

Bridgelux® Decor Series™ Class A LED Array

Product Data Sheet DS35



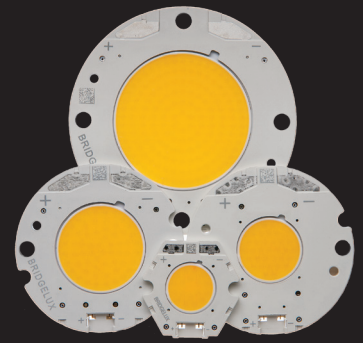
| | | | |
|--------------|---------|---------|---------|
| BXRC-30A1001 | 30A2001 | 30A4001 | 30A10K1 |
|--------------|---------|---------|---------|

| | | | |
|--------------|---------|---------|---------|
| BXRC-35A1001 | 35A2001 | 35A4001 | 35A10K1 |
|--------------|---------|---------|---------|

| | | | |
|------------------------------------------------------------|-----|---------|---------|
| Downloaded From Oneyac.com | 001 | 40A4001 | 40A10K1 |
|------------------------------------------------------------|-----|---------|---------|

Introduction

Vero



Bridgelux® Décor Series™ Class A products are a revolutionary advancement in lighting designed to match how humans perceive and prefer light. The Class A specification was created by the Lighting Research Center (LRC) behavior studies in conjunction with Bridgelux and other ASSIST members. Based on human factor response testing, the Décor Series Class A products provide vibrant, natural and brilliant looking light, evoking an emotional attraction and response. The Décor Series Class A products were developed for high-end retail, museum, architectural, premium building and hospitality applications.

Bridgelux Décor Series Class A products are available on all Vero form factors. The Vero platform has been engineered with advanced connectivity options and can operate over a broad current range, enabling multiple degrees of flexibility in luminaire design optimization.

Features

- Light quality is based on human perception of color and light
- High gamut area index (GAI)
- No harmful UV or near IR light in the spectrum
- Substantially broader GAI and color spectrum than halogen
- Radial die pattern enhances optical uniformity
- Based on Bridgelux Vero COB LED array platform

Benefits

- 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
- Enhanced ease of use and manufacturability



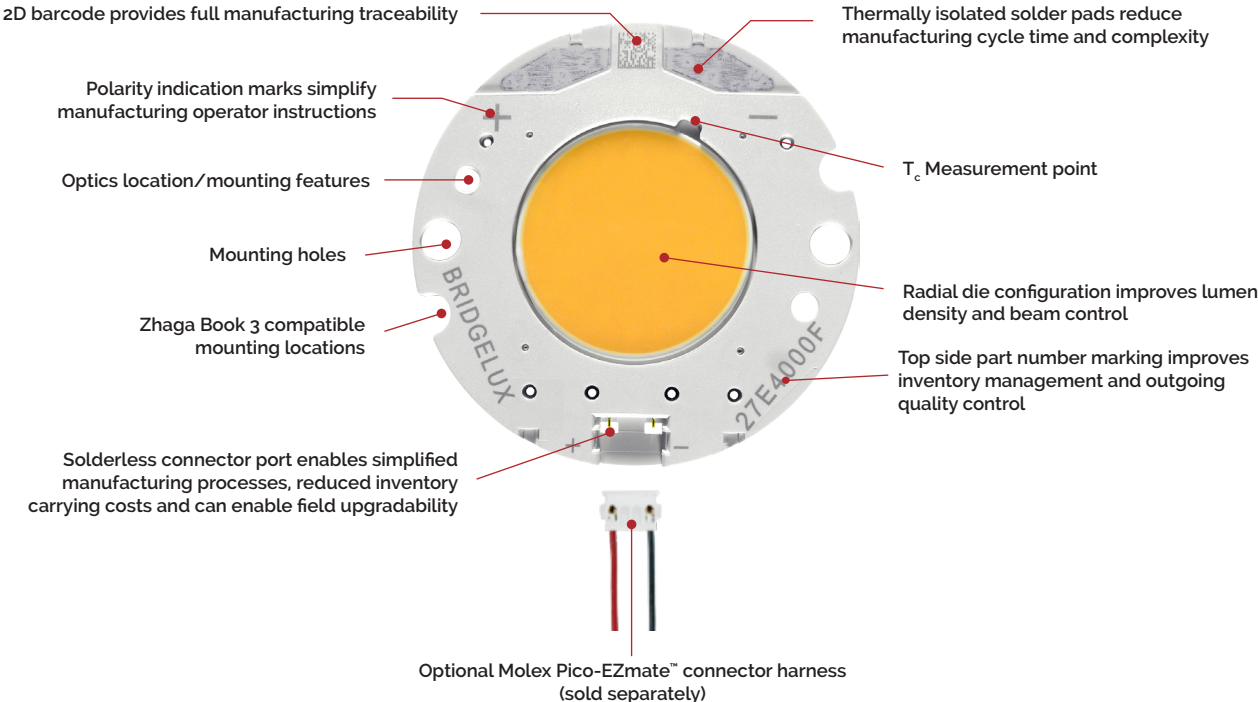
Contents

| | |
|---------------------------------------------|----|
| Product Feature Map | 2 |
| Product Nomenclature | 2 |
| Product Selection Guide | 3 |
| Performance at Commonly Used Drive Currents | 5 |
| Electrical Characteristics | 7 |
| Absolute Maximum Ratings | 8 |
| Performance Curves | 9 |
| Typical Radiation Pattern | 16 |
| Mechanical Dimensions | 17 |
| Packaging and Labeling | 21 |
| Design Resources | 24 |
| Precautions | 24 |
| Disclaimers | 24 |
| About Bridgelux | 25 |

Product Feature Map

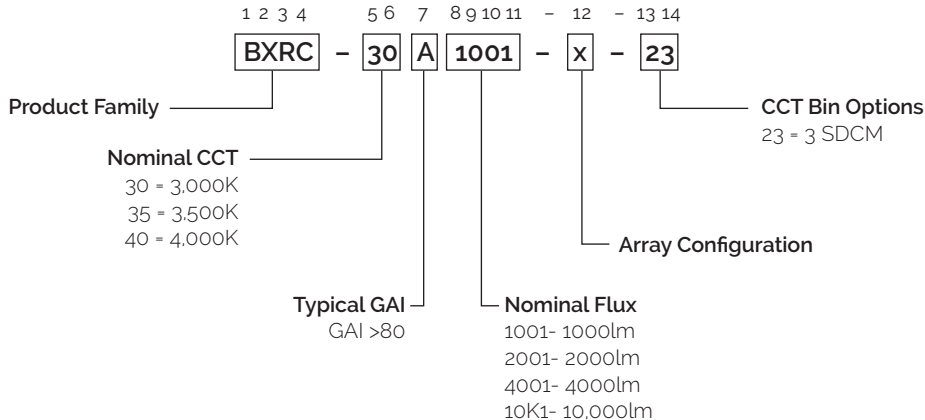
In addition to delivering the performance and light quality required for many lighting applications, Décor Series Class A LED arrays incorporate several features to

simplify the design integration and manufacturing process, accelerate time to market and reduce system costs.



Product Nomenclature

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



Product Selection Guide

The following product configurations are available:

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

| Product | Part Number | Nominal CCT ¹ (K) | GAI ² | CRI ³ | Nominal Drive Current ⁴ (mA) | Typical Pulsed Flux ^{5,7} $T_c = 25^\circ\text{C}$ (lm) | Minimum Pulsed Flux ^{7,8} $T_c = 25^\circ\text{C}$ (lm) | Typical V_f (V) | Typical Power (W) | Typical Efficacy (lm/W) |
|-----------------------|-------------------|------------------------------|------------------|------------------|-----------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|-------------------|-------------------|-------------------------|
| Décor Class A Vero 10 | BXRC-30A1001-B-23 | 3000 | 80 | 93 | 350 | 820 | 750 | 26.5 | 9.3 | 88 |
| Décor Class A Vero 10 | BXRC-35A1001-B-23 | 3500 | 80 | 93 | 350 | 909 | 849 | 26.5 | 9.3 | 98 |
| Décor Class A Vero 10 | BXRC-40A1001-B-23 | 4000 | 80 | 93 | 350 | 970 | 900 | 26.5 | 9.3 | 105 |
| Décor Class A Vero 13 | BXRC-30A2001-C-23 | 3000 | 80 | 93 | 500 | 1500 | 1394 | 32.3 | 16.2 | 93 |
| Décor Class A Vero 13 | BXRC-35A2001-C-23 | 3500 | 80 | 93 | 500 | 1628 | 1520 | 32.3 | 16.2 | 101 |
| Décor Class A Vero 13 | BXRC-40A2001-C-23 | 4000 | 80 | 93 | 500 | 1740 | 1625 | 32.3 | 16.2 | 108 |
| Décor Class A Vero 18 | BXRC-30A4001-F-23 | 3000 | 80 | 93 | 1050 | 2897 | 2695 | 29.5 | 31.0 | 94 |
| Décor Class A Vero 18 | BXRC-35A4001-F-23 | 3500 | 80 | 93 | 1050 | 3096 | 2893 | 29.5 | 31.0 | 100 |
| Décor Class A Vero 18 | BXRC-40A4001-F-23 | 4000 | 80 | 93 | 1050 | 3385 | 3157 | 29.5 | 31.0 | 109 |
| Décor Class A Vero 29 | BXRC-30A10K1-L-23 | 3000 | 80 | 93 | 2100 | 7483 | 7014 | 38 | 79.8 | 94 |
| Décor Class A Vero 29 | BXRC-35A10K1-L-23 | 3000 | 80 | 93 | 2100 | 8251 | 7712 | 38 | 79.8 | 103 |
| Décor Class A Vero 29 | BXRC-40A10K1-L-23 | 4000 | 80 | 93 | 2100 | 8666 | 8054 | 38 | 79.8 | 109 |

Table 2: Selection Guide, Stabilized DC Performance ($T_c = 70^\circ\text{C}$)^{9,10}

| Product | Part Number | Nominal CCT ¹ (K) | GAI ² | CRI ³ | Nominal Drive Current ⁴ (mA) | Typical DC Flux ^{6,7} $T_c = 70^\circ\text{C}$ (lm) | Minimum DC Flux ^{7,11} $T_c = 70^\circ\text{C}$ (lm) | Typical V_f (V) | Typical Power (W) | Typical Efficacy (lm/W) |
|-----------------------|-------------------|------------------------------|------------------|------------------|-----------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------|-------------------|-------------------|-------------------------|
| Décor Class A Vero 10 | BXRC-30A1001-B-23 | 3000 | 80 | 93 | 350 | 752 | 688 | 25.8 | 9.0 | 83 |
| Décor Class A Vero 10 | BXRC-35A1001-B-23 | 3500 | 80 | 93 | 350 | 834 | 779 | 25.8 | 9.0 | 92 |
| Décor Class A Vero 10 | BXRC-40A1001-B-23 | 4000 | 80 | 93 | 350 | 888 | 824 | 25.8 | 9.0 | 98 |
| Décor Class A Vero 13 | BXRC-30A2001-C-23 | 3000 | 80 | 93 | 500 | 1377 | 1280 | 31.5 | 15.8 | 87 |
| Décor Class A Vero 13 | BXRC-35A2001-C-23 | 3500 | 80 | 93 | 500 | 1509 | 1409 | 31.5 | 15.8 | 96 |
| Décor Class A Vero 13 | BXRC-40A2001-C-23 | 4000 | 80 | 93 | 500 | 1597 | 1491 | 31.5 | 15.8 | 101 |
| Décor Class A Vero 18 | BXRC-30A4001-F-23 | 3000 | 80 | 93 | 1050 | 2638 | 2454 | 28.7 | 30.2 | 87 |
| Décor Class A Vero 18 | BXRC-35A4001-F-23 | 3500 | 80 | 93 | 1050 | 2868 | 2680 | 28.7 | 30.2 | 95 |
| Décor Class A Vero 18 | BXRC-40A4001-F-23 | 4000 | 80 | 93 | 1050 | 3120 | 2910 | 28.7 | 30.2 | 103 |
| Décor Class A Vero 29 | BXRC-30A10K1-L-23 | 3000 | 80 | 93 | 2100 | 6886 | 6454 | 37.2 | 78.2 | 88 |
| Décor Class A Vero 29 | BXRC-35A10K1-L-23 | 3000 | 80 | 93 | 2100 | 7637 | 7138 | 37.2 | 78.2 | 98 |
| Décor Class A Vero 29 | BXRC-40A10K1-L-23 | 4000 | 80 | 93 | 2100 | 7977 | 7414 | 37.2 | 78.2 | 102 |

