

# Bridgelux LED Arrays

## Product Brief

### Introduction

The Bridgelux family of LED Array products delivers high performance, compact and cost-effective solid-state lighting solutions to serve the general lighting market. These products combine the higher efficiency, lifetime, and reliability benefits of LEDs with the light output levels of many conventional lighting sources.

### Bridgelux LED Arrays

- ✓ Deliver the light required for general lighting applications
- ✓ Provide illumination-grade, high-quality white light
- ✓ Enable effective thermal management by leveraging Bridgelux's proprietary Metal Bond Technology
- ✓ Reduce system cost and enable simplified luminaire designs

Product options are tailored to match light output levels of conventional light sources, delivering between 400 and 2000 lumens under application conditions in cool, neutral and warm white colors. In order to satisfy system design requirements, the Bridgelux LED Arrays are specified to deliver these values hot, or under assumed typical use conditions, eliminating the need of incorporating additional sources to account for thermal degradation.

Various configurations are available allowing the product to be optimized on efficacy, CRI, light output, cost, or a combination of these attributes. These high lumen output integrated sources reduce system design complexity, enabling miniaturized cost-effective lamp and luminaire designs. Typical applications include task, accent, spot, track, down light, wide area and security lighting.

### Features

- Compact high flux density light source
- Uniform high quality illumination
- Streamlined thermal path
- Energy Star / ANSI compliant binning structure
- More energy efficient than incandescent, halogen and some fluorescent lamps
- Low voltage DC operation
- Instant light with unlimited dimming
- Long operating life
- RoHS compliant and Pb free

### Benefits

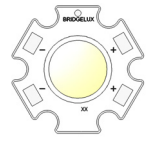
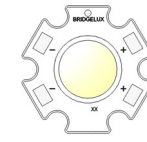
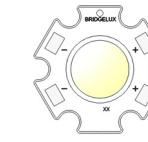
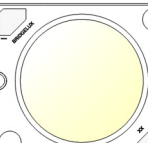
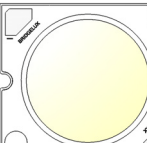
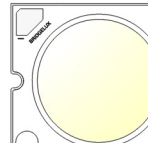
- Enhanced optical control
- Clean white light
- Significantly reduced thermal resistance and increased operating temperatures
- Uniform consistent white light
- Lower operating costs
- Increased safety
- Easy to use with daylight and motion detectors to enable increased energy savings
- Reduced maintenance costs
- Environmentally friendly, no disposal issues



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### Product Selection Guide

	WARM WHITE		NEUTRAL WHITE		COOL WHITE	
<b>Nominal Color Temperature</b>	3000 K		4100 K		5600 K	
<b>Color Rendering Index (CRI)<sup>[1]</sup></b>	82		80		65	
<b>Typical Efficacy (lm/W)<sup>[2]</sup></b>	50 – 60 lm/W		55 – 65 lm/W		75 – 85 lm/W	
<b>Hot Lumen Performance Options (lm)<sup>[3]</sup></b>	400 lm		400 lm		400 lm	
	800 lm 1200 lm		800 lm 1200 lm		800 lm 1200 lm 2000 lm	

**Notes:**

- 1) Higher CRI options available upon request.
- 2) Higher efficacy options available upon request.
- 3) Lumen values indicated are "hot lumens" (not T<sub>j</sub> 25°C pulsed lumens) based on an estimated use condition of 60-70°C heat sink temperature. Pulsed test lumens (T<sub>j</sub> 25°C) will be approximately 10% higher than the values indicated.

### Lamps with Comparable Performance

Light Output (lm)	400	800	1200	2000
<b>Incandescent</b>	40W A-Line 40W B10 40W G25	60W A-Line 65W BR30	75W A-Line	150W A-Line
<b>Halogen</b>	35W PAR 35W MR16 35W Bi-Pin	50W PAR 50W MR16 50W Bi-pin	75W PAR	120W PAR
<b>Compact Fluorescent</b>	7W CFL	13W CFL	18W CFL	26W CFL
<b>HID</b>	-	-	-	35W MH 35W HPS

Note: Lamp equivalents for available lumen options based on average conventional lamp performance.



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### Typical Performance – Warm White

Light Output at Test Current ( $I_m$ , $T_j$ 25°C)	440	880	1320
Base Part Number	BXRA-W0400	BXRA-W0800	BXRA-W1200
Test Current (mA) <sup>[1]</sup>	900	1300	1600
Forward Voltage at Test Current (V)	9.8	13.2	16.4
Thermal Resistance	1.0° C/W	0.7° C/W	0.5° C/W
Recommended Max DC Current (mA) <sup>[1,2]</sup>	1500	2000	2500

### Typical Performance – Neutral White

Light Output at Test Current ( $I_m$ , $T_j$ 25°C)	440	880	1320
Base Part Number	BXRA-N0400	BXRA-N0800	BXRA-N1200
Test Current (mA) <sup>[1]</sup>	800	1200	1400
Forward Voltage at Test Current (V)	9.7	13.0	16.2
Thermal Resistance	1.0° C/W	0.7° C/W	0.5° C/W
Recommended Max DC Current (mA) <sup>[1,2]</sup>	1500	2000	2500

