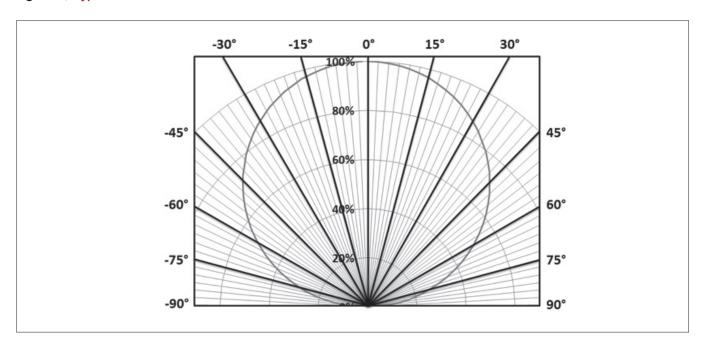
Figure 13: Typical Spatial Radiation Pattern



Note for Figure 13:

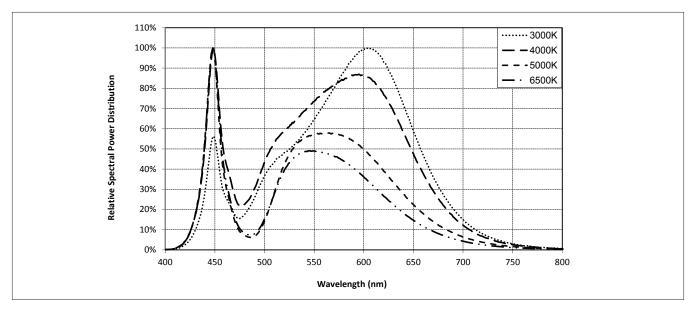
- 1. Typical viewing angle is 120°.
- 2. The viewing angle is defined as the off axis angle from the centerline where intensity is ½ of the peak value.

Figure 14: Typical Polar Radiation Pattern



Typical Color Spectrum

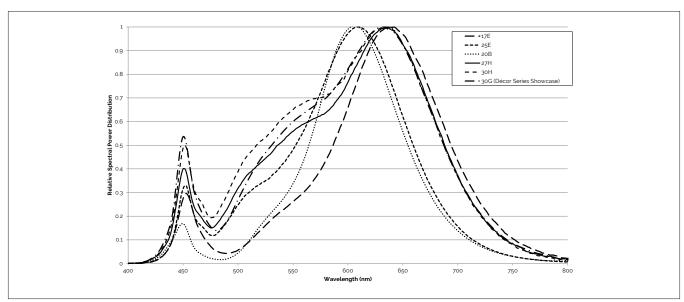
Figure 15: Typical Color Spectrum



Note for Figure 15:

- 1. Color spectra measured at nominal current for T_i = T_c = 25°C.
- 2. Color spectra shown is 3000K and 80 CRI.
- 3. Color spectra shown is 4000K and 80 CRI.
- 4. Color spectra shown is 5000K and 70 CRI.
- 4. Color spectra shown is 6500K and 70 CRI.

Figure 16: Typical Color Spectrum for Décor Series

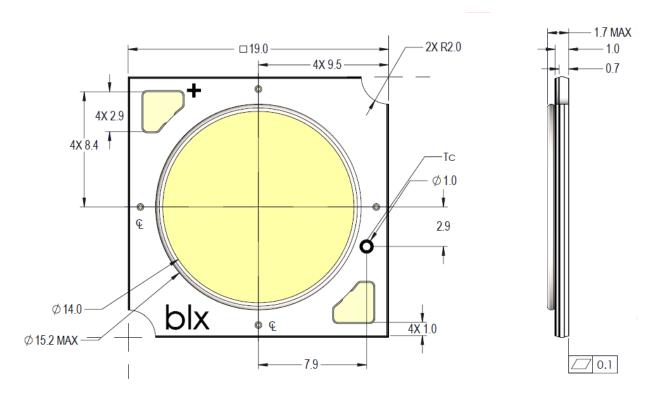


Note for Figure 16:

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

Mechanical Dimensions

Figure 17: Drawing for V13 LED Array

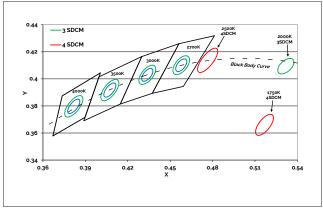


Notes for Figure 17:

- 1. Drawings are not to scale.
- 2. Drawing dimensions are in millimeters.
- 3. Unless otherwise specified, tolerances are ±0.1mm.
- 4. Solder pad labeled "+" denotes positive contact.
- 5. Refer to Application Notes AN101 for product handling, mounting and heat sink recommendations.
- 6. The optical center of the LED Array is nominally defined by the mechanical center of the array to a tolerance of ± 0.2mm.
- 7. Bridgelux maintains a flatness of 0.10mm across the mounting surface of the array.