Notes for Tables 1 & 2:

- Nominal CCT is defined by the Lighting Research Center's Class A definition. The center of the Class A color bin is on the corresponding isothermal line.
- To help ensure optimal fixture level performance, GAI is measured at the fixture level, on axis, at a case temperature of 70°C . GAI may vary depending on fixture design and performance.
- CRI Values are specified as typical. Typical R_g value for 3000K products is 90. CRI and R Values are measured at 25C pulsed.
- Drive current is referred to as nominal drive current.
- Products tested under pulsed condition (10ms pulse width) at nominal test current where T_j (junction temperature) - T_c (case temperature) = 25°C .
- Typical performance values are provided as a reference only and are not a guarantee of performance.
- Bridgelux maintains a $\pm 7\%$ tolerance on flux measurements.
- Minimum flux values at the nominal test current are guaranteed by 100% test.
- Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.
- Typical performance is estimated based on operation under DC (direct current) with LED array mounted onto a heat sink with thermal interface material and the case temperature maintained at specified temperature. Based on Bridgelux test setup, values may vary depending on the thermal design of the luminaire and/or the exposed environment to which the product is subjected.
- Minimum flux values at elevated temperatures are provided for reference only and are not guaranteed by 100% production testing. Based on Bridgelux test setup, values may vary depending on the thermal design of the luminaire and/or the exposed environment to which the product is subjected.

Product Selection Guide

The following product configurations are available:

Table 3: Selection Guide, Stabilized DC Performance (T_c = 85°C) ^{9,10}

| Product | Part Number | Nominal CCT ¹ (K) | GAI ² | CRI ³ | Nominal Drive Current ⁴ (mA) | Typical DC Flux ^{6,7} T _c = 85°C (lm) | Minimum DC Flux ^{7,11} T _c = 85°C (lm) | Typical V _f (V) | Typical Power (W) | Typical Efficacy (lm/W) |
|-----------------------|-------------------|------------------------------|------------------|------------------|-----------------------------------------|-----------------------------------------------------------|------------------------------------------------------------|----------------------------|-------------------|-------------------------|
| Décor Class A Vero 10 | BXRC-30A1001-B-23 | 3000 | 80 | 93 | 350 | 728 | 666 | 25.5 | 8.9 | 81 |
| Décor Class A Vero 10 | BXRC-35A1001-B-23 | 3500 | 80 | 93 | 350 | 807 | 753 | 25.5 | 8.9 | 90 |
| Décor Class A Vero 10 | BXRC-40A1001-B-23 | 4000 | 80 | 93 | 350 | 861 | 799 | 25.5 | 8.9 | 96 |
| Décor Class A Vero 13 | BXRC-30A2001-C-23 | 3000 | 80 | 93 | 500 | 1332 | 1238 | 31.3 | 15.6 | 85 |
| Décor Class A Vero 13 | BXRC-35A2001-C-23 | 3500 | 80 | 93 | 500 | 1461 | 1364 | 31.3 | 15.6 | 93 |
| Décor Class A Vero 13 | BXRC-40A2001-C-23 | 4000 | 80 | 93 | 500 | 1545 | 1443 | 31.3 | 15.6 | 99 |
| Décor Class A Vero 18 | BXRC-30A4001-F-23 | 3000 | 80 | 93 | 1050 | 2543 | 2365 | 28.6 | 30.0 | 85 |
| Décor Class A Vero 18 | BXRC-35A4001-F-23 | 3500 | 80 | 93 | 1050 | 2781 | 2598 | 28.6 | 30.0 | 93 |
| Décor Class A Vero 18 | BXRC-40A4001-F-23 | 4000 | 80 | 93 | 1050 | 3025 | 2821 | 28.6 | 30.0 | 101 |
| Décor Class A Vero 29 | BXRC-30A10K1-L-23 | 3000 | 80 | 93 | 2100 | 6668 | 6250 | 36.8 | 77.3 | 86 |
| Décor Class A Vero 29 | BXRC-35A10K1-L-23 | 3000 | 80 | 93 | 2100 | 7399 | 6916 | 36.8 | 77.3 | 96 |
| Décor Class A Vero 29 | BXRC-40A10K1-L-23 | 4000 | 80 | 93 | 2100 | 7718 | 7173 | 36.8 | 77.3 | 100 |

Notes for Table 3:

- Nominal CCT is defined by the Lighting Research Center's Class A definition. The center of the Class A color bin is on the corresponding isothermal line.
- To help ensure optimal fixture level performance, GAI is measured at the fixture level, on axis, at a case temperature of 70°C. GAI may vary depending on fixture design and performance.
- CRI Values are specified as typical. Typical R₉ value for 3000K products is 90. CRI and R Values are measured at 25C pulsed.
- Drive current is referred to as nominal drive current.
- Products tested under pulsed condition (10ms pulse width) at nominal test current where T_j (junction temperature) - T_c (case temperature) = 25°C.
- Typical performance values are provided as a reference only and are not a guarantee of performance.
- Bridgelux maintains a ±7% tolerance on flux measurements.
- Minimum flux values at the nominal test current are guaranteed by 100% test.
- Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.
- Typical performance is estimated based on operation under DC (direct current) with LED array mounted onto a heat sink with thermal interface material and the case temperature maintained at specified temperature. Based on Bridgelux test setup, values may vary depending on the thermal design of the luminaire and/or the exposed environment to which the product is subjected.
- Minimum flux values at elevated temperatures are provided for reference only and are not guaranteed by 100% production testing. Based on Bridgelux test setup, values may vary depending on the thermal design of the luminaire and/or the exposed environment to which the product is subjected.

Performance at Commonly Used Drive Currents

Vero LED arrays are tested to the specifications shown using the nominal drive currents in Table 1. Vero 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 Figure 3-6 and the flux vs. current characteristics shown in Figures 7-10. The performance at commonly used drive currents is summarized in Table 4.

Table 4: Product Performance at Commonly Used Drive Currents

| Product | Part Number | GAI | CRI | Drive Current ¹ (mA) | Typical V_f $T_c = 25^\circ\text{C}$ (V) | Typical Power $T_j = 25^\circ\text{C}$ (W) | Typical Flux ² $T_c = 25^\circ\text{C}$ (lm) | Typical DC Flux ³ $T_c = 85^\circ\text{C}$ (lm) | Typical Efficacy $T_j = 25^\circ\text{C}$ (lm/W) |
|-----------------------|-------------------|-----|-----|---------------------------------|-----------------------------------------------|-----------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------|
| Décor Class A Vero 10 | BXRC-30A1001-B-23 | 80 | 93 | 175 | 24.9 | 4.4 | 435 | 386 | 100 |
| | | | | 350 | 26.5 | 9.3 | 820 | 728 | 88 |
| | | | | 500 | 27.6 | 13.8 | 1116 | 991 | 81 |
| | | | | 700 | 29 | 20.3 | 1454 | 1292 | 72 |
| Décor Class A Vero 10 | BXRC-35A1001-B-23 | 80 | 93 | 175 | 24.9 | 4.4 | 482 | 428 | 111 |
| | | | | 350 | 26.5 | 9.3 | 909 | 807 | 98 |
| | | | | 500 | 27.6 | 13.8 | 1237 | 1098 | 90 |
| | | | | 700 | 29 | 20.3 | 1612 | 1430 | 79 |
| Décor Class A Vero 10 | BXRC-40A1001-B-23 | 80 | 93 | 175 | 24.9 | 4.4 | 514 | 457 | 118 |
| | | | | 350 | 26.5 | 9.3 | 970 | 861 | 105 |
| | | | | 500 | 27.6 | 13.8 | 1321 | 1172 | 96 |
| | | | | 700 | 29 | 20.3 | 1720 | 1527 | 85 |
| Décor Class A Vero 13 | BXRC-30A2001-C-23 | 80 | 93 | 175 | 30.2 | 5.3 | 572 | 508 | 108 |
| | | | | 350 | 31.4 | 11.0 | 1095 | 972 | 100 |
| | | | | 500 | 32.3 | 16.2 | 1500 | 1332 | 93 |
| | | | | 700 | 33.4 | 23.4 | 1995 | 1772 | 85 |
| | | | | 1050 | 35.1 | 36.9 | 2702 | 2400 | 73 |
| Décor Class A Vero 13 | BXRC-35A2001-C-23 | 80 | 93 | 175 | 30.2 | 5.3 | 620 | 556 | 117 |
| | | | | 350 | 31.4 | 11.0 | 1188 | 1066 | 108 |
| | | | | 500 | 32.3 | 16.2 | 1628 | 1461 | 101 |
| | | | | 700 | 33.4 | 23.4 | 2165 | 1943 | 93 |
| | | | | 1050 | 35.1 | 36.9 | 2932 | 2631 | 80 |
| Décor Class A Vero 13 | BXRC-40A2001-C-23 | 80 | 93 | 175 | 30.2 | 5.3 | 663 | 589 | 125 |
| | | | | 350 | 31.4 | 11.0 | 1270 | 1127 | 116 |
| | | | | 500 | 32.3 | 16.2 | 1740 | 1545 | 108 |
| | | | | 700 | 33.4 | 23.4 | 2314 | 2055 | 99 |
| | | | | 1050 | 35.1 | 36.9 | 3134 | 2783 | 85 |

Notes for Table 4:

1. Alternate drive currents in Table 4 are provided for reference only and are not a guarantee of performance.
2. Bridgelux maintains a $\pm 7\%$ tolerance on flux measurements.
3. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Performance at Commonly Used Drive Currents

