



# Bridgelux® V18 F90 BBBL Array Series

**Product Data Sheet DS448-4** 







### Introduction

The V Series™ LED Array products deliver high quality light in a compact and cost-effective solid-state lighting package. These chip on board (CoB) arrays can be efficiently driven up to two times the nominal drive current, enabling design flexibility not previously possible. These high flux density light sources are designed to support a wide range of high quality. low cost directional luminaires and replacement lamps for both interior and exterior commercial and residential applications.

The Fgo V 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 Fg0 Series delivering better or equivalent efficacy as that of our traditional 80 CRI V Series product.

The V18 LED Array is available in a variety of electrical, CCT, and CRI combinations providing substantial design flexibility and energy efficiency advantages.

Lighting system designs incorporating these LED arrays deliver increased system level efficacy and a longer service life. Typical applications include replacement lamps and task, accent, spot, track, wide area, security, wall packs and down lights.

#### Features

- Efficacy of 179 lm/W typical, 3000K 90 CRI
- · Wide selection of CCT options (2700K-4000K) with minimumgo CRI options
- · Uniform high-quality illumination
- 2 and 3 SDCM binning options (2700K 4000K)
- Forward voltage bin codes and backside marking
- · Instant light with unlimited dimming
- 5-Year warranty

- 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
- · Easy to use with daylight and motion sensors to incréase energy savings
- · Design with confidence













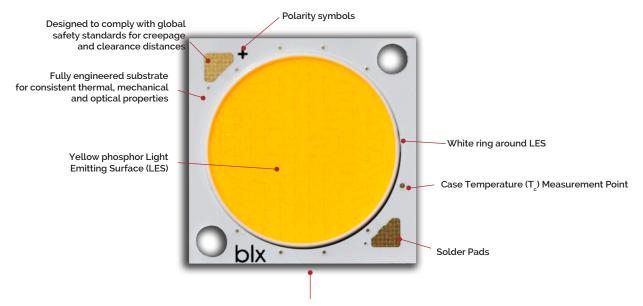
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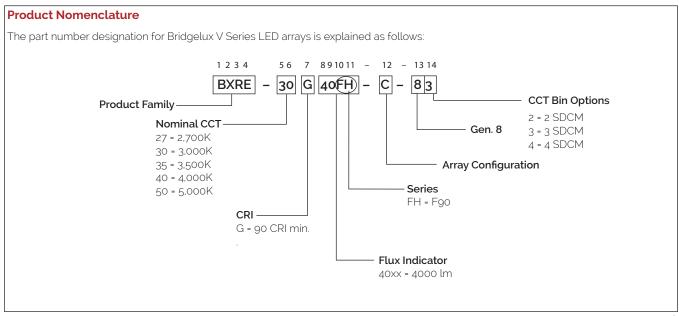
## **Product Feature Map**

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

The arrays incorporate several features to simplify design integration and assembly. Please visit www.bridgelux.com for more information on the V Series family of products.



Note: Part number and lot codes are scribed on back of array



## **Product Selection Guide**

The following product configurations are available:

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

Part Number	Nominal CCT¹ (K)	CRI²	Nominal Drive Current³ (mA)	Typical Pulsed Flux <sup>4.5.6</sup> T <sub>c</sub> = 25°C (lm)	Minimum Pulsed Flux <sup>6,7</sup> T <sub>c</sub> = 25°C (lm)	Typical V <sub>r</sub> (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-27G40FH-B-8x	2700	90	700	4235	3811	34.6	24.2	175
BXRE-27G40FH-C-8x	2700	90	1050	6349	5714	34.9	36.7	173
BXRE-30G40FH-B-8x	3000	90	700	4321	3889	34.6	24.2	179
BXRE-30G40FH-C-8x	3000	90	1050	6479	5831	34.9	36.7	177
BXRE-35G40FH-B-8x	3500	90	700	4297	3867	34.6	24.2	178
BXRE-35G40FH-C-8x	3500	90	1050	6442	5798	34.9	36.7	176
BXRE-40G40FH-B-8x	4000	90	700	4339	3905	34.6	24.2	179
BXRE-40G40FH-C-8x	4000	90	1050	6506	5855	34.9	36.7	177

#### Notes for Table 1:

- 1. Nominal CCT as defined by ANSI C78.377-2011.
- 2. CRI values are minimums and tested at T, = T, = 25°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<sub>1</sub> (junction temperature) = T<sub>2</sub> (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.

