



# Bridgelux® Gen 7 V13 Array Series

Product Data Sheet DS101



# Introduction

V Series



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 170 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 2, 3 and 4 SDCM options
- More energy efficient than incandescent, halogen and fluorescent lamps
- Low voltage DC operation
- Instant light with unlimited dimming
- V<sub>f</sub> 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 Selection Guide

The following product configurations are available:

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

Part Number	Nominal CCT <sup>1</sup> (K)	CRI <sup>2</sup>	Nominal Drive Current <sup>3</sup> (mA)	Typical Pulsed Flux <sup>4,5,6</sup> $T_c = 25^\circ\text{C}$ (lm)	Minimum Pulsed Flux <sup>6,7</sup> $T_c = 25^\circ\text{C}$ (lm)	Typical $V_f$ (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-17E2000-C-74	1750	80	630	2014	1813	34.8	21.9	92
BXRE-20B2001-B-73	2000	65	450	2455	1992	34.8	15.6	157
BXRE-20B2001-C-73	2000	65	630	3437	2853	34.8	21.9	157
BXRE-25E2000-C-74	2500	80	630	3350	3015	34.8	21.9	153
BXRE-27E2000-B-7X	2700	80	450	2502	2090	34.8	15.6	160
BXRE-27E2000-C-7X	2700	80	630	3503	2926	34.8	21.9	160
BXRE-27G20H0-B-7X	2700	90	450	2142	1928	34.8	15.6	137
BXRE-27G20H0-C-7X	2700	90	630	2999	2699	34.8	21.9	137
BXRE-27G2000-B-7X	2700	90	450	2064	1858	34.8	15.6	132
BXRE-27G2000-C-7X	2700	90	630	2890	2601	34.8	21.9	132
BXRE-27H2000-B-7X	2700	97	450	1830	1647	34.8	15.6	117
BXRE-30C2001-B-74	3000	70	450	2783	2505	34.8	15.6	178
BXRE-30C2001-C-74	3000	70	630	3897	3507	34.8	21.9	178
BXRE-30E2000-B-7X	3000	80	450	2658	2392	34.8	15.6	170
BXRE-30E2000-C-7X	3000	80	630	3722	3350	34.8	21.9	170
BXRE-30G20H0-B-7X	3000	90	450	2252	2027	34.8	15.6	144
BXRE-30G20H0-C-7X	3000	90	630	3153	2837	34.8	21.9	144
BXRE-30G2000-B-7X	3000	90	450	2158	1942	34.8	15.6	138
BXRE-30G2000-C-7X	3000	90	630	3021	2719	34.8	21.9	138
BXRE-30G200C-B-73	3000	90	450	2080	1872	34.8	15.6	133
BXRE-30G200C-C-73	3000	90	630	2912	2621	34.8	21.9	133
BXRE-30A2001-B-73 <sup>8,9</sup>	3000	93	450	1939	1745	34.8	15.6	124
BXRE-30A2001-C-73 <sup>8,9</sup>	3000	93	630	2715	2443	34.8	21.9	124
BXRE-30H2000-B-7X	3000	97	450	1955	1759	34.8	15.6	125
BXRE-35E2000-B-7X	3500	80	450	2721	2449	34.8	15.6	174
BXRE-35E2000-C-7X	3500	80	630	3809	3428	34.8	21.9	174
BXRE-35G2000-B-7X	3500	90	450	2236	2013	34.8	15.6	143
BXRE-35G2000-C-7X	3500	90	630	3131	2818	34.8	21.9	143
BXRE-35A2001-B-73 <sup>8,9</sup>	3500	93	450	2064	1858	34.8	15.6	132
BXRE-35A2001-C-73 <sup>8,9</sup>	3500	93	630	2890	2601	34.8	21.9	132
BXRE-40C2001-B-74	4000	70	450	2862	2575	34.8	15.6	183
BXRE-40C2001-C-74	4000	70	630	4006	3606	34.8	21.9	183
BXRE-40E2000-B-7X	4000	80	450	2737	2463	34.8	15.6	175
BXRE-40E2000-C-7X	4000	80	630	3831	3170	34.8	21.9	175

Notes for Table 1:

- Nominal CCT as defined by ANSI C78.377-2011. Products with a CCT of 5000K-6500K are hot targeted to  $T_c = 85^\circ\text{C}$ .
- CRI values are typical for Decor Series Ultra, Décor Series Street and Landmark 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  $\pm 3$  tolerance on Rg values.
- Drive current is referred to as nominal drive current.
- Products tested under pulsed condition (10ms pulse width) at nominal test current where  $T_j$  (junction temperature) =  $T_c$  (case temperature) =  $25^\circ\text{C}$ .
- Typical performance values are provided as a reference only and are not a guarantee of performance.
- Bridgelux maintains a  $\pm 7\%$  tolerance on flux measurements.
- Minimum flux values at the nominal test current are guaranteed by 100% test.
- 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.
- 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  $70^\circ\text{C}$ . GAI may vary depending on fixture design and performance.

# Product Selection Guide

The following product configurations are available:

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

Part Number	Nominal CCT <sup>1</sup> (K)	CRI <sup>2</sup>	Nominal Drive Current <sup>3</sup> (mA)	Typical Pulsed Flux <sup>4,5,6</sup> $T_c = 25^\circ\text{C}$ (lm)	Minimum Pulsed Flux <sup>6,7</sup> $T_c = 25^\circ\text{C}$ (lm)	Typical $V_f$ (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-40G2000-B-7x	4000	90	450	2283	1938	34.8	15.6	146
BXRE-40G2000-C-7x	4000	90	630	3196	2713	34.8	21.9	146
BXRE-50C2001-B-7x	5000	70	450	2877	2482	34.8	15.6	184
BXRE-50C2001-C-7x	5000	70	630	4028	3475	34.8	21.9	184
BXRE-50E2001-B-7x	5000	80	450	2768	2491	34.8	15.6	177
BXRE-50E2001-C-7x	5000	80	630	3875	3266	34.8	21.9	177
BXRE-50G2001-B-7x	5000	90	450	2393	1986	34.8	15.6	153
BXRE-50G2001-C-7x	5000	90	630	3350	2780	34.8	21.9	153
BXRE-57C2001-B-7x	5700	70	450	2799	2395	34.8	15.6	179
BXRE-57C2001-C-7x	5700	70	630	3919	3353	34.8	21.9	179
BXRE-57E2001-B-7x	5700	80	450	2658	2374	34.8	15.6	170
BXRE-57E2001-C-7x	5700	80	630	3722	3322	34.8	21.9	170
BXRE-65C2001-B-7x	6500	70	450	2799	2439	34.8	15.6	179
BXRE-65C2001-C-7x	6500	70	630	3919	3414	34.8	21.9	179
BXRE-65E2001-B-7x	6500	80	450	2690	2417	34.8	15.6	172
BXRE-65E2001-C-7x	6500	80	630	3766	3383	34.8	21.9	172

Notes for Table 1:

- Nominal CCT as defined by ANSI C78.377-2011. Products with a CCT of 5000K-6500K are hot targeted to  $T_c = 85^\circ\text{C}$ .
- CRI values are typical for Decor Series Ultra, Décor Series Street and Landmark 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  $\pm 3$  tolerance on Rg values.
- Drive current is referred to as nominal drive current.
- Products tested under pulsed condition (10ms pulse width) at nominal test current where  $T_j$  (junction temperature) =  $T_c$  (case temperature) =  $25^\circ\text{C}$ .
- Typical performance values are provided as a reference only and are not a guarantee of performance.
- Bridgelux maintains a  $\pm 7\%$  tolerance on flux measurements.
- Minimum flux values at the nominal test current are guaranteed by 100% test.
- 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.
- 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  $70^\circ\text{C}$ . GAI may vary depending on fixture design and performance.

# Product Selection Guide

**Table 2:** Selection Guide, Stabilized DC Performance ( $T_c = 70^\circ\text{C}$ ) <sup>7,8</sup>

Part Number	Nominal CCT <sup>1</sup> (K)	GAI <sup>2</sup>	CRI <sup>3</sup>	Nominal Drive Current <sup>4</sup> (mA)	Typical DC Flux <sup>5,6</sup> $T_c = 70^\circ\text{C}$ (lm)	Minimum DC Flux <sup>6,9</sup> $T_c = 70^\circ\text{C}$ (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

Notes for Table 2:

- 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.
- To help ensure optimal fixture level performance, GAI is measured at the fixture level, on axis, at a case temperature of  $70^\circ\text{C}$ . GAI may vary depending on fixture design and performance.
- All CRI values are measured at  $T_j = T_c = 25^\circ\text{C}$ . CRI Values are specified as typical.
- Drive current is referred to as nominal drive current.
- Typical performance values are provided as a reference only and are not a guarantee of performance.
- Bridgelux maintains a  $\pm 7\%$  tolerance on flux measurements.
- Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.
- 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.
- 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.

