bridgelux®


# Bridgelux® Vero® SE 10 Array

**Product Data Sheet DS120**

10 TEN YEAR Warranty™

BXRC-27X1000 | 30X1000 | 35X1000 | 40X1000 | 50X1001 | 57X1001 | 65X1001

# Introduction

Vero SE

Vero SE represents a state of the art COB solution with revolutionary advancements in LED integration technology. Vero SE's innovative light source system integrates Bridgelux's seventh generation COB technology with poke-in connectivity that enables solder free installation. Vero SE LED light sources streamline assembly processes, lower manufacturing cost, simplify luminaire design, improve light quality and increase design flexibility.

Vero SE includes poke-in connectivity simplifies manufacturing and assembly processes by eliminating the need to solder. Secondary connector and holder components are not required, allowing for rapid integration of arrays into fixtures and an efficient field replaceable solution.

Vero SE is available in four different light emitting surface (LES) configurations and has been engineered to reliably operate over a broad current range, enabling new degrees of flexibility in luminaire design optimization. Vero SE arrays deliver increased lumen density for improved beam control and precision lighting with 2 and 3 SDCM color control standards for clean and consistent uniform lighting.

## Features

- Poke-in connectivity
- Efficacy of 146 lm/W typical
- Vero SE 10 lumen output performance ranges from 566 to 3,850 lumens
- Broad range of CCT options from 2700K to 6500K
- CRI options: minimum 70, 80, and 90
- Color control: 2 and 3 SDCM for 2700K-4000K CCT
- Reliable operation at up to 2X nominal drive current
- Radial die pattern and improved lumen density
- Top side part number markings
- No exposed solder pads or electrical connections

## Benefits

- Poke-in connectivity enables solderless, connector free installation
- Broad application coverage for interior and exterior lighting
- Flexibility for application driven lighting design requirements
- High quality, true color reproduction
- Uniform consistent white light
- Flexibility in design optimization
- Improved optical control
- Enhanced ease of use and manufacturability
- Ability to configure multiple Vero SE arrays in series and parallel reduces customer driver cost
- Improved inventory management and quality control

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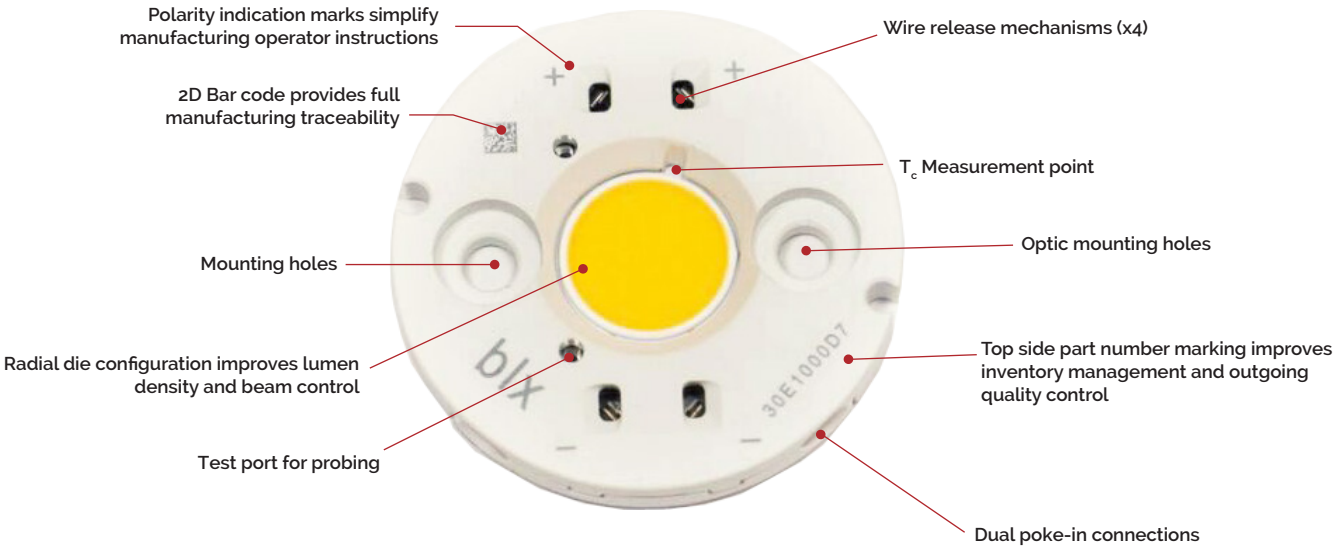
# Product Feature Map

Vero SE 10 is the smallest form factor in the product family of next generation solid state light sources. In addition to delivering the performance and light quality required for many lighting applications,

Vero SE incorporates several features to simplify the design integration and manufacturing process, accelerate time to market and reduce system costs. Please visit www.bridgelux.com for more information on the Vero SE family of products.




## Product Nomenclature

The part number designation for Bridgelux Vero SE LED arrays is explained as follows:

1 2 3 4 – 5 6 7 8 9 10 11 – 12 – 13 14 - 15 16

BXRC – 30 E 100Ⓞ – C – 7 3 - SE

**Product Family**

**Nominal CCT**
27 = 2,700K
30 = 3,000K
35 = 3,500K
40 = 4,000K
50 = 5,000K
57 = 5,700K
65 = 6,500K

**Minimum CRI**
C = 70 CRI
E = 80 CRI
G = 90 CRI

**Flux Indicator**
100x = 1000lm

**Color Targeting Designator**
0 = Cold Targeted (2700K - 4000K)
1 = Hot Targeted (5000K - 6500K)

**Array Configuration**

**Gen. 7**

**CCT Bin Options**
2 = 2 SDCM
3 = 3 SDCM
4 = 4 SDCM

**Special Edition**

# 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) |
|---|---|---|---|---|---|---|---|---|
| BXRC-27E1000-B-7X-SE | 2700 | 80 | 270 | 1311 | 1154 | 35.0 | 9.5 | 139 |
| BXRC-27E1000-C-7X-SE | 2700 | 80 | 360 | 1747 | 1537 | 35.0 | 12.6 | 139 |
| BXRC-27E1000-D-7X-SE | 2700 | 80 | 350 | 1274 | 1121 | 26.0 | 9.1 | 140 |
| BXRC-27G1000-B-7X-SE | 2700 | 90 | 270 | 1092 | 961 | 35.0 | 9.5 | 116 |
| BXRC-27G1000-C-7X-SE | 2700 | 90 | 360 | 1456 | 1281 | 35.0 | 12.6 | 116 |
| BXRC-27G1000-D-7X-SE | 2700 | 90 | 350 | 1061 | 934 | 26.0 | 9.1 | 117 |
| BXRC-30E1000-B-7X-SE | 3000 | 80 | 270 | 1378 | 1201 | 35.0 | 9.5 | 146 |
| BXRC-30E1000-C-7X-SE | 3000 | 80 | 360 | 1837 | 1601 | 35.0 | 12.6 | 146 |
| BXRC-30E1000-D-7X-SE | 3000 | 80 | 350 | 1327 | 1167 | 26.0 | 9.1 | 146 |
| BXRC-30G1000-B-7X-SE | 3000 | 90 | 270 | 1133 | 997 | 35.0 | 9.5 | 120 |
| BXRC-30G1000-C-7X-SE | 3000 | 90 | 360 | 1510 | 1329 | 35.0 | 12.6 | 120 |
| BXRC-30G1000-D-7X-SE | 3000 | 90 | 350 | 1101 | 969 | 26.0 | 9.1 | 121 |
| BXRC-35E1000-B-7X-SE | 3500 | 80 | 270 | 1406 | 1237 | 35.0 | 9.5 | 149 |
| BXRC-35E1000-C-7X-SE | 3500 | 80 | 360 | 1874 | 1649 | 35.0 | 12.6 | 149 |
| BXRC-35E1000-D-7X-SE | 3500 | 80 | 350 | 1367 | 1202 | 26.0 | 9.1 | 150 |
| BXRC-35G1000-B-7X-SE | 3500 | 90 | 270 | 1174 | 1033 | 35.0 | 9.5 | 124 |
| BXRC-35G1000-C-7X-SE | 3500 | 90 | 360 | 1565 | 1377 | 35.0 | 12.6 | 124 |
| BXRC-35G1000-D-7X-SE | 3500 | 90 | 350 | 1141 | 1004 | 26.0 | 9.1 | 125 |
| BXRC-40E1000-B-7X-SE | 4000 | 80 | 270 | 1420 | 1249 | 35.0 | 9.5 | 150 |
| BXRC-40E1000-C-7X-SE | 4000 | 80 | 360 | 1892 | 1665 | 35.0 | 12.6 | 150 |
| BXRC-40E1000-D-7X-SE | 4000 | 80 | 350 | 1380 | 1214 | 26.0 | 9.1 | 152 |
| BXRC-40G1000-B-7X-SE | 4000 | 90 | 270 | 1215 | 1069 | 35.0 | 9.5 | 129 |
| BXRC-40G1000-C-7X-SE | 4000 | 90 | 360 | 1619 | 1425 | 35.0 | 12.6 | 129 |
| BXRC-40G1000-D-7X-SE | 4000 | 90 | 350 | 1181 | 1039 | 26.0 | 9.1 | 130 |
| BXRC-50C1001-B-74-SE | 5000 | 70 | 270 | 1556 | 1370 | 35.0 | 9.5 | 165 |
| BXRC-50C1001-C-74-SE | 5000 | 70 | 360 | 2074 | 1825 | 35.0 | 12.6 | 165 |
| BXRC-50C1001-D-74-SE | 5000 | 70 | 350 | 1513 | 1331 | 26.0 | 9.1 | 166 |
| BXRC-50E1001-B-74-SE | 5000 | 80 | 270 | 1463 | 1287 | 35.0 | 9.5 | 155 |
| BXRC-50E1001-C-74-SE | 5000 | 80 | 360 | 1950 | 1716 | 35.0 | 12.6 | 155 |
| BXRC-50E1001-D-74-SE | 5000 | 80 | 350 | 1422 | 1251 | 26.0 | 9.1 | 156 |

Notes for Table 1:

1. Nominal CCT as defined by ANSI C78.377-2011. Products with CCTs 5000K-6500K are hot targetd to 85˚C.
2. CRI Values are minimums. Minimum R9 value for 80 CRI products is 0, the minimum R9 values for warm white and neutral white 90 CRI products is 60, the minimum R9 values for cool white 90 CRI products is 50.
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 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.