Color Binning Information

Figure 18: Warm and Neutral White Test Bins in xy Color Space



Note: Pulsed Test Conditions, T₂ = 25°C

Figure 19: Cool White Test Bins in xy Color Space

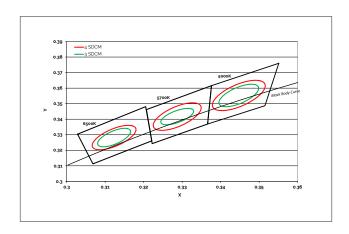


Table 8: Warm and Neutral White xy Bin Coordinates and Associated Typical CCT

Bin Code	1750K	2000K	2500K	2700K	3000K1	3500K1	4000K¹
ANSI Bin (for reference only)	-	-	-	(2580K - 2870K)	(2870K - 3220K)	(3220K - 3710K)	(3710K - 4260K)
73 (3 SDCM)	-	-	-	(2651K - 2794K)	(2968K - 3136K)	(3369K - 3586K)	(3851K - 4130K)
72 (2 SDCM)	-	-	-	(2674K - 2769K)	(2995K - 3107K)	(3404K - 3548K)	(3895K - 4081K)
Center Point (x,y)	(0.5167, 0.336)	(0.5280, 0.4100)	(0.4765, 0.4137)	(0.4578, 0.4101)	(0.4338, 0.403) (0.4465, 0.4024) ²	(0.4073, 0.3917)	(0.3818, 0.3797)

- 1. Color Binning information excludes Décor Series Class A products. Please contact your Bridgelux Sales Representative for more information.
- 2. Center Point for Decor Series Showcase.

Table 9: Cool White xy Bin Coordinates and Associated Typical CCT (product is hot targeted to T_c = 85°C)

Bin Code	5000K	5700K	6500K
ANSI Bin (for reference only)	(4745K - 5311K)	(5312K - 6022K)	(6022K - 7042K)
74 (4 SDCM)	(4801K - 5282K)	(5829K - 5481K)	(6270K - 6765K)
73 (3 SDCM)	(4835K - 5215K)	(4590K - 5820K)	(6250K - 6745K)
Center Point (x,y)	(0.3447, 0.3553)	(0.3287, 0.3417)	(0.3123, 0.3282)

Packaging and Labeling

Figure 20: Drawing for V13 Packaging Tray



Notes for Figure 20:

- 1. Each tube holds 25 V13 COB arrays.
- 2. One tube is sealed in an anti-static bag. Four bags are placed in a shipping box. Depending on quantities ordered, a bigger shipping box, containing four boxes may be used to ship products.
- 3. Each bag and box is to be labeled as shown above.
- 4. Dimensions for each tube are 21.3 (W) \times 9.5(H) \times 505 (L). Dimensions for the anti-static bag are 75 (W) \times 615 (L) \times 3.1 (T) mm. Dimensions for the shipping box are 58.7 \times 13.3 \times 7.9 cm.

Packaging and Labeling

Figure 21: Gen. 7 Product Labeling

Bridgelux COB arrays have laser markings on the back side of the substrate to help with product identification. In addition to the product identification markings, Bridgelux COB arrays 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 COB array.



Design Resources

Application Notes

Bridgelux has developed a comprehensive set of application notes and design resources to assist customers in successfully designing with the V Series product family of LED array products. For all available application notes 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.

Precautions

3D CAD Models

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

LM8o

LM80 testing has been completed and the LM80 report is now available. Please contact your Bridgelux sales representative for LM-80 report.

CAUTION: CHEMICAL EXPOSURE HAZARD

Exposure to some chemicals commonly used in luminaire manufacturing and assembly can cause damage to the LED array. Please consult Bridgelux Application Note AN101 for additional information.

CAUTION: RISK OF BURN

Do not touch the V Series LED array during operation. Allow the array to cool for a sufficient period of time before handling. The V Series LED array 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 LED array or apply stress to the LES (yellow phosphor resin area). Contact may cause damage to the LED array.

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

Disclaimers

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.

STANDARD TEST CONDITIONS

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

About Bridgelux: We Build Light That Transforms

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
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