# Product Selection Guide

**Table 3:** Selection Guide, Stabilized DC Performance ( $T_c = 85^\circ\text{C}$ )<sup>4,5</sup>

Part Number	Nominal CCT <sup>1</sup> (K)	CRI <sup>2</sup>	Nominal Drive Current <sup>3</sup> (mA)	Typical DC Flux <sup>4,5</sup> $T_c = 85^\circ\text{C}$ (lm)	Minimum DC Flux <sup>6</sup> $T_c = 85^\circ\text{C}$ (lm)	Typical $V_f$ (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-17E2000-C-74	1750	80	630	1813	1631	33.9	21.4	85
BXRE-20B2001-B-73	2000	65	450	2210	1989	33.9	15.3	145
BXRE-20B2001-C-73	2000	65	630	3093	2784	33.9	21.4	145
BXRE-25E2000-C-74	2500	80	630	3015	2713	33.9	21.4	141
BXRE-27E2000-B-7X	2700	80	450	2252	2027	33.9	15.3	148
BXRE-27E2000-C-7X	2700	80	630	3153	2837	33.9	21.4	148
BXRE-27G20H0-B-7X	2700	90	450	1928	1735	33.9	15.3	126
BXRE-27G20H0-C-7X	2700	90	630	2699	2429	33.9	21.4	126
BXRE-27G2000-B-7X	2700	90	450	1858	1672	33.9	15.3	122
BXRE-27G2000-C-7X	2700	90	630	2601	2341	33.9	21.4	122
BXRE-27H2000-B-7X	2700	97	450	1647	1482	33.9	15.3	108
BXRE-30C2001-B-74	3000	70	450	2505	2255	33.9	15.3	164
BXRE-30C2001-C-74	3000	70	630	3507	3156	33.9	21.4	164
BXRE-30E2000-B-7X	3000	80	450	2393	2153	33.9	15.3	157
BXRE-30E2000-C-7X	3000	80	630	3350	3015	33.9	21.4	157
BXRE-30G20H0-B-7X	3000	90	450	2027	1824	33.9	15.3	133
BXRE-30G20H0-C-7X	3000	90	630	2837	2554	33.9	21.4	133
BXRE-30G2000-B-7X	3000	90	450	1942	1748	33.9	15.3	127
BXRE-30G2000-C-7X	3000	90	630	2719	2447	33.9	21.4	127
BXRE-30G200C-B-73	3000	90	450	1872	1685	33.9	15.3	123
BXRE-30G200C-C-73	3000	90	630	2621	2358	33.9	21.4	123
BXRE-30A2001-B-73 <sup>8,9</sup>	3000	93	450	1745	1571	33.9	15.3	114
BXRE-30A2001-C-73 <sup>8,9</sup>	3000	93	630	2443	2199	33.9	21.4	114
BXRE-30H2000-B-7X	3000	97	450	1759	1583	33.9	15.3	115
BXRE-35E2000-B-7X	3500	80	450	2449	2204	33.9	15.3	161
BXRE-35E2000-C-7X	3500	80	630	3428	3086	33.9	21.4	161
BXRE-35G2000-B-7X	3500	90	450	2013	1811	33.9	15.3	132
BXRE-35G2000-C-7X	3500	90	630	2818	2536	33.9	21.4	132
BXRE-35A2001-B-73 <sup>8,9</sup>	3500	93	450	1858	1672	33.9	15.3	122
BXRE-35A2001-C-73 <sup>8,9</sup>	3500	93	630	2601	2341	33.9	21.4	122
BXRE-40C2001-B-74	4000	70	450	2575	2318	33.9	15.3	169
BXRE-40C2001-C-74	4000	70	630	3606	3245	33.9	21.4	169
BXRE-40E2000-B-7X	4000	80	450	2463	2217	33.9	15.3	161

Notes for Table 3:

- Nominal CCT as defined by ANSI C78.377-2011. Products with a CCT of 5000K-6500K are hot targeted to  $T_c = 85^\circ\text{C}$ .
- All CRI values are measured at  $T_j = T_c = 25^\circ\text{C}$ . CRI values are typical for Decor Series Ultra, Décor Series Street and Landmark 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  $\pm 3$  tolerance on Rg values.
- Drive current is referred to as nominal drive current.
- Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.
- 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  $85^\circ\text{C}$ . 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.
- 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.
- 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.
- 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  $70^\circ\text{C}$ . GAI may vary depending on fixture design and performance.

# Product Selection Guide

**Table 3:** Selection Guide, Stabilized DC Performance ( $T_c = 85^\circ\text{C}$ )<sup>4,5</sup> (continued)

Part Number	Nominal CCT <sup>1</sup> (K)	CRI <sup>2</sup>	Nominal Drive Current <sup>3</sup> (mA)	Typical DC Flux <sup>4,5</sup> $T_c = 85^\circ\text{C}$ (lm)	Minimum DC Flux <sup>6</sup> $T_c = 85^\circ\text{C}$ (lm)	Typical $V_f$ (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-40E2000-C-7X	4000	80	630	3448	3103	33.9	21.4	161
BXRE-40G2000-B-7X	4000	90	450	2055	1849	33.9	15.3	135
BXRE-40G2000-C-7X	4000	90	630	2877	2589	33.9	21.4	135
BXRE-50C2001-B-7X	5000	70	450	2590	2331	33.9	15.3	170
BXRE-50C2001-C-7X	5000	70	630	3625	3263	33.9	21.4	170
BXRE-50E2001-B-7X	5000	80	450	2491	2242	33.9	15.3	163
BXRE-50E2001-C-7X	5000	80	630	3487	3139	33.9	21.4	163
BXRE-50G2001-B-7X	5000	90	450	2153	1938	33.9	15.3	141
BXRE-50G2001-C-7X	5000	90	630	3015	2713	33.9	21.4	141
BXRE-57C2001-B-7X	5700	70	450	2519	2267	33.9	15.3	165
BXRE-57C2001-C-7X	5700	70	630	3527	3174	33.9	21.4	165
BXRE-57E2001-B-7X	5700	80	450	2393	2153	33.9	15.3	157
BXRE-57E2001-C-7X	5700	80	630	3350	3015	33.9	21.4	157
BXRE-65C2001-B-7X	6500	70	450	2519	2267	33.9	15.3	165
BXRE-65C2001-C-7X	6500	70	630	3527	3174	33.9	21.4	165
BXRE-65E2001-B-7X	6500	80	450	2421	2179	33.9	15.3	159
BXRE-65E2001-C-7X	6500	80	630	3389	3050	33.9	21.4	159

Notes for Table 3:

- Nominal CCT as defined by ANSI C78.377-2011. Products with a CCT of 5000K-6500K are hot targeted to  $T_c = 85^\circ\text{C}$ .
- All CRI values are measured at  $T_c = T_a = 25^\circ\text{C}$ . CRI values are typical for Decor Series Ultra, Décor Series Street and Landmark and Decor Series Class A products. CRI values are minimums for all other products. Minimum R<sub>g</sub> value for 80 CRI products is 0, the minimum R<sub>g</sub> values for 90 CRI products is 50, the minimum R<sub>g</sub> values for 97 CRI products is 93. Bridgelux maintains a  $\pm 3$  tolerance on R<sub>g</sub> values.
- Drive current is referred to as nominal drive current.
- Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.
- 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  $85^\circ\text{C}$ . 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.
- 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.
- 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.
- 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  $70^\circ\text{C}$ . GAI may vary depending on fixture design and performance.