## **Product Selection Guide**

**Table 2:** Selection Guide, Stabilized DC Performance (T<sub>c</sub> = 65°C) <sup>4.5</sup>

Part Number	Nominal CCT¹ (K)	CRI²	Nominal Drive Current³ (mA)	Typical DC Flux <sup>4.5</sup> T <sub>c</sub> = 65°C (lm)	Minimum DC Flux <sup>6</sup> T <sub>c</sub> = 65°C c (lm)	Typical V <sub>f</sub> (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRE-27G40FH-B-8x	2700	90	700	3960	3564	34.1	23.9	166
BXRE-27G40FH-C-8x	2700	90	1050	5936	5343	34.5	36.2	164
BXRE-30G40FH-B-8x	3000	90	700	4040	3636	34.1	23.9	169
BXRE-30G40FH-C-8x	3000	90	1050	6058	5452	34.5	36.2	167
BXRE-35G40FH-B-8x	3500	90	700	4017	3616	34.1	23.9	168
BXRE-35G40FH-C-8x	3500	90	1050	6023	5421	34.5	36.2	166
BXRE-40G40FH-B-8x	4000	90	700	4057	3651	34.1	23.9	170
BXRE-40G40FH-C-8x	4000	90	1050	6083	5474	34.5	36.2	168

#### Notes for Table 2:

- 1. Nominal CCT as defined by ANSI C78.377-2011.
- 2. CRI values are minimums and tested at T<sub>i</sub> = T<sub>c</sub> = 65°C. Minimum R9 value for 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 65°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.

## 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 <sup>1</sup>	CCT (K)	CRI	Current² (mA)	Vf (V)	Useful flux³ (Фuse) at 85C (lm)	Power (W)	Efficacy (lm/W)	Energy efficiency class <sup>4</sup>	Registra- tion No	URL to Product Information Sheet in EPREL Database
BXRE-27G40FH-B-83	2700	90	1620	38.0	8005	62	130	Е	1441958	https://eprel.ec.europa.eu/qr/1441958
BXRE-27G40FH-C-83	2700	90	2160	38.0	10782	82	131	Е	1441959	https://eprel.ec.europa.eu/qr/1441959
BXRE-30G40FH-B-83	3000	90	1620	38.0	8168	62	133	Е	1441975	https://eprel.ec.europa.eu/qr/1441975
BXRE-30G40FH-C-83	3000	90	2160	38.0	11002	82	134	Е	1441976	https://eprel.ec.europa.eu/qr/1441976
BXRE-35G40FH-B-83	3500	90	1620	38.0	8124	62	132	Е	1441992	https://eprel.ec.europa.eu/qr/1441992
BXRE-35G40FH-C-83	3500	90	2160	38.0	10942	82	133	Е	1441993	https://eprel.ec.europa.eu/qr/1441993
BXRE-40G40FH-B-83	4000	90	1620	38.0	8204	62	133	Е	1442010	https://eprel.ec.europa.eu/qr/1442010
BXRE-40G40FH-C-83	4000	90	2160	38.0	11050	82	135	Е	1442011	https://eprel.ec.europa.eu/qr/1442011

#### 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 (ouse), 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

V Series LED arrays are tested to the specifications shown using the nominal drive currents in Table 1. V Series may also be driven at other drive currents dependent on specific application design requirements. The performance at any drive current can be derived from the current vs. voltage characteristics shown in Figures 1 & 2 and the flux vs. current characteristics shown in Figures 3 & 4. The performance at commonly used drive currents is summarized in Table 4.

