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# Bridgelux® Gen 7 V13 Array Series

**Product Data Sheet DS101**

FIVE YEAR Warranty™

# 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 160 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
- $V_f$ bin code backside marking

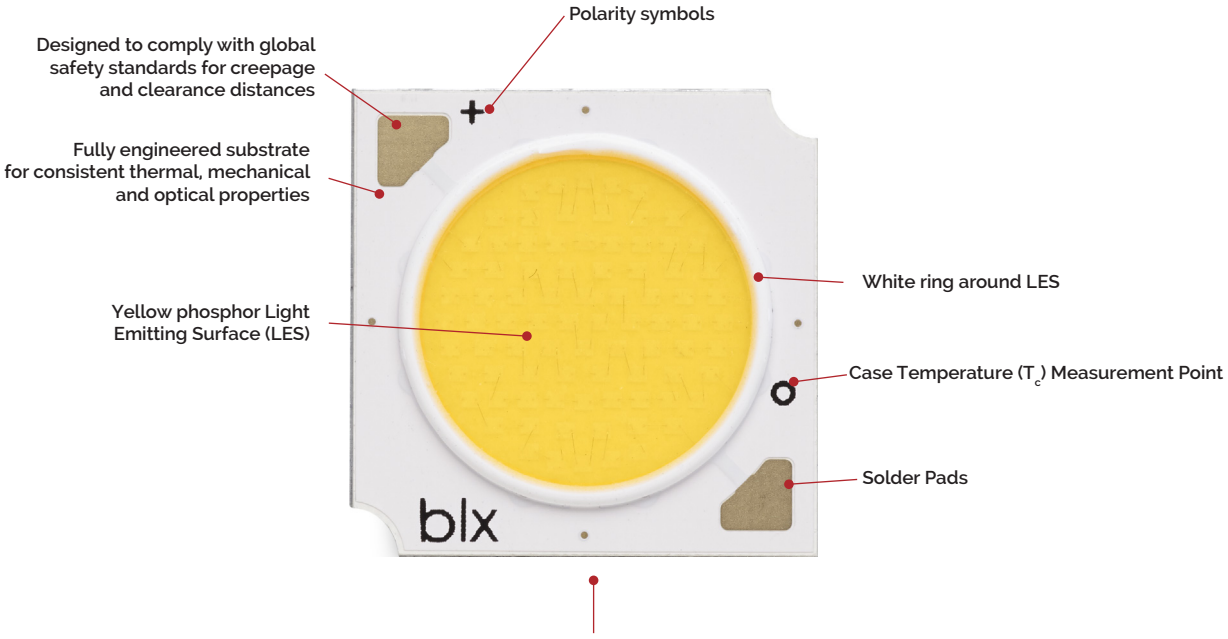
## Benefits

- 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

# Contents

# Product Feature Map

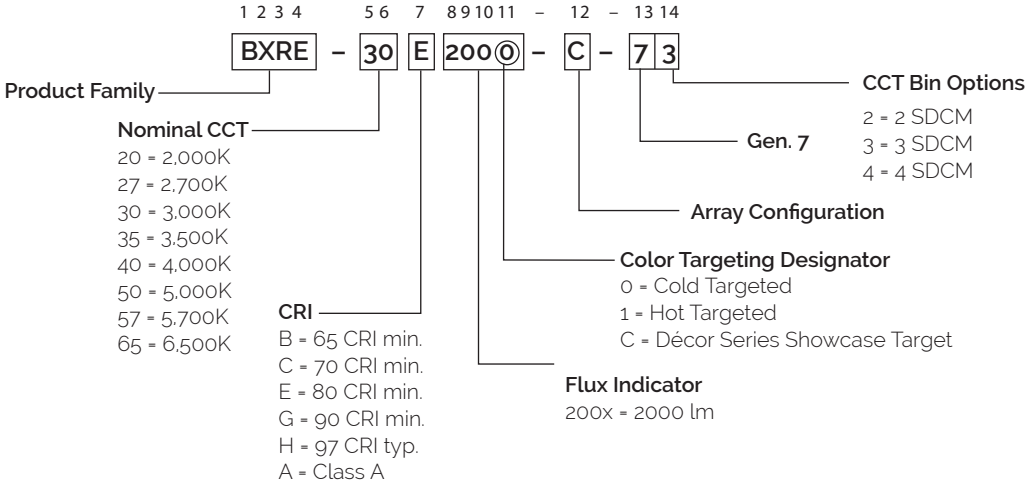
Bridgelux arrays are fully engineered devices that provide consistent thermal and optical performance on an engineered mechanical platform. The V Series arrays are the most compact chip-on-board devices across all of Bridgelux's LED Array products. The arrays incorporate several features to simplify 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

## Product Nomenclature

The part number designation for Bridgelux V Series LED arrays is explained as follows:



# Product Selection Guide

The following product configurations are available:

**Table 1:** Selection Guide, Pulsed Measurement Data ($T_j$ = $T_c$ = 25˚C)

| Part Number | Nominal CCT[1] (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 | 1939 | 1745 | 34.8 | 21.9 | 89 |
| BXRE-20B2001-B-73 | 2000 | 65 | 450 | 2335 | 1992 | 34.8 | 15.6 | 149 |
| BXRE-20B2001-C-73 | 2000 | 65 | 630 | 3270 | 2853 | 34.8 | 21.9 | 149 |
| BXRE-25E2000-C-74 | 2500 | 80 | 630 | 3134 | 2821 | 34.8 | 21.9 | 143 |
| BXRE-27E2000-B-7X | 2700 | 80 | 450 | 2400 | 2090 | 34.8 | 15.6 | 153 |
| BXRE-27E2000-C-7X | 2700 | 80 | 630 | 3360 | 2926 | 34.8 | 21.9 | 153 |
| BXRE-27G2000-B-7X | 2700 | 90 | 450 | 1997 | 1742 | 34.8 | 15.6 | 128 |
| BXRE-27G2000-C-7X | 2700 | 90 | 630 | 2796 | 2438 | 34.8 | 21.9 | 128 |
| BXRE-27H2000-B-7X | 2700 | 97 | 450 | 1740 | 1506 | 34.8 | 15.6 | 111 |
| BXRE-30E2000-B-7X | 3000 | 80 | 450 | 2497 | 2178 | 34.8 | 15.6 | 160 |
| BXRE-30E2000-C-7X | 3000 | 80 | 630 | 3495 | 3048 | 34.8 | 21.9 | 160 |
| BXRE-30G2000-B-7X | 3000 | 90 | 450 | 2078 | 1807 | 34.8 | 15.6 | 133 |
| BXRE-30G2000-C-7X | 3000 | 90 | 630 | 2909 | 2530 | 34.8 | 21.9 | 133 |
| BXRE-30G200C-B-73 | 3000 | 90 | 450 | 1933 | 1740 | 34.8 | 15.6 | 124 |
| BXRE-30G200C-C-73 | 3000 | 90 | 630 | 2706 | 2435 | 34.8 | 15.6 | 124 |
| BXRE-30A2001-B-73[8,9] | 3000 | 93 | 450 | 1877 | 1689 | 34.8 | 15.6 | 120 |
| BXRE-30A2001-C-73[8,9] | 3000 | 93 | 630 | 2627 | 2364 | 34.8 | 21.9 | 120 |
| BXRE-30H2000-B-7X | 3000 | 97 | 450 | 1852 | 1618 | 34.8 | 15.6 | 118 |
| BXRE-35E2000-B-7X | 3500 | 80 | 450 | 2577 | 2243 | 34.8 | 21.9 | 165 |
| BXRE-35E2000-C-7X | 3500 | 80 | 630 | 3608 | 3140 | 34.8 | 15.6 | 165 |
| BXRE-35G2000-B-7X | 3500 | 90 | 450 | 2142 | 1873 | 34.8 | 15.6 | 137 |
| BXRE-35G2000-C-7X | 3500 | 90 | 630 | 2999 | 2621 | 34.8 | 21.9 | 137 |
| BXRE-35A2001-B-73[8,9] | 3500 | 93 | 450 | 2017 | 1787 | 34.8 | 15.6 | 129 |
| BXRE-35A2001-C-73[8,9] | 3500 | 93 | 630 | 2824 | 2542 | 34.8 | 21.9 | 129 |
| BXRE-40E2000-B-7X | 4000 | 80 | 450 | 2593 | 2265 | 34.8 | 15.6 | 166 |
| BXRE-40E2000-C-7X | 4000 | 80 | 630 | 3630 | 3170 | 34.8 | 21.9 | 166 |
| BXRE-40G2000-B-7X | 4000 | 90 | 450 | 2223 | 1938 | 34.8 | 15.6 | 142 |
| BXRE-40G2000-C-7X | 4000 | 90 | 630 | 3112 | 2713 | 34.8 | 21.9 | 142 |
| BXRE-50C2001-B-7X | 5000 | 70 | 450 | 2851 | 2482 | 34.8 | 15.6 | 182 |
| BXRE-50C2001-C-7X | 5000 | 70 | 630 | 3991 | 3475 | 34.8 | 21.9 | 182 |
| BXRE-50E2001-B-7X | 5000 | 80 | 450 | 2674 | 2334 | 34.8 | 15.6 | 171 |
| BXRE-50E2001-C-7X | 5000 | 80 | 630 | 3743 | 3266 | 34.8 | 21.9 | 171 |
| BXRE-50G2001-B-7X | 5000 | 90 | 450 | 2271 | 1986 | 34.8 | 15.6 | 145 |

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 R9 value for 80 CRI products is 0, the minimum R9 values for 90 CRI products is 50, the minimum R9 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. Products tested under pulsed condition (10ms pulse width) at nominal test current where $T_j$ (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.