# Performance at Commonly Used Drive Currents

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 Current <sup>1</sup> (mA)	Typical $V_f$ $T_c = 25^\circ\text{C}$ (V)	Typical Power $T_c = 25^\circ\text{C}$ (W)	Typical Flux <sup>2</sup> $T_c = 25^\circ\text{C}$ (lm)	Typical DC Flux <sup>3</sup> $T_c = 85^\circ\text{C}$ (lm)	Typical Efficacy $T_c = 25^\circ\text{C}$ (lm/W)
BXRE-17E2000-C-74	80	158	32.3	5.1	534	486	105
		315	33.2	10.4	1039	942	99
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>2014</b>	<b>1813</b>	<b>92</b>
		945	36.1	34.1	2905	2589	85
		1260	37.3	47.0	3730	3288	79
BXRE-20B2001-B-7x	65	113	32.3	3.6	651	592	179
		225	33.2	7.5	1266	1148	170
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2455</b>	<b>1992</b>	<b>157</b>
		675	36.0	24.3	3541	3156	146
		900	37.2	33.5	4546	4008	136
BXRE-20B2001-C-73	65	158	32.3	5.1	911	829	179
		315	33.2	10.4	1773	1607	170
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3437</b>	<b>2853</b>	<b>157</b>
		945	36.1	34.1	4957	4419	145
		1260	37.3	47.0	6365	5612	135
BXRE-25E2000-C-74	80	158	32.3	5.1	888	808	174
		315	33.2	10.4	1728	1566	165
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3350</b>	<b>3015</b>	<b>153</b>
		945	36.1	34.1	4831	4306	142
		1260	37.3	47.0	6202	5469	132
BXRE-27E2000-B-7x	80	113	32.3	3.6	663	603	182
		225	33.2	7.5	1291	1170	173
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2502</b>	<b>2252</b>	<b>160</b>
		675	36.0	24.3	3608	3217	148
		900	37.2	33.5	4633	4085	138
BXRE-27E2000-C-7x	80	158	32.3	5.1	929	845	182
		315	33.2	10.4	1807	1638	173
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3503</b>	<b>3153</b>	<b>160</b>
		945	36.1	34.1	5052	4503	148
		1260	37.3	47.0	6486	5719	138
BXRE-27G20H0-B-7x	90	113	32.3	3.6	568	517	156
		225	33.2	7.5	1105	1002	148
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2142</b>	<b>1928</b>	<b>137</b>
		675	36.0	24.3	3090	2754	127
		900	37.2	33.5	3967	3498	119
BXRE-27G20H0-C-7x	90	158	32.3	5.1	795	723	156
		315	33.2	10.4	1547	1403	148
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>2999</b>	<b>2699</b>	<b>137</b>
		945	36.1	34.1	4325	3856	127
		1260	37.3	47.0	5554	4897	118

Notes for Table 4:

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.

# Performance at Commonly Used Drive Currents

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

Part Number	CRI	Drive Current <sup>1</sup> (mA)	Typical V <sub>f</sub> T <sub>c</sub> = 25°C (V)	Typical Power T <sub>c</sub> = 25°C (W)	Typical Flux <sup>2</sup> T <sub>c</sub> = 25°C (lm)	Typical DC Flux <sup>3</sup> T <sub>c</sub> = 85°C (lm)	Typical Efficacy T <sub>c</sub> = 25°C (lm/W)
BXRE-27G2000-B-7x	90	113	32.3	3.6	547	498	150
		225	33.2	7.5	1065	965	143
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2064</b>	<b>1858</b>	<b>132</b>
		675	36.0	24.3	2977	2654	122
		900	37.2	33.5	3822	3370	114
BXRE-27G2000-C-7x	90	158	32.3	5.1	766	697	151
		315	33.2	10.4	1491	1351	143
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>2890</b>	<b>2601</b>	<b>132</b>
		945	36.1	34.1	4168	3715	122
		1260	37.3	47.0	5351	4718	114
BXRE-27H2000-B-7x	97	113	32.3	3.6	485	441	133
		225	33.2	7.5	944	856	126
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>1830</b>	<b>1647</b>	<b>117</b>
		675	36.0	24.3	2639	2352	108
		900	37.2	33.5	3388	2987	101
BXRE-30C2001-B-74	70	113	32.3	3.6	738	671	203
		225	33.2	7.5	1436	1302	192
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2783</b>	<b>2505</b>	<b>178</b>
		675	36.0	24.3	4014	3578	165
		900	37.2	33.5	5154	4544	154
BXRE-30C2001-C-74	70	158	32.3	5.1	1033	940	203
		315	33.2	10.4	2010	1822	192
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3897</b>	<b>3507</b>	<b>178</b>
		945	36.1	34.1	5620	5010	165
		1260	37.3	47.0	7216	6362	154
BXRE-30E2000-B-7x	80	113	32.3	3.6	705	641	194
		225	33.2	7.5	1371	1243	184
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2658</b>	<b>2393</b>	<b>170</b>
		675	36.0	24.3	3834	3418	158
		900	37.2	33.5	4923	4340	147
BXRE-30E2000-C-7x	80	158	32.3	5.1	987	897	194
		315	33.2	10.4	1920	1740	184
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3722</b>	<b>3350</b>	<b>170</b>
		945	36.1	34.1	5367	4785	157
		1260	37.3	47.0	6892	6076	147
BXRE-30G20H0-B-7x	90	113	32.3	3.6	597	543	164
		225	33.2	7.5	1161	1053	156
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2252</b>	<b>2027</b>	<b>144</b>
		675	36.0	24.3	3247	2895	133
		900	37.2	33.5	4170	3676	125
BXRE-30G20H0-C-7x	90	158	32.3	5.1	836	760	164
		315	33.2	10.4	1626	1474	156
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3153</b>	<b>2837</b>	<b>144</b>
		945	36.1	34.1	4546	4053	133
		1260	37.3	47.0	5838	5147	124

Notes for Table 4:

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.

# Performance at Commonly Used Drive Currents

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

Part Number	CRI	Drive Current <sup>1</sup> (mA)	Typical V <sub>f</sub> T <sub>c</sub> = 25°C (V)	Typical Power T <sub>c</sub> = 25°C (W)	Typical Flux <sup>2</sup> T <sub>c</sub> = 25°C (lm)	Typical DC Flux <sup>3</sup> T <sub>c</sub> = 85°C (lm)	Typical Efficacy T <sub>c</sub> = 25°C (lm/W)
BXRE-30G2000-B-7x	90	113	32.3	3.6	572	520	157
		225	33.2	7.5	1113	1009	149
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2158</b>	<b>1942</b>	<b>138</b>
		675	36.0	24.3	3112	2774	128
		900	37.2	33.5	3996	3523	119
BXRE-30G2000-C-7x	90	158	32.3	5.1	801	728	157
		315	33.2	10.4	1558	1413	149
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3021</b>	<b>2719</b>	<b>138</b>
		945	36.1	34.1	4357	3884	128
		1260	37.3	47.0	5594	4932	119
BXRE-30G200C-B-73	90	113	32.3	3.6	551	501	152
		225	33.2	7.5	1073	973	144
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2080</b>	<b>1872</b>	<b>133</b>
		675	36.0	24.3	2999	2674	123
		900	37.2	33.5	3851	3396	115
BXRE-30G200C-C-73	90	158	32.3	5.1	772	702	152
		315	33.2	10.4	1502	1362	144
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>2912</b>	<b>2621</b>	<b>133</b>
		945	36.1	34.1	4199	3743	123
		1260	37.3	47.0	5392	4754	115
BXRE-30A2001-B-73	93	113	32.3	3.6	514	468	141
		225	33.2	7.5	1000	907	134
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>1939</b>	<b>1745</b>	<b>124</b>
		675	36.0	24.3	2796	2493	115
		900	37.2	33.5	3591	3166	107
BXRE-30A2001-C-73	93	158	32.3	5.1	720	655	141
		315	33.2	10.4	1400	1269	134
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>2715</b>	<b>2443</b>	<b>124</b>
		945	36.1	34.1	3915	3490	115
		1260	37.3	47.0	5027	4432	107
BXRE-30H2000-B-7x	97	113	32.3	3.6	518	471	143
		225	33.2	7.5	1008	914	135
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>1955</b>	<b>1759</b>	<b>125</b>
		675	36.0	24.3	2819	2513	116
		900	37.2	33.5	3620	3191	108
BXRE-35E2000-B-7x	80	113	32.3	3.6	721	656	198
		225	33.2	7.5	1403	1272	188
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2721</b>	<b>2449</b>	<b>174</b>
		675	36.0	24.3	3924	3498	161
		900	37.2	33.5	5038	4442	151
BXRE-35E2000-C-7x	80	158	32.3	5.1	1010	918	198
		315	33.2	10.4	1965	1781	188
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3809</b>	<b>3428</b>	<b>174</b>
		945	36.1	34.1	5494	4897	161
		1260	37.3	47.0	7054	6219	150

Notes for Table 4:

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.