Table 4: Product Performance at Commonly Used Drive Currents

Part Number	CRI	Drive Current¹ (mA)	Typical V <sub>f</sub> T <sub>c</sub> = 25°C (V)	Typical Power T <sub>c</sub> = 25°C (W)	Typical Flux² T <sub>c</sub> = 25°C (lm)	Typical DC Flux³ T <sub>c</sub> = 65°C (lm)	Typical Efficacy T <sub>c</sub> = 25°C (lm/W)
		350	33.2	11.6	2169	2065	187
		525	33.9	17.8	3208	3034	180
DVDE 27C (2FLL D. 0)		700	34.6	24.2	4235	3960	175
BXRE-27G40FH-B-8x	90	900	35.4	31.8	5394	4969	169
		1400	37.2	52.1	8222	7285	158
		1620	38.0	61.6	9435	8224	153
		525	33.4	17.5	3364	3113	192
		785	34.1	26.8	4962	4547	185
DVDE and tall C O.		1050	34.9	36.7	6349	5936	173
BXRE-27G40FH-C-8x	90	1170	35.3	41.3	7289	6542	177
		2100	37.9	79.6	12723	10822	160
		2160	38.0	82.2	13064	11076	159
		350	33.2	11.6	2213	2107	191
		525	33.9	17.8	3273	3095	184
DVDE and rafil D o.		700	34.6	24.2	4321	4040	179
BXRE-30G40FH-B-8x	90	900	35.4	31.8	5504	5069	173
		1400	37.2	52.1	8390	7432	161
		1620	38.0	61.6	9628	8390	156
		525	33.4	17.5	3433	3177	196
		785	34.1	26.8	5063	4641	189
DVDE0 EU 0		1050	34.9	36.7	6479	6058	177
BXRE-30G40FH-C-8x	90	1170	35.3	41.3	7438	6677	180
		2100	37.9	79.6	12982	11044	163
		2160	38.0	82.2	13331	11303	162
		350	33.2	11.6	2200	2095	190
		525	33.9	17.8	3255	3078	183
DVDE0 : EU D 0		700	34.6	24.2	4297	4017	178
BXRE-35G40FH-B-8x	90	900	35.4	31.8	5472	5040	172
		1400	37.2	52.1	8342	7390	160
		1620	38.0	61.6	9573	8342	155
		525	33.4	17.5	3413	3159	195
		785	34.1	26.8	5034	4614	188
DVDE 050 (05H 0 0		1050	34.9	36.7	6442	6023	176
BXRE-35G40FH-C-8x	90	1170	35.3	41.3	7395	6638	179
		2100	37.9	79.6	12908	10980	162
		2160	38.0	82.2	13255	11238	161

### 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 Current¹ (mA)	Typical V <sub>f</sub> T <sub>c</sub> = 25°C (V)	Typical Power  T <sub>c</sub> = 25°C  (W)	Typical Flux² T <sub>c</sub> = 25°C (lm)	Typical DC Flux³ T <sub>c</sub> = 65°C (lm)	Typical Efficacy T <sub>c</sub> = 25°C (lm/W)
		350	33.2	11.6	2222	2116	191
		525	33.9	17.8	3287	3108	185
DVDE 40C 40ELL D. 9v	00	700	34.6	24.2	4339	4057	179
BXRE-40G40FH-B-8x	90	900	35.4	31.8	5527	5090	174
		1400	37.2	52.1	8424	7463	162
		1620	38.0	61.6	9668	8425	157
		525	33.4	17.5	3447	3190	197
		785	34.1	26.8	5084	4660	190
BXRE-40G40FH-C-8x		1050	34.9	36.7	6506	6083	177
	90	1170	35.3	41.3	7468	6704	181
		2100	37.9	79.6	13036	11090	164
		2160	38.0	82.2	13386	11350	163