# Product Selection Guide

The following product configurations are available:

**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) |
|---|---|---|---|---|---|---|---|---|
| BXRC-50G1001-B-74-SE | 5000 | 90 | 270 | 1245 | 1095 | 32.4 | 9.5 | 132 |
| BXRC-50G1001-C-74-SE | 5000 | 90 | 360 | 1659 | 1460 | 32.4 | 12.6 | 132 |
| BXRC-50G1001-D-74-SE | 5000 | 90 | 350 | 1210 | 1064 | 24.1 | 9.1 | 133 |
| BXRC-57C1001-B-74-SE | 5700 | 70 | 270 | 1502 | 1322 | 32.4 | 9.5 | 159 |
| BXRC-57C1001-C-74-SE | 5700 | 70 | 360 | 2002 | 1761 | 32.4 | 12.6 | 159 |
| BXRC-57C1001-D-74-SE | 5700 | 70 | 350 | 1459 | 1284 | 24.1 | 9.1 | 160 |
| BXRC-57E1001-B-74-SE | 5700 | 80 | 270 | 1488 | 1309 | 32.4 | 9.5 | 157 |
| BXRC-57E1001-C-74-SE | 5700 | 80 | 360 | 1983 | 1746 | 32.4 | 12.6 | 157 |
| BXRC-57E1001-D-74-SE | 5700 | 80 | 350 | 1446 | 1272 | 24.1 | 9.1 | 159 |
| BXRC-65C1001-B-74-SE | 6500 | 70 | 270 | 1529 | 1345 | 32.4 | 9.5 | 162 |
| BXRC-65C1001-C-74-SE | 6500 | 70 | 360 | 2038 | 1793 | 32.4 | 12.6 | 162 |
| BXRC-65C1001-D-74-SE | 6500 | 70 | 350 | 1486 | 1307 | 24.1 | 9.1 | 163 |
| BXRC-65E1001-B-74-SE | 6500 | 80 | 270 | 1515 | 1334 | 32.4 | 9.5 | 160 |
| BXRC-65E1001-C-74-SE | 6500 | 80 | 360 | 2020 | 1778 | 32.4 | 12.6 | 160 |
| BXRC-65E1001-D-74-SE | 6500 | 80 | 350 | 1473 | 1296 | 24.1 | 9.1 | 162 |

Notes for Table 1:

1. Nominal CCT as defined by ANSI C78.377-2011. Products with a CCT of 5000K-6500K are hot targetd to 85˚C.
2. CRI Values are minimums. Minimum R9 value for 80 CRI products is 0, the minimum R9 values for warm white and neutral white 90 CRI products is 60, the minimum R9 values for cool white 90 CRI products is 50.
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 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.

# Product Selection Guide

The following product configurations are available:

**Table 2:** 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 $T_c$ = 85°C (lm) | Minimum DC Flux[6] $T_c$ = 85°C (lm) | Typical $V_f$ (V) | Typical Power (W) | Typical Efficacy (lm/W) |
|---|---|---|---|---|---|---|---|---|
| BXRC-27E1000-B-7X-SE | 2700 | 80 | 270 | 1180 | 1038 | 34.0 | 9.2 | 128 |
| BXRC-27E1000-C-7X-SE | 2700 | 80 | 360 | 1572 | 1383 | 34.0 | 12.3 | 128 |
| BXRC-27E1000-D-7X-SE | 2700 | 80 | 350 | 1146 | 1009 | 25.3 | 8.9 | 129 |
| BXRC-27G1000-B-7X-SE | 2700 | 90 | 270 | 983 | 865 | 34.0 | 9.2 | 107 |
| BXRC-27G1000-C-7X-SE | 2700 | 90 | 360 | 1310 | 1153 | 34.0 | 12.3 | 107 |
| BXRC-27G1000-D-7X-SE | 2700 | 90 | 350 | 955 | 841 | 25.3 | 8.9 | 108 |
| BXRC-30E1000-B-7X-SE | 3000 | 80 | 270 | 1240 | 1081 | 34.0 | 9.2 | 135 |
| BXRC-30E1000-C-7X-SE | 3000 | 80 | 360 | 1653 | 1441 | 34.0 | 12.3 | 135 |
| BXRC-30E1000-D-7X-SE | 3000 | 80 | 350 | 1194 | 1051 | 25.3 | 8.9 | 135 |
| BXRC-30G1000-B-7X-SE | 3000 | 90 | 270 | 1020 | 898 | 34.0 | 9.2 | 111 |
| BXRC-30G1000-C-7X-SE | 3000 | 90 | 360 | 1359 | 1196 | 34.0 | 12.3 | 111 |
| BXRC-30G1000-D-7X-SE | 3000 | 90 | 350 | 991 | 872 | 25.3 | 8.9 | 112 |
| BXRC-35E1000-B-7X-SE | 3500 | 80 | 270 | 1266 | 1114 | 34.0 | 9.2 | 138 |
| BXRC-35E1000-C-7X-SE | 3500 | 80 | 360 | 1687 | 1485 | 34.0 | 12.3 | 138 |
| BXRC-35E1000-D-7X-SE | 3500 | 80 | 350 | 1230 | 1082 | 25.3 | 8.9 | 139 |
| BXRC-35G1000-B-7X-SE | 3500 | 90 | 270 | 1057 | 930 | 34.0 | 9.2 | 115 |
| BXRC-35G1000-C-7X-SE | 3500 | 90 | 360 | 1408 | 1240 | 34.0 | 12.3 | 115 |
| BXRC-35G1000-D-7X-SE | 3500 | 90 | 350 | 1027 | 904 | 25.3 | 8.9 | 116 |
| BXRC-40E1000-B-7X-SE | 4000 | 80 | 270 | 1278 | 1124 | 34.0 | 9.2 | 139 |
| BXRC-40E1000-C-7X-SE | 4000 | 80 | 360 | 1703 | 1499 | 34.0 | 12.3 | 139 |
| BXRC-40E1000-D-7X-SE | 4000 | 80 | 350 | 1242 | 1093 | 25.3 | 8.9 | 140 |
| BXRC-40G1000-B-7X-SE | 4000 | 90 | 270 | 1094 | 962 | 34.0 | 9.2 | 119 |
| BXRC-40G1000-C-7X-SE | 4000 | 90 | 360 | 1457 | 1282 | 34.0 | 12.3 | 119 |
| BXRC-40G1000-D-7X-SE | 4000 | 90 | 350 | 1063 | 935 | 25.3 | 8.9 | 120 |
| BXRC-50C1001-B-74-SE | 5000 | 70 | 270 | 1401 | 1233 | 34.0 | 9.2 | 152 |
| BXRC-50C1001-C-74-SE | 5000 | 70 | 360 | 1867 | 1643 | 34.0 | 12.3 | 152 |
| BXRC-50C1001-D-74-SE | 5000 | 70 | 350 | 1361 | 1198 | 25.3 | 8.9 | 154 |
| BXRC-50E1001-B-74-SE | 5000 | 80 | 270 | 1317 | 1158 | 34.0 | 9.2 | 143 |
| BXRC-50E1001-C-74-SE | 5000 | 80 | 360 | 1755 | 1544 | 34.0 | 12.3 | 143 |
| BXRC-50E1001-D-74-SE | 5000 | 80 | 350 | 1280 | 1126 | 25.3 | 8.9 | 145 |

Notes for Table 2:

1. Nominal CCT as defined by ANSI C78.377-2011. Prodcuts with a CCT of 5000K-6500K are hot targetd to 85°C.
2. CRI Values are minimums. Minimum R9 value at $T_j$ = $T_c$ = 25°C for 80 CRI products is 0, the minimum R9 values for warm white and neutral white 90 CRI products is 60, the minimum R9 values for cool white 90 CRI products is 50.
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.

# Product Selection Guide

The following product configurations are available:

**Table 2:** 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 Pulsed Flux[4,5,6] $T_c$ = 85°C (lm) | Minimum Pulsed Flux[6,7] $T_c$ = 85°C (lm) | Typical $V_f$ (V) | Typical Power (W) | Typical Efficacy (lm/W) |
|---|---|---|---|---|---|---|---|---|
| BXRC-50G1001-B-74-SE | 5000 | 90 | 270 | 1121 | 986 | 34.0 | 9.2 | 122 |
| BXRC-50G1001-C-74-SE | 5000 | 90 | 360 | 1494 | 1314 | 34.0 | 12.3 | 122 |
| BXRC-50G1001-D-74-SE | 5000 | 90 | 350 | 1089 | 958 | 25.3 | 8.9 | 123 |
| BXRC-57C1001-B-74-SE | 5700 | 70 | 270 | 1352 | 1190 | 34.0 | 9.2 | 147 |
| BXRC-57C1001-C-74-SE | 5700 | 70 | 360 | 1801 | 1585 | 34.0 | 12.3 | 147 |
| BXRC-57C1001-D-74-SE | 5700 | 70 | 350 | 1314 | 1156 | 25.3 | 8.9 | 148 |
| BXRC-57E1001-B-74-SE | 5700 | 80 | 270 | 1339 | 1178 | 34.0 | 9.2 | 146 |
| BXRC-57E1001-C-74-SE | 5700 | 80 | 360 | 1785 | 1571 | 34.0 | 12.3 | 146 |
| BXRC-57E1001-D-74-SE | 5700 | 80 | 350 | 1302 | 1145 | 25.3 | 8.9 | 147 |
| BXRC-65C1001-B-74-SE | 6500 | 70 | 270 | 1376 | 1211 | 34.0 | 9.2 | 150 |
| BXRC-65C1001-C-74-SE | 6500 | 70 | 360 | 1834 | 1614 | 34.0 | 12.3 | 150 |
| BXRC-65C1001-D-74-SE | 6500 | 70 | 350 | 1337 | 1177 | 25.3 | 8.9 | 151 |
| BXRC-65E1001-B-74-SE | 6500 | 80 | 270 | 1364 | 1200 | 34.0 | 9.2 | 148 |
| BXRC-65E1001-C-74-SE | 6500 | 80 | 360 | 1818 | 1600 | 34.0 | 12.3 | 148 |
| BXRC-65E1001-D-74-SE | 6500 | 80 | 350 | 1325 | 1166 | 25.3 | 8.9 | 150 |

Notes for Table 2:

1. Nominal CCT as defined by ANSI C78.377-2011. Prodcuts with a CCT of 5000K-6500K are hot targetd to 85˚C.
2. CRI Values are minimums. Minimum R9 value at $T_j$ - $T_c$ = 25˚C for 80 CRI products is 0, the minimum R9 values for warm white and neutral white 90 CRI products is 60, the minimum R9 values for cool white 90 CRI products is 50.
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.

# Performance at Commonly Used Drive Currents

Vero SE LED arrays are tested to the specifications shown using the nominal drive currents in Table 1. Vero SE 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 & 3 and the flux vs. current characteristics shown in Figures 4, 5 & 6. The performance at commonly used drive currents is summarized in Table 3.

**Table 3:** 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) |
|---|---|---|---|---|---|---|---|
| BXRC-27E1000-B-7X-SE | 80 | 135 | 33.3 | 4.5 | 698 | 628 | 156 |
| | | 180 | 33.8 | 6.1 | 916 | 821 | 150 |
| | | **270** | **35.0** | **9.5** | **1311** | **1180** | **139** |
| | | 405 | 36.4 | 14.8 | 1923 | 1710 | 130 |
| | | 540 | 37.8 | 20.4 | 2463 | 2180 | 121 |
| BXRC-27E1000-C-7X-SE | 80 | 180 | 33.3 | 6.0 | 929 | 829 | 155 |
| | | 240 | 33.8 | 8.1 | 1217 | 1081 | 150 |
| | | **360** | **35.0** | **12.6** | **1747** | **1572** | **139** |
| | | 540 | 36.4 | 19.7 | 2544 | 2210 | 129 |
| | | 720 | 37.7 | 27.1 | 3249 | 2781 | 120 |
| BXRC-27E1000-D-7X-SE | 80 | 175 | 24.9 | 4.4 | 680 | 618 | 156 |
| | | 233 | 25.4 | 5.9 | 892 | 802 | 151 |
| | | **350** | **26.0** | **9.1** | **1274** | **1146** | **140** |
| | | 525 | 27.4 | 14.4 | 1875 | 1617 | 130 |
| | | 700 | 28.4 | 19.9 | 2402 | 2023 | 121 |
| BXRC-27G1000-B-7X-SE | 90 | 135 | 33.3 | 4.5 | 582 | 523 | 130 |
| | | 180 | 33.8 | 6.1 | 763 | 684 | 125 |
| | | **270** | **35.0** | **9.5** | **1092** | **983** | **116** |
| | | 405 | 36.4 | 14.8 | 1602 | 1425 | 109 |
| | | 540 | 37.8 | 20.4 | 2053 | 1817 | 101 |
| BXRC-27G1000-C-7X-SE | 90 | 180 | 33.3 | 6.0 | 774 | 691 | 129 |
| | | 240 | 33.8 | 8.1 | 1014 | 901 | 125 |
| | | **360** | **35.0** | **12.6** | **1456** | **1310** | **116** |
| | | 540 | 36.4 | 19.7 | 2120 | 1841 | 108 |
| | | 720 | 37.7 | 27.1 | 2708 | 2318 | 100 |
| BXRC-27G1000-D-7X-SE | 90 | 175 | 24.9 | 4.4 | 567 | 515 | 130 |
| | | 233 | 25.4 | 5.9 | 743 | 668 | 126 |
| | | **350** | **26.0** | **9.1** | **1061** | **955** | **117** |
| | | 525 | 27.4 | 14.4 | 1562 | 1347 | 109 |
| | | 700 | 28.4 | 19.9 | 2002 | 1686 | 101 |

Notes for Table 3:

1. Alternate drive currents in Table 3 are provided for reference only and 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 not a guarantee of performance.