# Performance at Commonly Used Drive Currents

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

Part Number	CRI	Drive Current <sup>1</sup> (mA)	Typical V <sub>f</sub> T <sub>c</sub> = 25°C (V)	Typical Power T <sub>c</sub> = 25°C (W)	Typical Flux <sup>2</sup> T <sub>c</sub> = 25°C (lm)	Typical DC Flux <sup>3</sup> T <sub>c</sub> = 85°C (lm)	Typical Efficacy T <sub>c</sub> = 25°C (lm/W)
BXRE-35G2000-B-7x	90	113	32.3	3.6	593	539	163
		225	33.2	7.5	1153	1046	155
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2236</b>	<b>2013</b>	<b>143</b>
		675	36.0	24.3	3225	2875	133
		900	37.2	33.5	4141	3651	124
BXRE-35G2000-C-7x	90	158	32.3	5.1	830	755	163
		315	33.2	10.4	1615	1464	155
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3131</b>	<b>2818</b>	<b>143</b>
		945	36.1	34.1	4515	4025	132
		1260	37.3	47.0	5797	5111	123
BXRE-35A2001-B-73	93	113	32.3	3.6	547	498	150
		225	33.2	7.5	1065	965	143
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2064</b>	<b>1858</b>	<b>132</b>
		675	36.0	24.3	2977	2654	122
		900	37.2	33.5	3822	3370	114
BXRE-35A2001-C-73	93	158	32.3	5.1	766	697	151
		315	33.2	10.4	1491	1351	143
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>2890</b>	<b>2601</b>	<b>132</b>
		945	36.1	34.1	4168	3715	122
		1260	37.3	47.0	5351	4718	114
BXRE-40C2001-B-74	70	113	32.3	3.6	759	690	209
		225	33.2	7.5	1476	1338	198
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2862</b>	<b>2575</b>	<b>183</b>
		675	36.0	24.3	4127	3679	170
		900	37.2	33.5	5299	4672	158
BXRE-40C2001-C-74	70	158	32.3	5.1	1062	966	209
		315	33.2	10.4	2066	1873	198
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>4006</b>	<b>3606</b>	<b>183</b>
		945	36.1	34.1	5778	5151	169
		1260	37.3	47.0	7419	6541	158
BXRE-40E2000-B-7x	80	113	32.3	3.6	725	660	200
		225	33.2	7.5	1411	1280	189
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2737</b>	<b>2463</b>	<b>175</b>
		675	36.0	24.3	3947	3518	162
		900	37.2	33.5	5067	4468	151
BXRE-40E2000-C-7x	80	158	32.3	5.1	1016	924	200
		315	33.2	10.4	1976	1792	189
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3831</b>	<b>3448</b>	<b>175</b>
		945	36.1	34.1	5525	4925	162
		1260	37.3	47.0	7094	6255	151
BXRE-40G2000-B-7x	90	113	32.3	3.6	605	550	166
		225	33.2	7.5	1178	1068	158
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2283</b>	<b>2055</b>	<b>146</b>
		675	36.0	24.3	3293	2935	135
		900	37.2	33.5	4228	3727	126

Notes for Table 4:

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.

# Performance at Commonly Used Drive Currents

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

Part Number	CRI	Drive Current <sup>1</sup> (mA)	Typical $V_f$ $T_c = 25^\circ\text{C}$ (V)	Typical Power $T_c = 25^\circ\text{C}$ (W)	Typical Flux <sup>2</sup> $T_c = 25^\circ\text{C}$ (lm)	Typical DC Flux <sup>3</sup> $T_c = 85^\circ\text{C}$ (lm)	Typical Efficacy $T_c = 25^\circ\text{C}$ (lm/W)
BXRE-40G2000-C-7x	90	158	32.3	5.1	847	771	166
		315	33.2	10.4	1649	1495	158
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3196</b>	<b>2877</b>	<b>146</b>
		945	36.1	34.1	4610	4109	135
		1260	37.3	47.0	5919	5218	126
BXRE-50C2001-B-7x	70	113	32.3	3.6	763	694	210
		225	33.2	7.5	1484	1346	199
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2877</b>	<b>2590</b>	<b>184</b>
		675	36.0	24.3	4150	3699	171
		900	37.2	33.5	5328	4698	159
BXRE-50C2001-C-7x	70	158	32.3	5.1	1068	971	210
		315	33.2	10.4	2078	1884	199
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>4028</b>	<b>3625</b>	<b>184</b>
		945	36.1	34.1	5809	5179	170
		1260	37.3	47.0	7459	6577	159
BXRE-50E2001-B-7x	80	113	32.3	3.6	734	667	202
		225	33.2	7.5	1428	1294	191
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2768</b>	<b>2491</b>	<b>177</b>
		675	36.0	24.3	3992	3558	164
		900	37.2	33.5	5125	4519	153
BXRE-50E2001-C-7x	80	158	32.3	5.1	1027	934	202
		315	33.2	10.4	1999	1812	191
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3875</b>	<b>3487</b>	<b>177</b>
		945	36.1	34.1	5588	4982	164
		1260	37.3	47.0	7175	6326	153
BXRE-50G2001-B-7x	90	113	32.3	3.6	634	577	174
		225	33.2	7.5	1234	1119	165
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2393</b>	<b>2153</b>	<b>153</b>
		675	36.0	24.3	3450	3076	142
		900	37.2	33.5	4430	3906	132
BXRE-50G2001-C-7x	90	158	32.3	5.1	888	808	174
		315	33.2	10.4	1728	1566	165
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3350</b>	<b>3015</b>	<b>153</b>
		945	36.1	34.1	4831	4306	142
		1260	37.3	47.0	6202	5469	132
BXRE-57C2001-B-7x	70	113	32.3	3.6	742	675	204
		225	33.2	7.5	1444	1309	193
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2799</b>	<b>2519</b>	<b>179</b>
		675	36.0	24.3	4037	3599	166
		900	37.2	33.5	5183	4570	155
BXRE-57C2001-C-7x	70	158	32.3	5.1	1039	945	204
		315	33.2	10.4	2021	1833	193
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3919</b>	<b>3527</b>	<b>179</b>
		945	36.1	34.1	5651	5038	166
		1260	37.3	47.0	7256	6398	154

Notes for Table 4:

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.

# Performance at Commonly Used Drive Currents

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

Part Number	CRI	Drive Current <sup>1</sup> (mA)	Typical $V_f$ $T_c = 25^\circ\text{C}$ (V)	Typical Power $T_c = 25^\circ\text{C}$ (W)	Typical Flux <sup>2</sup> $T_c = 25^\circ\text{C}$ (lm)	Typical DC Flux <sup>3</sup> $T_c = 85^\circ\text{C}$ (lm)	Typical Efficacy $T_c = 25^\circ\text{C}$ (lm/W)
BXRE-57E2001-B-7x	80	113	32.3	3.6	705	641	194
		225	33.2	7.5	1371	1243	184
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2658</b>	<b>2393</b>	<b>170</b>
		675	36.0	24.3	3834	3418	158
		900	37.2	33.5	4923	4340	147
BXRE-57E2001-C-7x	80	158	32.3	5.1	987	897	194
		315	33.2	10.4	1920	1740	184
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3722</b>	<b>3350</b>	<b>170</b>
		945	36.1	34.1	5367	4785	157
		1260	37.3	47.0	6892	6076	147
BXRE-65C2001-B-7x	70	113	32.3	3.6	742	675	204
		225	33.2	7.5	1444	1309	193
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2799</b>	<b>2519</b>	<b>179</b>
		675	36.0	24.3	4037	3599	166
		900	37.2	33.5	5183	4570	155
BXRE-65C2001-C-7x	70	158	32.3	5.1	1039	945	204
		315	33.2	10.4	2021	1833	193
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3919</b>	<b>3527</b>	<b>179</b>
		945	36.1	34.1	5651	5038	166
		1260	37.3	47.0	7256	6398	154
BXRE-65E2001-B-7x	80	113	32.3	3.6	713	649	196
		225	33.2	7.5	1387	1258	186
		<b>450</b>	<b>34.8</b>	<b>15.6</b>	<b>2690</b>	<b>2421</b>	<b>172</b>
		675	36.0	24.3	3879	3458	159
		900	37.2	33.5	4980	4391	149
BXRE-65E2001-C-7x	80	158	32.3	5.1	998	908	196
		315	33.2	10.4	1942	1761	186
		<b>630</b>	<b>34.8</b>	<b>21.9</b>	<b>3766</b>	<b>3389</b>	<b>172</b>
		945	36.1	34.1	5430	4841	159
		1260	37.3	47.0	6973	6148	148

Notes for Table 4:

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	Drive Current (mA)	Forward Voltage Pulsed, $T_c = 25^\circ\text{C}$ (V) <sup>1, 2, 3, 8</sup>			Typical Coefficient of Forward Voltage <sup>4</sup> $\Delta V_f / \Delta T_c$ (mV/ $^\circ\text{C}$ )	Typical Thermal Resistance Junction to Case <sup>5,6</sup> $R_{j-c}$ ( $^\circ\text{C}/\text{W}$ )	Driver Selection Voltages <sup>7</sup> (V)	
		Minimum	Typical	Maximum			$V_f$ Min. Hot $T_c = 105^\circ\text{C}$ (V)	$V_f$ Max. Cold $T_c = -40^\circ\text{C}$ (V)
BXRE-xxx200x-B-7x	450	32.1	34.8	37.4	-14.1	0.28	31.0	38.3
	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

