

Bridgelux LED Arrays

Data Sheet DS19

BXRB Series Packaging, Labeling, Handling, and Design Resources

Introduction

Bridgelux LED Array products deliver high performance, compact and cost-effective solid-state lighting solutions to serve the general lighting market. These products combine the higher efficacy, lifetime, and reliability benefits of LEDs with the light output levels of many conventional light sources. The Bridgelux Arrays have been specified to enable lamp and luminaire designs with comparable performance to existing incandescent, halogen, CFL and HID conventional light sources.

These compact high flux density light sources deliver uniform high quality illumination without pixilation or the multiple shadow effect caused by LED component based solutions, enabling excellent beam control for precision lighting. To simplify system design for appropriate light output, Bridgelux LED Arrays are specified to deliver performance under typical use conditions.

These integrated plug and play solutions reduce system complexity and enable miniaturized cost-effective lamp and luminaire designs. Typical applications include replacement lamps, task lighting, spot and track lighting, under cabinet, accent lights, down lights, pendants, sconces, porch lighting, pathway and landscape lighting, security lighting, portable lighting, and consumer luminaires and white goods.

Use

This data sheet complements other information contained in the relevant Bridgelux LED Array product data sheets. It applies to the products contained in the following data sheets:

- Data Sheet DS20, Bridgelux LS Array Series
- Data Sheet DS21, Bridgelux ES Star Array Series

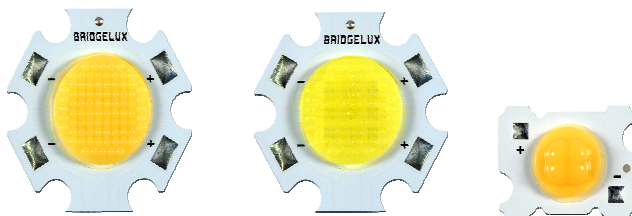


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Product Nomenclature

The part number designation for BXR B product families of Bridgelux LED Arrays is explained as follows:

B X R B – A A B C C C C – D – E E – F F F

Where:

B X R B: Designates product family

A A: Designates color

27 for 2700K ANSI Bin

30 for 3000K ANSI Bin

40 for 4000K ANSI Bin

56 for 5600K ANSI Bin

B: Designates minimum CRI

C = 70

E = 80

G = 90

C C C C: Designates nominal flux

0360 = 360 lm

0470 = 470 lm

0540 = 540 lm

0700 = 700 lm

0740 = 740 lm

0810 = 810 lm

1000 = 1000 lm

D: Designates configuration options, specific to each array family

E E: Designates color binning

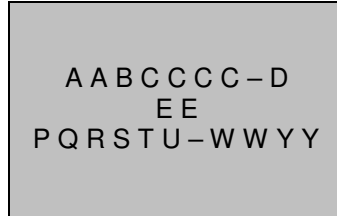
00 = Full ANSI bin, 7 SDCM

03 = 3 SDCM binning option

F F F: Designates wiring options, not applicable for LS and ES Star Arrays

Product Labeling

Bridgelux LED Array products are 100% tested and labeled via laser marking with relevant information on the back side of the LED Array. The following format is used for labeling the BXR B product families of Bridgelux LED Arrays.



Where:

A A B C C C C – D: Designates the base part number (30E0540-A, etc.)

E E: Designates the color bin code (Q3, P4, etc.)

P Q R S T or P Q R S T U: Designates the production lot code which may be a 5 or 6 character number (12345 or 123456, etc.)

W W Y Y: Designates the date code (production week and production year, 0210, etc.)

Product Packaging

Individual Bridgelux LED Arrays are packaged in tubes for shipment. All product packaged within a single tube are of the same color bin or bin code. Each tube is labeled with the information required for effective inventory management. A tube label example is shown in Figure 1.

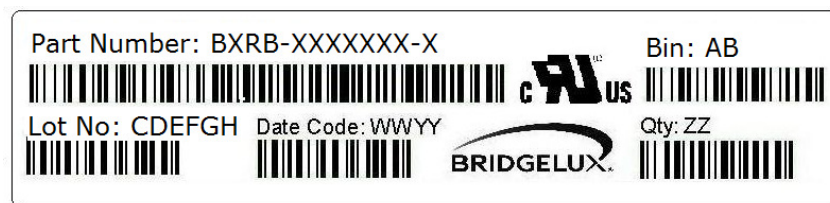


Figure 1: Tube Label Example

Where:

X X X X X X X - X: Designates the base part number (30E0540-A, etc.)

A B: Designates the bin code (Q3, etc.)

C D E F G H: Designates the production lot code

W W Y Y: Designates the date code (production week and production year, 0210, etc.)

Z Z: Designates the quantity

Tubes of Bridgelux LED Arrays are packaged in bags prior to loading into boxes for shipment. All products packaged within a single bag are of the same color bin or bin code, but each bag may contain multiple tubes of product. Each bag is labeled with the information required for effective inventory management. A bag label example is shown in Figure 2.



Figure 2: Bag Label Example

Where:

X X X X X X - X: Designates the base part number (30E0540-A, etc.)

A B: Designates the bin code (Q3, etc.)

C D E F G H: Designates the production lot code W W Y Y: Designates the date code (production week and production year, 0210, etc.)

Z Z: Designates the total quantity of products contained in the bag which may contain multiple tubes of product

Bags of Bridgelux LED Arrays are packaged in boxes prior to shipment. Multiple bags may be packaged into a single box. All products packaged within a box are of the same base part number, but multiple bins may be packaged in the same box. Each box is labeled with the information required for effective inventory management, including the quantity per color bin code in the case where multiple color bin codes are included in the same box. A box label example is shown in Figure 4.