# Product Selection Guide

**Table 1:** Selection Guide, Pulsed Measurement Data ($T_j$ = $T_c$ = 25˚C) (continued)

| Part Number | Nominal CCT[1] (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-50G2001-C-7X | 5000 | 90 | 630 | 3179 | 2780 | 34.8 | 21.9 | 145 |
| BXRE-57C2001-B-7X | 5700 | 70 | 450 | 2754 | 2395 | 34.8 | 15.6 | 176 |
| BXRE-57C2001-C-7X | 5700 | 70 | 630 | 3856 | 3353 | 34.8 | 21.9 | 176 |
| BXRE-57E2001-B-7X | 5700 | 80 | 450 | 2643 | 2374 | 34.8 | 15.6 | 169 |
| BXRE-57E2001-C-7X | 5700 | 80 | 630 | 3700 | 3322 | 34.8 | 21.9 | 169 |
| BXRE-65C2001-B-7X | 6500 | 70 | 450 | 2803 | 2439 | 34.8 | 15.6 | 179 |
| BXRE-65C2001-C-7X | 6500 | 70 | 630 | 3924 | 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:

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 R9 value for 80 CRI products is 0, the minimum R9 values for 90 CRI products is 50, the minimum R9 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. Products tested under pulsed condition (10ms pulse width) at nominal test current where $T_j$ (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 CCT[1] (K) | GAI[2] | CRI[3] | Nominal Drive Current[4] (mA) | Typical DC Flux[5,6] $T_c$ = 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 |

Notes for Table 2:

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 $T_j$ = $T_c$ = 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.

# Product Selection Guide

**Table 3:** Selection Guide, Stabilized DC Performance ($T_c$ = 85°C) [4,5]

| Part Number | Nominal CCT[1] (K) | CRI[2] | Nominal Drive Current[3] (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 | 1745 | 1571 | 33.9 | 21.4 | 82 |
| BXRE-20B2001-B-73 | 2000 | 65 | 450 | 2102 | 1892 | 33.9 | 15.3 | 138 |
| BXRE-20B2001-C-73 | 2000 | 65 | 630 | 2943 | 2648 | 33.9 | 21.4 | 138 |
| BXRE-25E2000-C-74 | 2500 | 80 | 630 | 2821 | 2539 | 33.9 | 21.4 | 132 |
| BXRE-27E2000-B-7X | 2700 | 80 | 450 | 2160 | 1944 | 33.9 | 15.3 | 142 |
| BXRE-27E2000-C-7X | 2700 | 80 | 630 | 3024 | 2721 | 33.9 | 21.4 | 142 |
| BXRE-27G2000-B-7X | 2700 | 90 | 450 | 1797 | 1618 | 33.9 | 15.3 | 118 |
| BXRE-27G2000-C-7X | 2700 | 90 | 630 | 2516 | 2265 | 33.9 | 21.4 | 118 |
| BXRE-27H2000-B-7X | 2700 | 97 | 450 | 1566 | 1409 | 33.9 | 15.3 | 103 |
| BXRE-30E2000-B-7X | 3000 | 80 | 450 | 2247 | 2022 | 33.9 | 15.3 | 147 |
| BXRE-30E2000-C-7X | 3000 | 80 | 630 | 3146 | 2831 | 33.9 | 21.4 | 147 |
| BXRE-30G2000-B-7X | 3000 | 90 | 450 | 1870 | 1683 | 33.9 | 15.3 | 123 |
| BXRE-30G2000-C-7X | 3000 | 90 | 630 | 2618 | 2356 | 33.9 | 21.4 | 123 |
| BXRE-30G200C-B-73 | 3000 | 90 | 450 | 1740 | 1566 | 33.9 | 15.3 | 114 |
| BXRE-30G200C-C-73 | 3000 | 90 | 630 | 2435 | 2192 | 33.9 | 21.4 | 114 |
| BXRE-30A2001-B-73[7,8] | 3000 | 93 | 450 | 1689 | 1520 | 33.9 | 15.3 | 111 |
| BXRE-30A2001-C-73[7,8] | 3000 | 93 | 630 | 2364 | 2128 | 33.9 | 21.4 | 111 |
| BXRE-30H2000-B-7X | 3000 | 97 | 450 | 1667 | 1500 | 33.9 | 15.3 | 109 |
| BXRE-35E2000-B-7X | 3500 | 80 | 450 | 2319 | 2087 | 33.9 | 15.3 | 152 |
| BXRE-35E2000-C-7X | 3500 | 80 | 630 | 3247 | 2922 | 33.9 | 21.4 | 152 |
| BXRE-35G2000-B-7X | 3500 | 90 | 450 | 1928 | 1735 | 33.9 | 15.3 | 126 |
| BXRE-35G2000-C-7X | 3500 | 90 | 630 | 2699 | 2429 | 33.9 | 21.4 | 126 |
| BXRE-35A2001-B-73[7,8] | 3500 | 93 | 450 | 1816 | 1634 | 33.9 | 15.3 | 119 |
| BXRE-35A2001-C-73[7,8] | 3500 | 93 | 630 | 2542 | 2288 | 33.9 | 21.4 | 119 |
| BXRE-40E2000-B-7X | 4000 | 80 | 450 | 2334 | 2100 | 33.9 | 15.3 | 153 |
| BXRE-40E2000-C-7X | 4000 | 80 | 630 | 3267 | 2941 | 33.9 | 21.4 | 153 |
| BXRE-40G2000-B-7X | 4000 | 90 | 450 | 2000 | 1800 | 33.9 | 15.3 | 131 |
| BXRE-40G2000-C-7X | 4000 | 90 | 630 | 2801 | 2521 | 33.9 | 21.4 | 131 |
| BXRE-50C2001-B-7X | 5000 | 70 | 450 | 2566 | 2309 | 33.9 | 15.3 | 168 |
| BXRE-50C2001-C-7X | 5000 | 70 | 630 | 3592 | 3233 | 33.9 | 21.4 | 168 |
| BXRE-50E2001-B-7X | 5000 | 80 | 450 | 2406 | 2166 | 33.9 | 15.3 | 158 |
| BXRE-50E2001-C-7X | 5000 | 80 | 630 | 3369 | 3032 | 33.9 | 21.4 | 158 |
| BXRE-50G2001-B-7X | 5000 | 90 | 450 | 2044 | 1840 | 33.9 | 15.3 | 134 |

Notes for Table 3:

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 $T_j$ = $T_c$ = 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 R9 value for 80 CRI products is 0, the minimum R9 values for 90 CRI products is 50, the minimum R9 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.

# Product Selection Guide

**Table 3:** Selection Guide, Stabilized DC Performance ($T_c$ = 85˚C) [4,5] (continued)

| Part Number | Nominal CCT[1] (K) | CRI[2] | Nominal Drive Current[3] (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 | 2862 | 2575 | 33.9 | 21.4 | 134 |
| BXRE-57C2001-B-7X | 5700 | 70 | 450 | 2479 | 2231 | 33.9 | 15.3 | 162 |
| BXRE-57C2001-C-7X | 5700 | 70 | 630 | 3470 | 3123 | 33.9 | 21.4 | 162 |
| BXRE-57E2001-B-7X | 5700 | 80 | 450 | 2378 | 2141 | 33.9 | 15.3 | 156 |
| BXRE-57E2001-C-7X | 5700 | 80 | 630 | 3330 | 2997 | 33.9 | 21.4 | 156 |
| BXRE-65C2001-B-7X | 6500 | 70 | 450 | 2522 | 2270 | 33.9 | 15.3 | 165 |
| BXRE-65C2001-C-7X | 6500 | 70 | 630 | 3531 | 3178 | 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:

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 $T_j$ = $T_c$ = 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 R9 value for 80 CRI products is 0, the minimum R9 values for 90 CRI products is 50, the minimum R9 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.