Notes for Table 5:

- Parts are tested in pulsed conditions,  $T_c = 25^\circ\text{C}$ . Pulse width is 10ms.
- Voltage minimum and maximum are provided for reference only and are not a guarantee of performance.
- Bridgelux maintains a tester tolerance of  $\pm 0.10\text{V}$  on forward voltage measurements.
- Typical coefficient of forward voltage tolerance is  $\pm 0.1\text{mV}$  for nominal current.
- Thermal resistance values are based from test data of a 3000K 80 CRI product.
- 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.
- $V_f$  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.
- 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 Number	Drive Current <sup>5</sup> (mA)	CCT <sup>5</sup>			
		2700K/3000K	4000K <sup>2</sup>	5000K <sup>3</sup>	6500K <sup>4</sup>
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

Notes for Table 6:

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,  $E_{thr} = 1847.5$  lx.
3. For products classified as RG2 at 5000K  $E_{thr} = 1315.8$  lx.
4. For products classified as RG2 at 6500K,  $E_{thr} = 1124.5$  lx.
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

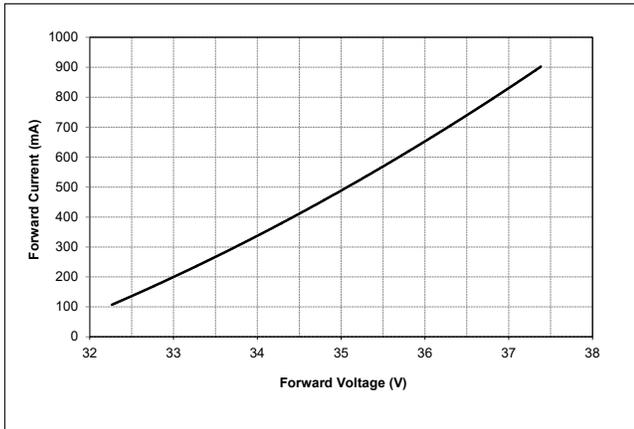
Parameter	Maximum Rating	
LED Junction Temperature ( $T_j$ )	150°C	
Storage Temperature	-40°C to +105°C	
Operating Case Temperature <sup>1</sup> ( $T_c$ )	105°C	
Soldering Temperature <sup>2</sup>	300°C or lower for a maximum of 6 seconds	
	BXRE-xxx200x-B-7x	BXRE-xxx200x-C-7x
Maximum Drive Current <sup>3</sup>	900mA	1260mA
Maximum Peak Pulsed Drive Current <sup>4</sup>	1290mA	1800mA
Maximum Reverse Voltage <sup>5</sup>	-60V	-60V

Notes for Table 7:

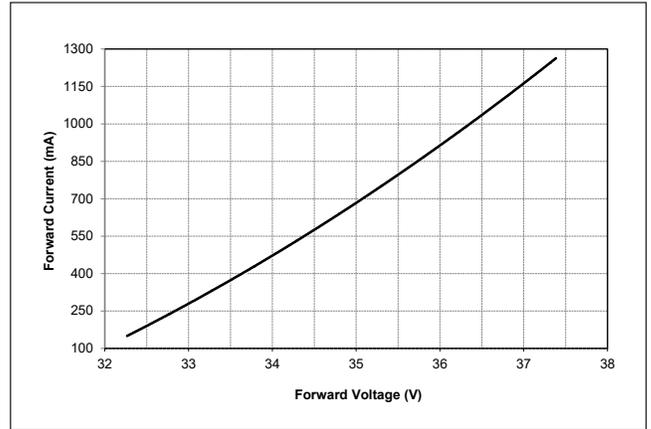
1. For IEC 62717 requirement, please consult your Bridgelux sales representative.
2. Refer to Bridgelux Application Note AN101: Handling and Assembly of Bridgelux V Series LED Arrays
3. Arrays may be driven at higher currents however lumen maintenance may be reduced.
4. Bridgelux recommends a maximum 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

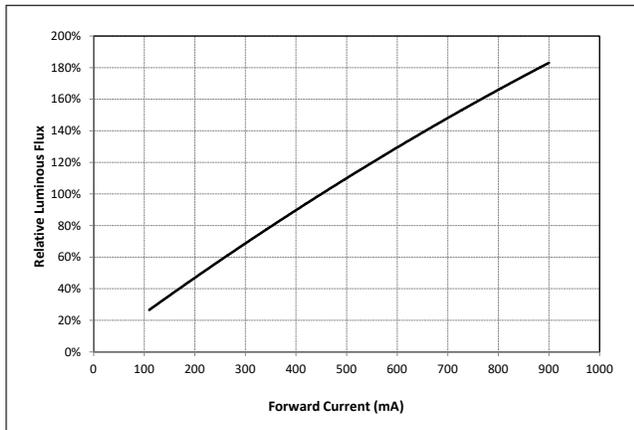
**Figure 1: V13B Drive Current vs. Voltage**



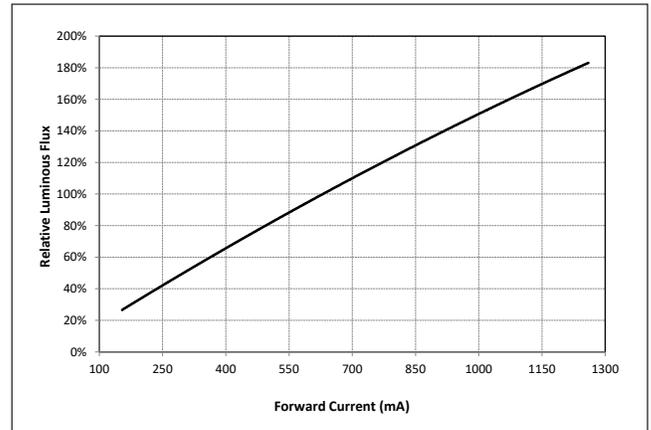
**Figure 2: V13C Drive Current vs. Voltage**



**Figure 3: V13B Drive Current vs. Voltage**



**Figure 4: V13C Typical Relative Flux vs. Current**

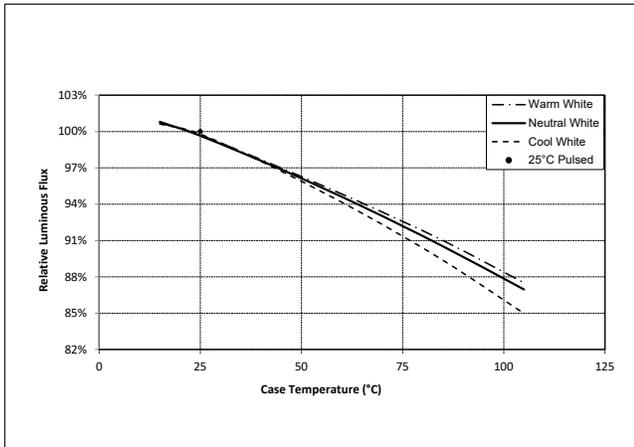


Notes for Figures 1-4:

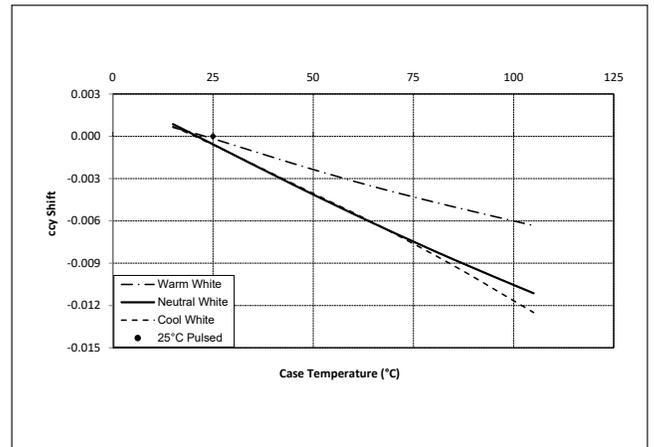
1. Bridgelux does not recommend driving high power LEDs at low currents. Doing so may produce unpredictable results. Pulse width modulation (PWM) is recommended for dimming effects.
2. Products tested under pulsed condition (10ms pulse width) at nominal test current where  $T_j$  (junction temperature)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