#### 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

			orward Voltag ed, T <sub>c</sub> = 25°C (V		Typical Coefficient	Typical Thermal	Driver Selection Voltages <sup>7</sup> (V)	
Part Number	Drive Current (mA)	Minimum	Typical	Maximum	of Forward Voltage⁴ ∆V <sub>₹</sub> /∆T <sub>c</sub> (mV/°C)	Resistance Junction to Case <sup>5,6</sup> R <sub>j-c</sub> (°C/W)	V,Min. Hot T <sub>c</sub> = 95°C (V)	V <sub>r</sub> Max. Cold T <sub>c</sub> = -40°C (V)
D\/DE	700	32.5	34.6	36.7	-10	0.14	31.8	37.3
BXRE-xxx40Fx-B-8x	1620	35.7	38.0	40.3	-11	0.23	35.0	41.0
BXRE-xxx40Fx-C-8x	1050	32.8	34.9	37.0	-10	0.12	32.1	37.7
	2160	35.8	38.0	40.3	-11	0.20	35.0	41.1

#### 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  $\pm$  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 go 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<sub>f</sub> 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 1140 V. The working voltage designated for the insulation is 70V 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)	co	TT⁴
		2700K/3000K	3500-5000K <sup>2,3</sup>
DVDE	1500	RG1	RG1
BXRE-xxx40Fx-B-8x	1620	RG1	RG2
DVDE	1560	RG1	RG1
BXRE-xxx40Fx-C-8x	2160	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. 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 <sub>j</sub> )	150°C			
Storage Temperature <sup>1</sup>	-40°C to +95°C			
Operating Case Temperature² (T <sub>c</sub> )	95°C			
Soldering Temperature <sup>3</sup>	300°C or lower for a maximum of 6 seconds			
	BXRE-xxx40Fx-B-8x	BXRE-xxx40Fx-C-8x		
Maximum Drive Current <sup>4</sup>	1620 mA at ≤85°C 1215 mA at 95°C	2160 mA at ≤85°C 1620 mA at 95°C		
Maximum Peak Pulsed Drive Current⁵	2320mA	3090 mA		
Maximum Reverse Voltage⁵	-6oV	-6oV		

#### Notes for Table 7:

- 1. The Fgo 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 AN101: Handling and Assembly of Bridgelux V Series 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: V18B Drive Current vs. Voltage

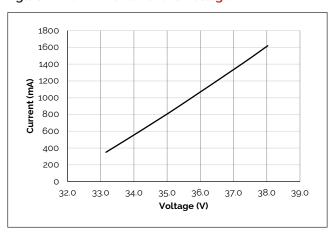


Figure 3: V18B Typical Relative Flux vs. Current

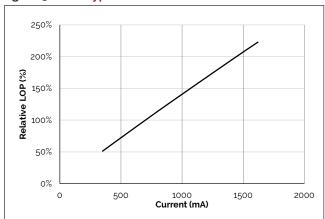


Figure 5: Typical DC Flux vs. Case Temperature

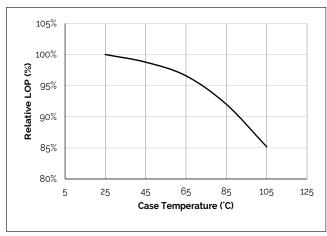


Figure 2: V18C Drive Current vs. Voltage

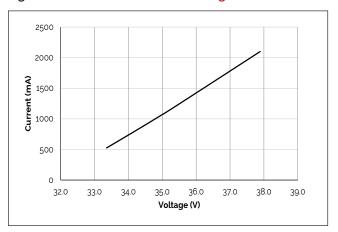
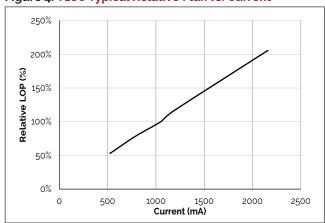
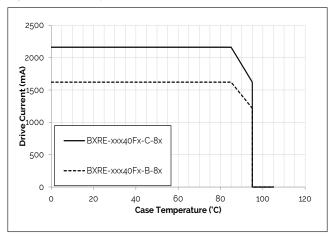


