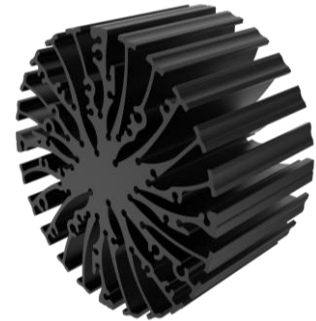


## EtraLED

### EtraLED-BRI-9650 Bridgelux Modular Passive Star LED Heat Sink $\Phi$ 96mm

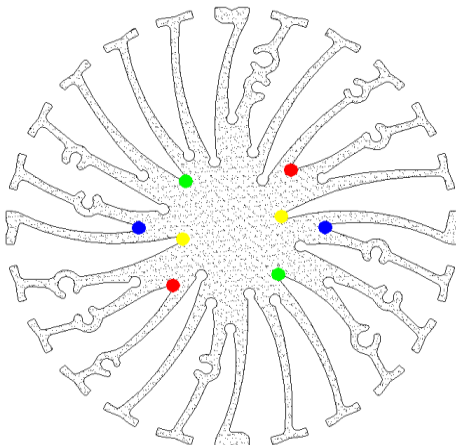
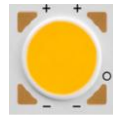
#### Features VS Benefits

- \* The EtraLED-BRI-9650 Bridgelux modular passive star LED heat sink are specifically designed for luminaires using the Bridgelux LED engines.
- \* Mechanical compatibility with direct mounting of the LED engines to the LED cooler and thermal performance matching the lumen packages.
- \* For spotlight and downlight designs from 2,000 to 5,100 lumen.
- \* Thermal resistance range  $R_{th}$  1.45°C/W.
- \* Modular design with mounting holes foreseen for direct mounting of Bridgelux V Series™, Vero® SE Series, Vero® Series, H Series™ and Vesta™ Series LED engines.
- \* Diameter 96.0mm - standard height 50.0mm, Other heights on request.
- \* Extruded from highly conductive aluminum.



#### Zhaga LED engine and radiator assembly is a unified future international standardization

- \* Below you find an overview of Bridgelux COB's and LED modules which standard fit on the srar LED heat sinks.
- \* In this way mechanical after work and related costs can be avoided, and lighting designers can standardize their designs on a limited number of srar LED heat sinks.



#### Bridgelux LED Modules directly Mounting Options

##### Bridgelux V13, V15, V18 LED Array Series:

BXRE-20xxxxx-x-xx;	BXRE-40xxxxxx-x-xx;
BXRE-27xxxxxx-x-xx;	BXRE-50xxxxxx-x-xx;
BXRE-30xxxxxx-x-xx;	BXRE-57xxxxxx-x-xx;
BXRE-35xxxxxx-x-xx;	BXRE-65xxxxxx-x-xx;

With the Zhaga Book 3 Holders:

BJB holder: 47.319.2025.50; 47.319.2030.50;

Direct mounting with machine screws M3x6.5mm, Blue indicator marks.

With the LEDiL products:

Olivia series: FN14637-S;

Ronda series: FN15xxx-xx;

##### Bridgelux Vero® Series Vero 10, Vero 13 LED Array and Vero® SE Series Vero 10 SE, Vero 13 SE LED Array

BXRC-27xxxx-x-xx ;	BXRC-50xxxxxx-x-xx;
BXRC-30xxxx-x-xx ;	BXRC-57xxxxxx-x-xx;
BXRC-35xxxx-x-xx ;	BXRC-65xxxxxx-x-xx;
BXRC-40xxxx-x-xx ;	

With the Bridgelux Holder:

Direct mounting with machine screws M3x6.5mm.

Vero 10 for the yellow indicator mark, Vero 13 for the red indicator mark.

With the LEDiL products:

Olivia series: FN14637-S; FN14828-M;

Ronda series: FN15xxx-xx;

##### Bridgelux® H Series™ H6, H9 LED Array:

BXRH-27xxxx-x-xx ;	BXRH-35xxxxxx-x-xx;
BXRH-30xxxx-x-xx ;	BXRH-40xxxxxx-x-xx;

With the Zhaga Book 11 Holders:

BJB holder: 47.319.6120.50; 47.319.6104.50;

Direct mounting with machine screws M3x6.5mm, Green indicator marks.

With the LEDiL products: Ronda series: FN15xxx-xx;

##### Bridgelux® Vesta™ Series Dim-To-Warm 9mm Array

BXRV-DR-1830H-1000-x-13;

With the Zhaga Book 11 Holders:

BJB holder: 47.319.6180.50;

Direct mounting with machine screws M3x6.5mm, Green indicator marks.