# Performance Curves

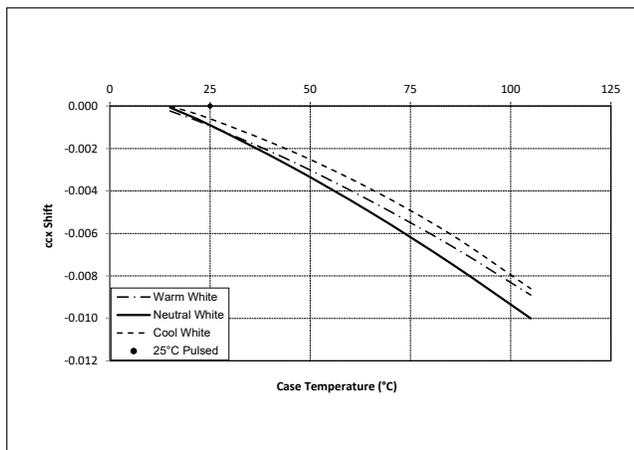
**Figure 5: Typical DC Flux vs. Case Temperature**



**Figure 6: Typical DC ccy Shift vs. Case Temperature**



**Figure 7: Typical DC ccx Shift vs. Case Temperature**

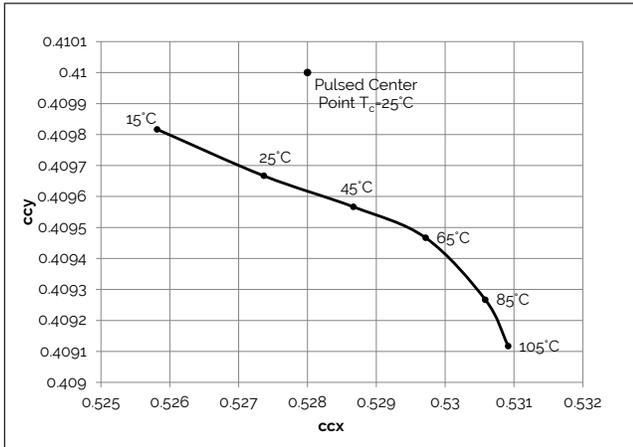


Notes for Figures 5-7:

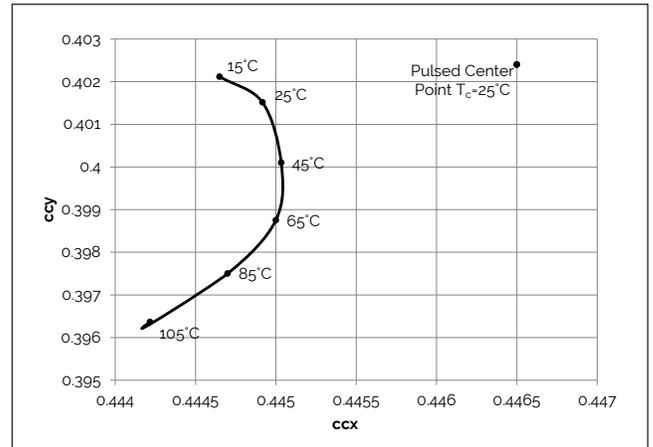
1. Characteristics shown for warm white based on 3000K and 80 CRI.
2. Characteristics shown for neutral white based on 4000K and 80 CRI.
3. Characteristics shown for cool white based on 5000K and 70 CRI.
4. Characteristics shown for warm white includes Decor Series Class A
5. For other color SKUs, the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

# Performance Curves

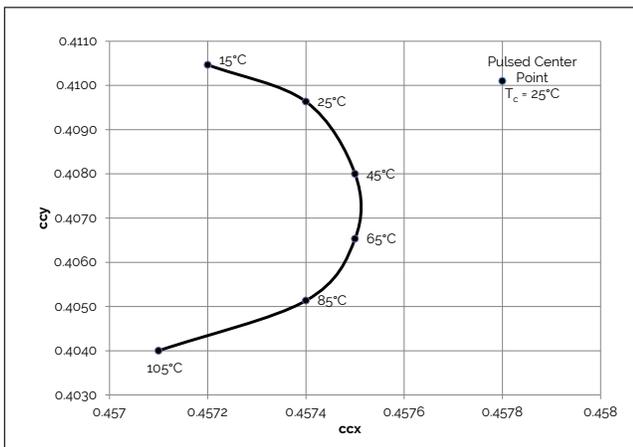
**Figure 8: 2000K, 65 CRI Color Shift vs. Case Temperature**



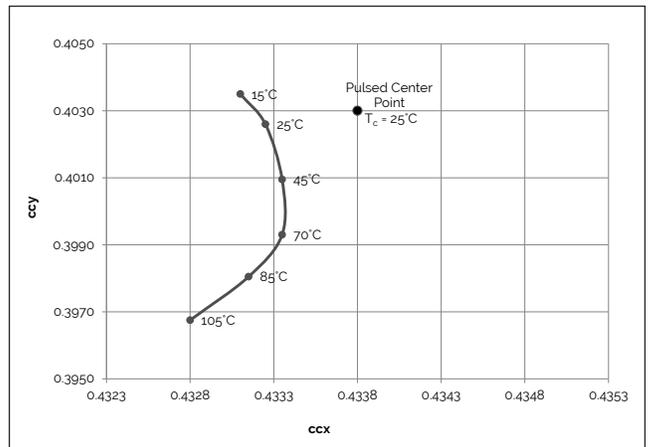
**Figure 9: 3000K, 90 CRI Color Shift vs. Case Temperature<sup>1,3</sup>**



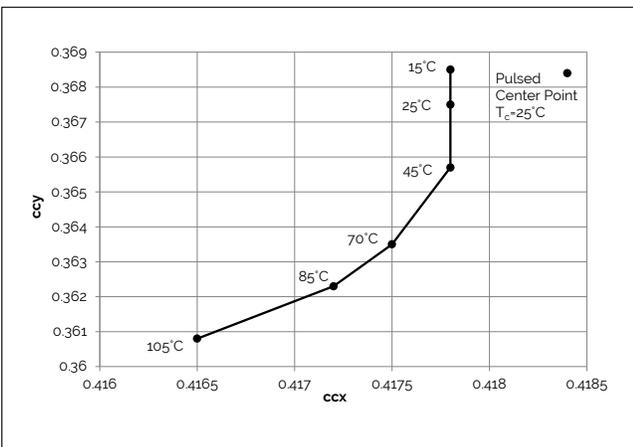
**Figure 10: 2700K, 97 CRI Color Shift vs. Case Temperature<sup>1</sup>**



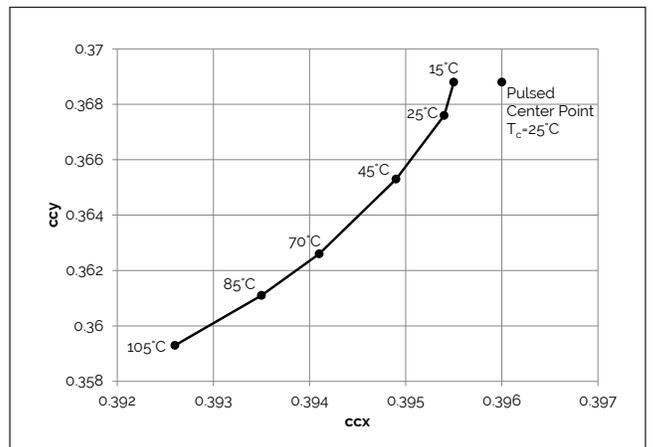
**Figure 11: 3000K, 97 CRI Color Shift vs. Case Temperature<sup>1</sup>**