# 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[1] (mA) | Typical $V_f$ $T_c$ = 25°C (V) | Typical Power $T_c$ = 25°C (W) | Typical Flux[2] $T_c$ = 25°C (lm) | Typical DC Flux[3] $T_c$ = 85°C (lm) | Typical Efficacy $T_c$ = 25°C (lm/W) |
|---|---|---|---|---|---|---|---|
| BXRE-17E2000-C-74 | 80 | 158 | 32.3 | 5.1 | 527 | 499 | 104 |
| | | 315 | 33.2 | 10.4 | 1018 | 959 | 97 |
| | | **630** | **34.8** | **21.9** | **1939** | **1745** | **89** |
| | | 945 | 36.1 | 34.1 | 2787 | 2606 | 82 |
| | | 1260 | 37.3 | 47.0 | 3556 | 3314 | 76 |
| BXRE-20B2001-B-7x | 65 | 113 | 32.3 | 3.6 | 640 | 591 | 176 |
| | | 225 | 33.2 | 7.5 | 1235 | 1133 | 165 |
| | | **450** | **34.8** | **15.6** | **2335** | **1992** | **149** |
| | | 675 | 36.0 | 24.3 | 3379 | 3067 | 139 |
| | | 900 | 37.2 | 33.5 | 4309 | 3892 | 129 |
| BXRE-20B2001-C-73 | 65 | 158 | 32.3 | 5.1 | 889 | 842 | 175 |
| | | 315 | 33.2 | 10.4 | 1716 | 1617 | 164 |
| | | **630** | **34.8** | **21.9** | **3270** | **2853** | **149** |
| | | 945 | 36.1 | 34.1 | 4698 | 4394 | 138 |
| | | 1260 | 37.3 | 47.0 | 5995 | 5588 | 128 |
| BXRE-25E2000-C-74 | 80 | 158 | 32.3 | 5.1 | 852 | 807 | 167 |
| | | 315 | 33.2 | 10.4 | 1645 | 1550 | 157 |
| | | **630** | **34.8** | **21.9** | **3134** | **2821** | **143** |
| | | 945 | 36.1 | 34.1 | 4504 | 4212 | 132 |
| | | 1260 | 37.3 | 47.0 | 5747 | 5357 | 122 |
| BXRE-27E2000-B-7x | 80 | 113 | 32.3 | 3.6 | 658 | 607 | 181 |
| | | 225 | 33.2 | 7.5 | 1269 | 1165 | 170 |
| | | **450** | **34.8** | **15.6** | **2400** | **2160** | **153** |
| | | 675 | 36.0 | 24.3 | 3472 | 3152 | 143 |
| | | 900 | 37.2 | 33.5 | 4428 | 3999 | 132 |
| BXRE-27E2000-C-7x | 80 | 158 | 32.3 | 5.1 | 914 | 865 | 179 |
| | | 315 | 33.2 | 10.4 | 1763 | 1662 | 169 |
| | | **630** | **34.8** | **21.9** | **3360** | **3024** | **153** |
| | | 945 | 36.1 | 34.1 | 4828 | 4515 | 142 |
| | | 1260 | 37.3 | 47.0 | 6161 | 5742 | 131 |
| BXRE-27G2000-B-7x | 90 | 113 | 32.3 | 3.6 | 547 | 505 | 151 |
| | | 225 | 33.2 | 7.5 | 1056 | 969 | 142 |
| | | **450** | **34.8** | **15.6** | **1997** | **1797** | **128** |
| | | 675 | 36.0 | 24.3 | 2890 | 2623 | 119 |
| | | 900 | 37.2 | 33.5 | 3685 | 3328 | 110 |
| BXRE-27G2000-C-7x | 90 | 158 | 32.3 | 5.1 | 760 | 720 | 149 |
| | | 315 | 33.2 | 10.4 | 1467 | 1383 | 140 |
| | | **630** | **34.8** | **21.9** | **2796** | **2516** | **128** |
| | | 945 | 36.1 | 34.1 | 4018 | 3758 | 118 |
| | | 1260 | 37.3 | 47.0 | 5127 | 4778 | 109 |

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[1] (mA) | Typical $V_f$ $T_c$ = 25°C (V) | Typical Power $T_c$ = 25°C (W) | Typical Flux[2] $T_c$ = 25°C (lm) | Typical DC Flux[3] $T_c$ = 85°C (lm) | Typical Efficacy $T_c$ = 25°C (lm/W) |
|---|---|---|---|---|---|---|---|
| BXRE-27H2000-B-7X | 97 | 113 | 32.3 | 3.6 | 477 | 440 | 131 |
| | | 225 | 33.2 | 7.5 | 920 | 844 | 123 |
| | | **450** | **34.8** | **15.6** | **1740** | **1566** | **111** |
| | | 675 | 36.0 | 24.3 | 2517 | 2284 | 103 |
| | | 900 | 37.2 | 33.5 | 3210 | 2899 | 96 |
| BXRE-30E2000-B-7X | 80 | 113 | 32.3 | 3.6 | 684 | 631 | 188 |
| | | 225 | 33.2 | 7.5 | 1320 | 1211 | 177 |
| | | **450** | **34.8** | **15.6** | **2497** | **2247** | **160** |
| | | 675 | 36.0 | 24.3 | 3612 | 3279 | 148 |
| | | 900 | 37.2 | 33.5 | 4606 | 4160 | 138 |
| BXRE-30E2000-C-7X | 80 | 158 | 32.3 | 5.1 | 950 | 900 | 187 |
| | | 315 | 33.2 | 10.4 | 1834 | 1729 | 176 |
| | | **630** | **34.8** | **21.9** | **3495** | **3146** | **160** |
| | | 945 | 36.1 | 34.1 | 5022 | 4697 | 147 |
| | | 1260 | 37.3 | 47.0 | 6409 | 5973 | 136 |
| BXRE-30G2000-B-7X | 90 | 113 | 32.3 | 3.6 | 569 | 526 | 157 |
| | | 225 | 33.2 | 7.5 | 1099 | 1008 | 147 |
| | | **450** | **34.8** | **15.6** | **2078** | **1870** | **133** |
| | | 675 | 36.0 | 24.3 | 3006 | 2729 | 124 |
| | | 900 | 37.2 | 33.5 | 3834 | 3463 | 115 |
| BXRE-30G2000-C-7X | 90 | 158 | 32.3 | 5.1 | 791 | 749 | 155 |
| | | 315 | 33.2 | 10.4 | 1526 | 1439 | 146 |
| | | **630** | **34.8** | **21.9** | **2909** | **2618** | **133** |
| | | 945 | 36.1 | 34.1 | 4180 | 3909 | 123 |
| | | 1260 | 37.3 | 47.0 | 5334 | 4971 | 113 |
| BXRE-30G200C-B-73 | 90 | 113 | 32.3 | 3.6 | 530 | 489 | 146 |
| | | 225 | 33.2 | 7.5 | 1022 | 938 | 137 |
| | | **450** | **34.8** | **15.6** | **1933** | **1740** | **124** |
| | | 675 | 36.0 | 24.3 | 2796 | 2538 | 115 |
| | | 900 | 37.2 | 33.5 | 3566 | 3221 | 107 |
| BXRE-30G200C-C-73 | 90 | 158 | 32.3 | 5.1 | 742 | 684 | 146 |
| | | 315 | 33.2 | 10.4 | 1431 | 1313 | 137 |
| | | **630** | **34.8** | **21.9** | **2706** | **2435** | **124** |
| | | 945 | 36.1 | 34.1 | 3915 | 3554 | 115 |
| | | 1260 | 37.3 | 47.0 | 4993 | 4509 | 106 |
| BXRE-30A2001-B-73 | 93 | 113 | 32.3 | 3.6 | 514 | 475 | 141 |
| | | 225 | 33.2 | 7.5 | 992 | 911 | 133 |
| | | **450** | **34.8** | **15.6** | **1877** | **1689** | **120** |
| | | 675 | 36.0 | 24.3 | 2715 | 2464 | 112 |
| | | 900 | 37.2 | 33.5 | 3462 | 3127 | 103 |
| BXRE-30A2001-C-73 | 93 | 158 | 32.3 | 5.1 | 720 | 664 | 141 |
| | | 315 | 33.2 | 10.4 | 1389 | 1275 | 133 |
| | | **630** | **34.8** | **21.9** | **2627** | **2364** | **120** |
| | | 945 | 36.1 | 34.1 | 3801 | 3450 | 111 |
| | | 1260 | 37.3 | 47.0 | 4847 | 4378 | 103 |