Figure 4: Box Label Example

Where the area inside the red box (red box for illustration purposes only, not on the label):

X X X X X X X – X: Designates the base part number (30E0540, etc.)

Z Z Z: Designates the total quantity of products included in the box

And where:

C D E F G H: Designates the production lot code

W W Y Y: Designates the date code (production week and production year, 0210, etc.)

A B: Designates the bin code (Q3, etc.)

Z Z Z: Designates the quantity per listed lot code, bin code and date code contained in the box

In the case where multiple lot codes, date codes, or bin codes of the same base part number are combined in a single box this information will be repeated for all lot code, date code and bin code combinations included in the box with a total quantity indicated per combination.

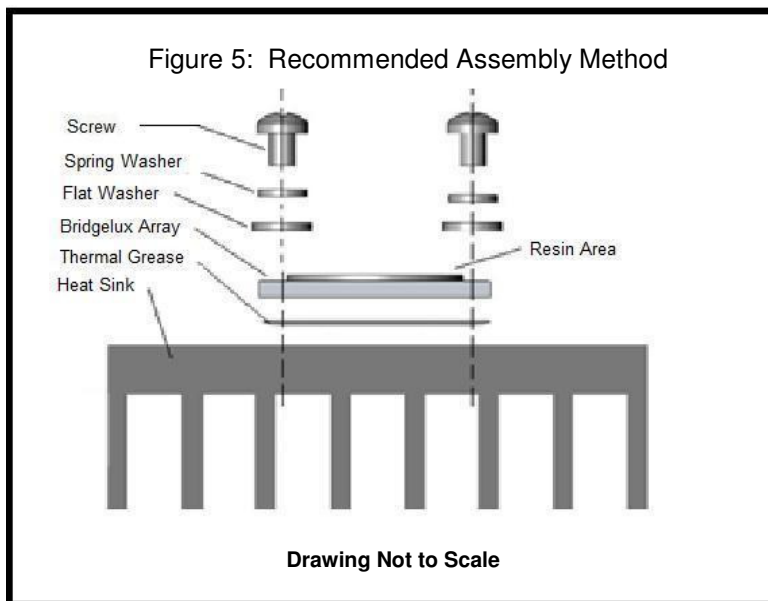
Mechanical Assembly and Handling

The recommended assembly process for Bridgelux LED Arrays is illustrated below.

When handling parts, please avoid contacting and do not apply stress to the resin area (see drawings included in the Mechanical Dimensions sections of the relevant product data sheets, resin area is indicated in yellow).

Product should be firmly secured to an appropriate heat sink by fastening M2.5 or #4 screws on both sides of the product as illustrated in Figure 5. To ensure proper thermal contact it is important to mount the LS and ES Star LED Arrays to the heat sink using a minimum of 2 mounting screws. Bridgelux recommends the use of hard non-electrically conductive flat washers with lock washers. The recommended center to center spacing for tapped mounting holes is included in the Mechanical Dimensions sections of the relevant product data sheets. Refer to Application Note AN11 – Handling and Assembly of Bridgelux LED Arrays, for more details.

A thin layer of thermal grease should be applied to the bottom surface of the LED Array, between the bottom of the LED Array and the heat sink. All air gaps and voids between the heat sink and Array should be eliminated. Ensure that sufficient thermal grease is used to cover the entire bottom surface of the Array, but not so much that the thermal grease creeps up to the top of the Array.



Design Resources

Bridgelux has developed a comprehensive set of application notes and design resources to assist customers in successfully designing with Bridgelux LED Array products. Included below is a list of available resources which can be downloaded from the Bridgelux web site under the Design Resources section. <http://www.bridgelux.com/products/ledarray.html>

Application Notes

- AN10: Effective Thermal Management of Bridgelux LED Arrays
- AN11: Assembly Considerations for Bridgelux LED Arrays
- AN12: Electrical Drive Considerations for Bridgelux LED Arrays
- AN14: Reliability Data Sheet for Bridgelux LED Arrays
- AN15: Reflow Soldering of Bridgelux LED Arrays
- AN16: Optical Considerations for Bridgelux LED Arrays

Optical Source Models

Optical source models and ray set files are available for all Bridgelux LED Array products, and can be downloaded directly from the Bridgelux web site. The list below contains the formats currently available. If you require a specific format not included in this list, please contact your Bridgelux sales representative for assistance.

- Zemax
- ASAP
- IESNA
- LightTools
- LucidShape
- OPTIS SPEOS
- PHOTOPIA
- TracePro
- Radiant Imaging Source Model

3D CAD Models

Three dimensional CAD models depicting the product outline of all Bridgelux LED Arrays are available in both SAT and STEP formats. These CAD files can be downloaded directly from the Bridgelux web site.

About Bridgelux

Bridgelux LED Arrays are developed, manufactured and marketed by Bridgelux, Inc. Bridgelux is a U.S. lighting company and leading developer of technologies and solutions that will transform the \$40 billion global lighting industry into a \$100 billion market opportunity. Based in Silicon Valley, Bridgelux is a pioneer in solid-state lighting (SSL), expanding the market for solid state lighting by driving down the cost of light through innovation. Bridgelux's patented light source technology replaces traditional lighting technologies (such as incandescent, halogen and fluorescent lamps) with integrated, solid-state solutions, enabling lamp and luminaire manufacturers to develop high performance and energy-efficient white light products. The plug and play simplicity of the Bridgelux LED Arrays enable our customers to address the rapidly growing interior and exterior solid state lighting markets, including street lights, retail lighting, commercial lighting and consumer applications. With more than 500 patent applications filed or granted worldwide, Bridgelux is the only vertically integrated LED manufacturer that designs its solutions specifically for the lighting industry.

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

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