# Performance at Commonly Used Drive Currents

**Table 3:** 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) |
|---|---|---|---|---|---|---|---|
| BXRC-30E1000-B-7X-SE | 80 | 135 | 33.3 | 4.5 | 734 | 660 | 164 |
| | | 180 | 33.8 | 6.1 | 963 | 863 | 158 |
| | | **270** | **35.0** | **9.5** | **1378** | **1240** | **146** |
| | | 405 | 36.4 | 14.8 | 2021 | 1798 | 137 |
| | | 540 | 37.8 | 20.4 | 2590 | 2292 | 127 |
| BXRC-30E1000-C-7X-SE | 80 | 180 | 33.3 | 6.0 | 977 | 872 | 163 |
| | | 240 | 33.8 | 8.1 | 1280 | 1137 | 158 |
| | | **360** | **35.0** | **12.6** | **1837** | **1653** | **146** |
| | | 540 | 36.4 | 19.7 | 2675 | 2324 | 136 |
| | | 720 | 37.7 | 27.1 | 3417 | 2925 | 126 |
| BXRC-30E1000-D-7X-SE | 80 | 175 | 24.9 | 4.4 | 708 | 644 | 162 |
| | | 233 | 25.4 | 5.9 | 929 | 836 | 157 |
| | | **350** | **26.0** | **9.1** | **1327** | **1194** | **146** |
| | | 525 | 27.4 | 14.4 | 1953 | 1684 | 136 |
| | | 700 | 28.4 | 19.9 | 2502 | 2107 | 126 |
| BXRC-30G1000-B-7X-SE | 90 | 135 | 33.3 | 4.5 | 604 | 543 | 134 |
| | | 180 | 33.8 | 6.1 | 792 | 710 | 130 |
| | | **270** | **35.0** | **9.5** | **1133** | **1020** | **120** |
| | | 405 | 36.4 | 14.8 | 1662 | 1479 | 113 |
| | | 540 | 37.8 | 20.4 | 2130 | 1885 | 104 |
| BXRC-30G1000-C-7X-SE | 90 | 180 | 33.3 | 6.0 | 803 | 716 | 134 |
| | | 240 | 33.8 | 8.1 | 1052 | 935 | 130 |
| | | **360** | **35.0** | **12.6** | **1510** | **1359** | **120** |
| | | 540 | 36.4 | 19.7 | 2199 | 1910 | 112 |
| | | 720 | 37.7 | 27.1 | 2809 | 2405 | 104 |
| BXRC-30G1000-D-7X-SE | 90 | 175 | 24.9 | 4.4 | 588 | 535 | 135 |
| | | 233 | 25.4 | 5.9 | 771 | 694 | 130 |
| | | **350** | **26.0** | **9.1** | **1101** | **991** | **121** |
| | | 525 | 27.4 | 14.4 | 1621 | 1398 | 113 |
| | | 700 | 28.4 | 19.9 | 2077 | 1749 | 104 |
| BXRC-35E1000-B-7X-SE | 80 | 135 | 33.3 | 4.5 | 749 | 673 | 167 |
| | | 180 | 33.8 | 6.1 | 982 | 881 | 161 |
| | | **270** | **35.0** | **9.5** | **1406** | **1266** | **149** |
| | | 405 | 36.4 | 14.8 | 2063 | 1835 | 140 |
| | | 540 | 37.8 | 20.4 | 2643 | 2339 | 130 |
| BXRC-35E1000-C-7X-SE | 80 | 180 | 33.3 | 6.0 | 996 | 889 | 166 |
| | | 240 | 33.8 | 8.1 | 1305 | 1160 | 161 |
| | | **360** | **35.0** | **12.6** | **1874** | **1687** | **149** |
| | | 540 | 36.4 | 19.7 | 2729 | 2371 | 139 |
| | | 720 | 37.7 | 27.1 | 3486 | 2984 | 128 |
| BXRC-35E1000-D-7X-SE | 80 | 175 | 24.9 | 4.4 | 730 | 663 | 167 |
| | | 233 | 25.4 | 5.9 | 957 | 861 | 162 |
| | | **350** | **26.0** | **9.1** | **1367** | **1230** | **150** |
| | | 525 | 27.4 | 14.4 | 2012 | 1735 | 140 |
| | | 700 | 28.4 | 19.9 | 2577 | 2170 | 130 |

Notes for Table 3:

1. Alternate drive currents in Table 3 are provided for reference only and 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 not a guarantee of performance.

# Performance at Commonly Used Drive Currents

**Table 3:** 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) |
|---|---|---|---|---|---|---|---|
| BXRC-35G1000-B-7X-SE | 90 | 135 | 33.3 | 4.5 | 626 | 562 | 139 |
| | | 180 | 33.8 | 6.1 | 820 | 736 | 135 |
| | | **270** | **35.0** | **9.5** | **1174** | **1057** | **124** |
| | | 405 | 36.4 | 14.8 | 1722 | 1532 | 117 |
| | | 540 | 37.8 | 20.4 | 2207 | 1953 | 108 |
| BXRC-35G1000-C-7X-SE | 90 | 180 | 33.3 | 6.0 | 832 | 742 | 139 |
| | | 240 | 33.8 | 8.1 | 1090 | 968 | 134 |
| | | **360** | **35.0** | **12.6** | **1565** | **1408** | **124** |
| | | 540 | 36.4 | 19.7 | 2279 | 1979 | 116 |
| | | 720 | 37.7 | 27.1 | 2911 | 2492 | 107 |
| BXRC-35G1000-D-7X-SE | 90 | 175 | 24.9 | 4.4 | 609 | 554 | 140 |
| | | 233 | 25.4 | 5.9 | 799 | 719 | 135 |
| | | **350** | **26.0** | **9.1** | **1141** | **1027** | **125** |
| | | 525 | 27.4 | 14.4 | 1680 | 1449 | 117 |
| | | 700 | 28.4 | 19.9 | 2152 | 1812 | 108 |
| BXRC-40E1000-B-7X-SE | 80 | 135 | 33.3 | 4.5 | 757 | 680 | 169 |
| | | 180 | 33.8 | 6.1 | 992 | 890 | 163 |
| | | **270** | **35.0** | **9.5** | **1420** | **1278** | **150** |
| | | 405 | 36.4 | 14.8 | 2083 | 1853 | 141 |
| | | 540 | 37.8 | 20.4 | 2669 | 2362 | 131 |
| BXRC-40E1000-C-7X-SE | 80 | 180 | 33.3 | 6.0 | 1006 | 898 | 168 |
| | | 240 | 33.8 | 8.1 | 1318 | 1171 | 162 |
| | | **360** | **35.0** | **12.6** | **1892** | **1703** | **150** |
| | | 540 | 36.4 | 19.7 | 2756 | 2394 | 140 |
| | | 720 | 37.7 | 27.1 | 3520 | 3013 | 130 |
| BXRC-40E1000-D-7X-SE | 80 | 175 | 24.9 | 4.4 | 737 | 670 | 169 |
| | | 233 | 25.4 | 5.9 | 967 | 869 | 163 |
| | | **350** | **26.0** | **9.1** | **1380** | **1242** | **152** |
| | | 525 | 27.4 | 14.4 | 2031 | 1752 | 141 |
| | | 700 | 28.4 | 19.9 | 2602 | 2191 | 131 |
| BXRC-40G1000-B-7X-SE | 90 | 135 | 33.3 | 4.5 | 647 | 582 | 144 |
| | | 180 | 33.8 | 6.1 | 849 | 761 | 139 |
| | | **270** | **35.0** | **9.5** | **1215** | **1094** | **129** |
| | | 405 | 36.4 | 14.8 | 1783 | 1586 | 121 |
| | | 540 | 37.8 | 20.4 | 2284 | 2021 | 112 |
| BXRC-40G1000-C-7X-SE | 90 | 180 | 33.3 | 6.0 | 861 | 768 | 144 |
| | | 240 | 33.8 | 8.1 | 1128 | 1002 | 139 |
| | | **360** | **35.0** | **12.6** | **1619** | **1457** | **129** |
| | | 540 | 36.4 | 19.7 | 2358 | 2049 | 120 |
| | | 720 | 37.7 | 27.1 | 3012 | 2578 | 111 |
| BXRC-40G1000-D-7X-SE | 90 | 175 | 24.9 | 4.4 | 630 | 573 | 145 |
| | | 233 | 25.4 | 5.9 | 827 | 744 | 140 |
| | | **350** | **26.0** | **9.1** | **1181** | **1063** | **130** |
| | | 525 | 27.4 | 14.4 | 1738 | 1499 | 121 |
| | | 700 | 28.4 | 19.9 | 2227 | 1875 | 112 |

Notes for Table 3:

1. Alternate drive currents in Table 3 are provided for reference only and 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 not a guarantee of performance.