Table 4: Product Performance at Commonly Used Drive Currents

| Product | Part Number | GAI | CRI | Drive Current ¹ (mA) | Typical V_f $T_c = 25^\circ\text{C}$ (V) | Typical Power $T_j = 25^\circ\text{C}$ (W) | Typical Flux ² $T_c = 25^\circ\text{C}$ (lm) | Typical DC Flux ³ $T_c = 85^\circ\text{C}$ (lm) | Typical Efficacy $T_j = 25^\circ\text{C}$ (lm/W) |
|-----------------------|-------------------|-----|-----|---------------------------------|-----------------------------------------------|-----------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------|
| Décor Class A Vero 18 | BXRC-30A4001-F-23 | 80 | 93 | 500 | 28.1 | 14.1 | 1483 | 1301 | 106 |
| | | | | 700 | 28.7 | 20.1 | 2025 | 1777 | 101 |
| | | | | 1050 | 29.5 | 31.0 | 2897 | 2543 | 94 |
| | | | | 1400 | 30.2 | 42.3 | 3692 | 3241 | 87 |
| | | | | 2100 | 31.6 | 66.4 | 5003 | 4391 | 75 |
| Décor Class A Vero 18 | BXRC-35A4001-F-23 | 80 | 93 | 500 | 28.1 | 14.1 | 1584 | 1423 | 113 |
| | | | | 700 | 28.7 | 20.1 | 2164 | 1943 | 108 |
| | | | | 1050 | 29.5 | 31.0 | 3096 | 2781 | 100 |
| | | | | 1400 | 30.2 | 42.3 | 3946 | 3544 | 93 |
| | | | | 2100 | 31.6 | 66.4 | 5347 | 4803 | 81 |
| Décor Class A Vero 18 | BXRC-40A4001-F-23 | 80 | 93 | 500 | 28.1 | 14.1 | 1732 | 1548 | 123 |
| | | | | 700 | 28.7 | 20.1 | 2366 | 2114 | 118 |
| | | | | 1050 | 29.5 | 31.0 | 3385 | 3025 | 109 |
| | | | | 1400 | 30.2 | 42.3 | 4314 | 3855 | 102 |
| | | | | 2100 | 31.6 | 66.4 | 5846 | 5224 | 88 |
| Décor Class A Vero 29 | BXRC-30A10K1-L-23 | 80 | 93 | 500 | 35.1 | 17.6 | 1964 | 1750 | 112 |
| | | | | 700 | 35.6 | 24.9 | 2717 | 2421 | 109 |
| | | | | 1050 | 36.4 | 38.2 | 3991 | 3556 | 104 |
| | | | | 2100 | 38 | 79.8 | 7483 | 6668 | 94 |
| | | | | 2800 | 39 | 109.2 | 9506 | 8470 | 87 |
| | | | | 3150 | 39.5 | 124.4 | 10438 | 9301 | 84 |
| | | | | 4200 | 40.4 | 169.7 | 12895 | 11490 | 76 |
| Décor Class A Vero 29 | BXRC-35A10K1-L-23 | 80 | 93 | 500 | 35.1 | 17.6 | 2166 | 1942 | 123 |
| | | | | 700 | 35.6 | 24.9 | 2996 | 2687 | 120 |
| | | | | 1050 | 36.4 | 38.2 | 4401 | 3946 | 115 |
| | | | | 2100 | 38 | 79.8 | 8251 | 7399 | 103 |
| | | | | 2800 | 39 | 109.2 | 10481 | 9399 | 96 |
| | | | | 3150 | 39.5 | 124.4 | 11510 | 10321 | 93 |
| | | | | 4200 | 40.4 | 169.7 | 14218 | 12750 | 84 |
| Décor Class A Vero 29 | BXRC-40A10K1-L-23 | 80 | 93 | 500 | 35.1 | 17.6 | 2275 | 2026 | 129 |
| | | | | 700 | 35.6 | 24.9 | 3147 | 2803 | 126 |
| | | | | 1050 | 36.4 | 38.2 | 4622 | 4116 | 121 |
| | | | | 2100 | 38 | 79.8 | 8666 | 7718 | 109 |
| | | | | 2800 | 39 | 109.2 | 11009 | 9805 | 101 |
| | | | | 3150 | 39.5 | 124.4 | 12089 | 10767 | 97 |
| | | | | 4200 | 40.4 | 169.7 | 14933 | 13300 | 88 |

Notes for Table 4:

1. Alternate drive currents in Table 4 are provided for reference only and are not a guarantee of performance.
2. Bridgelux maintains a $\pm 7\%$ tolerance on flux measurements.
3. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Electrical Characteristics

Table 5: Electrical Characteristics

| Part Number | Nominal Drive Current ¹ (mA) | Forward Voltage Pulsed, T _c = 25°C (V) ^{1, 2, 3} | | | 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 ⁴ T _c = -40°C (V) |
| BXRC-xxA1001-B-23 | 350 | 24.5 | 26.5 | 29.0 | -16 | 0.47 | 23.2 | 29.5 |
| | 700 | 26.5 | 29.0 | 31.2 | -16 | 0.59 | 25.2 | 32.2 |
| BXRC-xxA2001-C-23 | 500 | 29.9 | 32.3 | 34.7 | -17 | 0.22 | 28.5 | 35.8 |
| | 1050 | 32.0 | 35.1 | 37.9 | -17 | 0.28 | 30.6 | 39.0 |
| BXRC-xxA4001-F-23 | 1050 | 27.3 | 29.5 | 31.7 | -15 | 0.13 | 26.1 | 32.7 |
| | 2100 | 29.2 | 31.6 | 34.2 | -15 | 0.17 | 28.0 | 35.2 |
| BXRC-xxA10K1-L-23 | 2100 | 35.2 | 38.0 | 40.9 | -20 | 0.06 | 33.6 | 42.2 |
| | 4200 | 37.3 | 40.4 | 44.0 | -20 | 0.07 | 35.7 | 45.3 |

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.

Absolute Maximum Ratings

Table 6: Maximum Ratings

| Parameter | Maximum Rating | | | |
|------------------------------------------------|--------------------------------------------|-------------------|-------------------|-------------------|
| LED Junction Temperature | 150°C | | | |
| Storage Temperature | -40°C to +105°C | | | |
| Operating Case Temperature ^{1,2} | 105°C | | | |
| Soldering Temperature ³ | 350°C or lower for a maximum of 10 seconds | | | |
| | BXRC-xxA1001-B-23 | BXRC-xxA2001-C-23 | BXRC-xxA4001-F-23 | BXRC-xxA10K1-L-23 |
| Maximum Drive Current ¹ | 700 mA | 1050 mA | 2100 mA | 4200 mA |
| Maximum Peak Pulsed Drive Current ⁴ | 1500 mA | 1500 mA | 3000 mA | 6000 mA |
| Maximum Reverse Voltage ⁵ | -45V | -55 V | -55 V | -65 V |

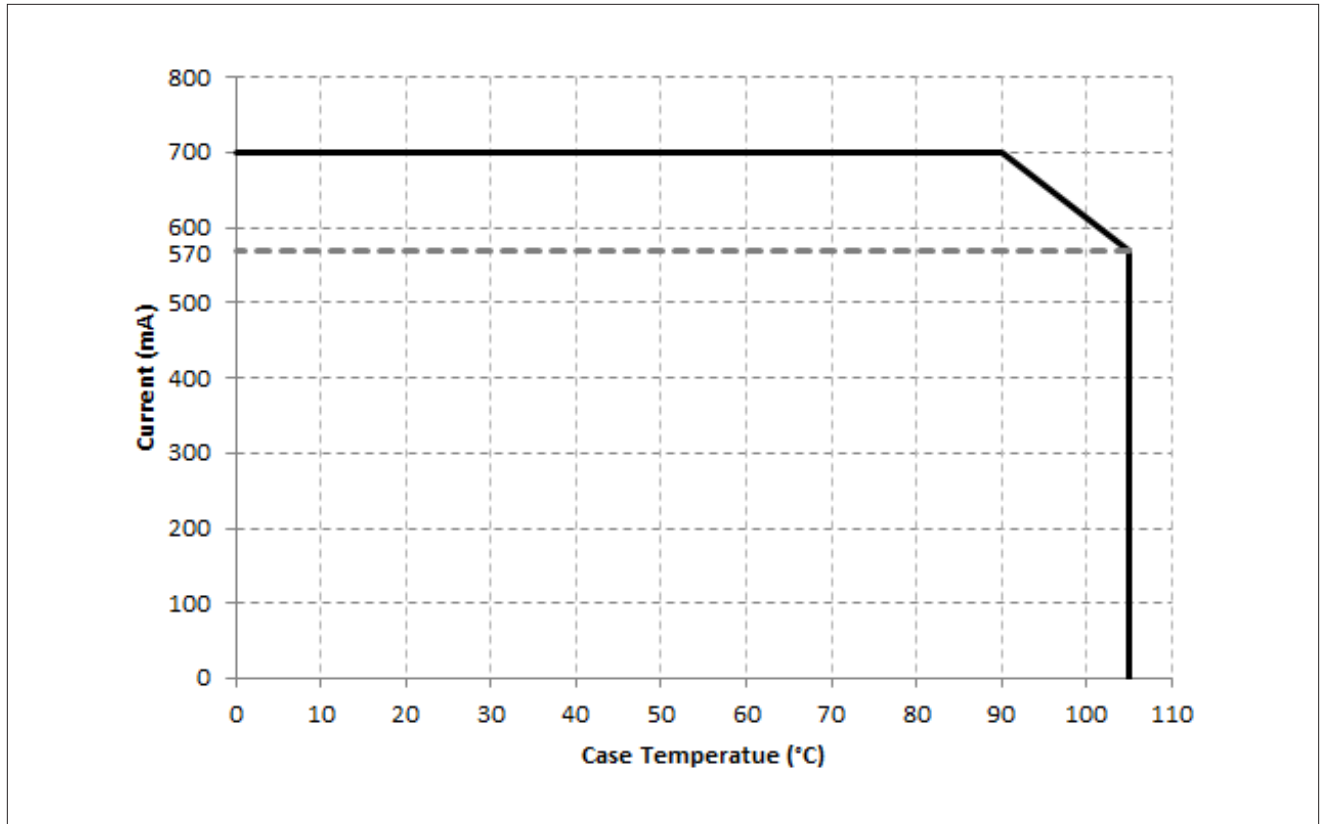
Notes for Table 6:

1. Please refer to Figures 1 and 2 for drive current derating curve for Vero 10 and Vero 29. Vero 13 and Vero 18 may be driven at 2 times nominal current upto 105°C.
2. For IEC 62717 requirement, please contact Bridgelux Sales Support.
3. See Bridgelux Application Note AN31, Assembly Considerations for Vero LED arrays, for more information.
4. Bridgelux recommends a maximum duty cycle of 10% and pulse width of 20ms when operating LED Arrays at the maximum peak pulsed current specified. Maximum peak pulsed current indicate values where the LED array 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

The maximum allowable drive current for the Vero 10 and Vero 29 product families is dependent on the operating case temperature. Please refer to the Product Feature Map (page 2) for the location of the T_c Point.