**Figure 12: 3000K Class A Color Shift vs. Case Temperature<sup>1</sup>**



**Figure 13: 3500K Class A Color Shift vs. Case Temperature<sup>1</sup>**

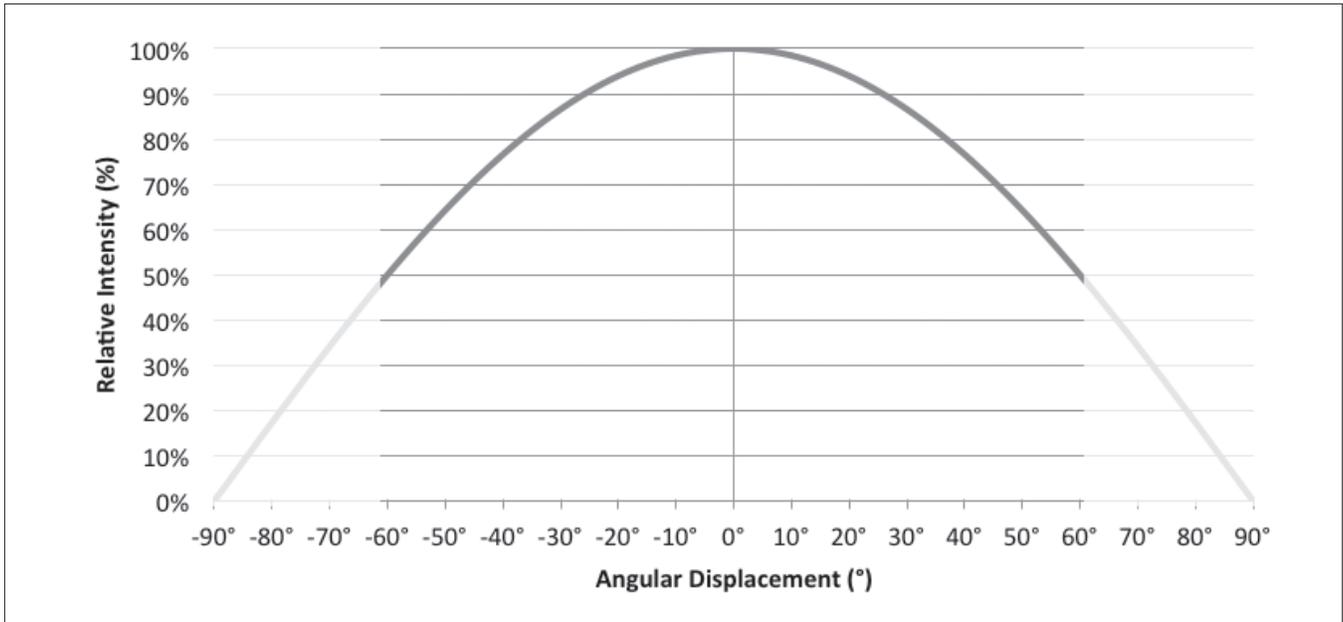


Note for Figures 8-12:

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

# Typical Radiation Pattern

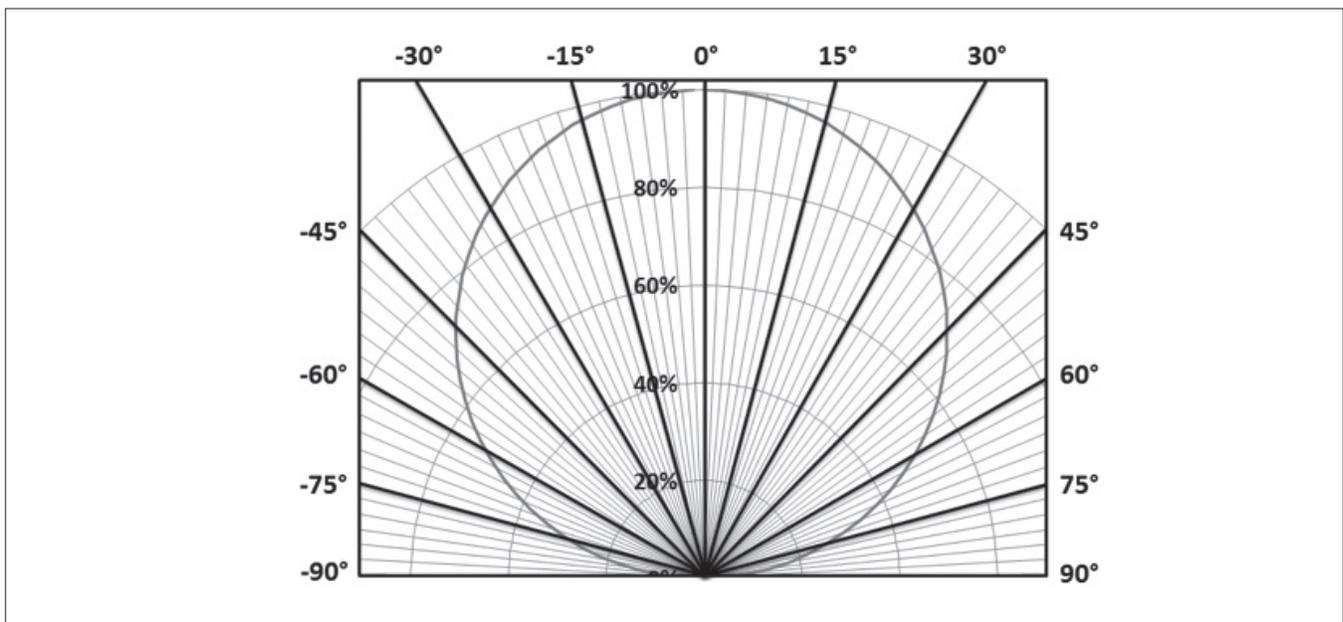
Figure 13: Typical Spatial Radiation Pattern



Note for Figure 13:

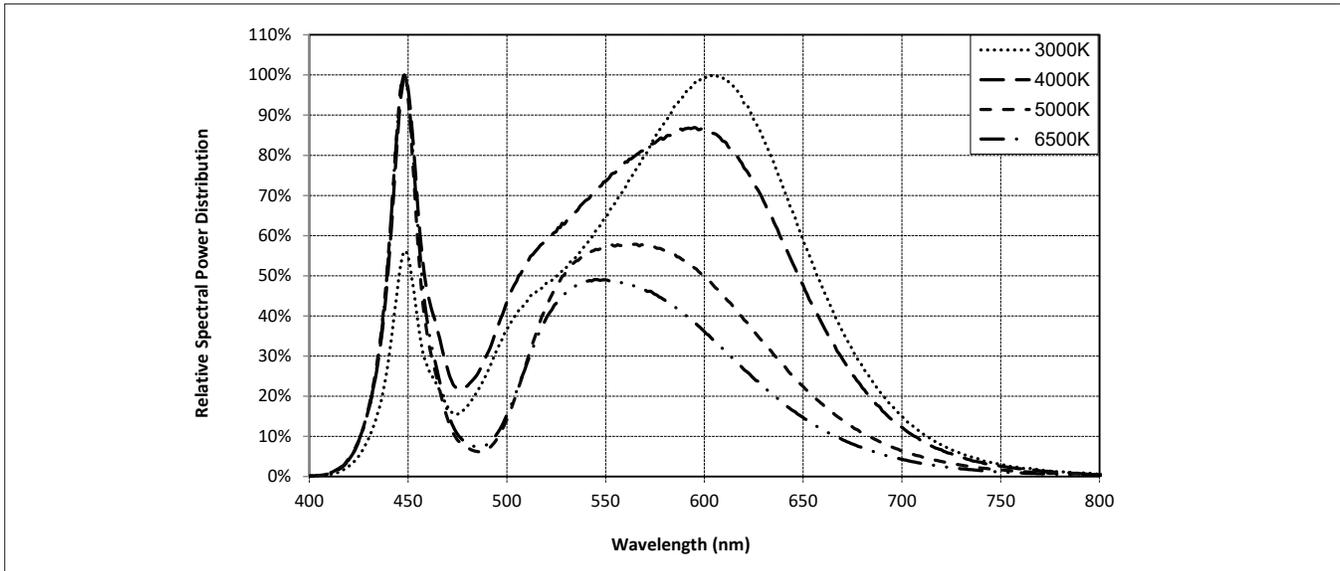
1. Typical viewing angle is 120°.
2. The viewing angle is defined as the off axis angle from the centerline where intensity is ½ of the peak value.

Figure 14: Typical Polar Radiation Pattern



# Typical Color Spectrum

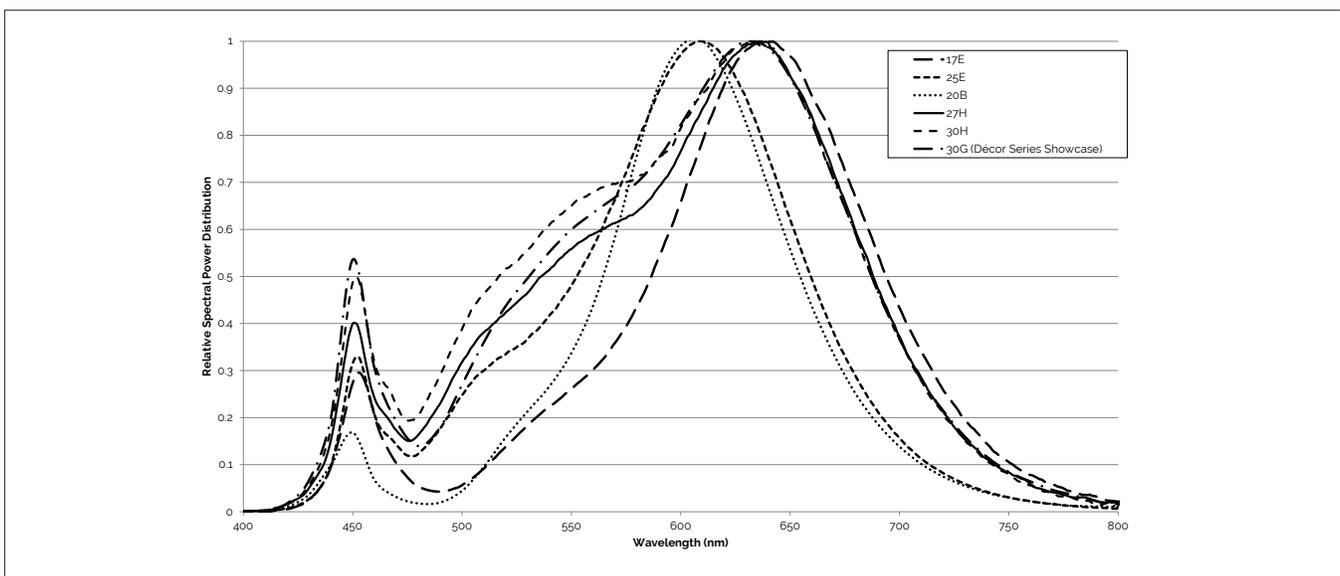
**Figure 15: Typical Color Spectrum**



Note for Figure 15:

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

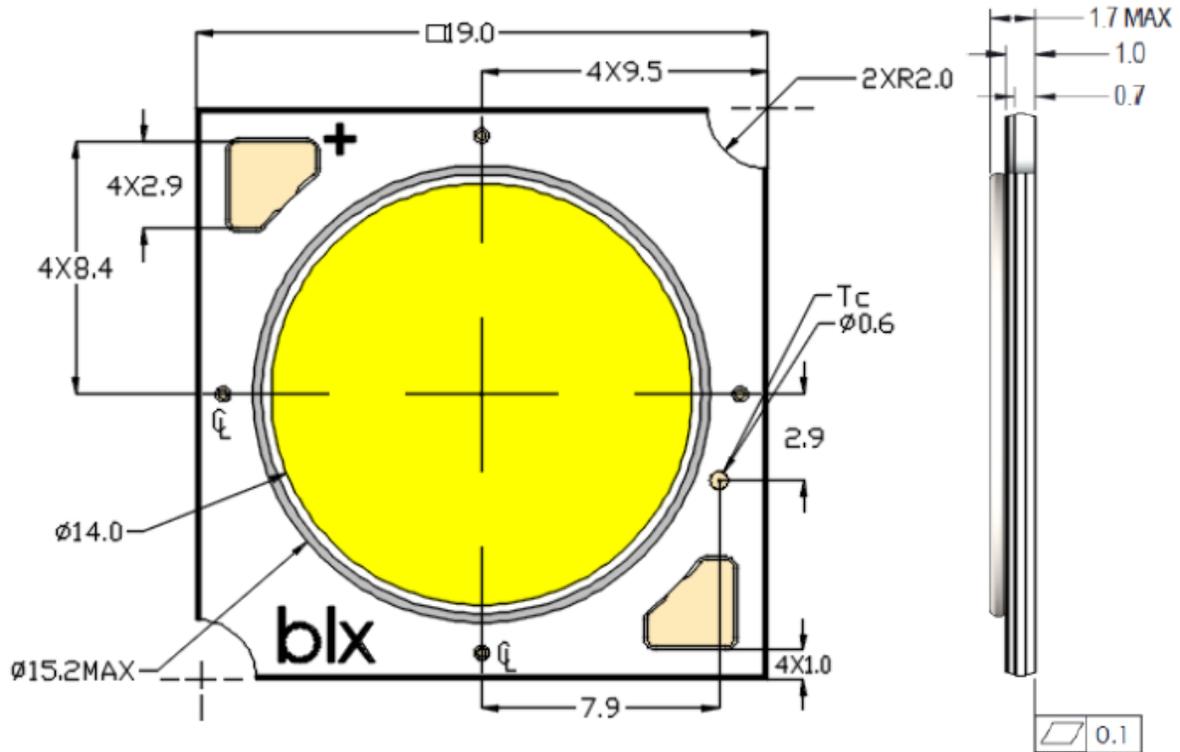


Note for Figure 16:

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

# Mechanical Dimensions

Figure 17: Drawing for V13 LED Array

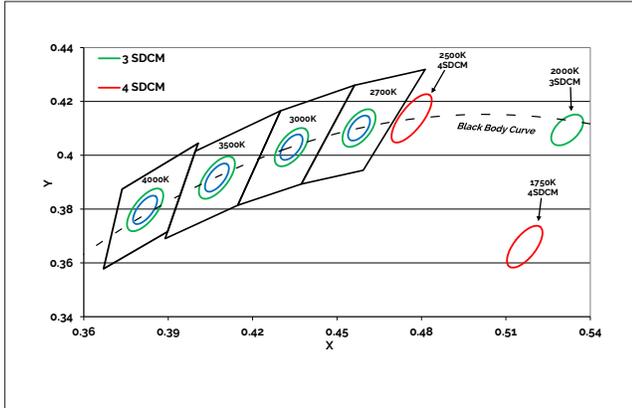


Notes for Figure 17:

1. Drawings are not to scale.
2. Drawing dimensions are in millimeters.
3. Unless otherwise specified, tolerances are  $\pm 0.1\text{mm}$ .
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  $\pm 0.2\text{mm}$ .
7. Bridgelux maintains a flatness of 0.10mm across the mounting surface of the array.

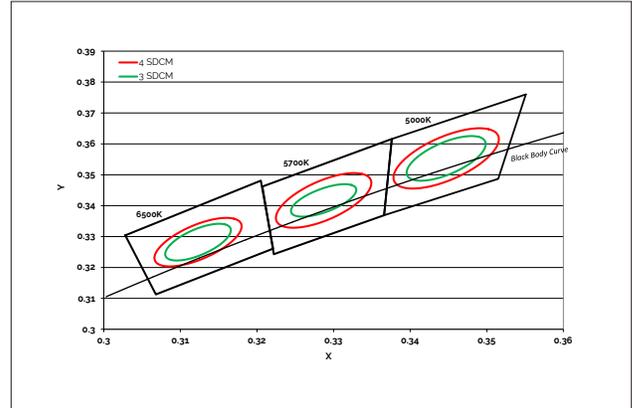
# Color Binning Information

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



Note: Pulsed Test Conditions,  $T_c = 25^\circ\text{C}$

**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	3000K <sup>1</sup>	3500K <sup>1</sup>	4000K <sup>1</sup>
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, 0.366)	(0.5280, 0.4100)	(0.4765, 0.4137)	(0.4578, 0.4101)	(0.4338, 0.403) (0.4465, 0.4024) <sup>2</sup>	(0.4073, 0.3917)	(0.3818, 0.3797)

Note for Table 8:

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

**Table 9: Cool White xy Bin Coordinates and Associated Typical CCT (product is hot targeted to  $T_c = 85^\circ\text{C}$ )**

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)	(5490K - 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



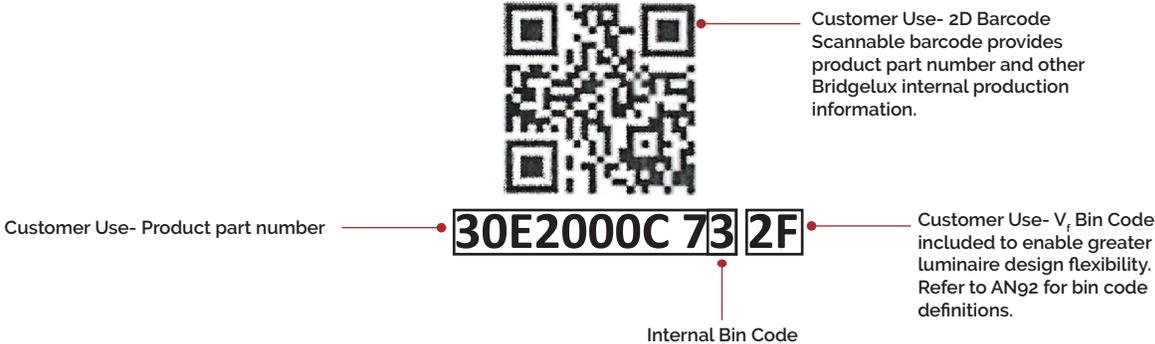
Notes for Figure 20:

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) x 9.5(H) x 505 (L). Dimensions for the anti-static bag are 75 (W) x 615 (L) x 3.1 (T) mm. Dimensions for the shipping box are 58.7 x 13.3 x 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](http://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](http://www.bridgelux.com).

## 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.

## LM80

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

# Precautions

## 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: 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.

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**Bridgelux Gen 7 V13 Array Series Product Data Sheet DS101 Rev. Q (09/2020)**