# Performance at Commonly Used Drive Currents

**Table 3:** 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) |
|---|---|---|---|---|---|---|---|
| BXRC-50C1001-B-74-SE | 70 | 135 | 33.3 | 4.5 | 829 | 745 | 185 |
| | | 180 | 33.8 | 6.1 | 1087 | 975 | 179 |
| | | **270** | **35.0** | **9.5** | **1556** | **1401** | **165** |
| | | 405 | 36.4 | 14.8 | 2283 | 2031 | 155 |
| | | 540 | 37.8 | 20.4 | 2925 | 2589 | 143 |
| BXRC-50C1001-C-74-SE | 70 | 180 | 33.3 | 6.0 | 1103 | 984 | 184 |
| | | 240 | 33.8 | 8.1 | 1445 | 1284 | 178 |
| | | **360** | **35.0** | **12.6** | **2074** | **1867** | **165** |
| | | 540 | 36.4 | 19.7 | 3021 | 2624 | 154 |
| | | 720 | 37.7 | 27.1 | 3858 | 3303 | 142 |
| BXRC-50C1001-D-74-SE | 70 | 175 | 24.9 | 4.4 | 808 | 734 | 185 |
| | | 233 | 25.4 | 5.9 | 1059 | 953 | 179 |
| | | **350** | **26.0** | **9.1** | **1513** | **1361** | **166** |
| | | 525 | 27.4 | 14.4 | 2226 | 1920 | 155 |
| | | 700 | 28.4 | 19.9 | 2852 | 2402 | 143 |
| BXRC-50E1001-B-74-SE | 80 | 135 | 33.3 | 4.5 | 780 | 701 | 174 |
| | | 180 | 33.8 | 6.1 | 1022 | 917 | 168 |
| | | **270** | **35.0** | **9.5** | **1463** | **1317** | **155** |
| | | 405 | 36.4 | 14.8 | 2146 | 1909 | 145 |
| | | 540 | 37.8 | 20.4 | 2750 | 2434 | 135 |
| BXRC-50E1001-C-74-SE | 80 | 180 | 33.3 | 6.0 | 1037 | 925 | 173 |
| | | 240 | 33.8 | 8.1 | 1358 | 1207 | 167 |
| | | **360** | **35.0** | **12.6** | **1950** | **1755** | **155** |
| | | 540 | 36.4 | 19.7 | 2839 | 2467 | 144 |
| | | 720 | 37.7 | 27.1 | 3627 | 3105 | 134 |
| BXRC-50E1001-D-74-SE | 80 | 175 | 24.9 | 4.4 | 759 | 690 | 174 |
| | | 233 | 25.4 | 5.9 | 996 | 895 | 168 |
| | | **350** | **26.0** | **9.1** | **1422** | **1280** | **156** |
| | | 525 | 27.4 | 14.4 | 2093 | 1805 | 146 |
| | | 700 | 28.4 | 19.9 | 2681 | 2258 | 135 |
| BXRC-50G1001-B-74-SE | 90 | 135 | 33.3 | 4.5 | 663 | 596 | 148 |
| | | 180 | 33.8 | 6.1 | 870 | 780 | 143 |
| | | **270** | **35.0** | **9.5** | **1245** | **1121** | **132** |
| | | 405 | 36.4 | 14.8 | 1827 | 1625 | 124 |
| | | 540 | 37.8 | 20.4 | 2340 | 2071 | 115 |
| BXRC-50G1001-C-74-SE | 90 | 180 | 33.3 | 6.0 | 882 | 787 | 147 |
| | | 240 | 33.8 | 8.1 | 1156 | 1027 | 142 |
| | | **360** | **35.0** | **12.6** | **1659** | **1494** | **132** |
| | | 540 | 36.4 | 19.7 | 2416 | 2099 | 123 |
| | | 720 | 37.7 | 27.1 | 3087 | 2642 | 114 |
| BXRC-50G1001-D-74-SE | 90 | 175 | 24.9 | 4.4 | 646 | 587 | 148 |
| | | 233 | 25.4 | 5.9 | 848 | 762 | 143 |
| | | **350** | **26.0** | **9.1** | **1210** | **1089** | **133** |
| | | 525 | 27.4 | 14.4 | 1781 | 1536 | 124 |
| | | 700 | 28.4 | 19.9 | 2282 | 1922 | 115 |

Notes for Table 3:

1. Alternate drive currents in Table 3 are provided for reference only and 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 not a guarantee of performance.

# Performance at Commonly Used Drive Currents

**Table 3:** 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) |
|---|---|---|---|---|---|---|---|
| BXRC-57C1001-B-74-SE | 70 | 135 | 33.3 | 4.5 | 800 | 719 | 178 |
| | | 180 | 33.8 | 6.1 | 1049 | 941 | 172 |
| | | **270** | **35.0** | **9.5** | **1502** | **1352** | **159** |
| | | 405 | 36.4 | 14.8 | 2203 | 1960 | 149 |
| | | 540 | 37.8 | 20.4 | 2823 | 2498 | 138 |
| BXRC-57C1001-C-74-SE | 70 | 180 | 33.3 | 6.0 | 1064 | 950 | 178 |
| | | 240 | 33.8 | 8.1 | 1394 | 1239 | 172 |
| | | **360** | **35.0** | **12.6** | **2002** | **1801** | **159** |
| | | 540 | 36.4 | 19.7 | 2915 | 2532 | 148 |
| | | 720 | 37.7 | 27.1 | 3723 | 3187 | 137 |
| BXRC-57C1001-D-74-SE | 70 | 175 | 24.9 | 4.4 | 779 | 709 | 179 |
| | | 233 | 25.4 | 5.9 | 1022 | 919 | 173 |
| | | **350** | **26.0** | **9.1** | **1459** | **1314** | **160** |
| | | 525 | 27.4 | 14.4 | 2148 | 1853 | 149 |
| | | 700 | 28.4 | 19.9 | 2752 | 2318 | 138 |
| BXRC-57E1001-B-74-SE | 80 | 135 | 33.3 | 4.5 | 793 | 713 | 177 |
| | | 180 | 33.8 | 6.1 | 1040 | 933 | 171 |
| | | **270** | **35.0** | **9.5** | **1488** | **1339** | **157** |
| | | 405 | 36.4 | 14.8 | 2183 | 1942 | 148 |
| | | 540 | 37.8 | 20.4 | 2797 | 2475 | 137 |
| BXRC-57E1001-C-74-SE | 80 | 180 | 33.3 | 6.0 | 1054 | 941 | 176 |
| | | 240 | 33.8 | 8.1 | 1381 | 1227 | 170 |
| | | **360** | **35.0** | **12.6** | **1983** | **1785** | **157** |
| | | 540 | 36.4 | 19.7 | 2888 | 2509 | 147 |
| | | 720 | 37.7 | 27.1 | 3689 | 3158 | 136 |
| BXRC-57E1001-D-74-SE | 80 | 175 | 24.9 | 4.4 | 772 | 702 | 177 |
| | | 233 | 25.4 | 5.9 | 1013 | 911 | 171 |
| | | **350** | **26.0** | **9.1** | **1446** | **1302** | **159** |
| | | 525 | 27.4 | 14.4 | 2129 | 1836 | 148 |
| | | 700 | 28.4 | 19.9 | 2727 | 2297 | 137 |
| BXRC-65C1001-B-74-SE | 70 | 135 | 33.3 | 4.5 | 815 | 732 | 181 |
| | | 180 | 33.8 | 6.1 | 1068 | 958 | 175 |
| | | **270** | **35.0** | **9.5** | **1529** | **1376** | **162** |
| | | 405 | 36.4 | 14.8 | 2243 | 1996 | 152 |
| | | 540 | 37.8 | 20.4 | 2874 | 2544 | 141 |
| BXRC-65C1001-C-74-SE | 70 | 180 | 33.3 | 6.0 | 1083 | 967 | 181 |
| | | 240 | 33.8 | 8.1 | 1420 | 1261 | 175 |
| | | **360** | **35.0** | **12.6** | **2038** | **1834** | **162** |
| | | 540 | 36.4 | 19.7 | 2968 | 2578 | 151 |
| | | 720 | 37.7 | 27.1 | 3791 | 3245 | 140 |
| BXRC-65C1001-D-74-SE | 70 | 175 | 24.9 | 4.4 | 793 | 721 | 182 |
| | | 233 | 25.4 | 5.9 | 1041 | 936 | 176 |
| | | **350** | **26.0** | **9.1** | **1486** | **1337** | **163** |
| | | 525 | 27.4 | 14.4 | 2187 | 1886 | 152 |
| | | 700 | 28.4 | 19.9 | 2802 | 2360 | 141 |

Notes for Table 3:

1. Alternate drive currents in Table 3 are provided for reference only and 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 not a guarantee of performance.

# Performance at Commonly Used Drive Currents

**Table 3:** 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) |
|---|---|---|---|---|---|---|---|
| BXRC-65E1001-B-74-SE | 80 | 135 | 33.3 | 4.5 | 808 | 726 | 180 |
| | | 180 | 33.8 | 6.1 | 1059 | 950 | 174 |
| | | **270** | **35.0** | **9.5** | **1515** | **1364** | **160** |
| | | 405 | 36.4 | 14.8 | 2223 | 1978 | 151 |
| | | 540 | 37.8 | 20.4 | 2848 | 2521 | 140 |
| BXRC-65E1001-C-74-SE | 80 | 180 | 33.3 | 6.0 | 1074 | 958 | 179 |
| | | 240 | 33.8 | 8.1 | 1407 | 1250 | 173 |
| | | **360** | **35.0** | **12.6** | **2020** | **1818** | **160** |
| | | 540 | 36.4 | 19.7 | 2941 | 2555 | 150 |
| | | 720 | 37.7 | 27.1 | 3757 | 3216 | 138 |
| BXRC-65E1001-D-74-SE | 80 | 175 | 24.9 | 4.4 | 786 | 715 | 180 |
| | | 233 | 25.4 | 5.9 | 1032 | 927 | 174 |
| | | **350** | **26.0** | **9.1** | **1473** | **1325** | **162** |
| | | 525 | 27.4 | 14.4 | 2168 | 1870 | 151 |
| | | 700 | 28.4 | 19.9 | 2777 | 2339 | 140 |

Notes for Table 3:

1. Alternate drive currents in Table 3 are provided for reference only and 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 not a guarantee of performance.

# Electrical Characteristics

**Table 4:** 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) |
| BXRC-xxx100x-B-7x-SE | 270 | 32.4 | 35.0 | 37.6 | -16.1 | 0.49 | 31.1 | 38.7 |
| | 540 | 34.9 | 37.8 | 40.6 | -16.1 | 0.57 | 33.6 | 41.6 |
| BXRC-xxx100x-C-7x-SE | 360 | 32.4 | 35.0 | 37.6 | -16.1 | 0.37 | 31.1 | 38.7 |
| | 720 | 34.9 | 37.7 | 40.5 | -16.1 | 0.43 | 33.6 | 41.6 |
| BXRC-xxx100x-D-7x-SE | 350 | 24.1 | 26.0 | 28.0 | -11.8 | 0.49 | 23.1 | 28.7 |
| | 700 | 26.3 | 28.4 | 30.5 | -11.8 | 0.57 | 25.3 | 31.3 |

Notes for Table 4:

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 5:** Eye Safety Classifications

| Part Number | Drive Current [4] (mA) | CCT[1,4] | | | |
|---|---|---|---|---|---|
| | | 2700K/3000K | 4000K[2] | 5000K | 6500K[3] |
| BXRC-xxx100x-B-7x-SE | 270 | RG1 | RG1 | RG1 | RG1 |
| | 405 | RG1 | RG1 | - | RG2 |
| | 540 | RG1 | RG1 | - | RG2 |
| BXRC-xxx100x-C-7x-SE | 360 | RG1 | RG1 | - | - |
| | 540 | RG1 | RG1 | - | - |
| | 720 | RG1 | RG2 | - | - |
| BXRC-xxx100x-D-7x-SE | 350 | RG1 | RG1 | RG1 | RG1 |
| | 525 | RG1 | RG1 | - | RG2 |
| | 700 | RG1 | RG1 | - | RG2 |

Notes for Table 5:

1. Eye safety classification for the use of Bridgelux Vero SE 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 6500K, $E_{thr}$ = 1224.5 lx.
4. Please contact your Bridgelux sales representative for $E_{thr}$ values at specific drive currents and CCTs not listed.

