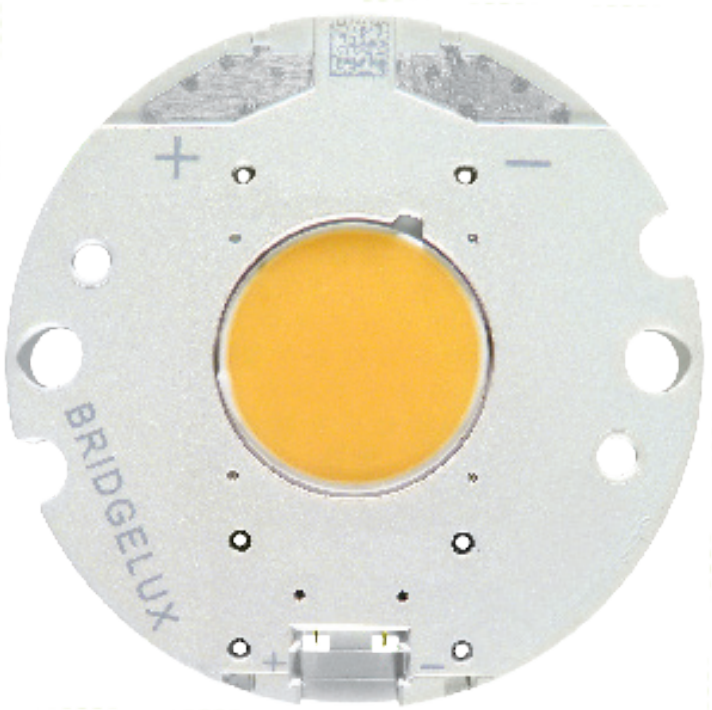


Bridgelux® Vero13 F90 Array

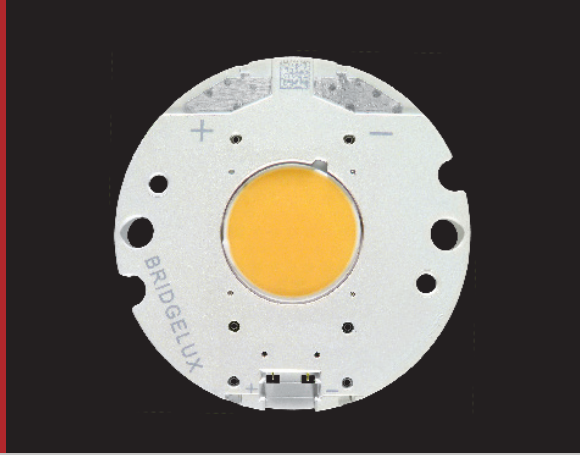
Product Data Sheet DS436

TEN YEAR Warranty™

BXRC-27G | 30G | 35G | 40G | 50G

Introduction

Vero® F90



The Vero® Series is a revolutionary advancement in chip on board (COB) light source technology and innovation, simplifying the luminaire design and manufacturing processes. Vero Chip on Board (COB) LED arrays are available in four LES configurations, engineered to enable new degrees of flexibility and reliability over a broad range of electrical currents. Vero arrays deliver increased lumen density to enable improved beam control and precision lighting with 2 and 3 SDCM color control standard for clean and consistent uniform lighting.

Vero products include an onboard connector port that enables a solder-free electrical interconnect, and simple mounting features for plug-and-play installation.

The F90 Vero Series COB is a high efficacy product that uses narrow band red phosphor to significantly improve the spectrum efficacy. The improved spectrum efficacy results in the 90 CRI product of the F90 Series delivering better or equivalent efficacy as that of our traditional 80 CRI Vero Series product.

Features

- Efficacy of 188 lm/W typical, 3000K 90 CRI
- Wide selection of CCT options (2700K-5000K) with minimum 90 CRI options
- Uniform high-quality illumination
- 2 and 3 SDCM binning options (2700K – 4000K)
- 3 and 4 SDCM binning options (5000K)
- Forward voltage bin codes and backside marking
- Instant light with unlimited dimming
- Thermally isolated solder pads
- 10-Year warranty

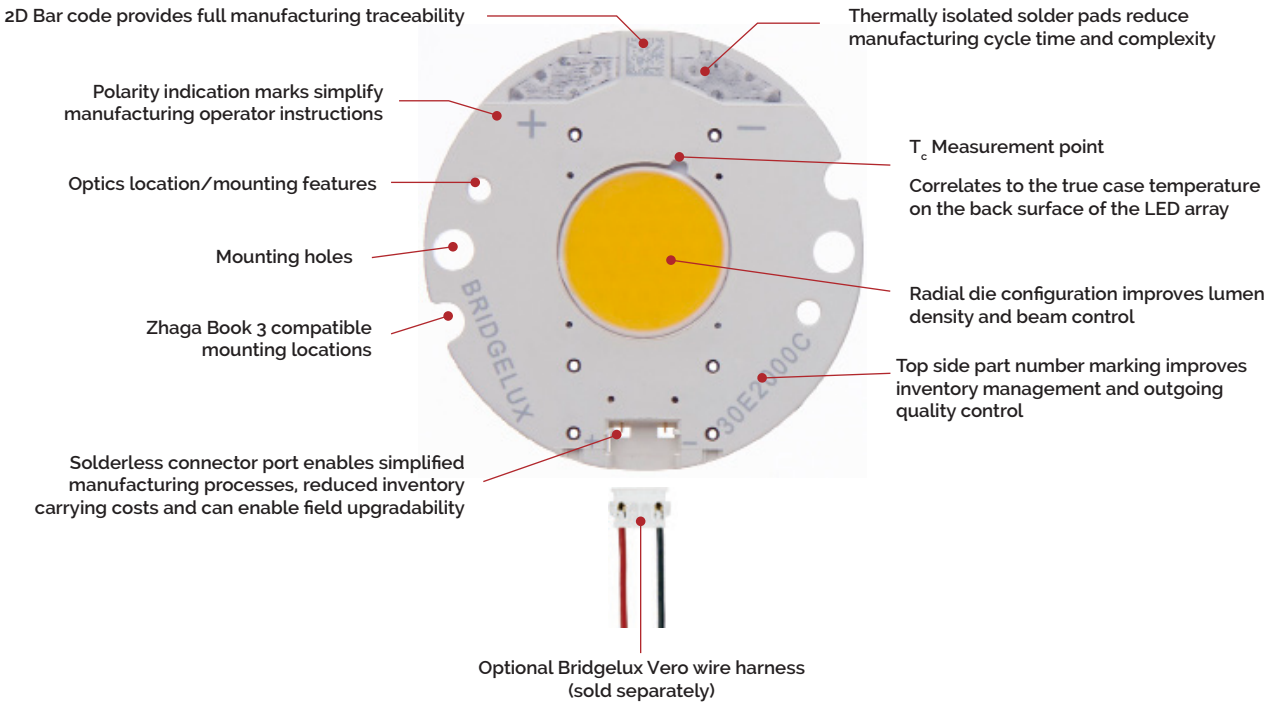
Benefits

- Solder free installation and field upgradability
- Improved inventory management and quality control
- Enables high efficiency lighting systems and lower operating costs
- Supports the trend toward luminaire miniaturization and delivers enhanced optical control
- Design flexibility for a broad range of lighting applications
- Clean white light without pixelation
- Uniform consistent white light
- Design flexibility for multi-source applications
- Enhanced ease of use and installation

Contents

Product Feature Map

Vero 13 is the second smallest form factor in the Vero family of the next generation solid state light sources. In addition to delivering the performance and light quality required for many lighting applications, Vero 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 Series family of products.