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[1] (mA) | Typical $V_f$ $T_c$ = 25°C (V) | Typical Power $T_c$ = 25°C (W) | Typical Flux[2] $T_c$ = 25°C (lm) | Typical DC Flux[3] $T_c$ = 85°C (lm) | Typical Efficacy $T_c$ = 25°C (lm/W) |
|---|---|---|---|---|---|---|---|
| BXRE-30H2000-B-7X | 97 | 113 | 32.3 | 3.6 | 508 | 469 | 140 |
| | | 225 | 33.2 | 7.5 | 980 | 899 | 131 |
| | | **450** | **34.8** | **15.6** | **1852** | **1667** | **118** |
| | | 675 | 36.0 | 24.3 | 2680 | 2432 | 110 |
| | | 900 | 37.2 | 33.5 | 3418 | 3087 | 102 |
| BXRE-35E2000-B-7X | 80 | 113 | 32.3 | 3.6 | 706 | 652 | 194 |
| | | 225 | 33.2 | 7.5 | 1363 | 1251 | 183 |
| | | **450** | **34.8** | **15.6** | **2577** | **2319** | **165** |
| | | 675 | 36.0 | 24.3 | 3729 | 3384 | 153 |
| | | 900 | 37.2 | 33.5 | 4755 | 4295 | 142 |
| BXRE-35E2000-C-7X | 80 | 158 | 32.3 | 5.1 | 981 | 929 | 193 |
| | | 315 | 33.2 | 10.4 | 1893 | 1785 | 181 |
| | | **630** | **34.8** | **21.9** | **3608** | **3247** | **165** |
| | | 945 | 36.1 | 34.1 | 5185 | 4849 | 152 |
| | | 1260 | 37.3 | 47.0 | 6615 | 6166 | 141 |
| BXRE-35G2000-B-7X | 90 | 113 | 32.3 | 3.6 | 587 | 542 | 161 |
| | | 225 | 33.2 | 7.5 | 1133 | 1039 | 152 |
| | | **450** | **34.8** | **15.6** | **2142** | **1928** | **137** |
| | | 675 | 36.0 | 24.3 | 3099 | 2813 | 127 |
| | | 900 | 37.2 | 33.5 | 3953 | 3570 | 118 |
| BXRE-35G2000-C-7X | 90 | 158 | 32.3 | 5.1 | 815 | 772 | 160 |
| | | 315 | 33.2 | 10.4 | 1574 | 1483 | 151 |
| | | **630** | **34.8** | **21.9** | **2999** | **2699** | **137** |
| | | 945 | 36.1 | 34.1 | 4310 | 4030 | 126 |
| | | 1260 | 37.3 | 47.0 | 5499 | 5125 | 117 |
| BXRE-35A2001-B-73 | 93 | 113 | 32.3 | 3.6 | 553 | 510 | 152 |
| | | 225 | 33.2 | 7.5 | 1067 | 979 | 143 |
| | | **450** | **34.8** | **15.6** | **2017** | **1816** | **129** |
| | | 675 | 36.0 | 24.3 | 2919 | 2649 | 120 |
| | | 900 | 37.2 | 33.5 | 3722 | 3362 | 111 |
| BXRE-35A2001-C-73 | 93 | 158 | 32.3 | 5.1 | 768 | 727 | 151 |
| | | 315 | 33.2 | 10.4 | 1482 | 1397 | 142 |
| | | **630** | **34.8** | **21.9** | **2824** | **2542** | **129** |
| | | 945 | 36.1 | 34.1 | 4058 | 3795 | 119 |
| | | 1260 | 37.3 | 47.0 | 5178 | 4826 | 110 |
| BXRE-40E2000-B-7X | 80 | 113 | 32.3 | 3.6 | 711 | 656 | 195 |
| | | 225 | 33.2 | 7.5 | 1371 | 1258 | 184 |
| | | **450** | **34.8** | **15.6** | **2593** | **2334** | **166** |
| | | 675 | 36.0 | 24.3 | 3752 | 3405 | 154 |
| | | 900 | 37.2 | 33.5 | 4785 | 4322 | 143 |
| BXRE-40E2000-C-7X | 80 | 158 | 32.3 | 5.1 | 987 | 935 | 194 |
| | | 315 | 33.2 | 10.4 | 1905 | 1796 | 182 |
| | | **630** | **34.8** | **21.9** | **3630** | **3267** | **166** |
| | | 945 | 36.1 | 34.1 | 5217 | 4879 | 153 |
| | | 1260 | 37.3 | 47.0 | 6657 | 6204 | 142 |

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[1] (mA) | Typical $V_f$ $T_c$ = 25°C (V) | Typical Power $T_c$ = 25°C (W) | Typical Flux[2] $T_c$ = 25°C (lm) | Typical DC Flux[3] $T_c$ = 85°C (lm) | Typical Efficacy $T_c$ = 25°C (lm/W) |
|---|---|---|---|---|---|---|---|
| BXRE-40G2000-B-7X | 90 | 113 | 32.3 | 3.6 | 609 | 562 | 168 |
| | | 225 | 33.2 | 7.5 | 1175 | 1079 | 158 |
| | | **450** | **34.8** | **15.6** | **2223** | **2000** | **142** |
| | | 675 | 36.0 | 24.3 | 3216 | 2919 | 132 |
| | | 900 | 37.2 | 33.5 | 4101 | 3704 | 123 |
| BXRE-40G2000-C-7X | 90 | 158 | 32.3 | 5.1 | 846 | 801 | 166 |
| | | 315 | 33.2 | 10.4 | 1633 | 1539 | 156 |
| | | **630** | **34.8** | **21.9** | **3112** | **2801** | **142** |
| | | 945 | 36.1 | 34.1 | 4472 | 4182 | 131 |
| | | 1260 | 37.3 | 47.0 | 5706 | 5318 | 121 |
| BXRE-50C2001-B-7X | 70 | 113 | 32.3 | 3.6 | 781 | 721 | 215 |
| | | 225 | 33.2 | 7.5 | 1508 | 1383 | 202 |
| | | **450** | **34.8** | **15.6** | **2851** | **2566** | **182** |
| | | 675 | 36.0 | 24.3 | 4125 | 3744 | 170 |
| | | 900 | 37.2 | 33.5 | 5260 | 4751 | 157 |
| BXRE-50C2001-C-7X | 70 | 158 | 32.3 | 5.1 | 1085 | 1028 | 213 |
| | | 315 | 33.2 | 10.4 | 2094 | 1974 | 200 |
| | | **630** | **34.8** | **21.9** | **3991** | **3592** | **182** |
| | | 945 | 36.1 | 34.1 | 5735 | 5364 | 168 |
| | | 1260 | 37.3 | 47.0 | 7318 | 6821 | 156 |
| BXRE-50E2001-B-7X | 80 | 113 | 32.3 | 3.6 | 733 | 676 | 201 |
| | | 225 | 33.2 | 7.5 | 1414 | 1297 | 189 |
| | | **450** | **34.8** | **15.6** | **2674** | **2406** | **171** |
| | | 675 | 36.0 | 24.3 | 3868 | 3511 | 159 |
| | | 900 | 37.2 | 33.5 | 4933 | 4456 | 147 |
| BXRE-50E2001-C-7X | 80 | 158 | 32.3 | 5.1 | 1018 | 964 | 200 |
| | | 315 | 33.2 | 10.4 | 1964 | 1852 | 188 |
| | | **630** | **34.8** | **21.9** | **3743** | **3369** | **171** |
| | | 945 | 36.1 | 34.1 | 5379 | 5030 | 158 |
| | | 1260 | 37.3 | 47.0 | 6863 | 6397 | 146 |
| BXRE-50G2001-B-7X | 90 | 113 | 32.3 | 3.6 | 622 | 574 | 171 |
| | | 225 | 33.2 | 7.5 | 1201 | 1102 | 161 |
| | | **450** | **34.8** | **15.6** | **2271** | **2044** | **145** |
| | | 675 | 36.0 | 24.3 | 3286 | 2982 | 135 |
| | | 900 | 37.2 | 33.5 | 4190 | 3785 | 125 |
| BXRE-50G2001-C-7X | 90 | 158 | 32.3 | 5.1 | 864 | 819 | 170 |
| | | 315 | 33.2 | 10.4 | 1668 | 1573 | 160 |
| | | **630** | **34.8** | **21.9** | **3179** | **2862** | **145** |
| | | 945 | 36.1 | 34.1 | 4569 | 4273 | 134 |
| | | 1260 | 37.3 | 47.0 | 5830 | 5434 | 124 |
| BXRE-57C2001-B-7X | 70 | 113 | 32.3 | 3.6 | 755 | 697 | 208 |
| | | 225 | 33.2 | 7.5 | 1457 | 1336 | 195 |
| | | **450** | **34.8** | **15.6** | **2754** | **2479** | **176** |
| | | 675 | 36.0 | 24.3 | 3985 | 3617 | 164 |
| | | 900 | 37.2 | 33.5 | 5082 | 4590 | 152 |