# Absolute Maximum Ratings

**Table 6:** 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 | | |
| | BXRC-xxx100x-B-7x-SE | BXRC-xxx100x-C-7x-SE | BXRC-xxx100x-D-7x-SE |
| Maximum Drive Current[2] | 540mA | 720mA | 700mA |
| Maximum Peak Pulsed Drive Current[3] | 770mA | 1030mA | 1000mA |
| Maximum Reverse Voltage[4] | -60V | -60V | -45V |

Notes for Table 6:

1. For IEC 62717 requirement, please consult your Bridgelux sales representative.
2. Arrays may be driven at higher currents however lumen maintenance may be reduced.
3. 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.
4. 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:** Vero SE 10B Drive Current vs. Voltage ($T_j = T_c = 25^{\circ}C$)

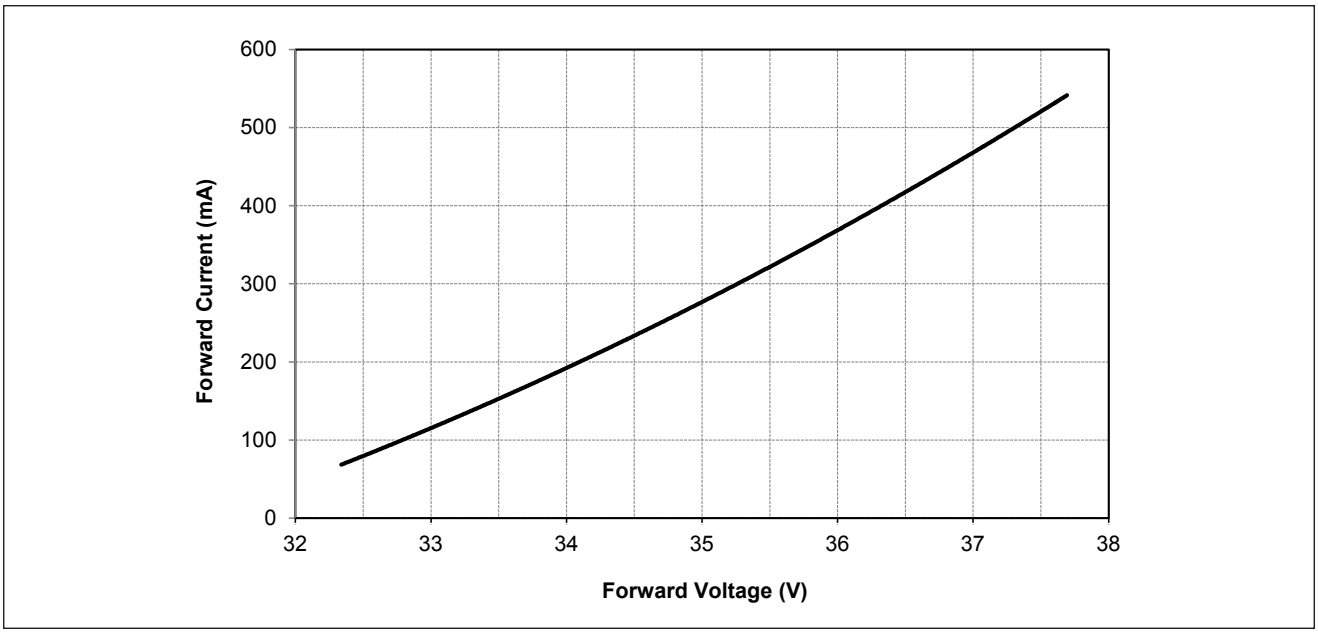
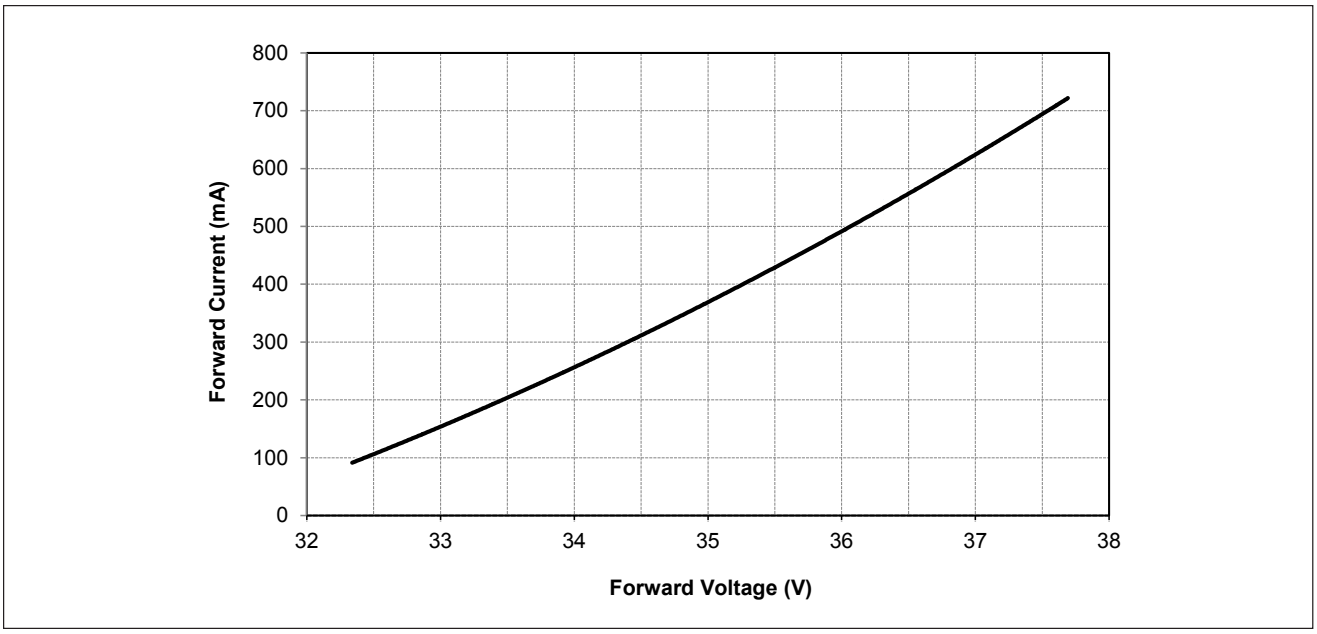



**Figure 2:** Vero SE 10C Drive Current vs. Voltage ($T_j = T_c = 25^{\circ}C$)



# Performance Curves

**Figure 3:** Vero SE 10D Drive Current vs. Voltage ($T_j = T_c = 25°C$)

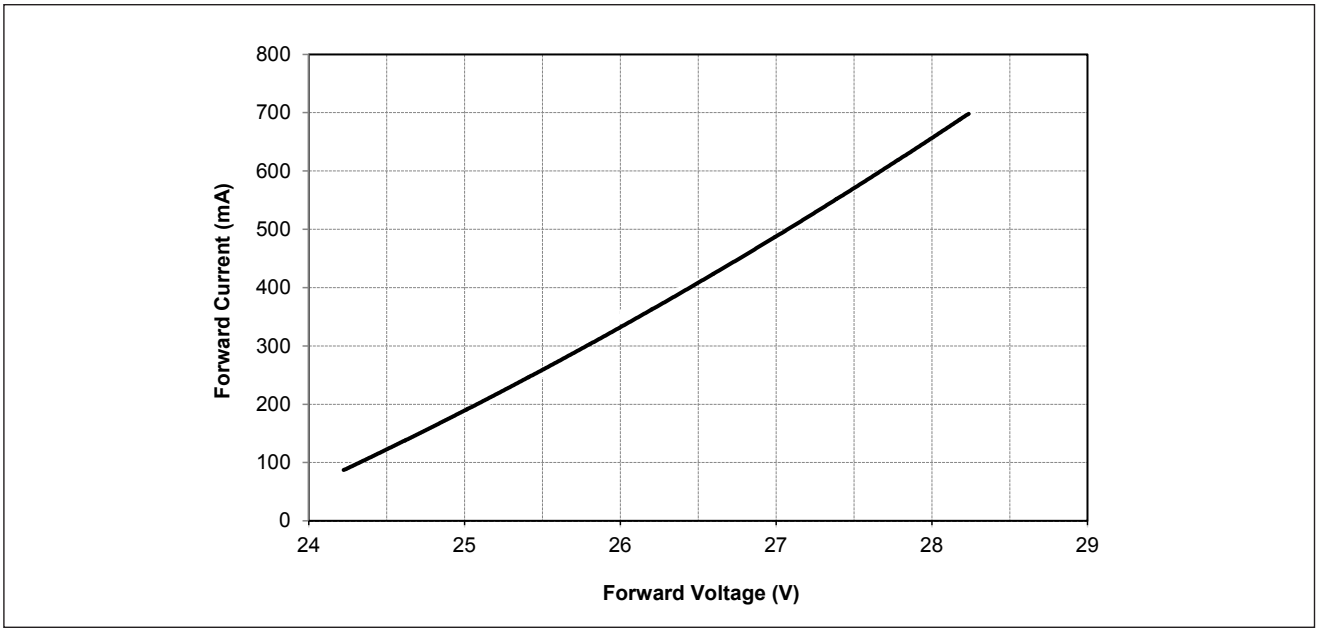
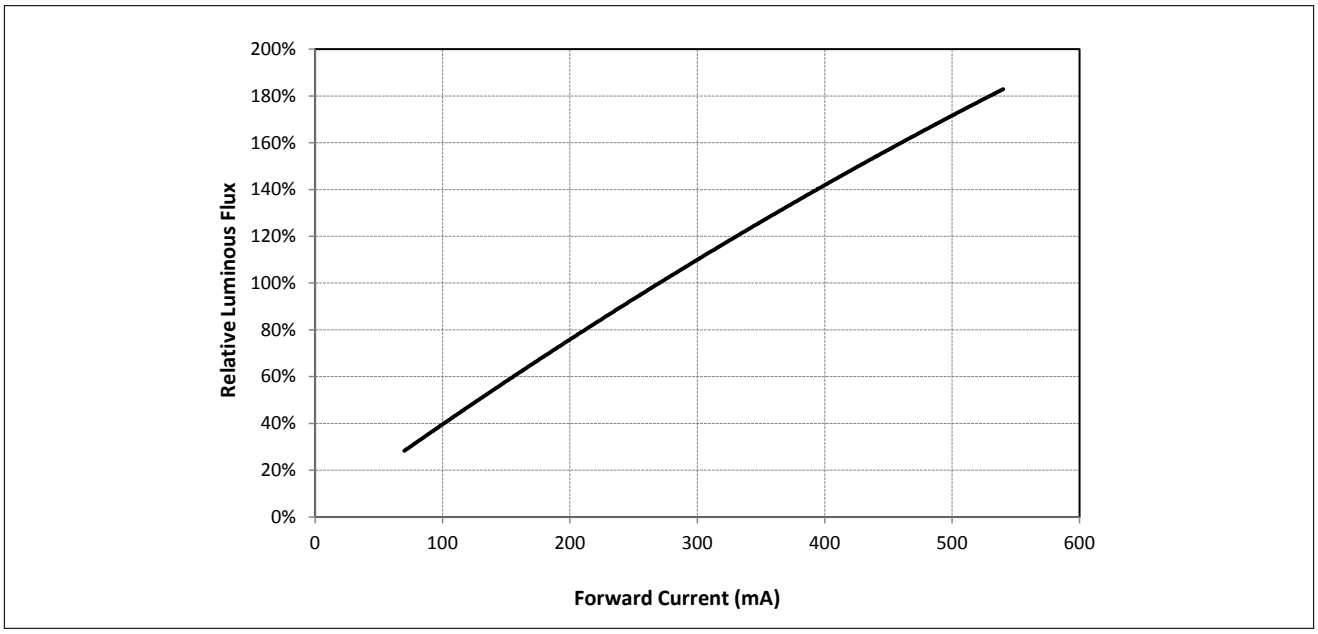



**Figure 4:** Vero SE 10B Typical Relative Flux vs. Current( $T_j = T_c = 25°C$)




Note for Figure 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.