Figure 1: Vero 10 Drive Current Derating Curve

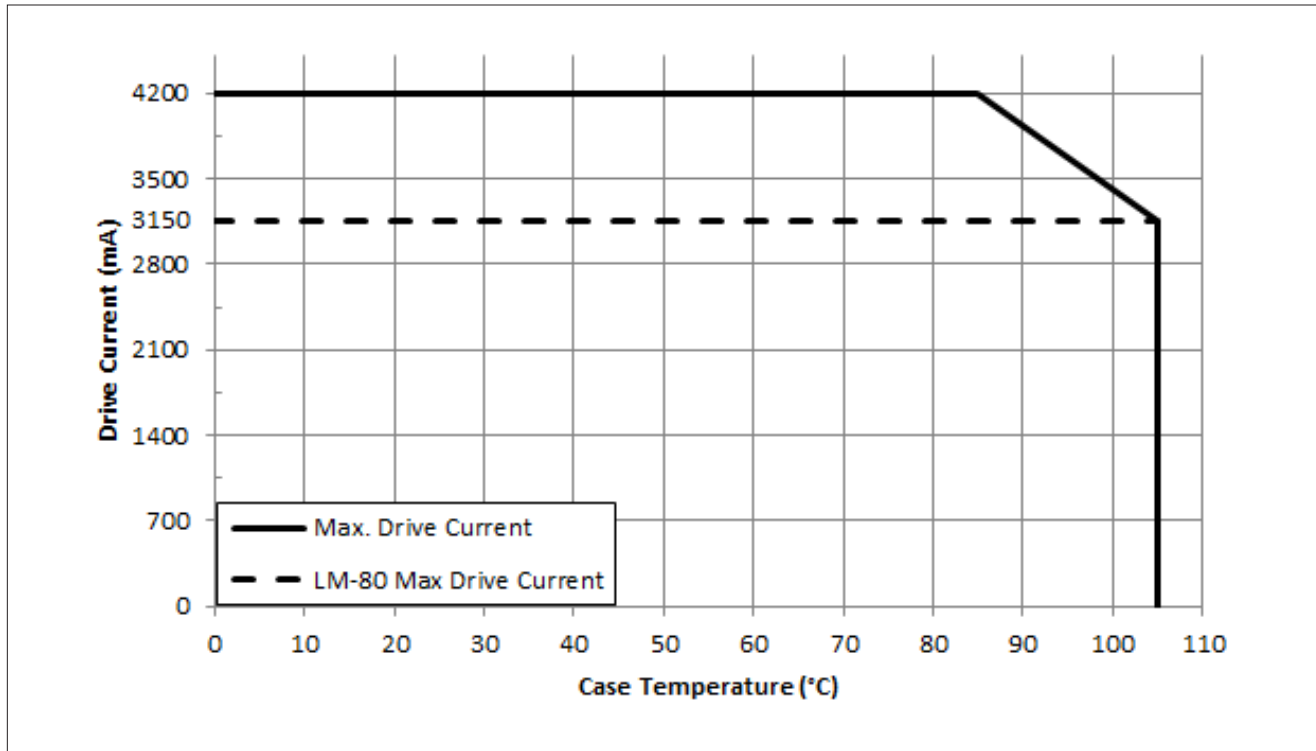


Notes for Figure 1:

1. In order to meet LM-80 lifetime projections Vero 10 may be driven up to 700mA at case temperatures up to 90°C. Operating conditions above case temperatures of 90°C driving conditions must follow the Vero 10 Drive Current Derating Curve.
2. Lumen maintenance (L70) and lifetime predictions are valid for drive current and case temperature conditions used for LM-80 testing as included in the applicable LM-80 test report for these products. Contact your Bridgelux sales representative for LM-80 report.

Performance Curves

Figure 2: Vero 29 Drive Current Derating Curve



Notes for Figure 2:

1. LM-80 Max Drive Current must not be exceeded in order to meet LM-80 lifetime projections.
2. Lumen maintenance (L70) and lifetime predictions are valid for drive current and case temperature conditions used for LM-80 testing as included in the applicable LM-80 test report for these products. Contact your Bridgelux sales representative for LM-80 report.

Performance Curves

Figure 3: **Vero 10 Drive Current vs. Forward Voltage**
($T_j=T_c=25^\circ\text{C}$)

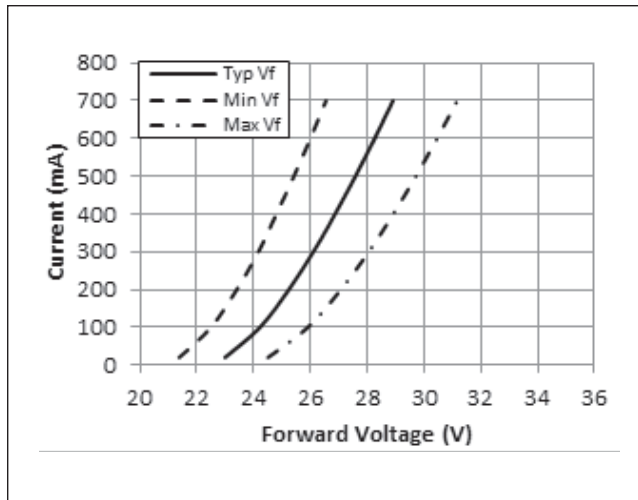


Figure 4: **Vero 13 Drive Current vs. Forward Voltage**
($T_j=T_c=25^\circ\text{C}$)

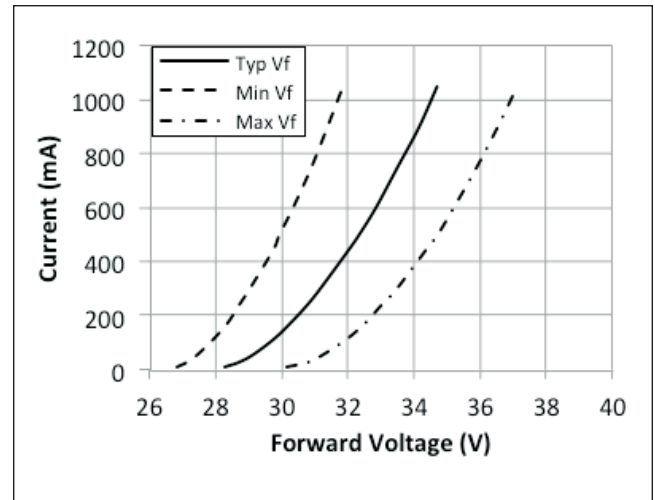


Figure 5: **Vero 18 Drive Current vs. Forward Voltage**
($T_j=T_c=25^\circ\text{C}$)

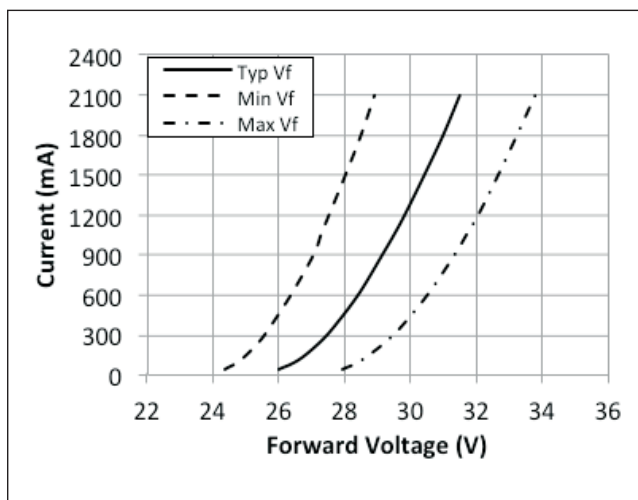
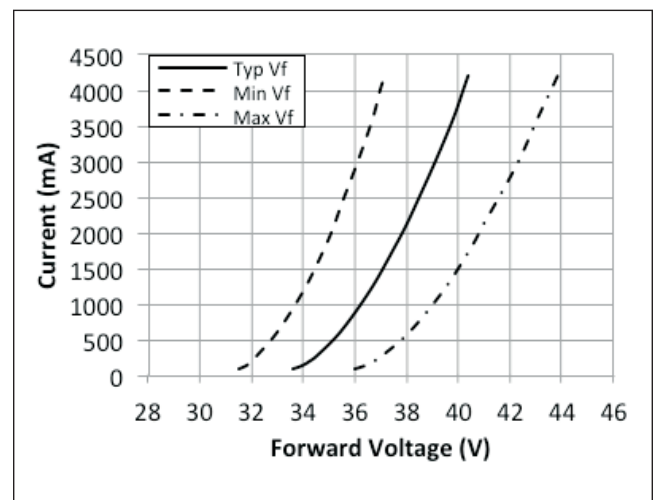


Figure 6: **Vero 29 Drive Current vs. Forward Voltage**
($T_j=T_c=25^\circ\text{C}$)



Performance Curves

Figure 7: Vero 10 Typical Relative Luminous Flux vs. Drive Current

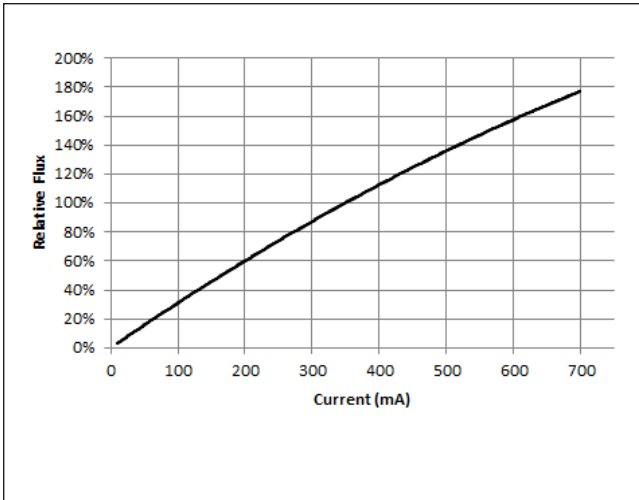


Figure 8: Vero 13 Typical Relative Luminous Flux vs. Drive Current

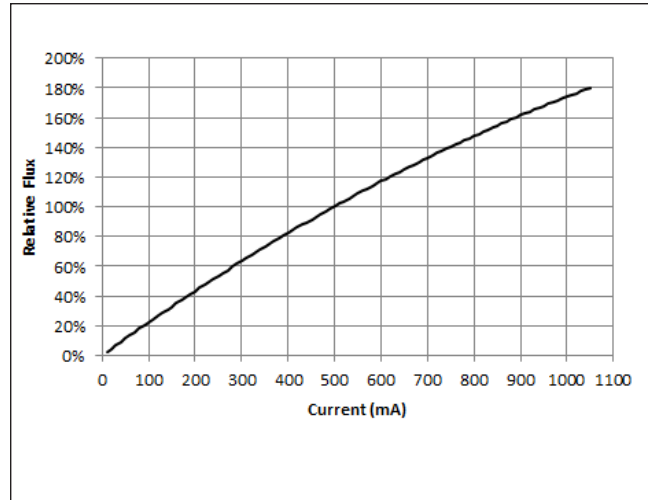


Figure 9: Vero 18 Typical Relative Luminous Flux vs. Drive Current

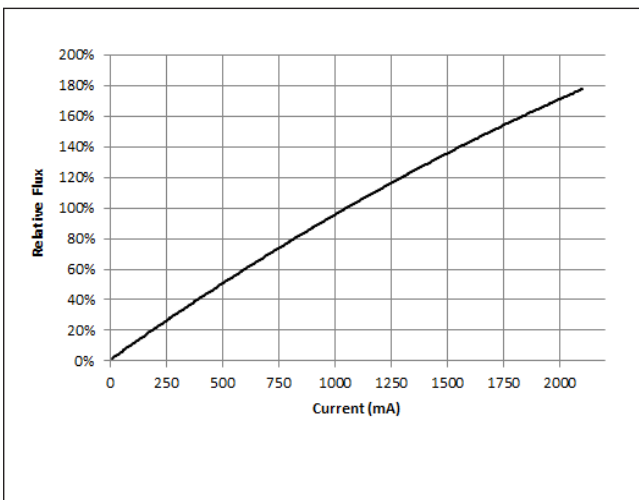
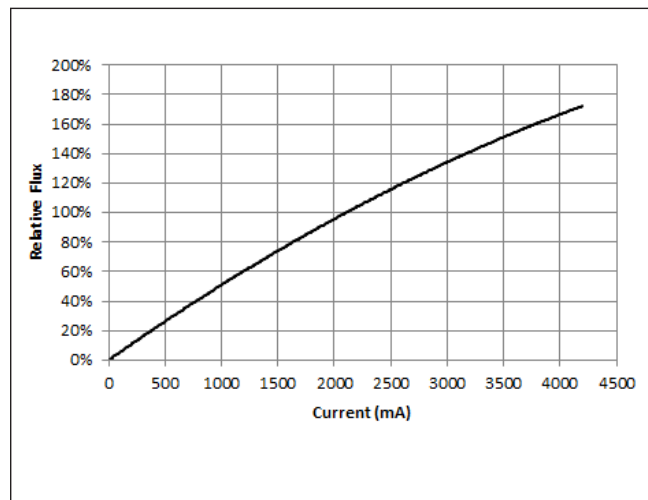