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[1] (mA) | Typical $V_f$ $T_c$ = 25°C (V) | Typical Power $T_c$ = 25°C (W) | Typical Flux[2] $T_c$ = 25°C (lm) | Typical DC Flux[3] $T_c$ = 85°C (lm) | Typical Efficacy $T_c$ = 25°C (lm/W) |
|---|---|---|---|---|---|---|---|
| BXRE-57C2001-C-7X | 70 | 158 | 32.3 | 5.1 | 1048 | 993 | 206 |
| | | 315 | 33.2 | 10.4 | 2023 | 1907 | 194 |
| | | **630** | **34.8** | **21.9** | **3856** | **3470** | **176** |
| | | 945 | 36.1 | 34.1 | 5541 | 5182 | 162 |
| | | 1260 | 37.3 | 47.0 | 7070 | 6590 | 150 |
| BXRE-57E2001-B-7X | 80 | 113 | 32.3 | 3.6 | 724 | 668 | 199 |
| | | 225 | 33.2 | 7.5 | 1398 | 1282 | 187 |
| | | **450** | **34.8** | **15.6** | **2643** | **2378** | **169** |
| | | 675 | 36.0 | 24.3 | 3824 | 3471 | 157 |
| | | 900 | 37.2 | 33.5 | 4876 | 4404 | 146 |
| BXRE-57E2001-C-7X | 80 | 158 | 32.3 | 5.1 | 1006 | 953 | 198 |
| | | 315 | 33.2 | 10.4 | 1942 | 1830 | 186 |
| | | **630** | **34.8** | **21.9** | **3700** | **3330** | **169** |
| | | 945 | 36.1 | 34.1 | 5317 | 4972 | 156 |
| | | 1260 | 37.3 | 47.0 | 6784 | 6323 | 144 |
| BXRE-65C2001-B-7X | 70 | 113 | 32.3 | 3.6 | 768 | 709 | 211 |
| | | 225 | 33.2 | 7.5 | 1482 | 1360 | 199 |
| | | **450** | **34.8** | **15.6** | **2803** | **2522** | **179** |
| | | 675 | 36.0 | 24.3 | 4055 | 3680 | 167 |
| | | 900 | 37.2 | 33.5 | 5171 | 4670 | 155 |
| BXRE-65C2001-C-7X | 70 | 158 | 32.3 | 5.1 | 1067 | 1010 | 210 |
| | | 315 | 33.2 | 10.4 | 2059 | 1941 | 197 |
| | | **630** | **34.8** | **21.9** | **3924** | **3531** | **179** |
| | | 945 | 36.1 | 34.1 | 5638 | 5273 | 165 |
| | | 1260 | 37.3 | 47.0 | 7194 | 6705 | 153 |
| BXRE-65E2001-B-7X | 80 | 113 | 32.3 | 3.6 | 737 | 680 | 203 |
| | | 225 | 33.2 | 7.5 | 1422 | 1305 | 191 |
| | | **450** | **34.8** | **15.6** | **2690** | **2421** | **172** |
| | | 675 | 36.0 | 24.3 | 3892 | 3532 | 160 |
| | | 900 | 37.2 | 33.5 | 4963 | 4482 | 148 |
| BXRE-65E2001-C-7X | 80 | 158 | 32.3 | 5.1 | 1024 | 970 | 201 |
| | | 315 | 33.2 | 10.4 | 1976 | 1863 | 189 |
| | | **630** | **34.8** | **21.9** | **3766** | **3389** | **172** |
| | | 945 | 36.1 | 34.1 | 5411 | 5060 | 159 |
| | | 1260 | 37.3 | 47.0 | 6904 | 6435 | 147 |

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.

# Electrical Characteristics

**Table 5:** Electrical Characteristics

| Part Number | Drive Current (mA) | Forward Voltage Pulsed, $T_c$ = 25°C (V) [1, 2, 3, 8] | | | Typical Coefficient of Forward Voltage[4] $\Delta V_f/\Delta T_c$ (mV/°C) | Typical Thermal Resistance Junction to Case[5,6] $R_{j-c}$ (°C/W) | Driver Selection Voltages[7] (V) | |
|---|---|---|---|---|---|---|---|---|
| | | Minimum | Typical | Maximum | | | $V_f$ Min. Hot $T_c$ = 105°C (V) | $V_f$ Max. Cold $T_c$ = -40°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:

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. $V_f$ 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.
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 Number | Drive Current [5] (mA) | CCT[1,5] | | | |
|---|---|---|---|---|---|
| | | 2700K/3000K | 4000K[2] | 5000K[3] | 6500K[4] |
| 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 ($T_j$) | 125˚C | |
| Storage Temperature | -40˚C to +105˚C | |
| Operating Case Temperature[1] ($T_c$) | 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 Current[4] | 1290mA | 1800mA |
| Maximum Reverse Voltage[5] | -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**

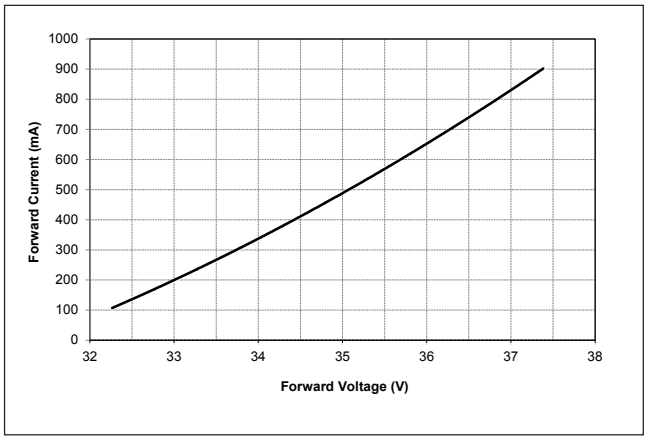



**Figure 2: V13C Drive Current vs. Voltage**

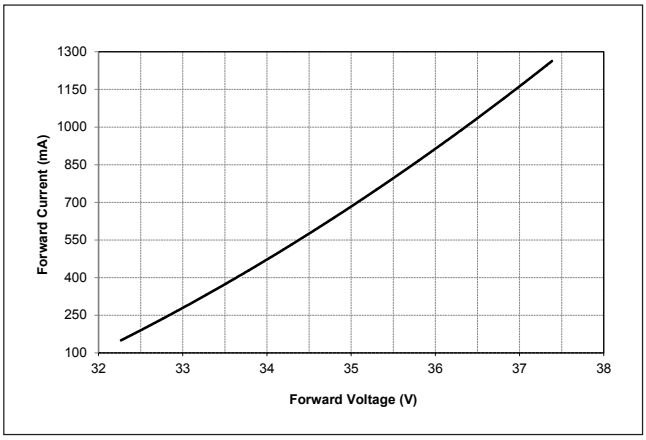



**Figure 3: V13B Drive Current vs. Voltage**

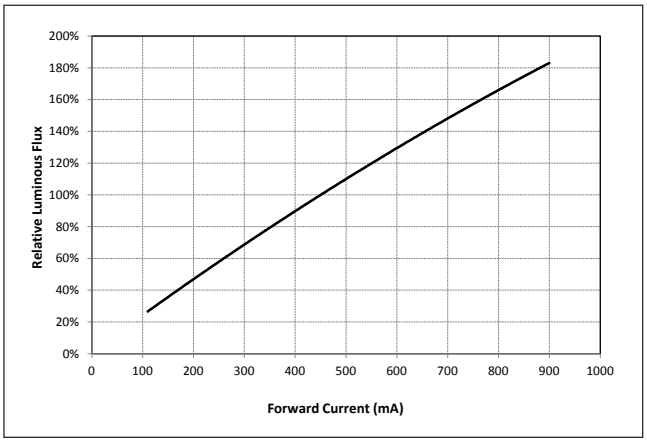
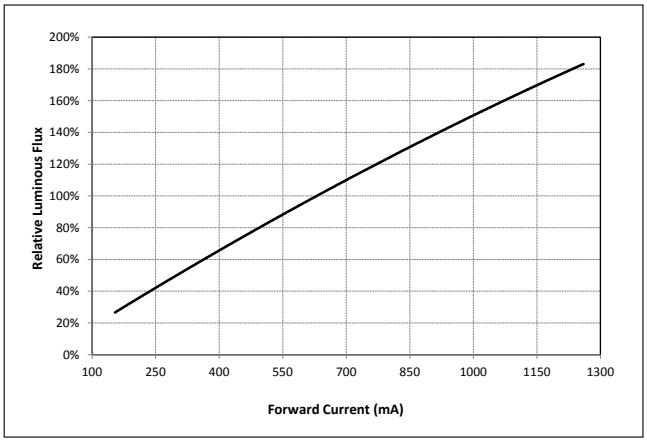