# Performance Curves

**Figure 5:** Vero SE 10C Typical Relative Flux vs. Current( $T_j = T_c = 25^{\circ}C$)

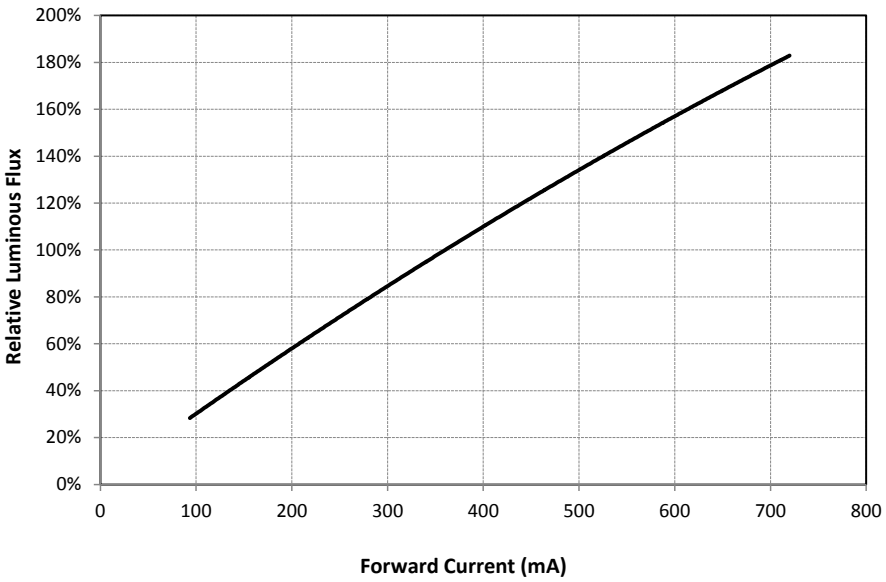
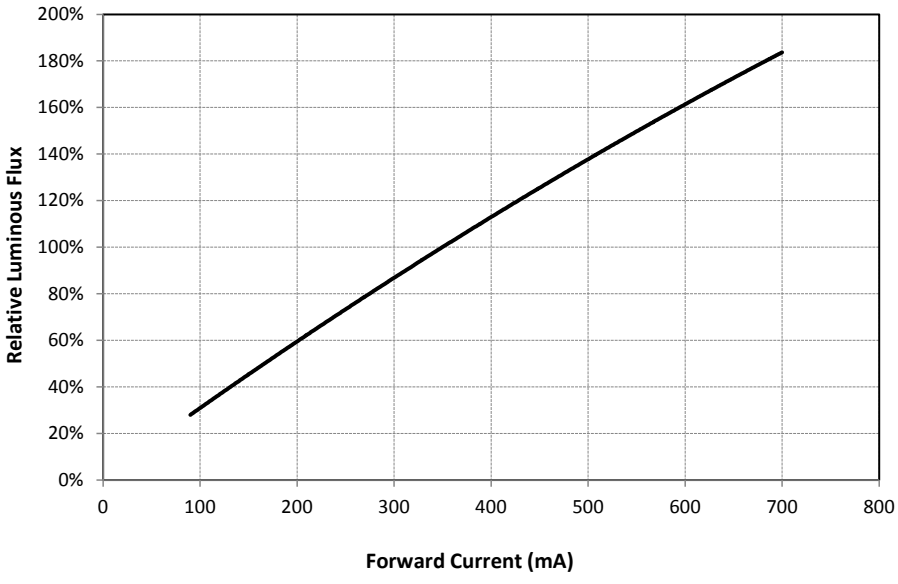



**Figure 6** Vero SE 10D Typical Relative Flux vs. Current( $T_j = T_c = 25^{\circ}C$)




Note for Figures 5 & 6:

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.

# Performance Curves

**Figure 7:** Typical DC Flux vs. Case Temperature

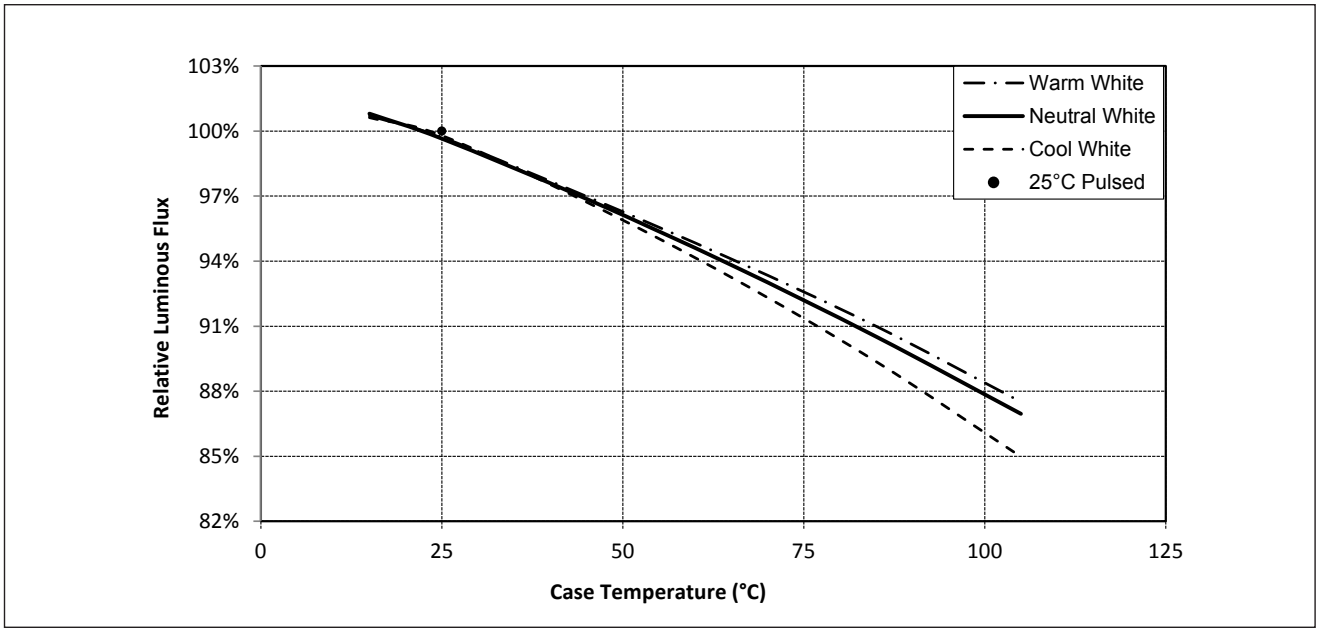
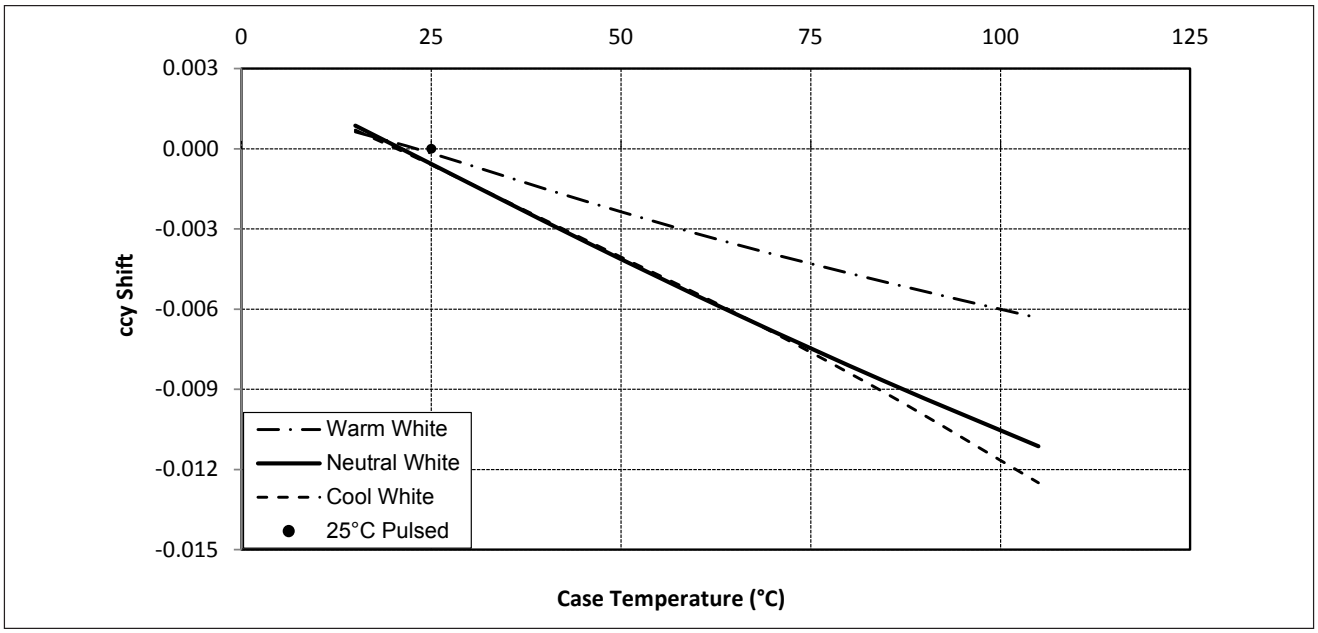



**Figure 8:** Typical DC ccy Shift vs. Case Temperature

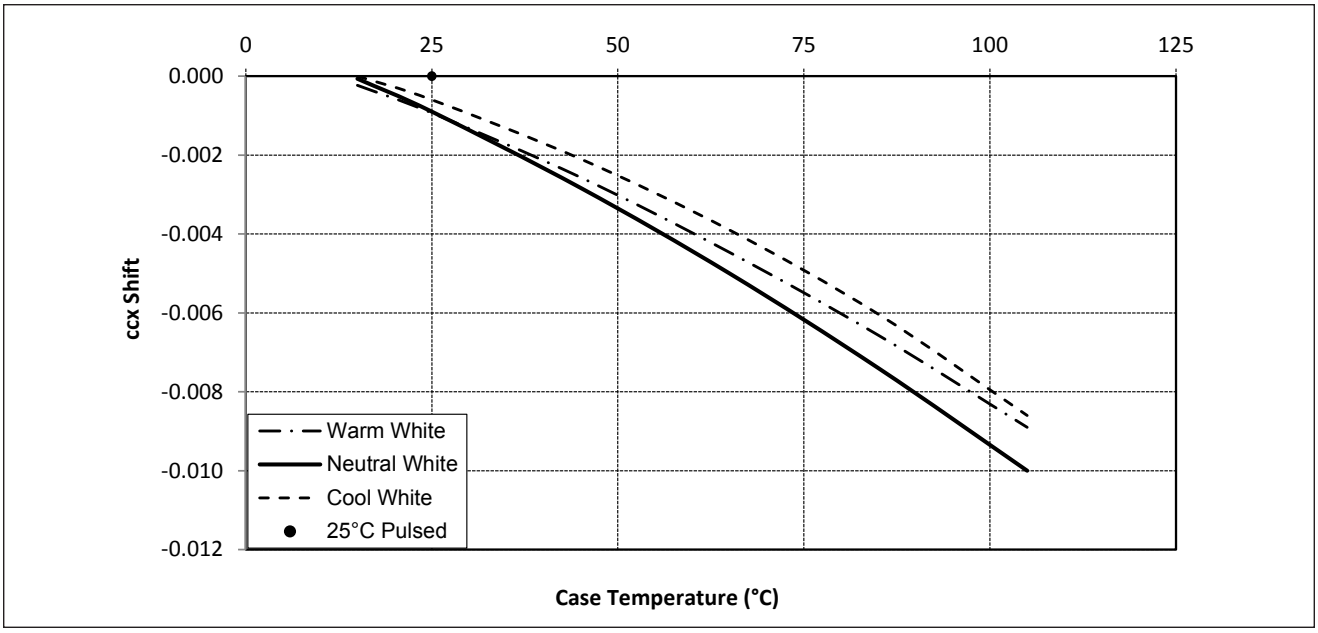



Notes for Figures 7 & 8:

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. For other color SKUs, the shift in color will vary. Please contact your Bridgelux Sales Representative for more information.