Figure 10: Vero 29 Typical Relative Luminous Flux vs. Drive Current



Performance Curves

Figure 11: Vero 10 Typical Relative Luminous Flux vs. Case Temperature¹

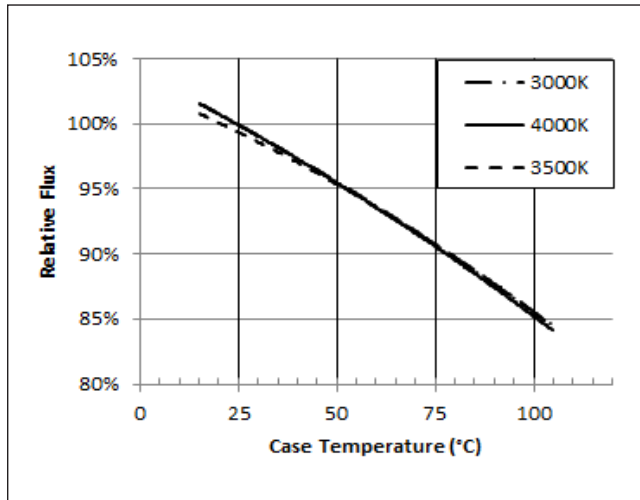


Figure 12: Vero 13 Typical Relative Luminous Flux vs. Case Temperature¹

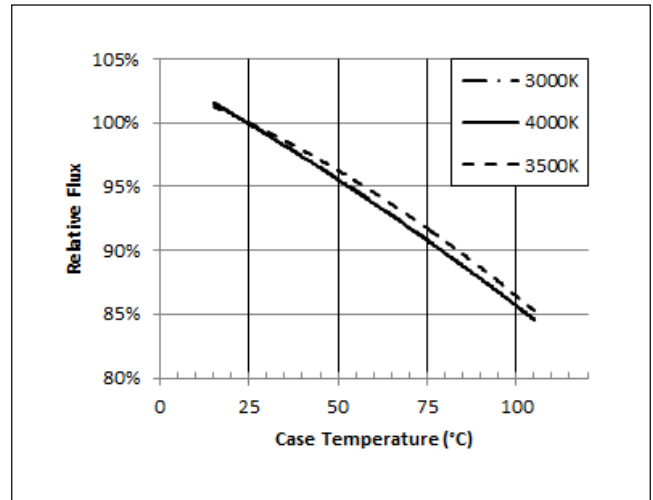


Figure 13: Vero 18 Typical Relative Luminous Flux vs. Case Temperature¹

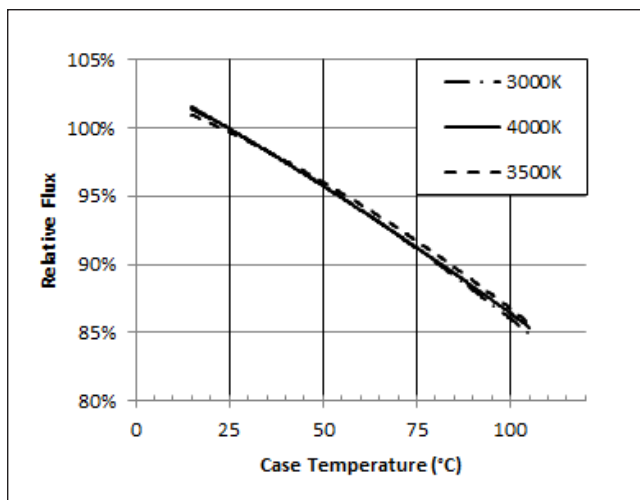
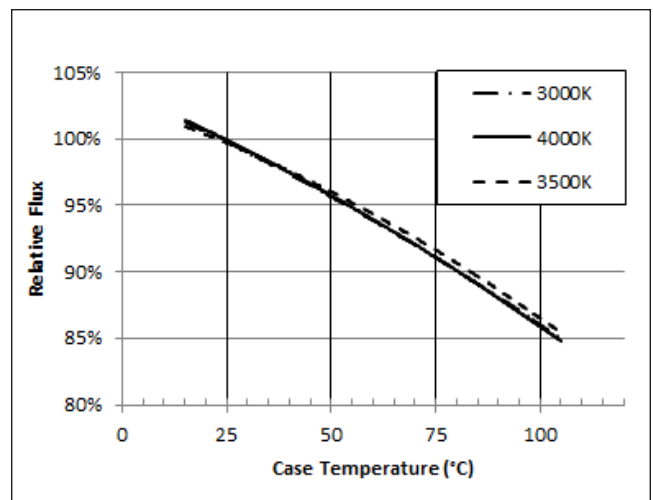


Figure 14: Vero 29 Typical Relative Luminous Flux vs. Case Temperature¹



Note for Figures 11-14:

1. Flux measurements taken under DC conditions.

Performance Curves

Figure 15: 3000K Class A Color Shift vs. Case Temperature¹

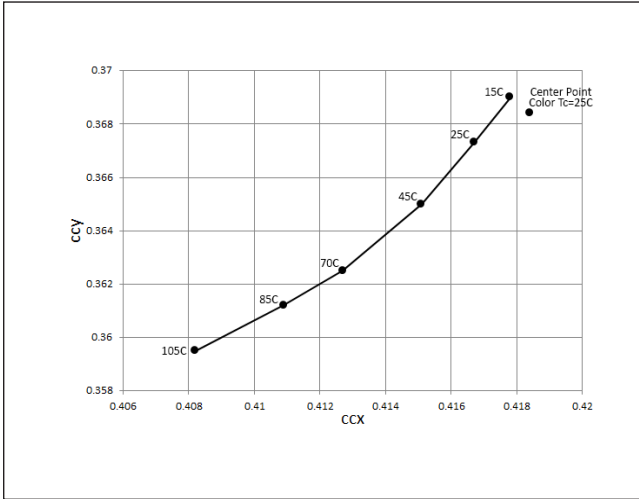


Figure 16: 3500K Class A Color Shift vs. Case Temperature¹

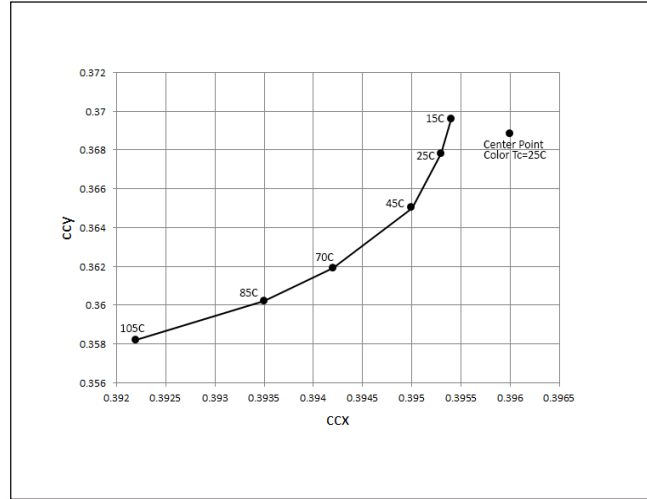
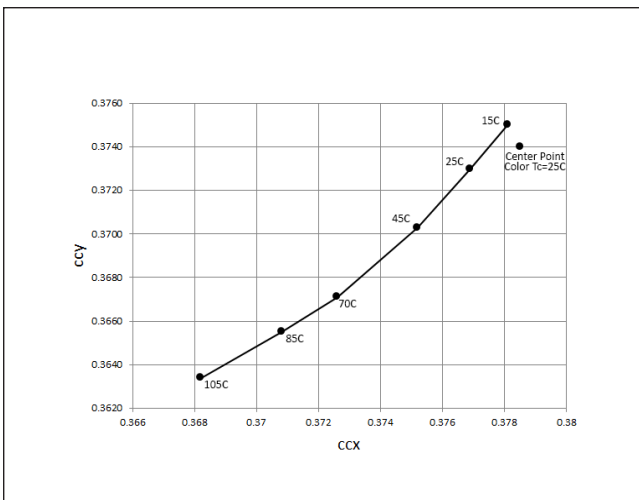


Figure 17: 4000K Class A Color Shift vs. Case Temperature¹

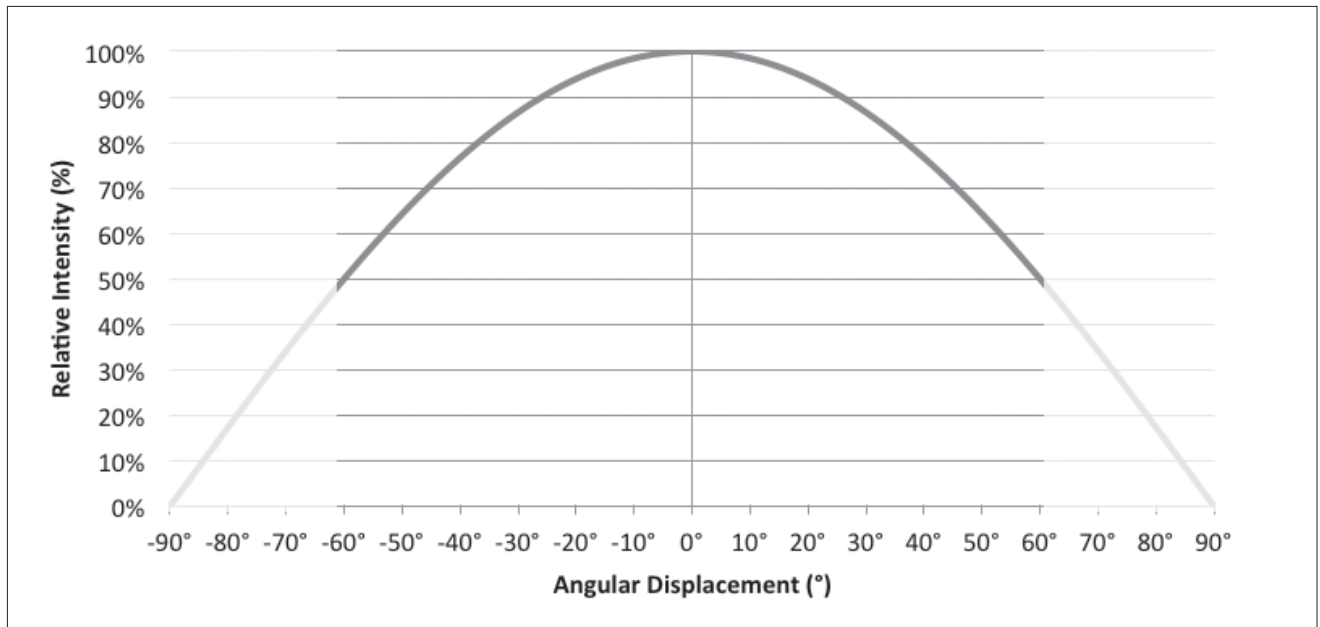


Note for Figures 15-17:

1. Measurements made under DC test conditions at the nominal drive current.
2. Typical color shift is shown with a tolerance of ± 0.002 .