Product Nomenclature

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

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

BXRC – 30 G 20F0 – C – 8 3

Product Family

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

Minimum CRI
G = 90 CRI min

Flux Indicator
20XX = 2000 lm

Series
F0=F90

Array Configuration

Gen 8

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

Product Selection Guide

The following product configurations are available:

Table 1: Selection Guide, Pulsed Measurement Data (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-27G20F0-B-8x	2700	90	350	2211	1989	34.3	12.0	184
BXRC-27G20F0-C-8x	2700	90	500	3146	2832	34.3	17.1	184
BXRC-30G20F0-B-8x	3000	90	350	2256	2030	34.3	12.0	188
BXRC-30G20F0-C-8x	3000	90	500	3210	2889	34.3	17.1	187
BXRC-35G20F0-B-8x	3500	90	350	2278	2050	34.3	12.0	190
BXRC-35G20F0-C-8x	3500	90	500	3242	2918	34.3	17.1	189
BXRC-40G20F0-B-8x	4000	90	350	2301	2071	34.3	12.0	192
BXRC-40G20F0-C-8x	4000	90	500	3275	2947	34.3	17.1	191
BXRC-50G20F0-B-8x	5000	90	350	2233	2010	34.3	12.0	186
BXRC-50G20F0-C-8x	5000	90	500	3178	2860	34.3	17.1	185

Table 2: Selection Guide, Stabilized DC Test Performance (T_c = 85˚C)[4,5,6]

Part Number	Nominal CCT[1] (K)	CRI[2]	Nominal Drive Current[3] (mA)	Typical DC Flux[4,5] T_c = 85°C (lm)	Minimum DC Flux[6] T_c = 85°C (lm)	Typical V_f (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRC-27G20F0-B-8x	2700	90	350	2034	1830	33.4	11.7	174
BXRC-27G20F0-C-8x	2700	90	500	2894	2605	33.4	16.7	173
BXRC-30G20F0-B-8x	3000	90	350	2075	1868	33.4	11.7	177
BXRC-30G20F0-C-8x	3000	90	500	2954	2658	33.4	16.7	177
BXRC-35G20F0-B-8x	3500	90	350	2096	1886	33.4	11.7	179
BXRC-35G20F0-C-8x	3500	90	500	2983	2685	33.4	16.7	178
BXRC-40G20F0-B-8x	4000	90	350	2117	1905	33.4	11.7	181
BXRC-40G20F0-C-8x	4000	90	500	3013	2711	33.4	16.7	180
BXRC-50G20F0-B-8x	5000	90	350	2054	1849	33.4	11.7	175
BXRC-50G20F0-C-8x	5000	90	500	2924	2632	33.4	16.7	175

Notes for Table 1 & 2:

1. Nominal CCT as defined by ANSI C78.377-2011.
2. CRI values are minimums and tested at T_j = T_c = 85˚C. Minimum R9 value for 90 CRI products is 50.Bridgelux maintains a ± 3 tolerance on CRI and R9 values.
3. Drive current is referred to as nominal drive current.
4. Products tested under pulsed condition (10ms pulse width) at nominal test current where T_j (junction temperature) = T_c (case temperature) = 25˚C.
5. Typical performance values are provided as a reference only and are not a guarantee of performance.
6. Bridgelux maintains a ±7% tolerance on flux measurements.
7. Minimum flux values at the nominal test current are guaranteed by 100% test.

European Product Registry for Energy Labeling

The European Product Registry for Energy Labeling (EPREL) is defined in the EU Regulation 2017/1369 to provide important energy efficiency information to consumers. Together with Energy Labeling Regulation ELR (EU) 2019/2015 which was amended by regulation (EU) 2021/340 for energy labelling of light sources, manufacturers are required to declare an energy class based on key technical specifications from each of their product and register it in an open data base managed by EPREL It is now a legal requirement for a vendor of light sources to upload information about their products into the EPREL database before placing these products on the market in the EU.

Table 3 below provides a list of part numbers that are in compliance with ELR and are currently listed in the EPREL database.

At Bridgelux, we are fully committed to supplying products that are compliant with pertinent laws, rules, and obligation imposed by relevant government bodies including the European Energy Labeling regulation. Customers can use these products with full confidence for any projects that fall under the ELR.

Table 3: Part numbers registered in European Product Registry for Energy Labeling

PART NUMBER[1]	CCT (K)	CRI	Current[2] (mA)	Vf (V)	Useful flux[3] (Φuse) at 85C (lm)	Power (W)	Efficacy (lm/W)	Energy efficiency class[4] 	Registration No	URL to Product Information Sheet in EPREL Database
BXRC-27G20F0-B-83	2700	90	900	38.6	4597	35	132	E	1332538	https://eprel.ec.europa.eu/qr/1332538
BXRC-27G20F0-C-83	2700	90	1260	38.0	6422	48	134	E	1332539	https://eprel.ec.europa.eu/qr/1332539
BXRC-30G20F0-B-83	3000	90	900	38.6	4691	35	135	E	1332542	https://eprel.ec.europa.eu/qr/1332542
BXRC-30G20F0-C-83	3000	90	1260	38.0	6553	48	137	E	1332543	https://eprel.ec.europa.eu/qr/1332543
BXRC-35G20F0-B-83	3500	90	900	38.6	4738	35	136	E	1332546	https://eprel.ec.europa.eu/qr/1332546
BXRC-35G20F0-C-83	3500	90	1260	38.0	6619	48	138	E	1332547	https://eprel.ec.europa.eu/qr/1332547
BXRC-40G20F0-B-83	4000	90	900	38.6	4786	35	138	E	1332550	https://eprel.ec.europa.eu/qr/1332550
BXRC-40G20F0-C-83	4000	90	1260	38.0	6684	48	140	E	1332551	https://eprel.ec.europa.eu/qr/1332551
BXRC-50G20F0-B-84	5000	90	900	38.6	4644	35	134	E	1367050	https://eprel.ec.europa.eu/qr/1367050
BXRC-50G20F0-C-84	5000	90	1260	38.0	6488	48	136	E	1367051	https://eprel.ec.europa.eu/qr/1367051