# Performance Curves

**Figure 9: Typical DC ccx Shift vs. Case Temperature**

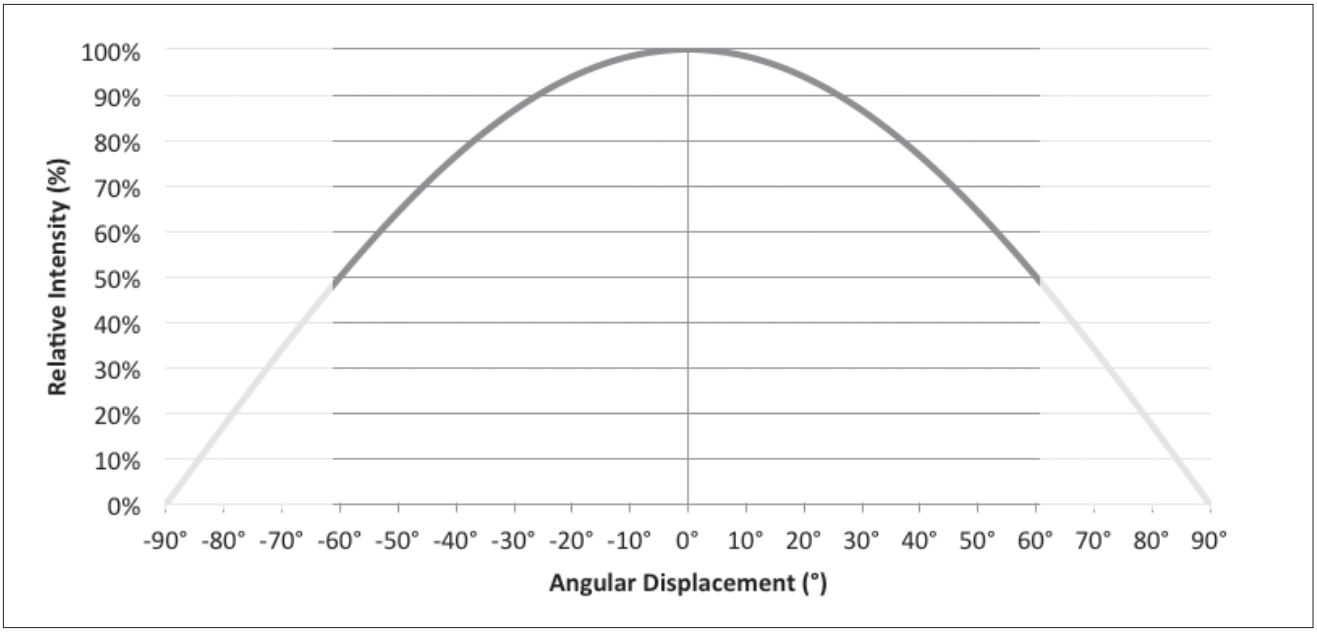



Notes for Figure 9:

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. For other color SKUs, the shift in color will vary. Please contact your Bridgelux Sales Representative for more information.

# Typical Radiation Pattern

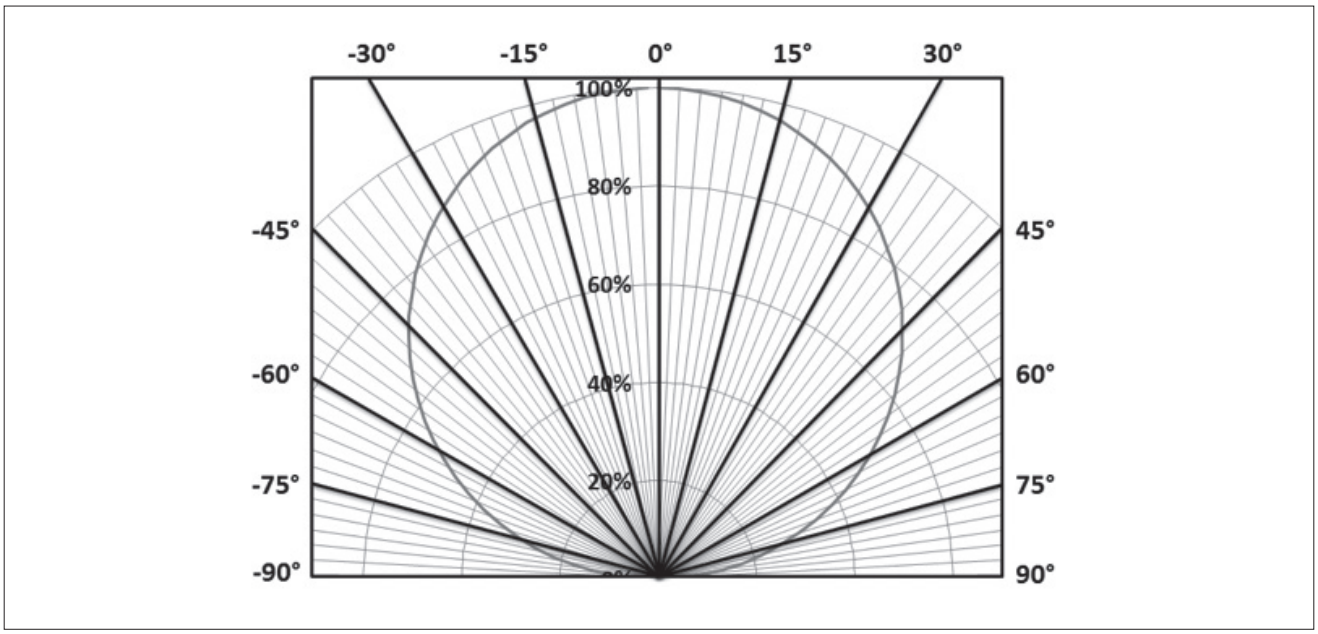
**Figure 10:** Typical Spatial Radiation Pattern




Notes for Figure 10:

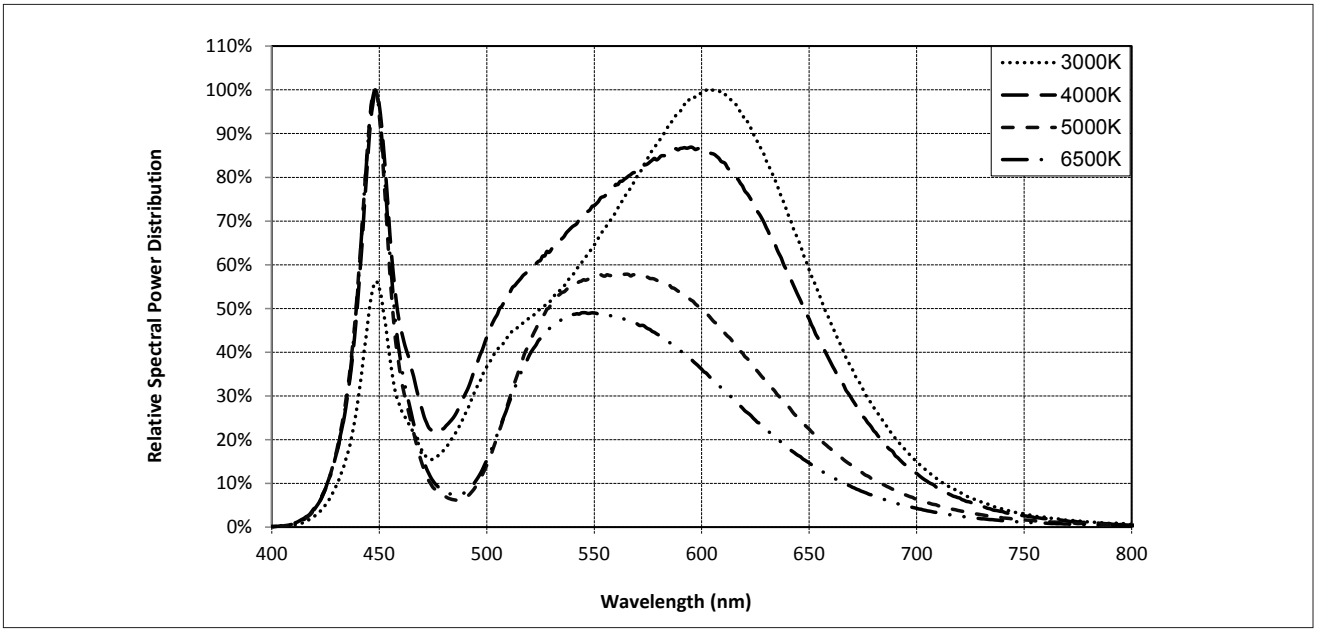
1. Typical viewing angle is 120°.
2. The viewing angle is defined as the off axis angle from the centerline where intensity is ½ of the peak value.

**Figure 11:** Typical Polar Radiation Pattern



# Typical Color Spectrum

**Figure 12: Typical Color Spectrum**

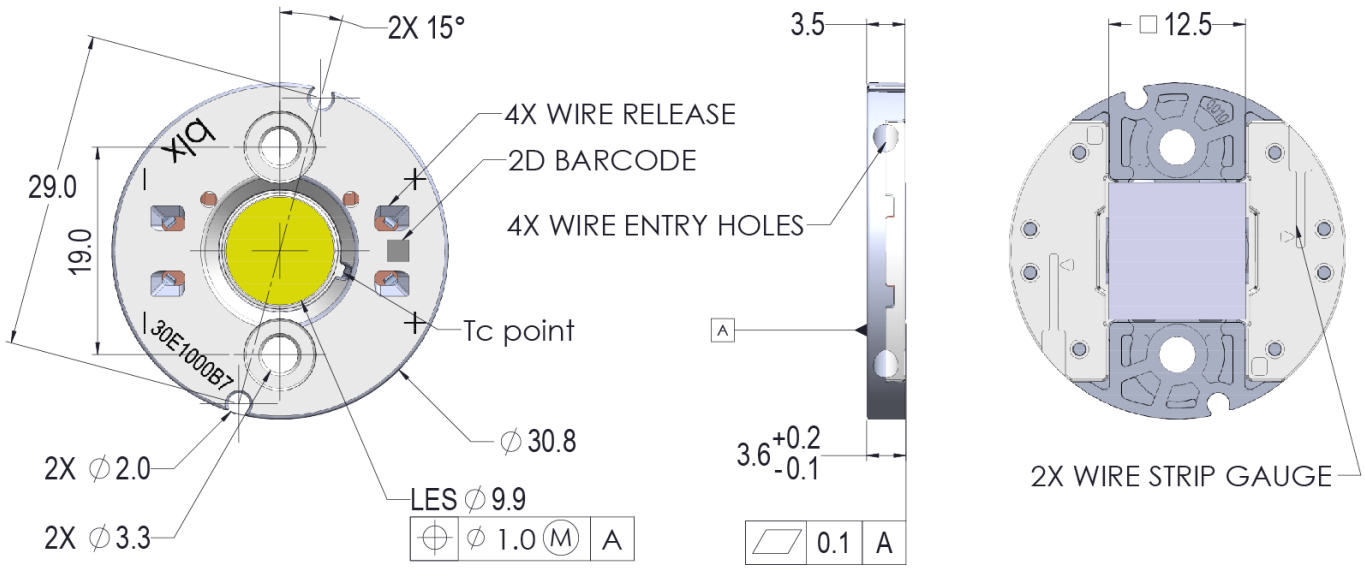



Notes for Figure 12:

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.