**Figure 4: V13C Typical Relative Flux vs. Current**




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

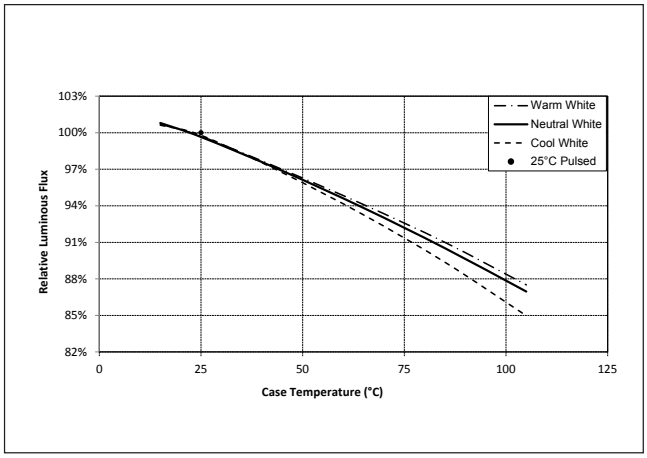



**Figure 6:** Typical DC ccy Shift vs. Case Temperature

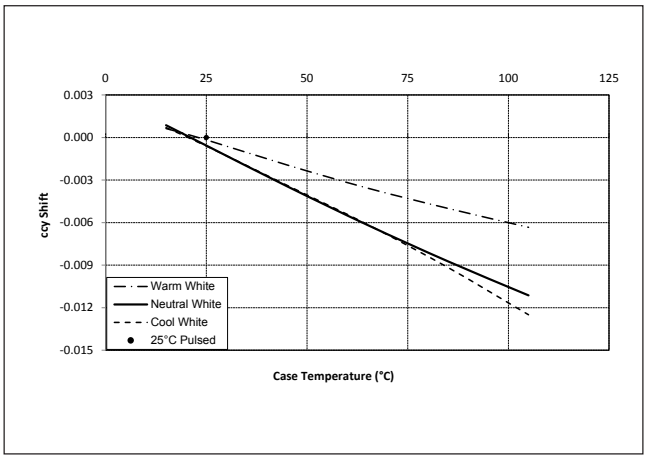
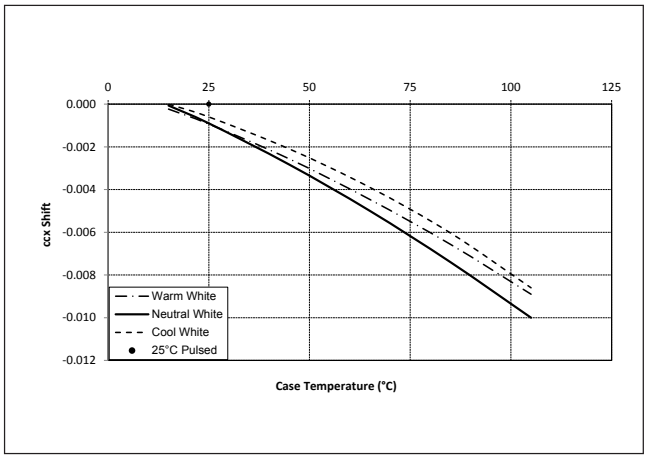



**Figure 7:** Typical DC ccx Shift vs. Case Temperature




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**

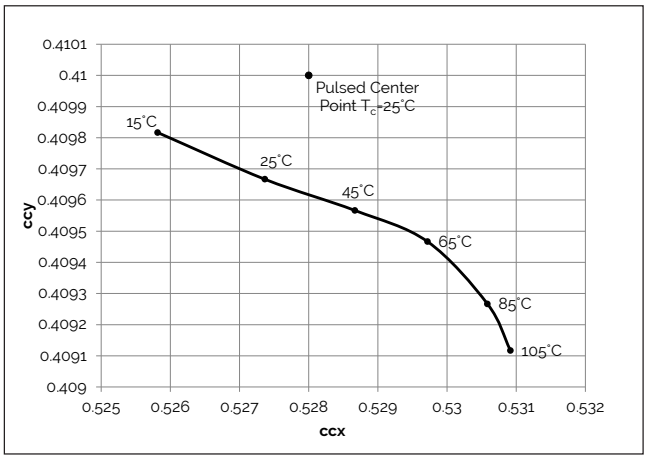



**Figure 9: 3000K, 90 CRI Color Shift vs. Case Temperature[1,3]**

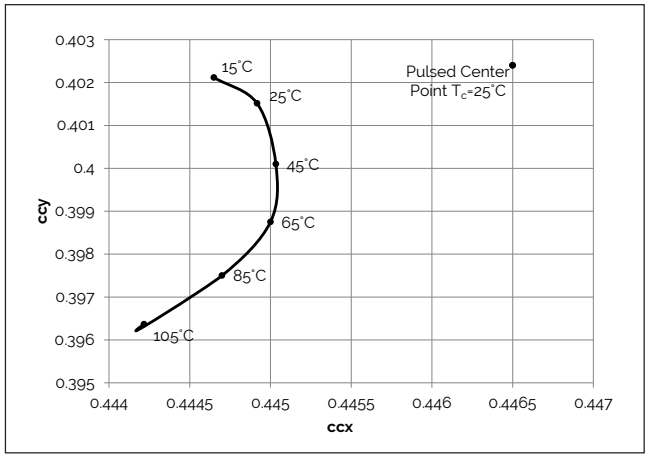



**Figure 10: 2700K, 97 CRI Color Shift vs. Case Temperature[1]**

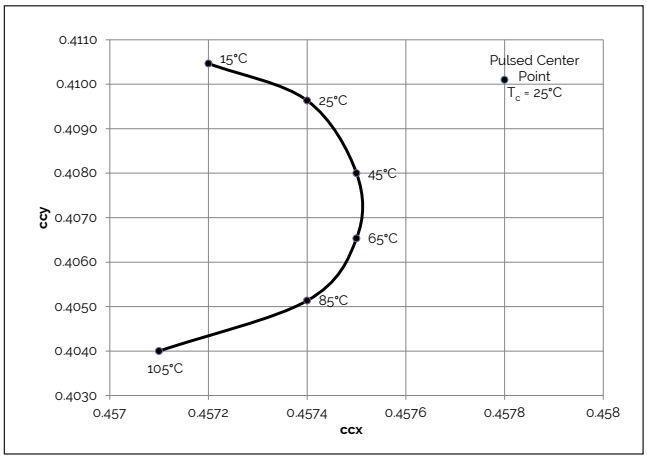



**Figure 11: 3000K, 97 CRI Color Shift vs. Case Temperature[1]**

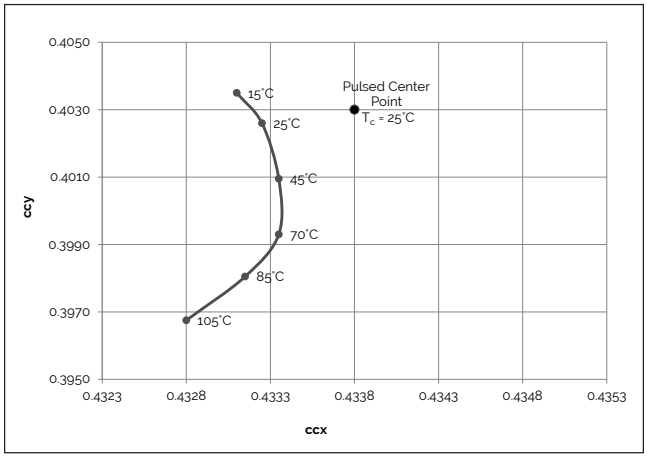



**Figure 12: 3000K Class A Color Shift vs. Case Temperature[1]**

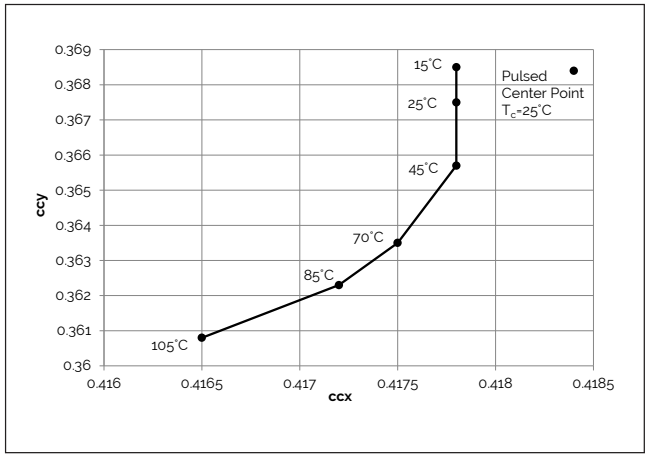
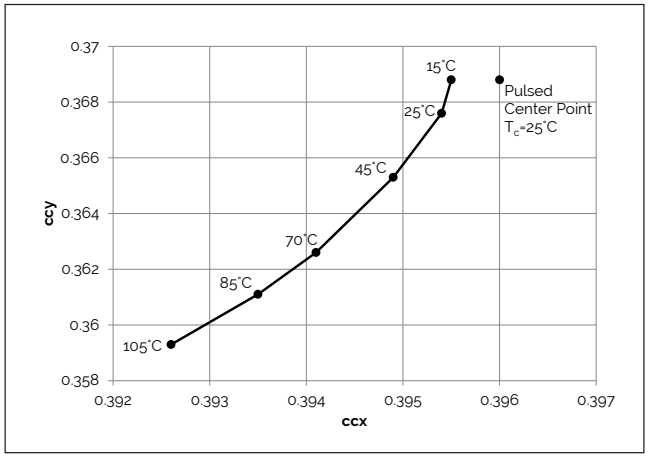