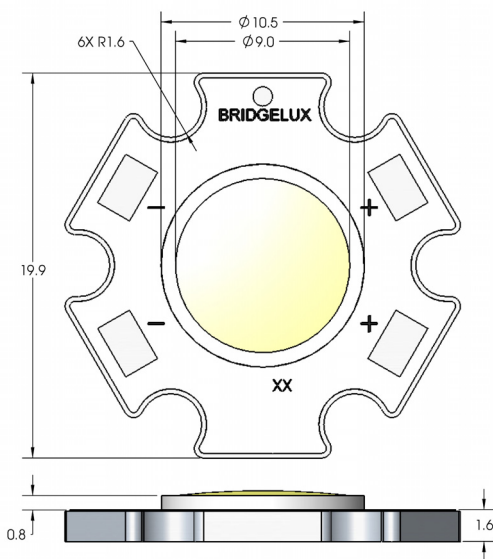
### Typical Performance – Cool White

Light Output at Test Current ( $I_m$ , $T_j$ 25°C)	440	880	1320	2200
Base Part Number	BXRA-C0400	BXRA-C0800	BXRA-C1200	BXRA-C2000
Test Current (mA) <sup>[1]</sup>	600	900	1300	1750
Forward Voltage at Test Current (V)	9.8	13.0	13.2	16.6
Thermal Resistance	1.4° C/W	0.8° C/W	0.7° C/W	0.5° C/W
Recommended Max DC Current (mA) <sup>[1,2]</sup>	1000	1500	2000	2500

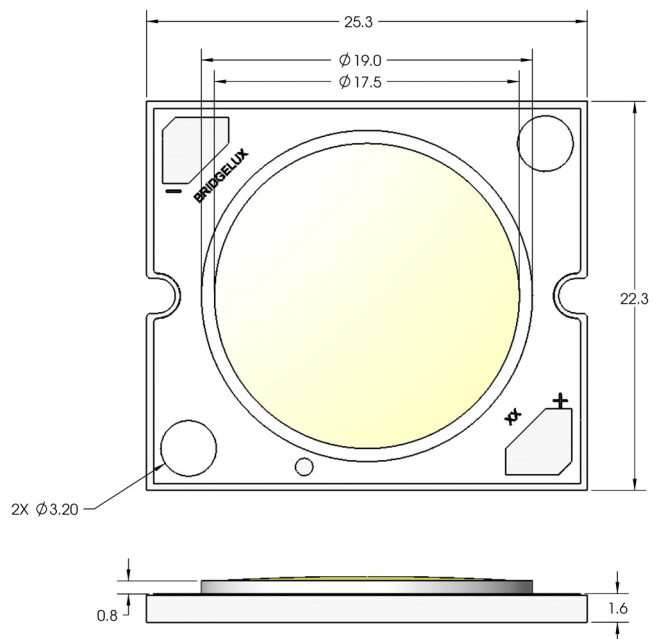
Notes (for all product configurations):

- 1) Proper thermal management is critical to maintain product below maximum junction temperature.
- 2) Maximum allowable pulsed current values will be higher.

### Mechanical Outline Drawings



Hexagonal Array



Rectangular Array

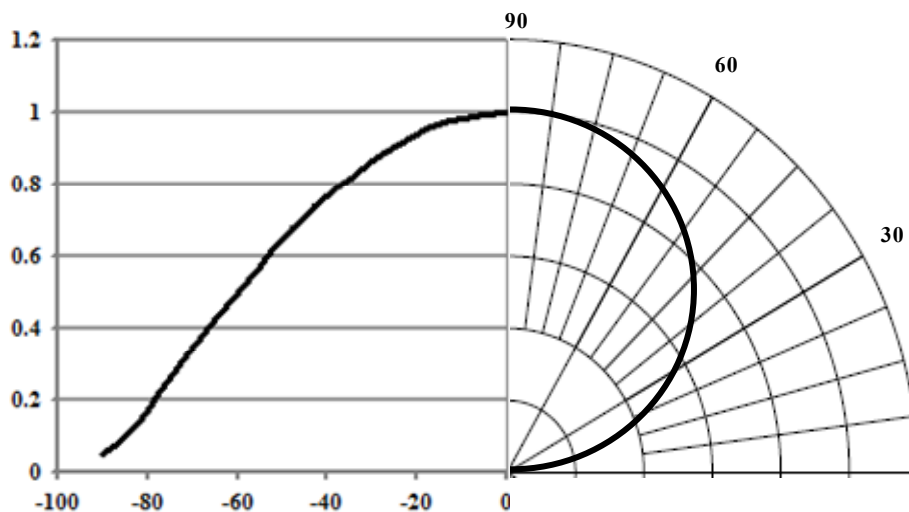
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### Absolute Maximum Ratings

Parameter	Value
Junction Temperature	150°C
Storage and Operating Case Temperature	-40°C to + 105°C
ESD Sensitivity	8000 V HBM 400 V MM
Manual soldering time at 350°C	3.5 seconds

### Typical Radiation Pattern (Lambertian)



### About Bridgelux

Focused on bringing innovation to light, Bridgelux is a leading provider of high-power, cost-effective and energy-efficient light-emitting diode (LED) solutions. The company's proprietary epitaxy technology, innovative chip designs and leading-edge LED packaging technology have enabled the company to develop advanced solid-state lighting (SSL) products that offer superior quality, are lower in cost and environmentally friendly—all without compromising performance. In addition to LED chips, the company delivers a range of SSL light sources that customers can easily integrate into a variety of lighting applications that will open up new markets in solid-state lighting. Founded in 2002, Bridgelux is headquartered in Sunnyvale, California. For more information about the company, please visit [www.bridgelux.com](http://www.bridgelux.com)



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