# Mechanical Dimensions

**Figure 13:** Drawing for Vero SE 10 LED Array

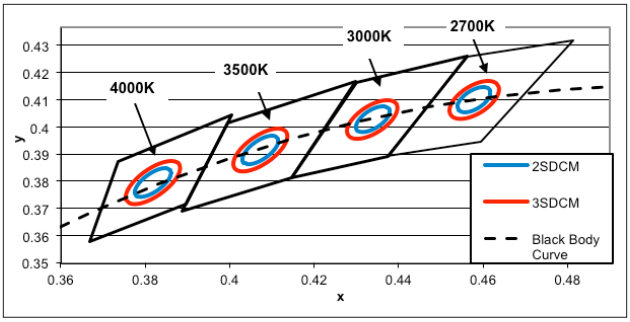



Notes for Figure 13:

1. Drawings are not to scale.
2. Dimensions are in mm.
3. Unless otherwise specified, tolerances are ± 0.10mm.
4. Mounting slots (2X) are for M2.5 screws.
5. Bridgelux recommends two tapped holes for mounting screws with 19.0 ± 0.10mm center-to-center spacing.
6. Screws with flat shoulders (pan, dome, button, round, truss, mushroom) provide optimal torque control. Do NOT use flat, countersink, or raised head screws.
7. The optical center of the LED Array is nominally defined by the mechanical center of the array to a tolerance of ± 0.2mm.
8. Bridgelux maintains a flatness of 0.10mm across the mounting surface of the array.

# Color Binning Information

**Figure 14:** Graph of Warm and Neutral White Test Bins in xy Color Space

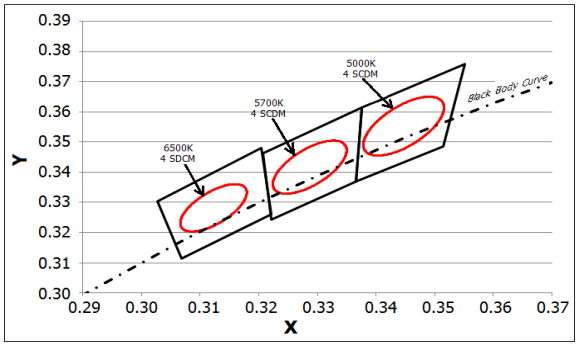



Note: Pulsed Test Conditions, $T_c$ = 25°C

**Table 6:** Warm and Neutral White xy Bin Coordinates and Associated Typical CCT

| Bin Code | 2700K | 3000K | 3500K | 4000K |
|---|---|---|---|---|
| ANSI Bin (for reference only) | (2580K - 2870K) | (2870K - 3220K) | (3220K - 3710K) | (3710K - 4260K) |
| 3 (3 SDCM) | (2651K - 2794K) | (2968K - 3136K) | (3369K - 3586K) | (3851K - 4130K) |
| 2 (2 SDCM) | (2674K - 2769K) | (2995K - 3107K) | (3404K - 3548K) | (3895K - 4081K) |
| Center Point (x,y) | (0.4578, 0.4101) | (0.4338, 0.403) | (0.4073, 0.3917) | (0.3818, 0.3797) |

**Figure 15:** Graph of Cool White Test Bins in xy Color Space



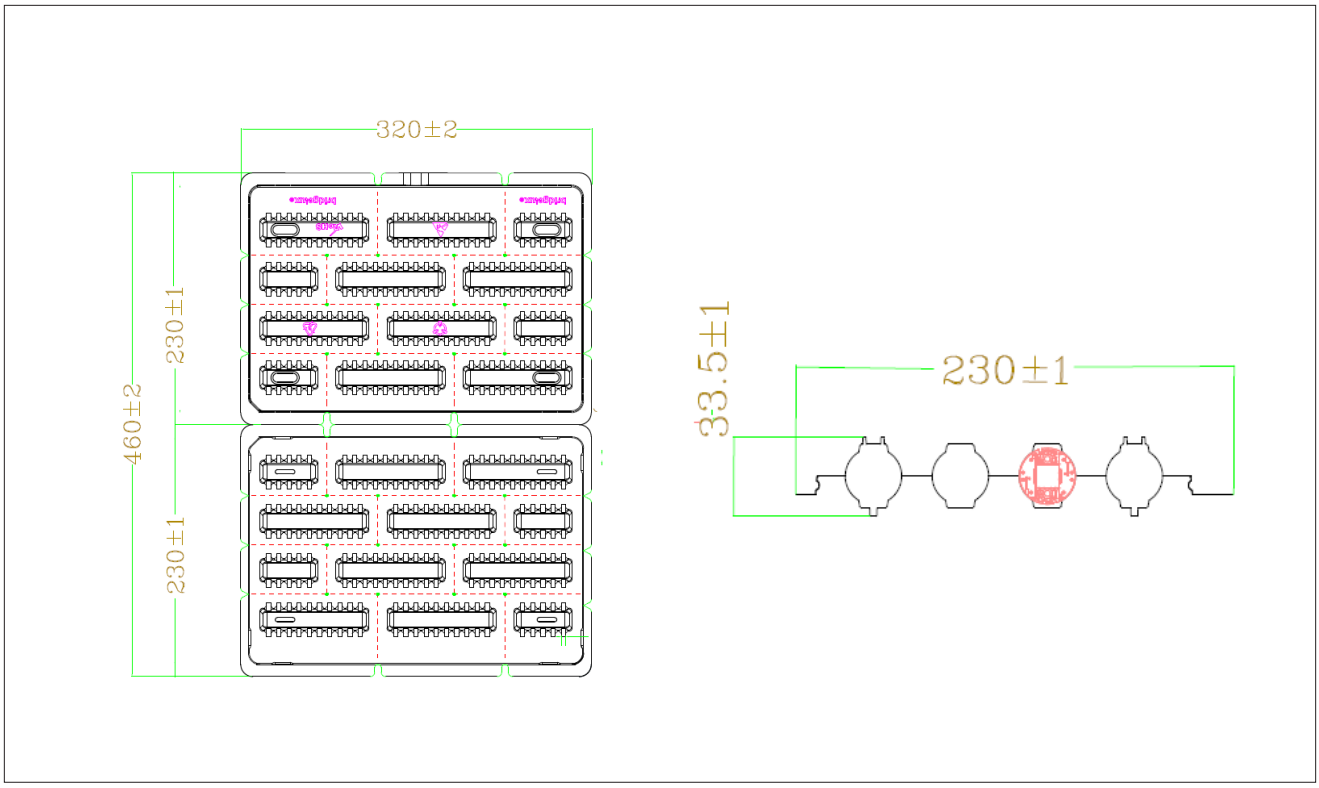

Note: Pulsed Test Conditions, $T_c$ = 25°C

**Table 7:** 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) |
| 4 (4 SDCM) | (4801K - 5282K) | (5829K - 5481K) | (6270K - 6765K) |
| Center Point (x,y) | (0.3447, 0.3553) | (0.3287, 0.3417) | (0.3123, 0.3282) |

# Packaging and Labeling

**Figure 16:** Drawing for Vero SE 10 Packaging Tray

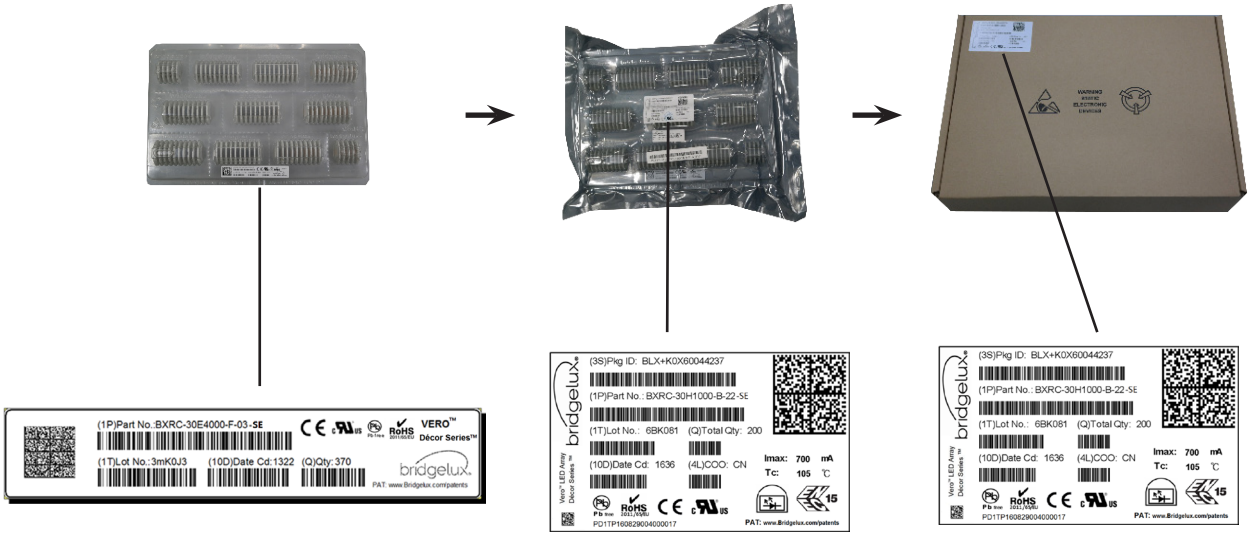



Notes for Figure 16:

1. Dimensions are in millimeters.
2. Drawings are not to scale.

# Packaging and Labeling

**Figure 17:** Vero SE Series Packaging and Labeling




Notes for Figure 17:

1. Each tray holds 100 COBs.
2. Each tray is vacuum sealed in ansalesfanti-static bag and placed in its own box.
3. Each tray, bag and box is to be labeled as shown above.

**Figure 18:** Vero SE 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

**Optical Source Models**

Optical source models and ray set files are available for all Bridgelux products. Please contact your Bridgelux sales representative for more information.

**3D CAD Models**

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

**LM80**

LM80 testing is on going. Please contact your Bridgelux sales representative for more information.

# Precautions

**CAUTION: CHEMICAL EXPOSURE HAZARD**

Exposure to some chemicals commonly used in luminaire manufacturing and assembly can cause damage to the LED array. Please conult Bridgelux Application Note AN31 for additional information.

**CAUTION: RISK OF BURN**

Do not touch the Vero SE LED array during operation. Allow the array to cool for a sufficient period of time before handling. The Vero SE 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). Optical devices may be mounted on the top surface of the plastic housing of the Vero SE LED array. Use the mechanical features of the LED array housing, edges and/or mounting holes to locate and secure optical devices as needed.

# Disclaimers

**MINOR PRODUCT CHANGE POLICY**

The rigorous qualification testing on products offered by Bridgelux provides performance assurance. Slight cosmetic changes that do not affect form, fit, or function may occur as Bridgelux continues product optimization.

**STANDARD TEST CONDITIONS**

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

# About Bridgelux: We Build Light That Transforms

At Bridgelux, we help companies, industries and people experience the power and possibility of light. Since 2002, we've designed LED solutions that are high performing, energy efficient, cost effective and easy to integrate. Our focus is on light's impact on human behavior, delivering products that create better environments, experiences and returns—both experiential and financial.  And our patented technology drives new platforms for commercial and industrial luminaires.

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