**Figure 13: 3500K Class A Color Shift vs. Case Temperature[1]**

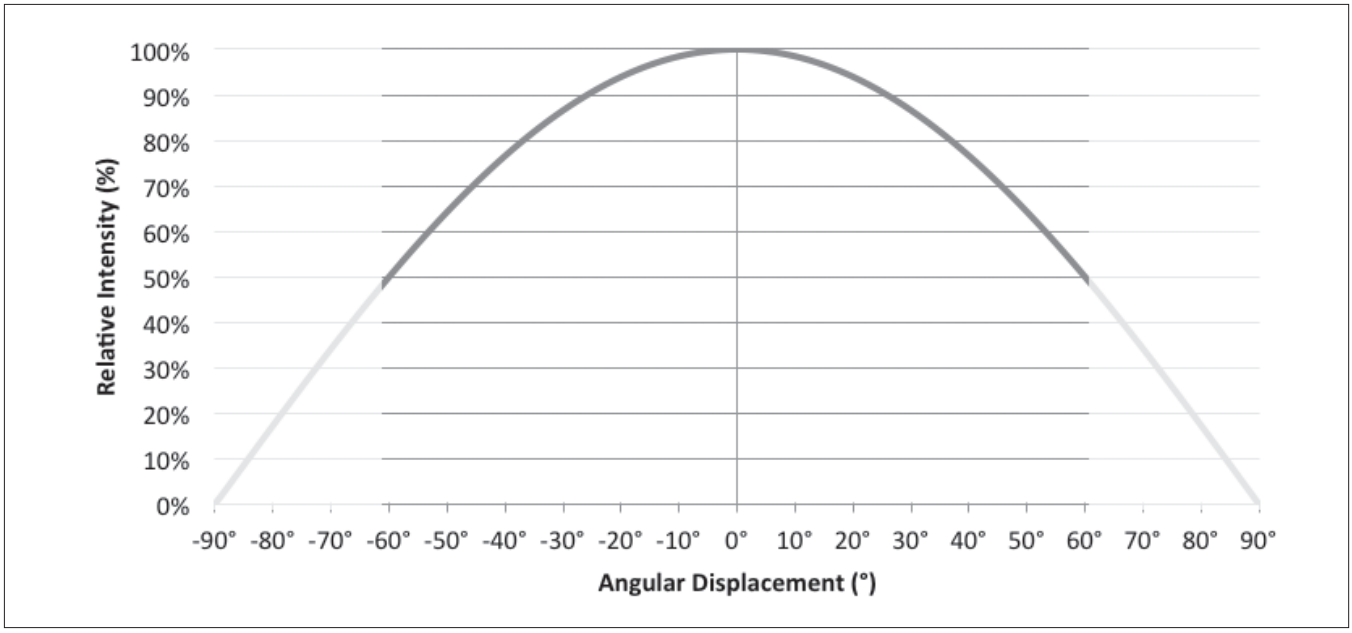



Note for Figures 8-12:

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

# Typical Radiation Pattern

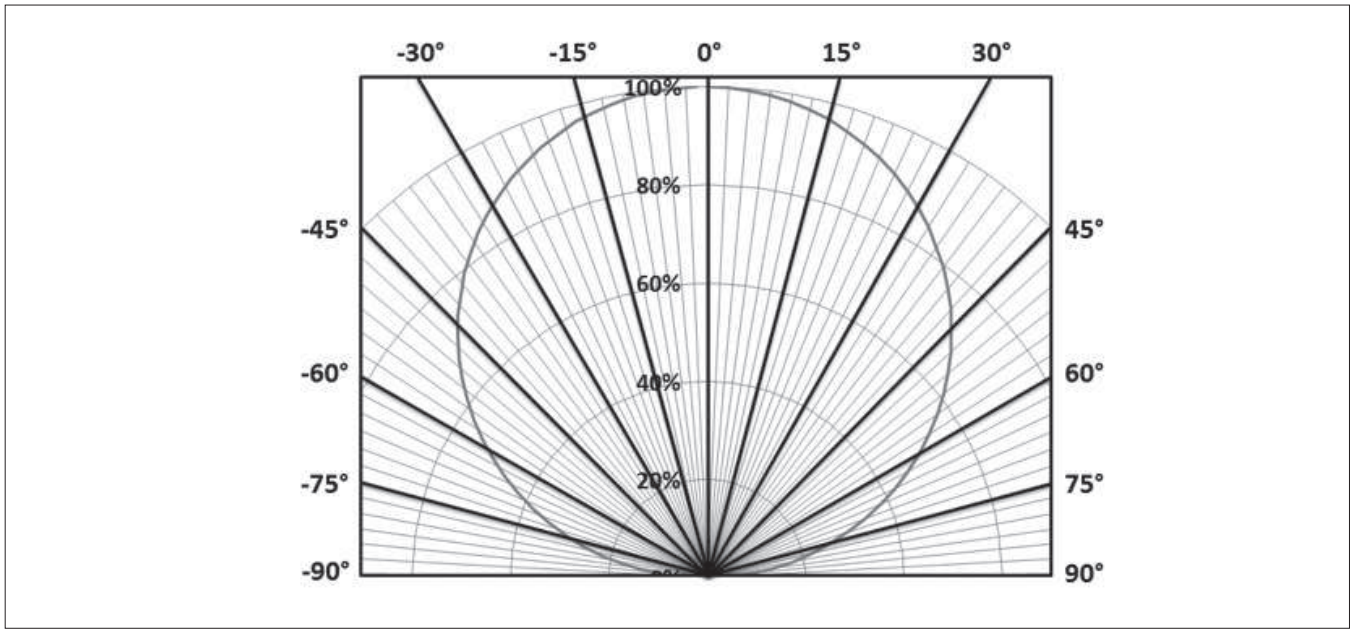
**Figure 13: Typical Spatial Radiation Pattern**




Note for Figure 13:

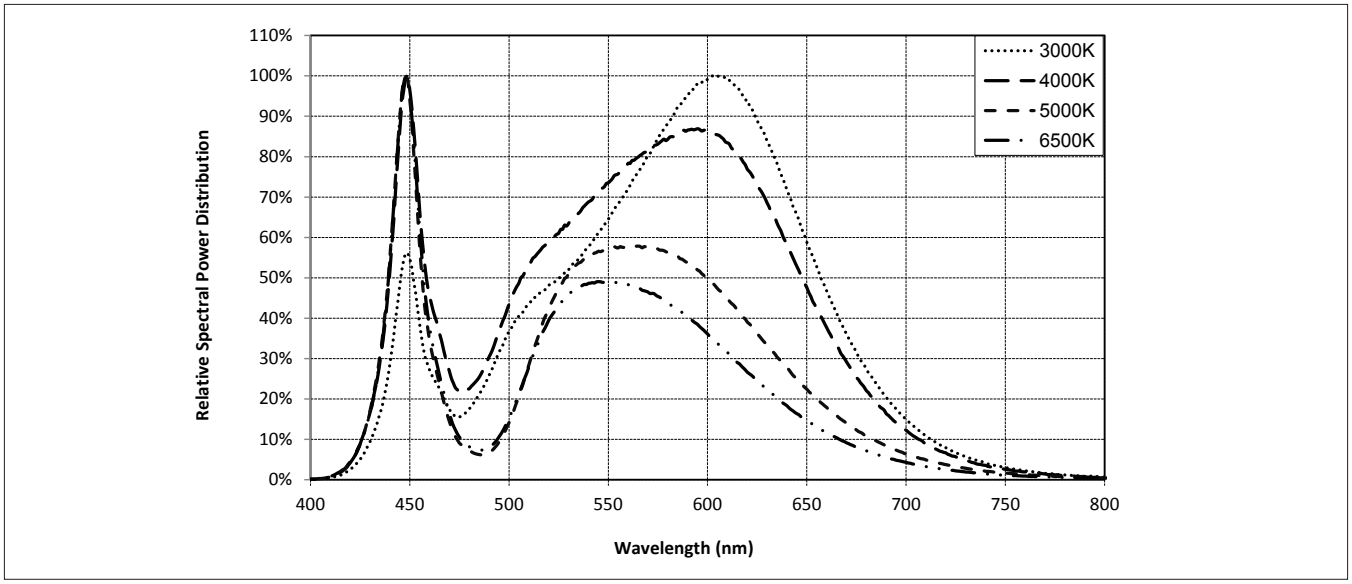
1. Typical viewing angle is 120°.
2. The viewing angle is defined as the off axis angle from the centerline where intensity is ½ of the peak value.