Notes for Table 3:

1. All device listed here must be disposed as e-waste upon its end of life according to local country guideline in each country.
2. For information on performance values at alternative drive conditions. please refer to the Product Selection Guide, Absolute Maximum Rating Table and Performance Curves in this data sheet.
3. For a definition of useful luminous flux **(Φuse),** please see the ELR regulations at https://tinyurl.com/4b6zvt4m.
4. EPREL requires an arrow symbol containing the letter of the energy efficiency class to be displayed. on technical promotional material. Refer to this energy efficiency class column for specific energy efficiency class on each part number.

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 Figures 1 & 2 and the flux vs. current characteristics shown in Figures 3 & 4. The performance at commonly used drive currents is summarized in Table 4.

Table 4: Product Performance at Commonly Used Drive Currents

Part Number	CRI	Drive Current[1] (mA)	Typical V_f T_c = 25°C (V)	Typical Power T_c = 25°C (W)	Typical Flux[2] T_c = 25°C (lm)	Typical DC Flux[3] T_c = 85°C (lm)	Typical Efficacy T_c = 25°C (lm/W)
BXRC-27G20F0-B-8x	90	175	33.0	5.8	1111	1040	192
		260	33.6	8.7	1652	1534	189
		350	**34.3**	**12.0**	**2211**	**2034**	**184**
		450	35.0	15.7	2812	2561	179
		700	36.6	25.6	4233	3757	165
		900	37.7	34.0	5283	4591	156
BXRC-27G20F0-C-8x	90	250	33.0	8.2	1600	1498	194
		375	33.6	12.6	2401	2228	190
		500	**34.3**	**17.1**	**3146**	**2894**	**184**
		630	34.9	22.0	3968	3617	180
		1000	36.6	36.6	6081	5398	166
		1260	37.7	47.5	7454	6490	157
BXRC-30G20F0-B-8x	90	175	33.0	5.8	1134	1061	196
		260	33.6	8.7	1686	1565	193
		350	**34.3**	**12.0**	**2256**	**2075**	**188**
		450	35.0	15.7	2870	2614	182
		700	36.6	25.6	4320	3834	169
		900	37.7	34.0	5391	4685	159
BXRC-30G20F0-C-8x	90	250	33.0	8.2	1633	1528	198
		375	33.6	12.6	2450	2274	194
		500	**34.3**	**17.1**	**3210**	**2954**	**187**
		630	34.9	22.0	4049	3691	184
		1000	36.6	36.6	6206	5508	170
		1260	37.7	47.5	7606	6622	160
BXRC-35G20F0-B-8x	90	175	33.0	5.8	1145	1072	198
		260	33.6	8.7	1703	1581	195
		350	**34.3**	**12.0**	**2278**	**2096**	**190**
		450	35.0	15.7	2898	2640	184
		700	36.6	25.6	4363	3872	170
		900	37.7	34.0	5445	4732	160
BXRC-35G20F0-C-8x	90	250	33.0	8.2	1649	1543	200
		375	33.6	12.6	2474	2296	196
		500	**34.3**	**17.1**	**3242**	**2983**	**189**
		630	34.9	22.0	4089	3728	186
		1000	36.6	36.6	6268	5563	171
		1260	37.7	47.5	7682	6688	162

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 ± 7% tolerance on flux measurements.
3. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Performance at Commonly Used Drive Currents

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

Part Number	CRI	Drive Current[1] (mA)	Typical V_f T_c = 25°C (V)	Typical Power T_c = 25°C (W)	Typical Flux[2] T_c = 25°C (lm)	Typical DC Flux[3] T_c = 85°C (lm)	Typical Efficacy T_c = 25°C (lm/W)
BXRC-40G20F0-B-8x	90	175	33.0	5.8	1156	1082	200
		260	33.6	8.7	1720	1596	197
		350	**34.3**	**12.0**	**2301**	**2117**	**192**
		450	35.0	15.7	2927	2666	186
		700	36.6	25.6	4406	3911	172
		900	37.7	34.0	5499	4779	162
BXRC-40G20F0-C-8x	90	250	33.0	8.2	1665	1559	202
		375	33.6	12.6	2499	2319	198
		500	**34.3**	**17.1**	**3275**	**3013**	**191**
		630	34.9	22.0	4130	3765	188
		1000	36.6	36.6	6330	5618	173
		1260	37.7	47.5	7758	6755	163
BXRC-50G20F0-B-8x	90	175	33.0	5.8	1122	1051	194
		260	33.6	8.7	1669	1550	191
		350	**34.3**	**12.0**	**2233**	**2054**	**186**
		450	35.0	15.7	2841	2588	181
		700	36.6	25.6	4276	3796	167
		900	37.7	34.0	5337	4638	157
BXRC-50G20F0-C-8x	90	250	33.0	8.2	1616	1513	196
		375	33.6	12.6	2425	2251	192
		500	**34.3**	**17.1**	**3178**	**2924**	**185**
		630	34.9	22.0	4008	3654	182
		1000	36.6	36.6	6144	5453	168
		1260	37.7	47.5	7530	6556	159

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 ± 7% tolerance on flux measurements.
3. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.

Electrical Characteristics

Table 5: Electrical Characteristics

Part Number	Drive Current (mA)	Forward Voltage Pulsed, T_c = 25°C (V) [1, 2, 3, 8]			Typical Coefficient of Forward Voltage[4] $\Delta V_f/\Delta T_c$ (mV/°C)	Typical Thermal Resistance Junction to Case[5,6] R_{j-c} (°C/W)	Driver Selection Voltages[7] (V)	
		Minimum	Typical	Maximum			V_f Min. Hot T_c = 105°C (V)	V_f Max. Cold T_c = -40°C (V)
BXRC-xxx20F0-B-8x	350	32.2	34.3	36.3	-11	0.22	31.4	37.1
	900	35.5	37.7	40.0	-12	0.34	34.6	40.8
BXRC-xxx20F0-C-8x	500	32.2	34.3	36.3	-11	0.19	31.4	37.1
	1260	35.4	37.7	39.9	-12	0.29	34.6	40.7

Notes for Table 5:

1. Parts are tested in pulsed conditions, T_c = 25°C. Pulse width is 10ms.
2. Voltage minimum and maximum are provided for reference only and are not a guarantee of performance.
3. Bridgelux maintains a tester tolerance of ± 0.10V on forward voltage measurements.
4. Typical coefficient of forward voltage tolerance is ± 0.1mV for nominal current.
5. Thermal resistance values are based from test data of a 3000K 80 CRI product.
6. Thermal resistance value was calculated using total electrical input power; optical power was not subtracted from input power. The thermal interface material used during testing is not included in the thermal resistance value.
7. V_f min hot and max cold values are provided as reference only and are not guaranteed by test. These values are provided to aid in driver design and selection over the operating range of the product.
8. This product has been designed and manufactured per IEC 62031:2018. This product has passed dielectric withstand voltage testing at 1160 V. The working voltage designated for the insulation is 80V d.c. The maximum allowable voltage across the array must be determined in the end product application.