Figure 4: V18C Typical Relative Flux vs. Current



**Figure 6:Derating Curve** 

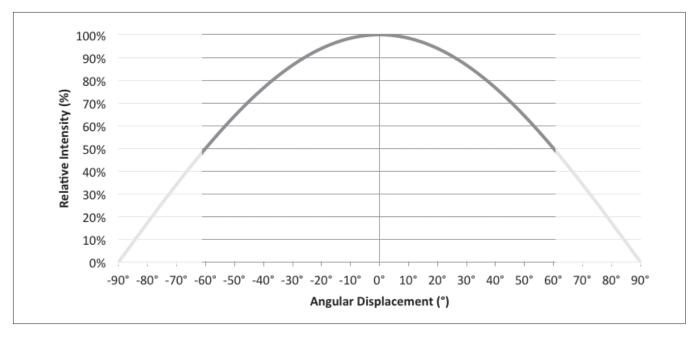


Notes for Figures 1-4:

- 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.

## **Typical Radiation Pattern**

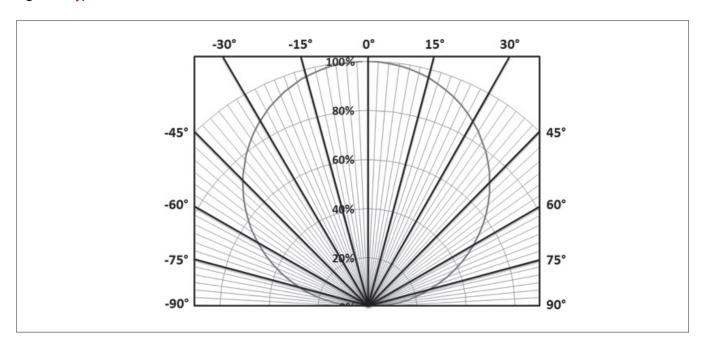
Figure 7: Typical Spatial Radiation Pattern



Notes for Figure 7:

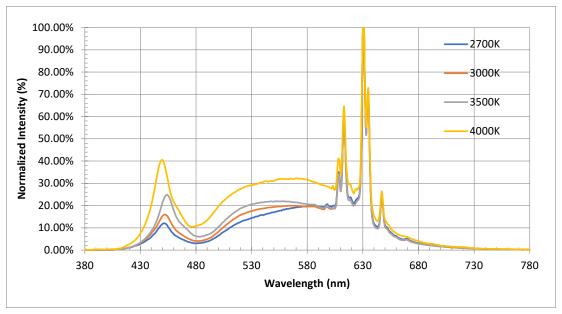
- 1. Typical viewing angle is 120°.
- 2. The viewing angle is defined as the off axis angle from the centerline where intensity is ½ of the peak value.

Figure 8: Typical Polar Radiation Pattern



## **Typical Color Spectrum**

Figure 9: Typical Color Spectrum

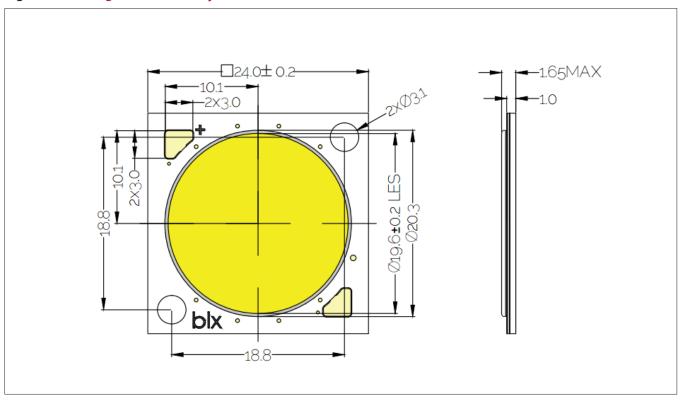


#### Notes for Figure 9:

- 1. Color spectra measured at nominal current for  $T_j$  =  $T_c$  = 65°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.