Typical Radiation Pattern

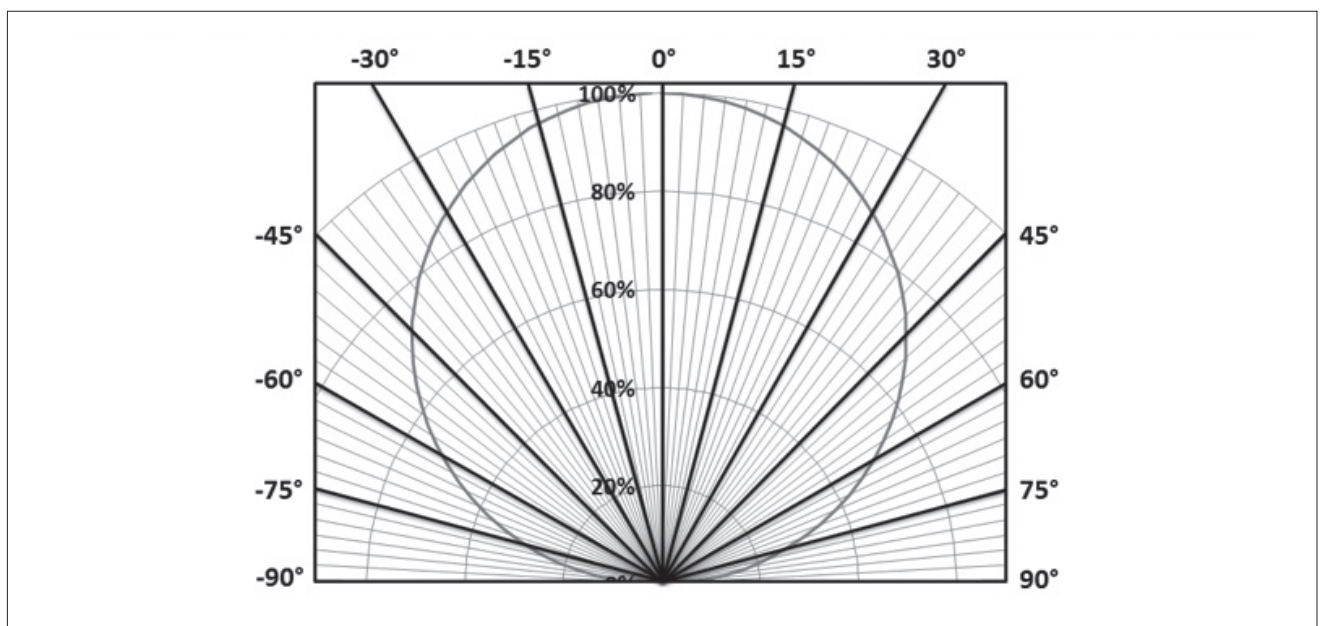
Figure 18: Typical Spatial Radiation Pattern



Notes for Figure 18:

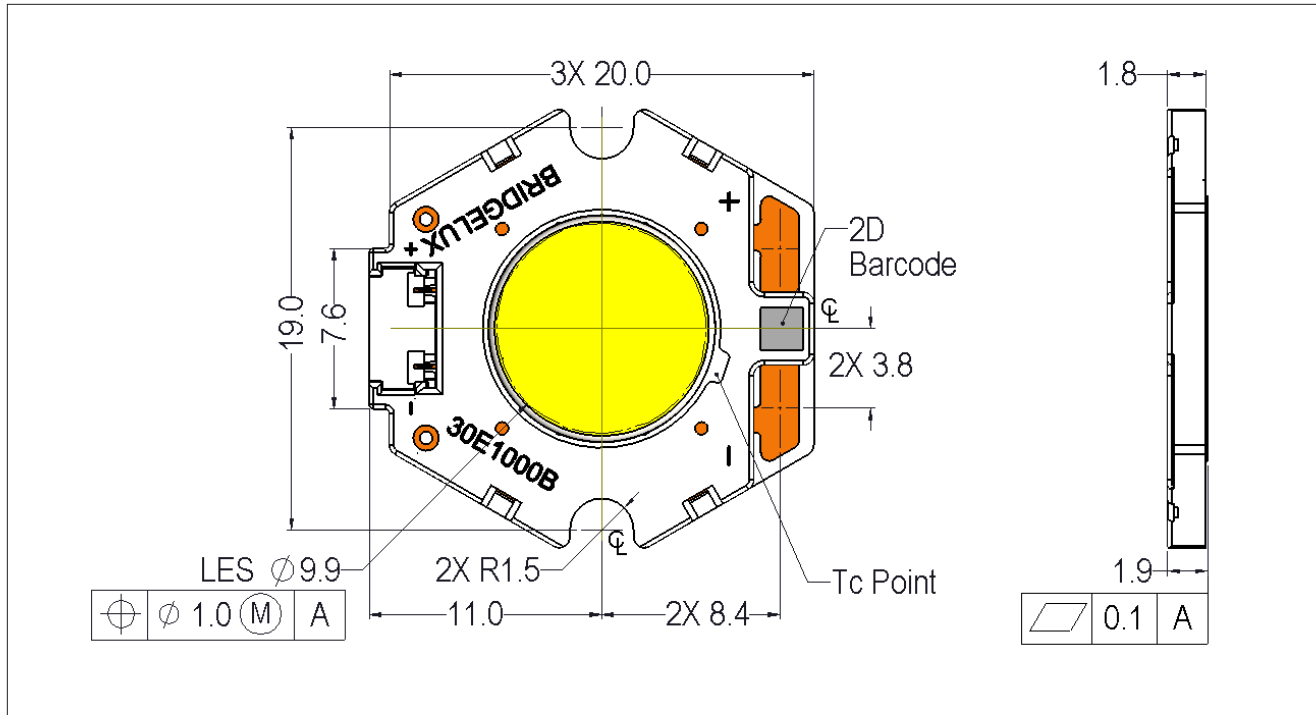
1. Typical viewing angle is 120°.
2. The viewing angle is defined as the off axis angle from the centerline where I_v is $\frac{1}{2}$ of the peak value.

Figure 19: Typical Polar Radiation Pattern



Mechanical Dimensions

Figure 20: Drawing for Vero 10 LED Array

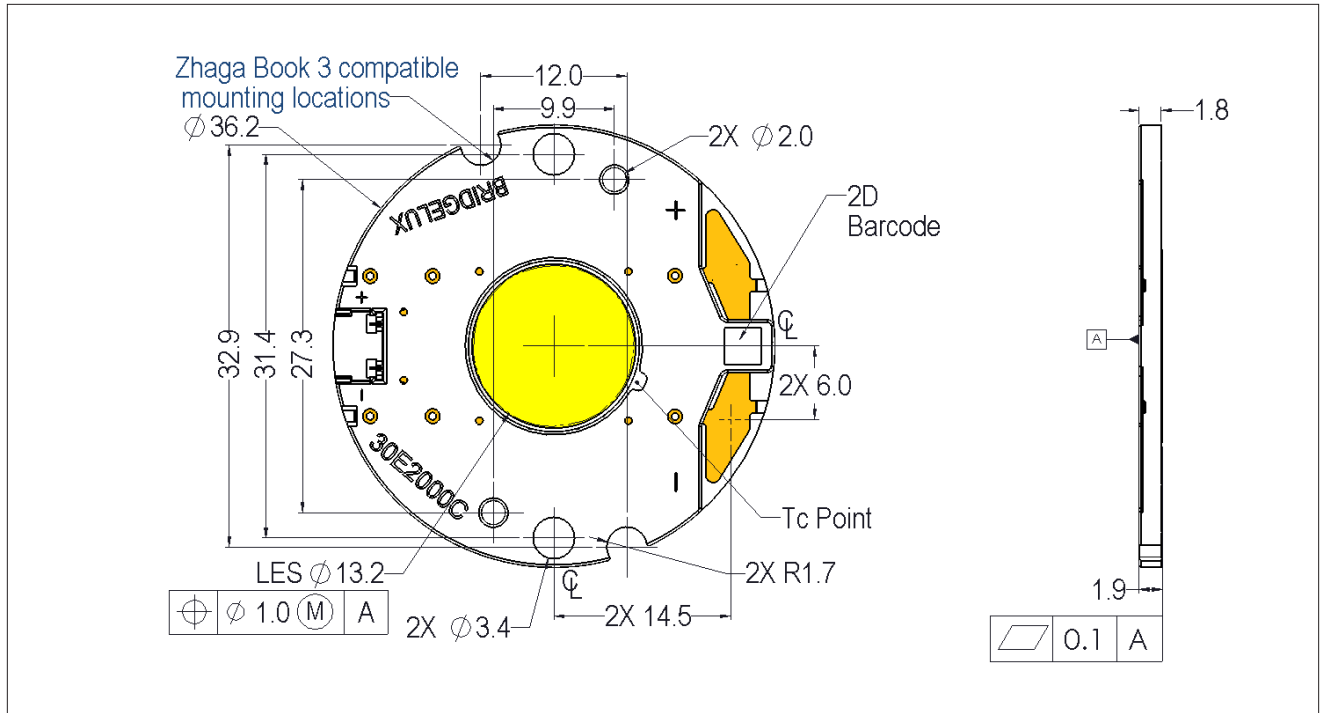


Notes for Figure 20:

1. Drawings are not to scale.
2. Drawing dimensions are in millimeters.
3. Unless otherwise specified, tolerances are $\pm 0.01\text{mm}$.
4. Mounting slots (2X) are for M2.5 screws.
5. Bridgelux recommends two tapped holes for mounting screws with $19.0 \pm 0.10\text{mm}$ 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. Solder pads and connector port are labeled "+" and "-" to denote positive and negative, respectively.
8. It is not necessary to provide electrical connections to both the solder pads and the connector port. Either set may be used depending on application specific design requirements.
9. Refer to Application Notes AN30 and AN31 for product handling, mounting and heat sink recommendations.
10. The optical center of the LED Array is nominally defined by the mechanical center of the array to a tolerance of $\pm 0.2\text{mm}$.
11. Bridgelux maintains a flatness of 0.10mm across the mounting surface of the array.

Mechanical Dimensions

Figure 21: Drawing for Vero 13 LED Array

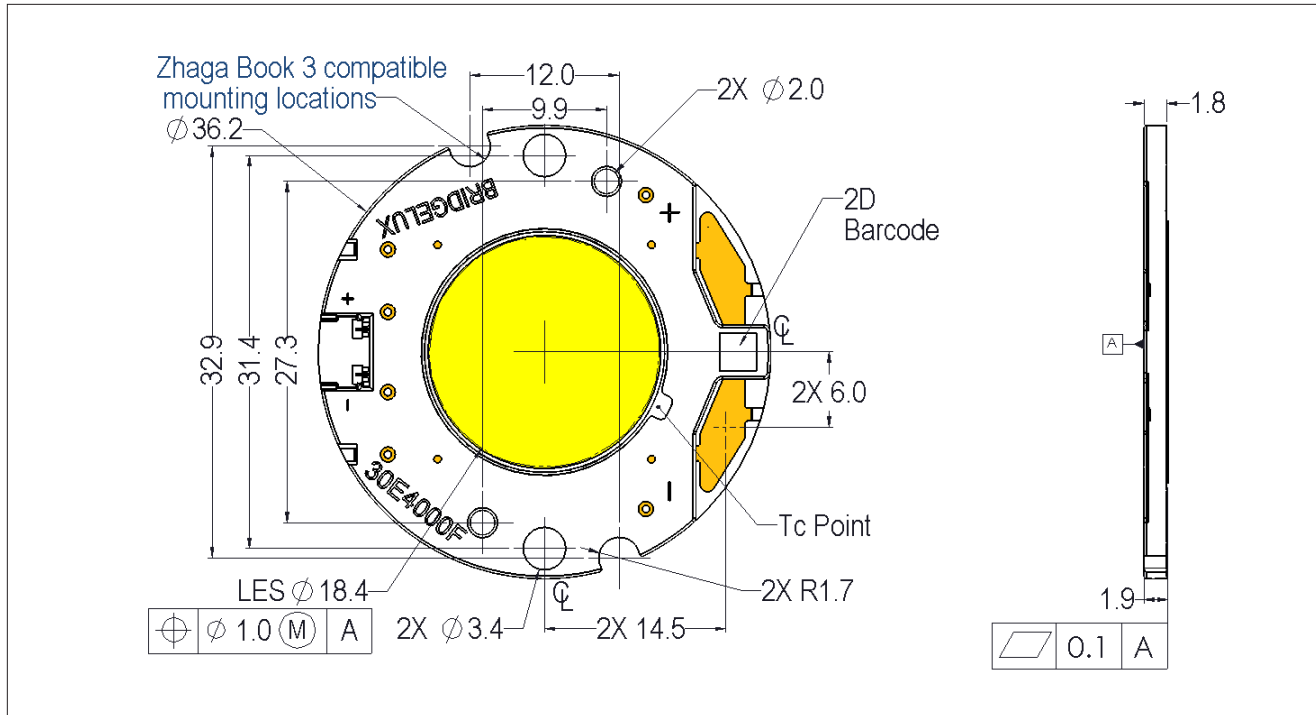


Notes for Figure 21:

1. Drawings are not to scale.
2. Drawing dimensions are in millimeters.
3. Unless otherwise specified, tolerances are $\pm 0.01\text{mm}$.
4. Mounting holes (2X) are for M2.5 screws.
5. Bridgelux recommends two tapped holes for mounting screws with $31.4 \pm 0.10\text{mm}$ 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. Solder pads and connector port are labeled "+" and "-" to denote positive and negative, respectively.
8. It is not necessary to provide electrical connections to both the solder pads and the connector port. Either set may be used depending on application specific design requirements.
9. Refer to Application Notes AN30 and AN31 for product handling, mounting and heat sink recommendations.
10. The optical center of the LED Array is nominally defined by the mechanical center of the array to a tolerance of $\pm 0.2\text{mm}$.
11. Bridgelux maintains a flatness of 0.10mm across the mounting surface of the array.

Mechanical Dimensions

Figure 22: Drawing for Vero 18 LED Array

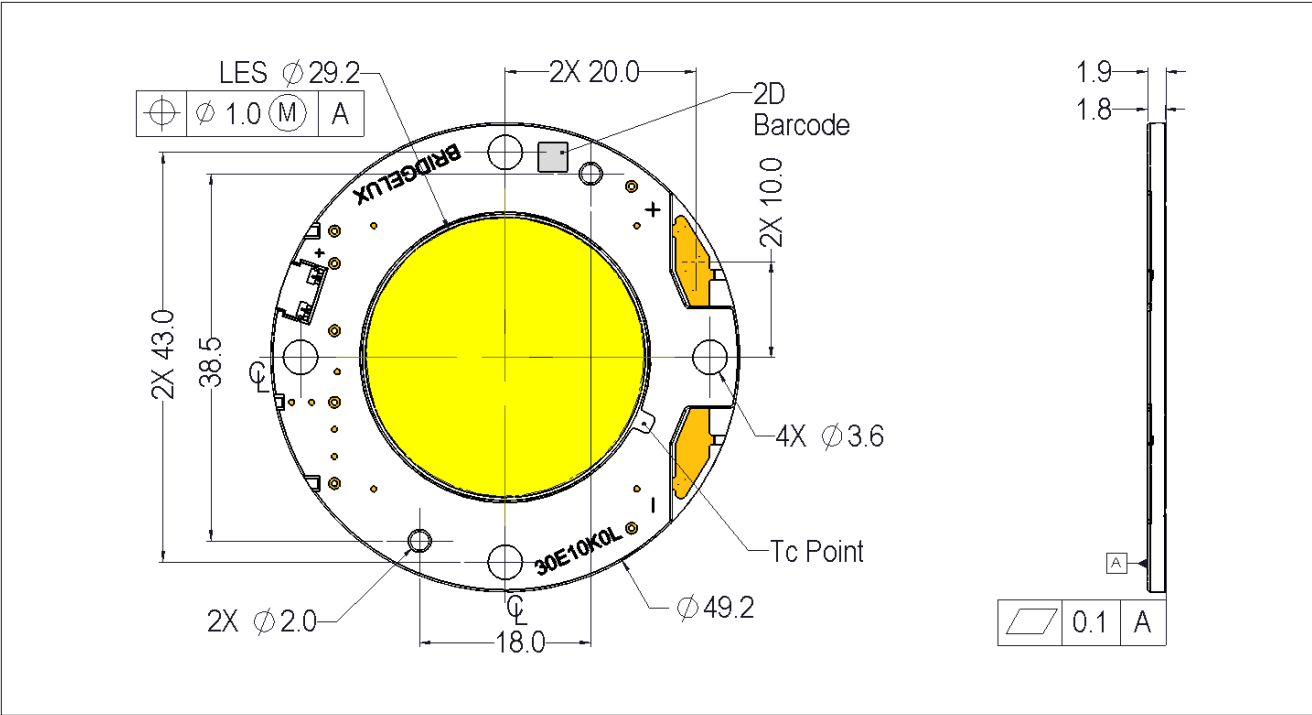


Notes for Figure 22:

1. Drawings are not to scale.
2. Drawing dimensions are in millimeters.
3. Unless otherwise specified, tolerances are ± 0.01 mm.
4. Mounting holes (2X) are for M2.5 screws.
5. Bridgelux recommends two tapped holes for mounting screws with 31.4 ± 0.10 mm 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. Solder pads and connector port are labeled "+" and "-" to denote positive and negative, respectively.
8. It is not necessary to provide electrical connections to both the solder pads and the connector port. Either set may be used depending on application specific design requirements.
9. Refer to Application Notes AN30 and AN31 for product handling, mounting and heat sink recommendations.
10. The optical center of the LED Array is nominally defined by the mechanical center of the array to a tolerance of ± 0.2 mm.
11. Bridgelux maintains a flatness of 0.10mm across the mounting surface of the array.

Mechanical Dimensions

Figure 23: Drawing for Vero 29 LED Array

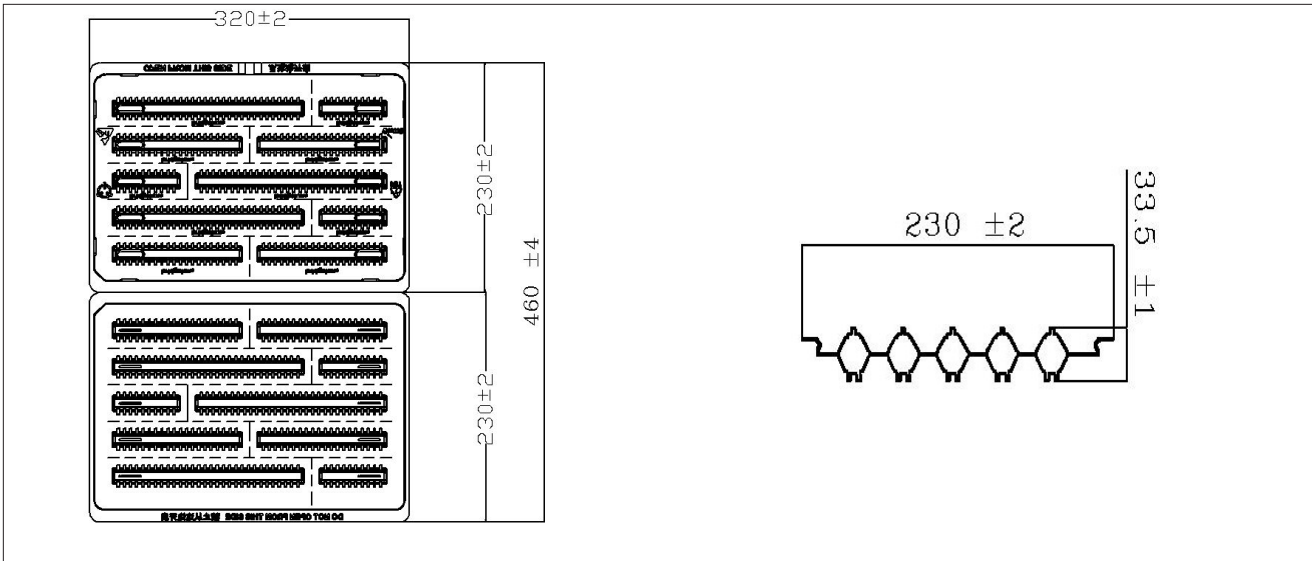


Notes for Figure 23:

1. Drawings are not to scale.
2. Drawing dimensions are in millimeters.
3. Unless otherwise specified, tolerances are $\pm 0.01\text{mm}$.
4. Mounting holes (2X) are for M3 screws.
5. Bridgelux recommends two tapped holes for mounting screws with $43.0 \pm 0.10\text{mm}$ 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. Solder pads and connector port are labeled "+" and "-" to denote positive and negative, respectively.
8. It is not necessary to provide electrical connections to both the solder pads and the connector port. Either set may be used depending on application specific design requirements.
9. Refer to Application Notes AN30 and AN31 for product handling, mounting and heat sink recommendations.
10. The optical center of the LED Array is nominally defined by the mechanical center of the array to a tolerance of $\pm 0.2\text{mm}$.
11. Bridgelux maintains a flatness of 0.10mm across the mounting surface of the array.

Packaging and Labeling

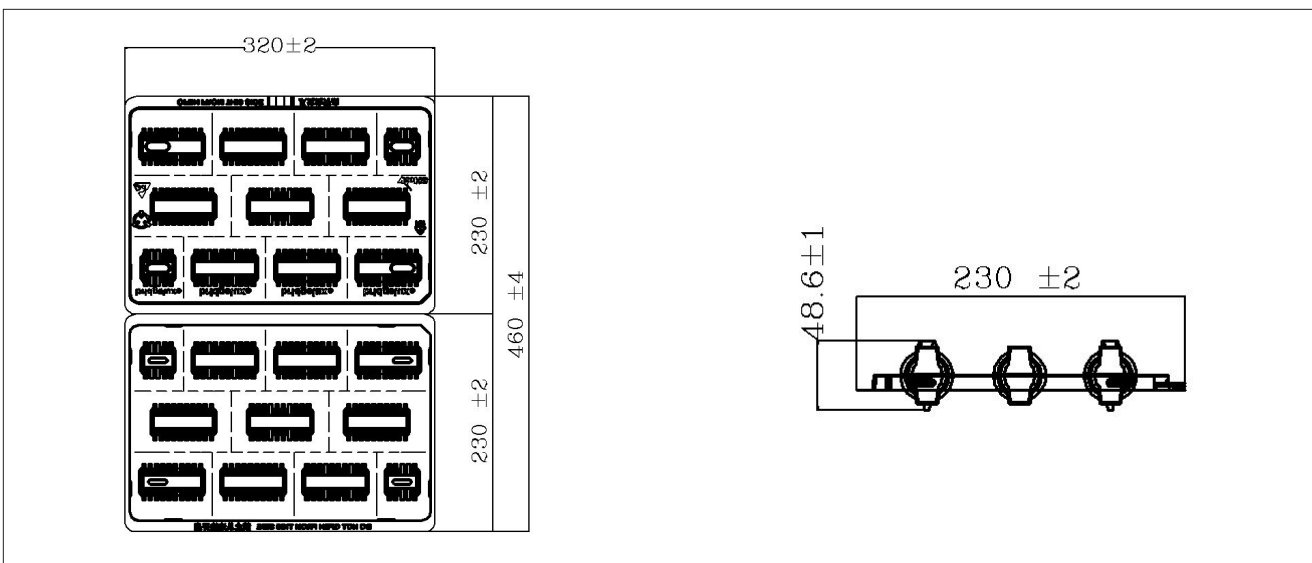
Figure 24: Drawing for Vero 10 Packaging Tray