Eye Safety

Table 6: Eye Safety Risk Group (RG) Classifications

Part Number	Drive Current (mA)	CCT[5]		
		2700K/3000K	4000K[2]	5000K[3]
BXRC-xxx20F0-B-8x	900	RG1	RG1	RG1
BXRC-xxx20F0-C-8x	1110	RG1	RG1	RG1
	1260	RG1	RG1	RG2

Notes for Table 6:

1. Eye safety classification for the use of Bridgelux V Series LED arrays is in accordance with specification IEC/TR 62778: Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires.
2. For products classified as RG2 at 4000K, Ethr= 1980 lx.
3. For products classified as RG2 at 5000K Ethr= 1530 lx.
4. For products classified as RG2 at 6500K, Ethr= 1170 lx.
5. Please contact your Bridgelux sales representative for Ethr values at specific drive currents and CCTs not listed.

Absolute Maximum Ratings

Table 7: Maximum Ratings

Parameter	Maximum Rating	
LED Junction Temperature (T_j)	150˚C	
Storage Temperature[1]	-40˚C to +95˚C	
Operating Case Temperature[2] (T_c)	95˚C	
Soldering Temperature[3]	300˚C or lower for a maximum of 6 seconds	
	BXRC-xxx20F0-B-8x	BXRC-xxx20F0-C-8x
Maximum Drive Current[4]	900 mA at ≤85˚C 675 mA at 95˚C	1260 mA at ≤85˚C 945 mA at 95˚C
Maximum Peak Pulsed Drive Current[5]	1290 mA	1800 mA
Maximum Reverse Voltage[6]	-60V	-60V

Notes for Table 7:

1. The F90 product is robust enough to pass our internal humidity test but it is still more sensitive compared to regular LED array product The product needs to be stored in a dry environment. It is not recommended to use the product in a damp environment that directly exposes it to moisture.
2. For IEC 62717 requirement, please consult your Bridgelux sales representative.
3. Refer to Bridgelux Application Note AN31: Assembly Considerations for Bridgelux Vero LED Arrays.
4. Arrays may be driven at higher currents however lumen maintenance may be reduced and warranty will not apply.
5. 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.
6. 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: Vero13B Drive Current vs. Voltage