**Figure 14: Typical Polar Radiation Pattern**



# Typical Color Spectrum

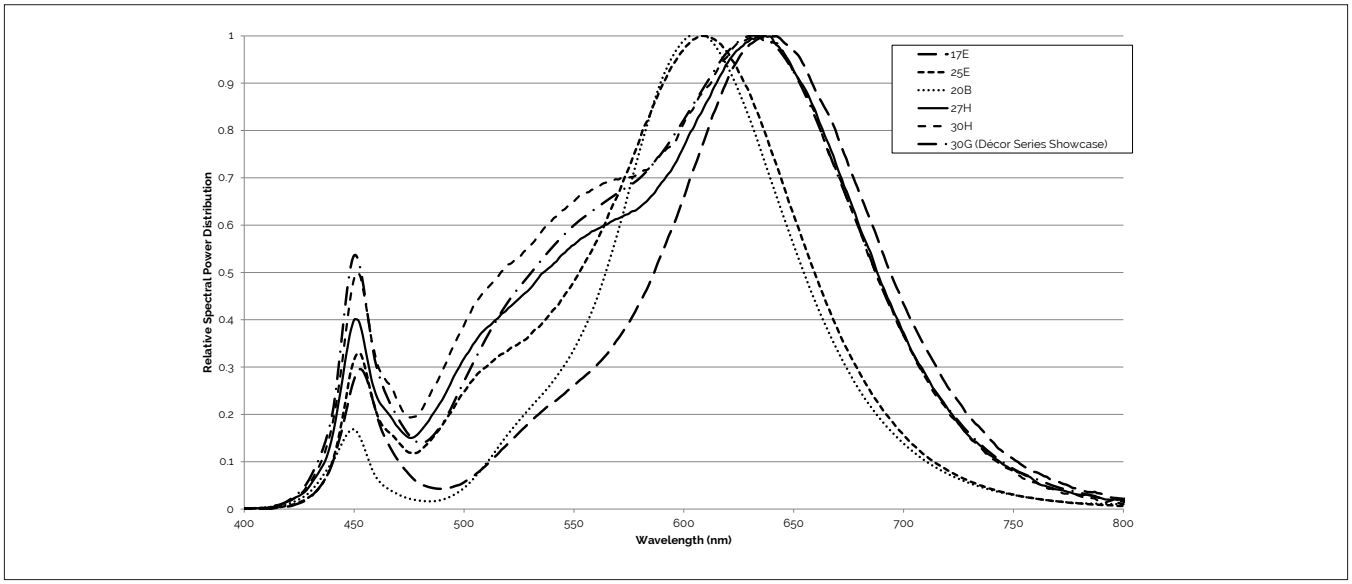
**Figure 15: Typical Color Spectrum**




Note for Figure 15:

1. Color spectra measured at nominal current for $T_j$ = $T_c$ = 25°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**

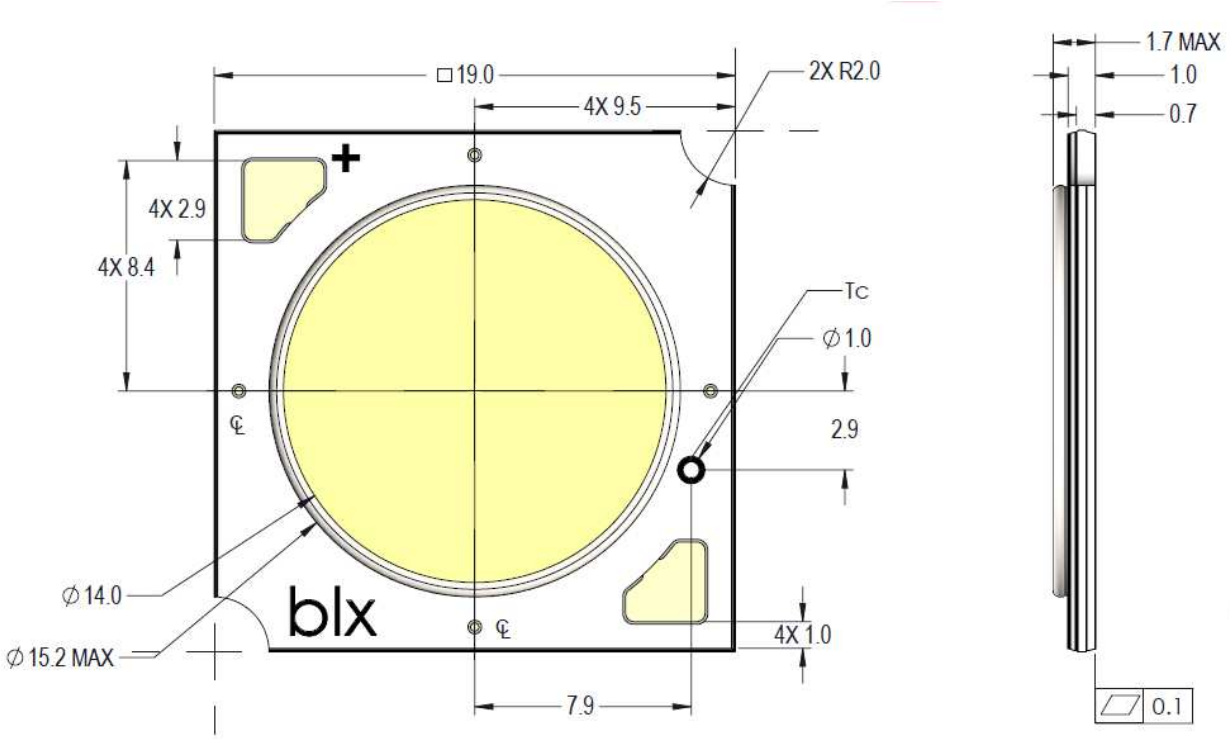



Note for Figure 16:

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

# Mechanical Dimensions

**Figure 17:** Drawing for V13 LED Array

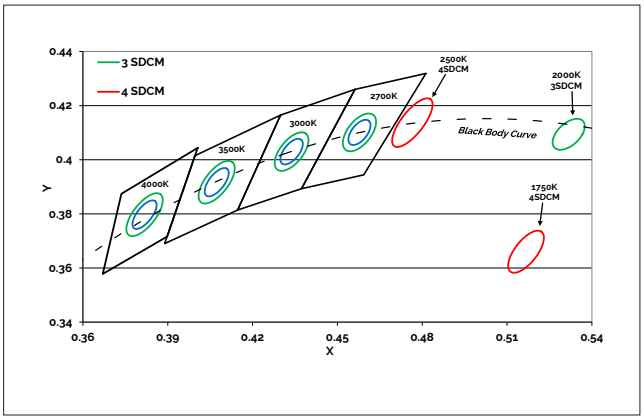



Notes for Figure 17:

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, $T_c$ = 25˚C

**Figure 19:** Cool White Test Bins in xy Color Space

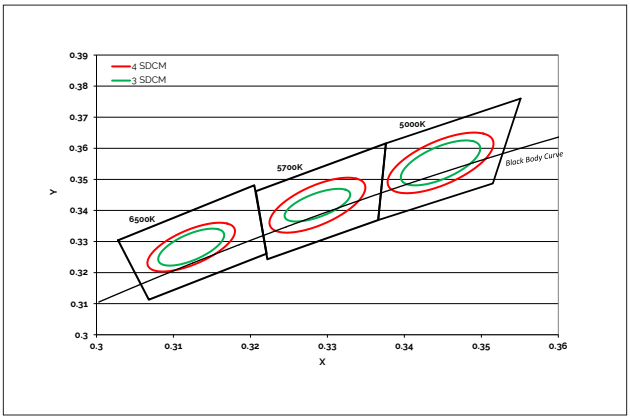



**Table 8:** Warm and Neutral White xy Bin Coordinates and Associated Typical CCT

| Bin Code | 1750K | 2000K | 2500K | 2700K | 3000K[1] | 3500K[1] | 4000K[1] |
|---|---|---|---|---|---|---|---|
| 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)<br>(0.4465, 0.4024)[2] | (0.4073, 0.3917) | (0.3818, 0.3797) |

Note for Table 8:

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) 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.