Notes for Figure 24:

1. Dimensions are in millimeters.
2. Drawing is not to scale.

Figure 25: Drawing for Vero 13 Packaging Tray

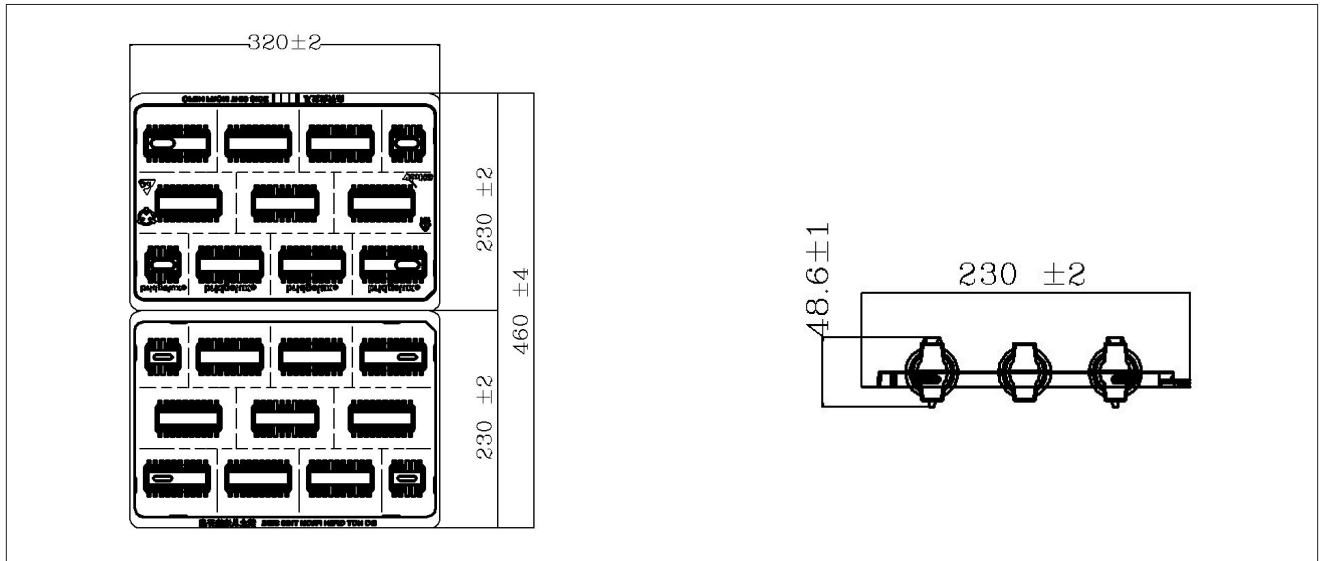


Notes for Figure 25:

1. Dimensions are in millimeters.
2. Drawing is not to scale.

Packaging Labeling

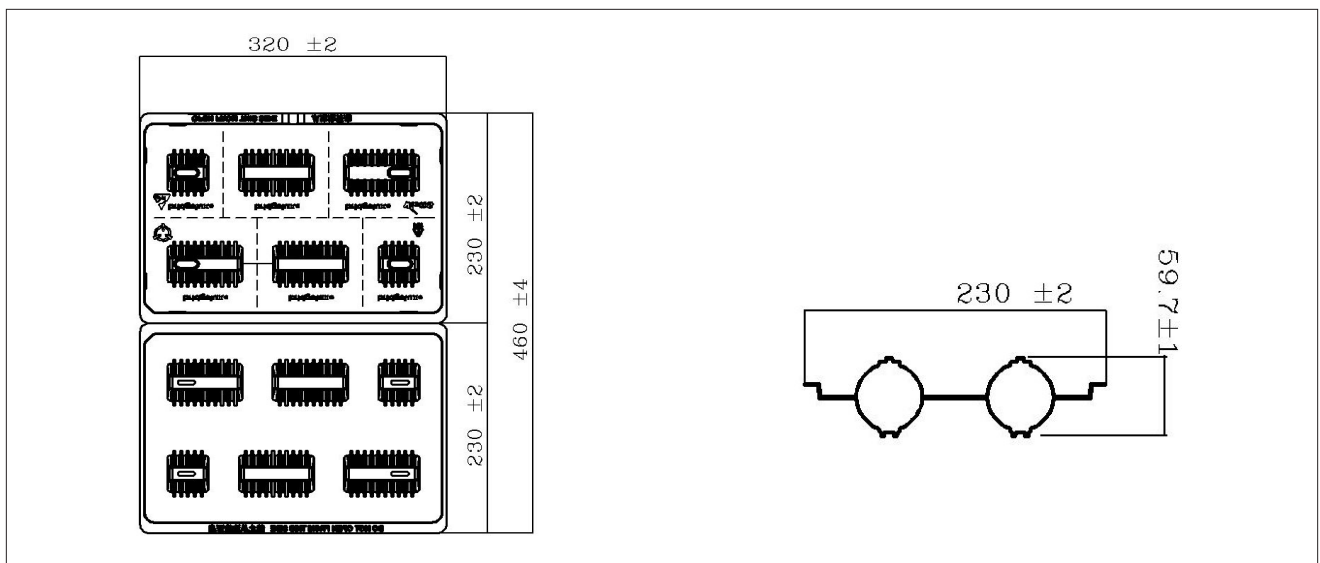
Figure 26: Drawing for Vero 18 Packaging Tray



Notes for Figure 26:

1. Dimensions are in millimeters.
2. Drawing is not to scale.

Figure 27: Drawing for Vero 29 Packaging Tray

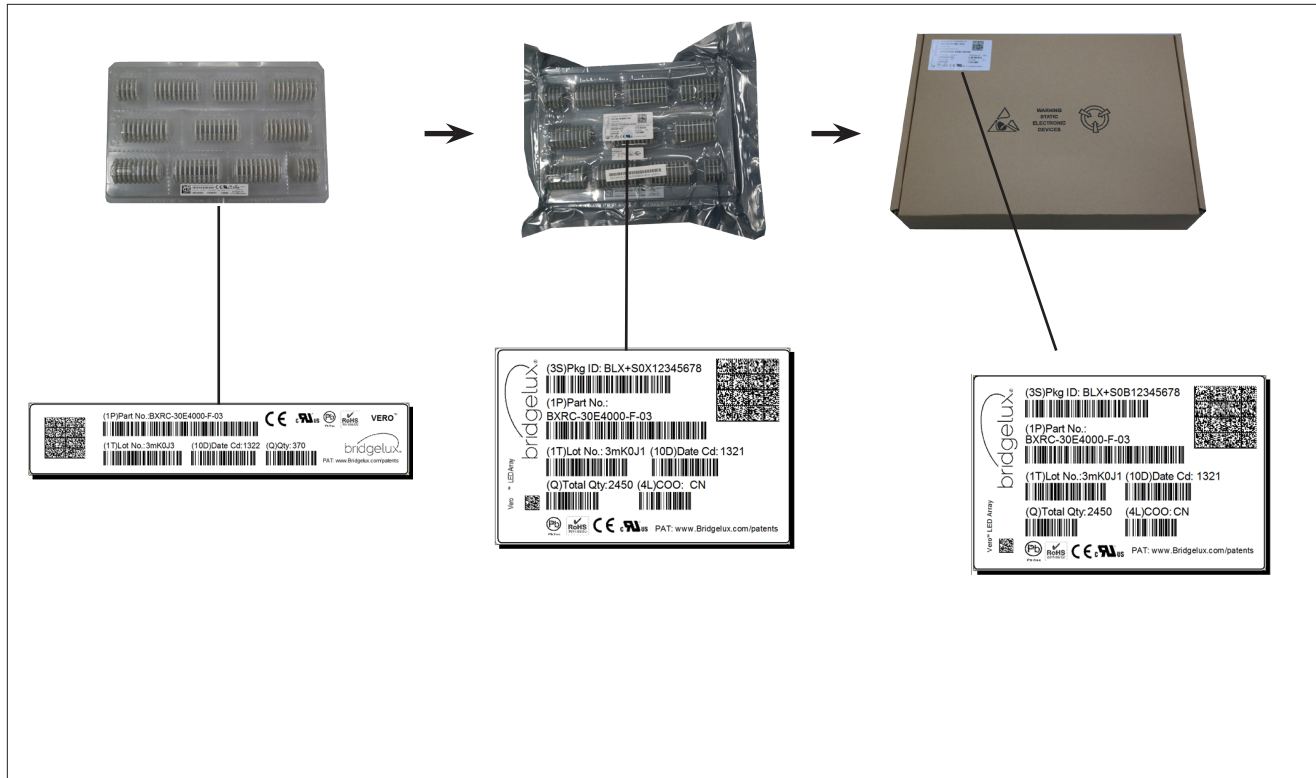


Notes for Figure 27:

1. Dimensions are in millimeters.
2. Drawing is not to scale.

Packaging and Labeling

Figure 28: Vero Series Packaging and Labeling



Notes for Figure 33:

1. Each tray holds for Vero 10: 200 COBs, Vero 13: 100 COBs, Vero 18: 100 COBs, Vero 29: 50 COBs.
2. Each tray is vacuum sealed in an anti-static bag and placed in its own box.
3. Each tray, bag and box is to be labeled as shown above.

Figure 29: Product Labeling

Bridgelux COB arrays have laser markings on the back side of the substrate to help with product identification. In addition to the product identification markings, Bridgelux COB arrays also contain markings for internal Bridgelux manufacturing use only. The image below shows which markings are for customer use and which ones are for Bridgelux internal use only. The Bridgelux internal manufacturing markings are subject to change without notice, however these will not impact the form, function or performance of the COB array.



Design Resources

Application Notes

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

Optical Source Models

Optical source models and ray set files are available for all Bridgelux products. For a list of available formats, visit www.bridgelux.com.

3D CAD Models

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

Precautions

CAUTION: CHEMICAL EXPOSURE HAZARD

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

CAUTION: EYE SAFETY

Eye safety classification for the use of Bridgelux Vero LED arrays is in accordance with IEC specification EN62471: Photobiological Safety of Lamps and Lamp Systems. Vero LED arrays are classified as Risk Group 1 (Low Risk) when operated at or below the maximum drive current. Please use appropriate precautions. It is important that employees working with LEDs are trained to use them safely.

CAUTION: RISK OF BURN

Do not touch the Vero LED array during operation. Allow the array to cool for a sufficient period of time before handling. The Vero 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 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.

For more information about the company, please visit
bridgelux.com
twitter.com/Bridgelux
facebook.com/Bridgelux
WeChat ID: BridgeluxInChina



101 Portola Avenue
Livermore, CA 94551
Tel (925) 583-8400
Fax (925) 583-8410
www.bridgelux.com

© 2016 Bridgelux, Inc. All rights reserved 2016. Product specifications are subject to change without notice. Bridgelux, the Bridgelux stylized logo design and Vero are registered trademarks, and Decor Series is a trademark of Bridgelux, Inc. All other trademarks are the property of their respective owners.

Bridgelux Vero Decor Series Class A Product Data Sheet DS35 Rev C (03/2016)

单击下面可查看定价，库存，交付和生命周期等信息

[>>Bridgelux\(普瑞光电\)](#)