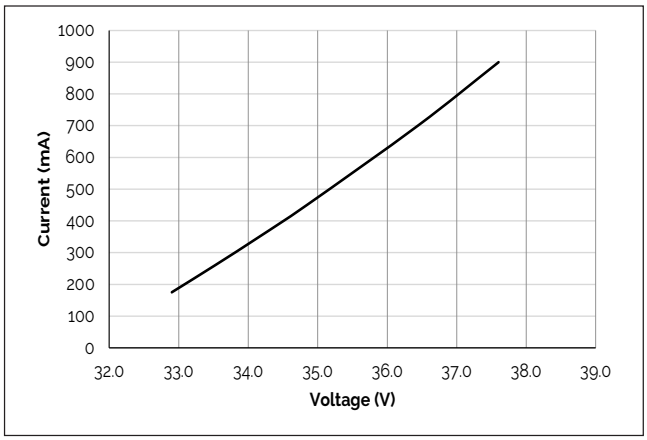


Figure 2: Vero13C Drive Current vs. Voltage

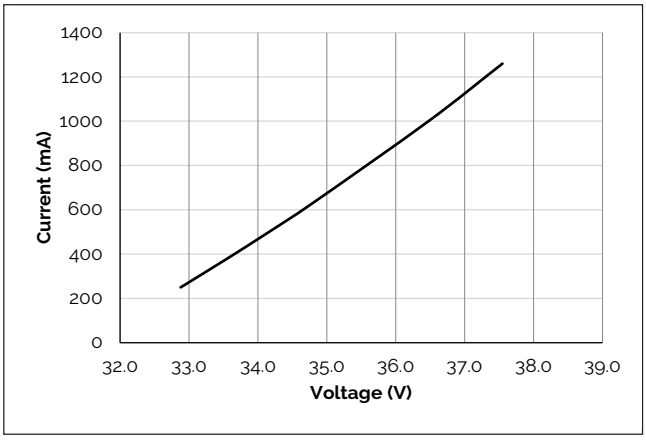


Figure 3: Vero13B Typical Relative Flux vs. Current

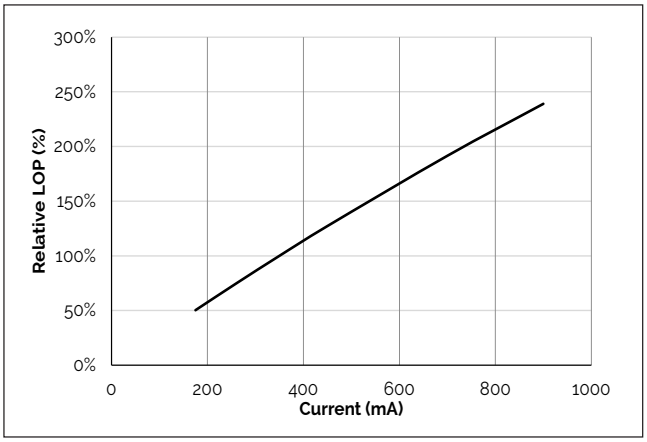


Figure 4: Vero13C Typical Relative Flux vs. Current

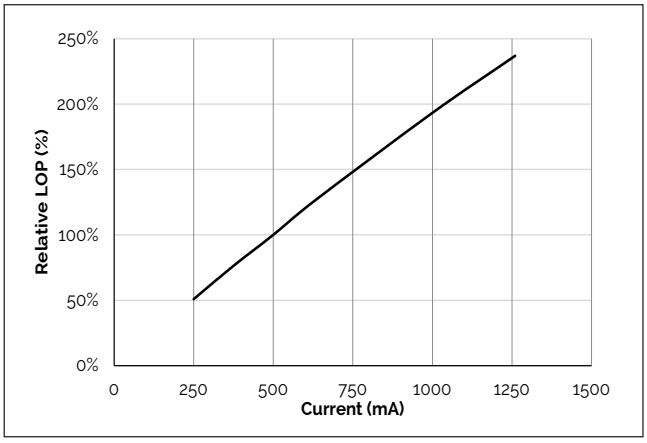


Figure 5: Typical DC Flux vs. Case Temperature

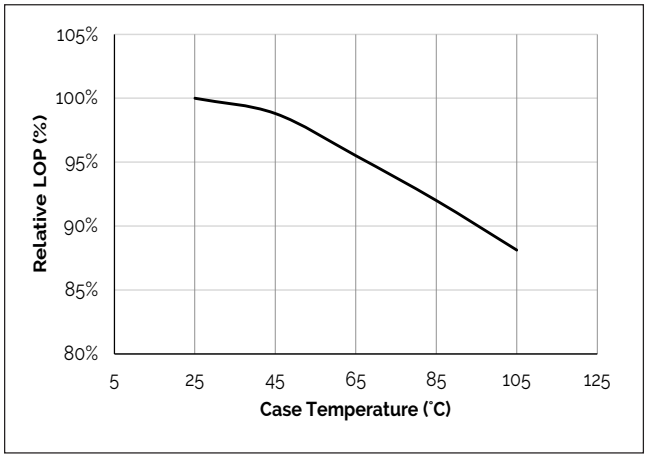
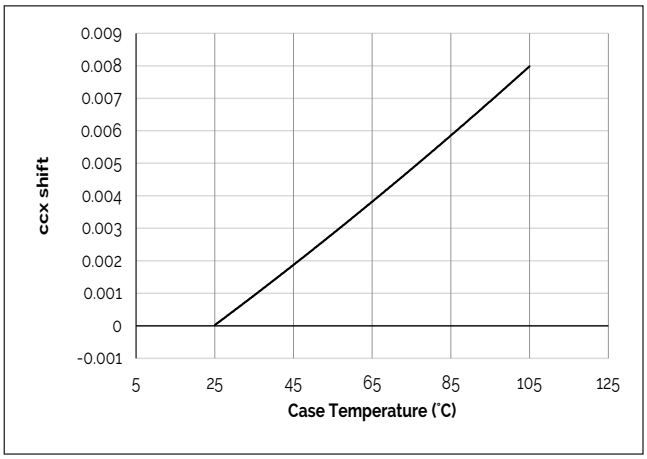


Figure 6: Typical DC ccx Shift vs. Case Temperature



Notes for Figures 1-4:

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

Note for Figures 5-6:

1. Characteristics shown for Warm White.

Performance Curves

Figure 7: Typical DC ccy Shift vs. Case Temperature

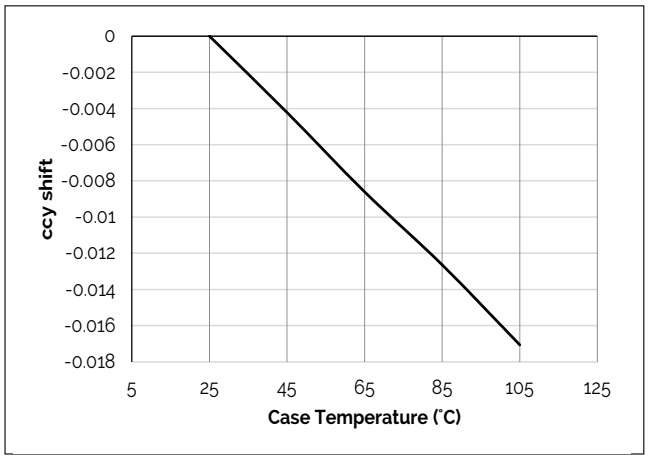


Figure 8: Vero13B Drive Current vs. ccx Shift

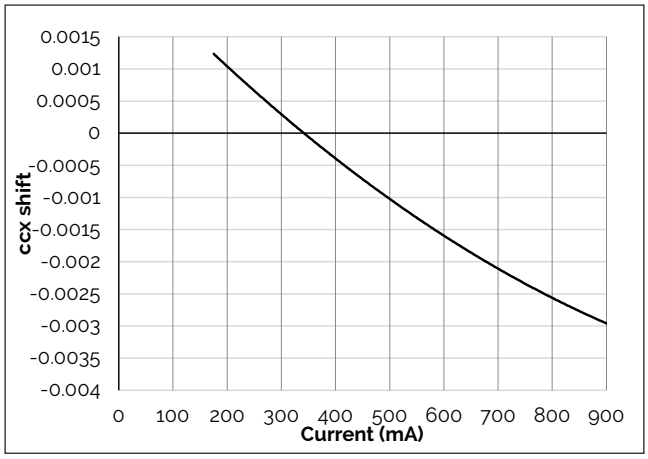


Figure 9: Vero13B Drive Current vs. ccy Shift

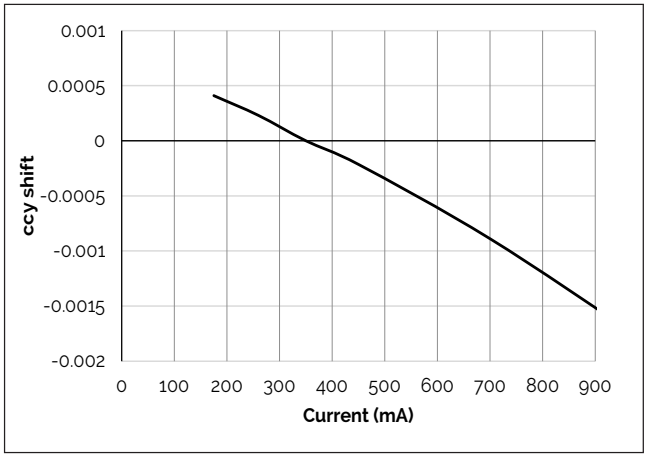


Figure 10: Vero13C Drive Current vs. ccx Shift

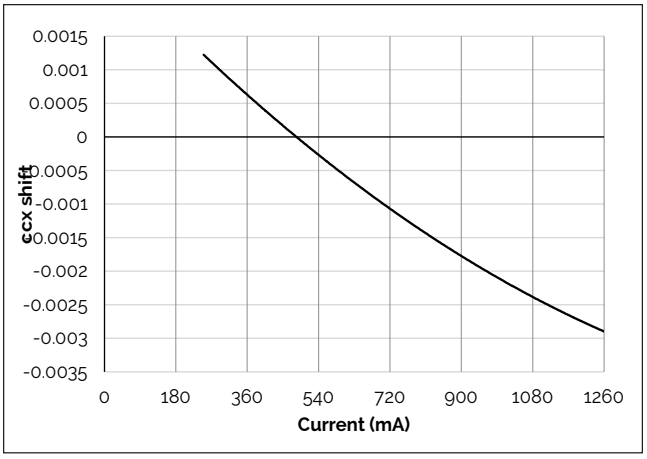


Figure 11: Vero13C Drive Current vs. ccy Shift

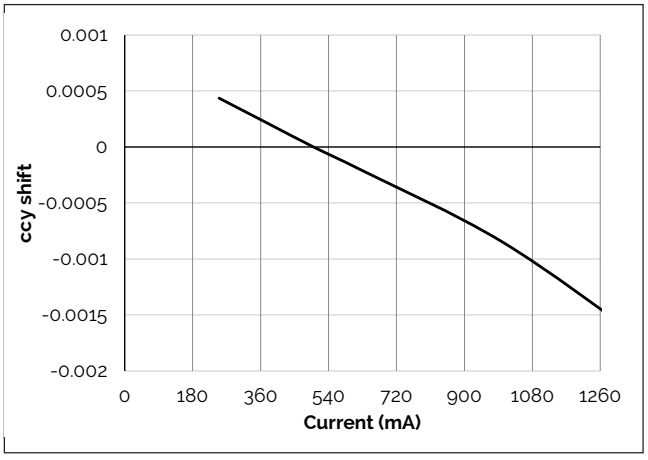
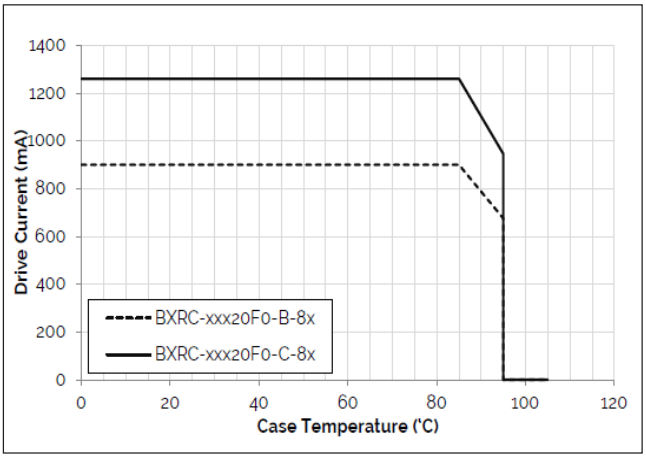


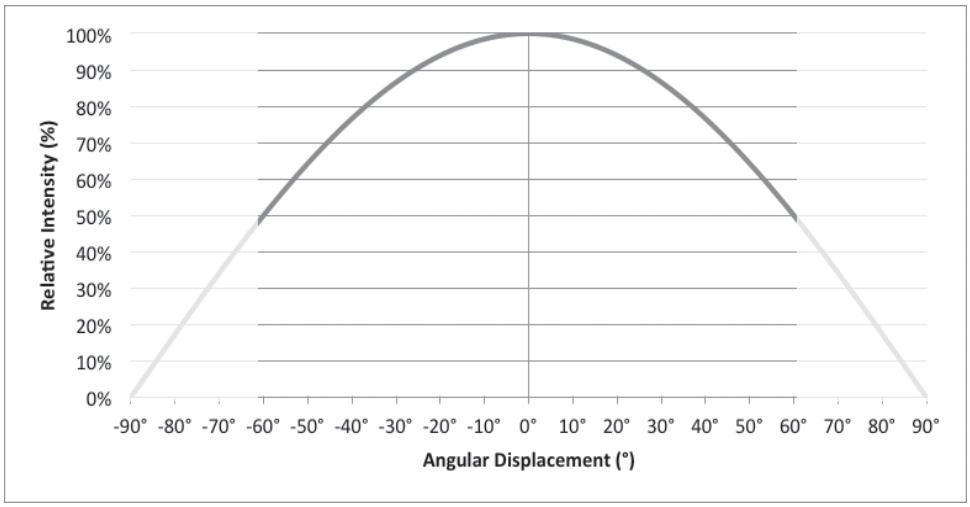
Figure 12: Derating Curve



Note for Figures 7-11:
1. Characteristics shown for Warm White.

Typical Radiation Pattern

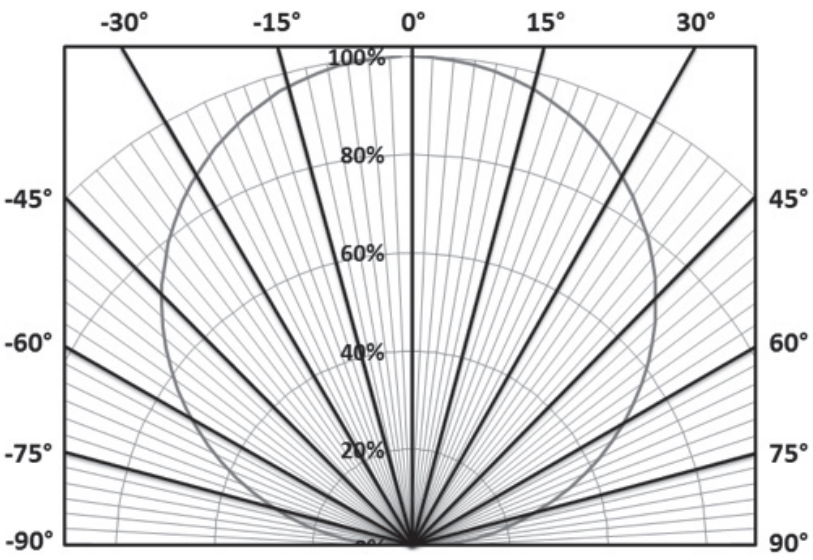
Figure 13: Typical Spatial Radiation Pattern



Notes for Figure 13:

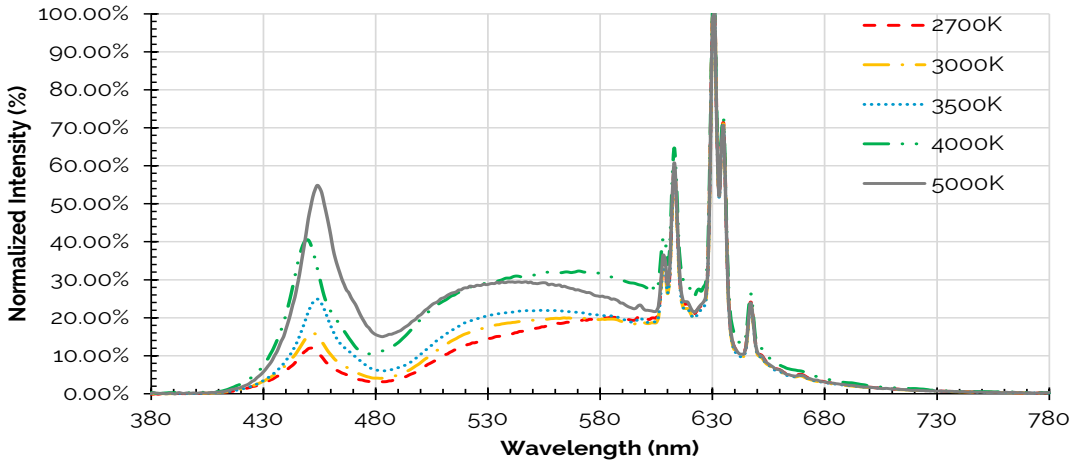
1. Typical viewing angle is 120°.
2. The viewing angle is defined as the off axis angle from the centerline where intensity is ½ of the peak value.

Figure 14: Typical Polar Radiation Pattern



Typical Color Spectrum

Figure 15: Typical Color Spectrum

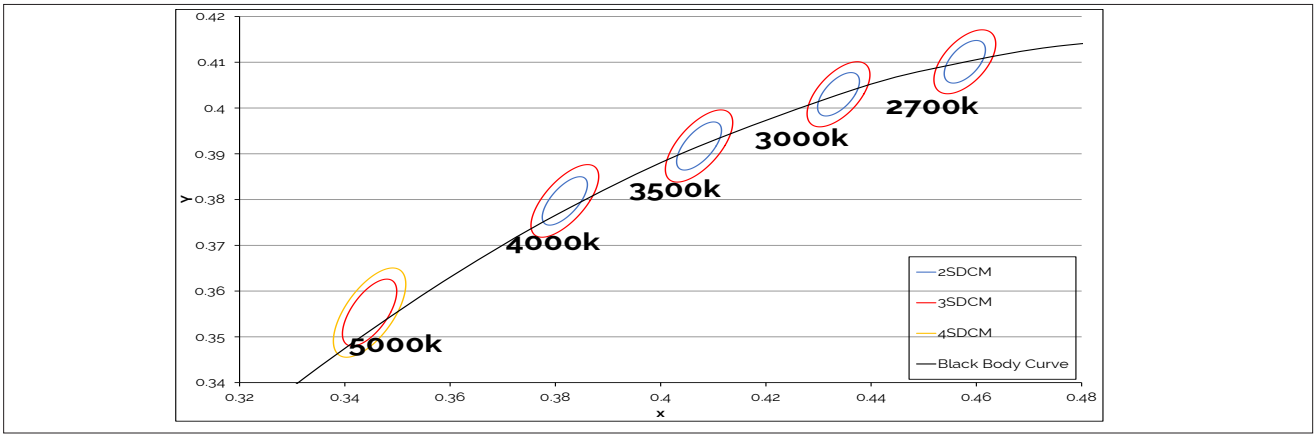


Notes for Figure 15:

1. Color spectra measured at nominal current for T_j = T_c = 85°C.
2. Color spectra shown is 2700K and 90CRI.
3. Color spectra shown is 3000K and 90 CRI.
4. Color spectra shown is 3500K and 90 CRI.
5. Color spectra shown is 4000K and 90 CRI.
6. Color spectra shown is 5000K and 90 CRI.

Color Binning Information

Figure 16: Warm,Neutral and Cool White Test Bins in xy Color Space



Note: Pulsed Test Conditions, T_c = 85˚C

Table 8: Warm and Neutral White xy Bin Coordinates and Associated Typical CCT (product is hot targeted to Tc = 85˚C)

Bin Code	2700K	3000K	3500K	4000K
ANSI Bin (for reference only)	(2580K - 2870K)	(2870K - 3220K)	(3220K - 3710K)	(3710K - 4260K)
83 (3 SDCM)	(2651K - 2794K)	(2968K - 3136K)	(3369K - 3586K)	(3851K - 4130K)
82 (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)

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

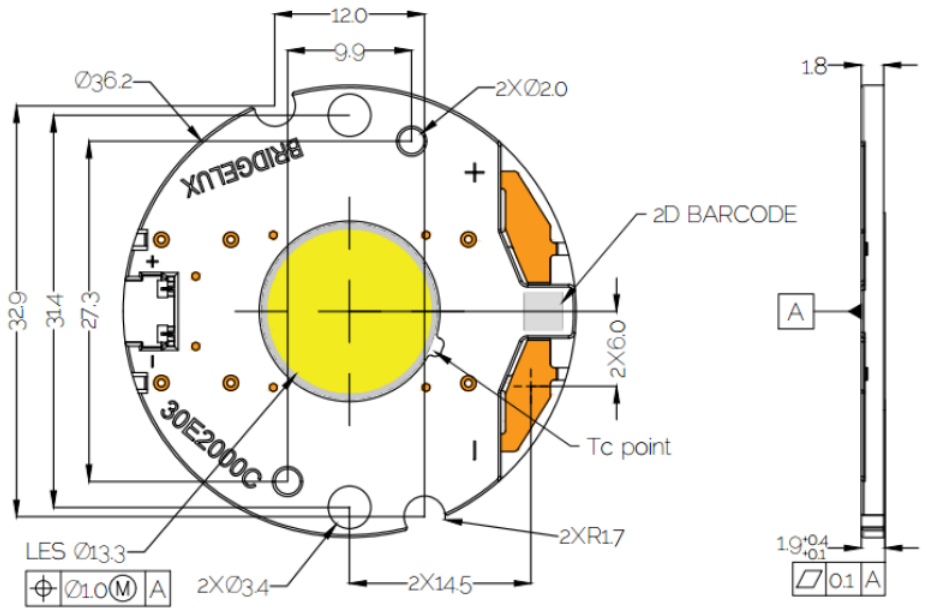
Bin Code	5000K
ANSI Bin (for reference only)	(4745K - 5311K)
84 (4 SDCM)	(4801K - 5282K)
83 (3 SDCM)	(4835K - 5215K)
Center Point (x,y)	(0.3447, 0.3553)

Note for Tables 8-9:

1. Bridgelux maintains a tolerance of +/- 0.007 on x and y color coordinates in the CIE 1931 color Space.

Mechanical Dimensions

Figure 17: **Drawing for Vero13 LED Array**

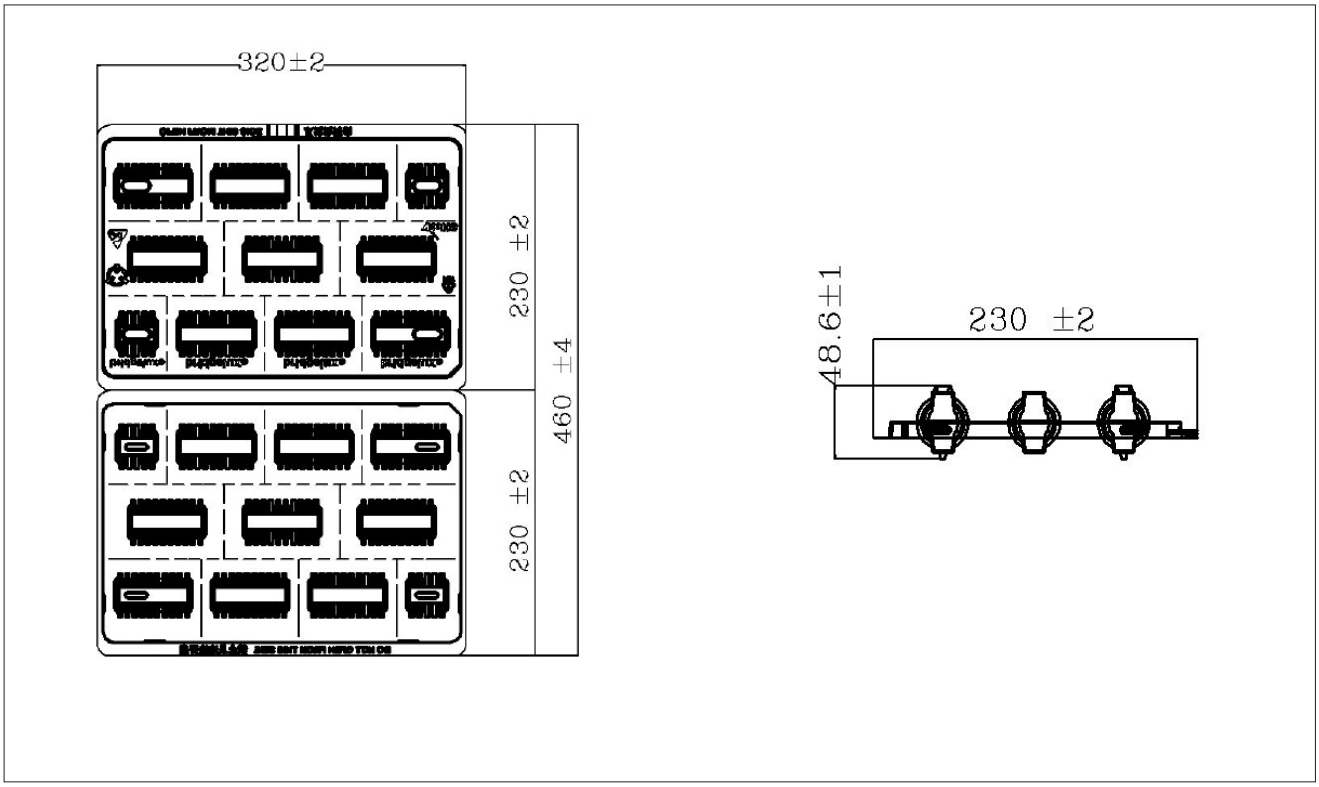


Notes for Figure 17:

1. Drawings are not to scale.
2. Drawing dimensions are in millimeters.
3. Unless otherwise specified, tolerances are ±0.1mm.
4. Mounting holes (2X) are for M2.5 screws.
5. Bridgelux recommends two tapped holes for mounting screws with 31.4 ± 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. 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 ± 0.2mm.
11. Bridgelux maintains a flatness of 0.10mm across the mounting surface of the array.

Packaging and Labeling

Figure 18: Drawing for Vero 13 Packaging Tray

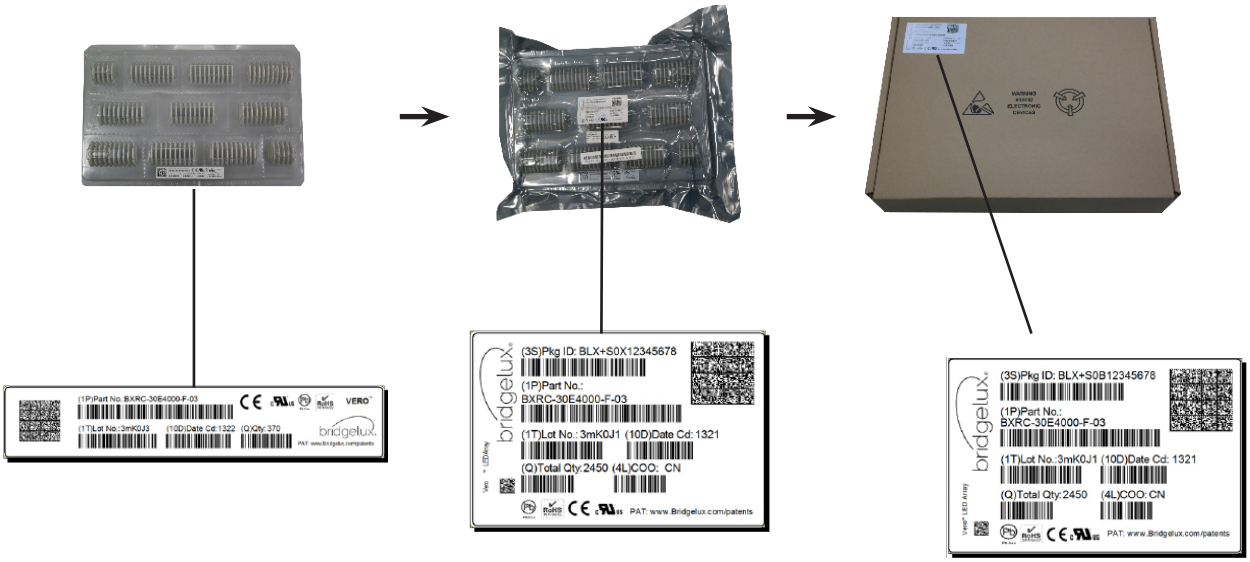


Notes for Figure 18:

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

Packaging and Labeling

Figure 19: Vero Series Packaging and Labeling



Notes for Figure 19:

1. Each tray holds 100 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 20: 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.

LM80

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

Precautions

CAUTION: CHEMICAL EXPOSURE HAZARD

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

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: Bridging Light and Life™

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

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