## **Mechanical Dimensions**

Figure 10: Drawing for V18 LED Array



#### Notes for Figure 16;

- 1. Drawings are not to scale.
- 2. Drawing dimensions are in millimeters.
- 3. Unless otherwise specified, tolerances are ±0.1mm.
- 4. Solder pad labeled "+" denotes positive contact.
- 5. Refer to Application Notes AN101 for product handling, mounting and heat sink recommendations.
- 6. The optical center of the LED Array is nominally defined by the mechanical center of the array to a tolerance of  $\pm$  0.2mm.
- 7. Bridgelux maintains a flatness of 0.10mm across the mounting surface of the array.

## **Color Binning Information**

0.41 2700k 0.4 3000k 0.39 3500k **≻**0.38 4000k 0.37 2SDCM 0.36 -3SDCM 4SDCM 0.35 5000k Black Body Curve 0.34 0.34 0.36 0.38 0.42 0.46 0.32 0.44

Figure 11: Warm and Neutral White Test Bins in xy Color Space

Note: Pulsed Test Conditions,  $\rm T_c$  =  $\rm 65^{\circ}C$ 

Table 8: Warm and Neutral White xy Bin Coordinates and Associated Typical CCT (product is hot targeted to Tc = 65°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)

Note for Tables 8:

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

## Packaging and Labeling

Figure 12: Drawing for V18 Packaging Tube



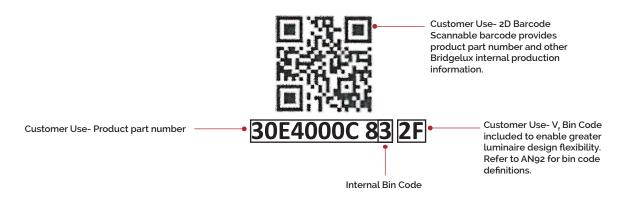
Notes for Figure 12

- 1. Each tube holds 20 V18 COB arrays.
- 2. One tube is sealed in an anti-static bag. Four bags are placed in a shipping box. Depending on quantities ordered, a bigger shipping box, containing four boxes may be used to ship products.
- 3. Each bag and box is to be labeled as shown above.
- 4. Dimensions for each tube are 26.3 (W)  $\times$  9.5(H)  $\times$  510 (L). Dimensions for the anti-static bag are 75 (W)  $\times$  615 (L)  $\times$  3.1 (T) mm. Dimensions for the shipping box are 58.7  $\times$  13.3  $\times$  79 cm

## Packaging and Labeling

### Figure 13: Gen. 8 Product Labeling

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



## **Design Resources**

#### **Application Notes**

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

### **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.

### **Precautions**

### 3D CAD Models

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

#### LM8o

Please contact your Bridgelux sales representative for LM-80 report.

### **CAUTION: CHEMICAL EXPOSURE HAZARD**

Exposure to some chemicals commonly used in luminaire manufacturing and assembly can cause damage to the LED array. Please consult Bridgelux Application Note AN101 for additional information.

#### **CAUTION: RISK OF BURN**

Do not touch the V Series LED array during operation. Allow the array to cool for a sufficient period of time before handling. The V Series LED array may reach elevated temperatures such that could burn skin when touched

### CAUTION

#### **CONTACT WITH LIGHT EMITTING SURFACE (LES)**

Avoid any contact with the LES. Do not touch the LES of the LED array or apply stress to the LES (yellow phosphor resin area). Contact may cause damage to the LED array.

Optics and reflectors must not be mounted in contact with the LES (yellow phosphor resin area).

### **Disclaimers**

#### MINOR PRODUCT CHANGE POLICY

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

#### STANDARD TEST CONDITIONS

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

## About Bridgelux: Bridging Light and Life™

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

For more information about the company, please visit bridgelux.com
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