**EtraLED**

**EtraLED-BRI-9650 Bridgelux Modular Passive Star LED Heat Sink  $\Phi$ 96mm**

**Mounting Options and Drawings & Dimensions**

Example: EtraLED-BRI-9650-B-1,2

Example: EtraLED-BRI-96 **1** - **2** - **3**

**1** Height (mm)

**2** Anodising Color

B-Black

C-Clear

Z-Custom

**3** Mounting Options - see graphics for details Combinations available

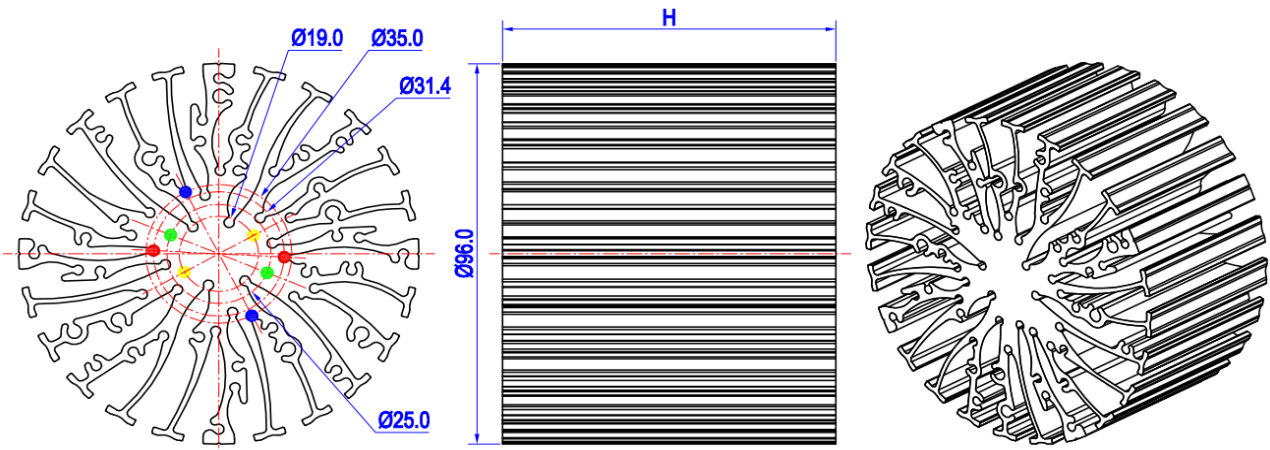
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means option 1 and 2 combined

**Notes:**

- Mentioned models are an extraction of full product range.
- For specific mechanical adaptations please contact MingfaTech.
- MingfaTech reserves the right to change products or specifications without prior notice.

MOUNTING OPTION	Module type	Holder NO.	LEDiL products		THREAD	THREAD DEPTH	THREAD HOLE DISTANCE
			Olivia series	Ronda series			
1	Vero 10 Vero SE 10	Bridgelux	/	/	M3	6.5mm	19.0mm/ 2-@180°
2	Vesta™ Series 9mm	BJB Holder 47.319.6180.50	/	/	M3	6.5mm	25.0mm/ 2-@180° (Zhaga book 11)
	H6	BJB Holder 47.319.6120.50	/	/			
	H9	BJB Holder 47.319.6104.50	/	FN15xxx-xx;			
3	Vero 13 Vero SE 13	Bridgelux	FN14637-S; FN14828-M;	FN15xxx-xx;	M3	6.5mm	31.4mm/ 2-@180°
4	V15, V18	BJB Holder 47.319.2224.50	FN14637-S	/	M3	6.5mm	35.0mm/ 2-@180° (Zhaga book 3)
	V13	BJB Holder 47.319.2025.50		FN15xxx-xx;			



## EtraLED

### EtraLED-BRI-9650 Bridgelux Modular Passive Star LED Heat Sink $\Phi 96\text{mm}$

#### The product data table

	Model No.	EtraLED-BRI-9650
	Heatsink Size	$\Phi 96 \times H50\text{mm}$
	Heatsink Material	AL6063-T5
	Finish	Black Anodized
	Weight (g)	458.0
	Dissipated power (T <sub>hs-amb</sub> , 50°C)	34.5 (W)
	Cooling surface area (mm <sup>2</sup> )	114836
	Thermal Resistance (R <sub>hs-amb</sub> )	1.45 (°C/W)

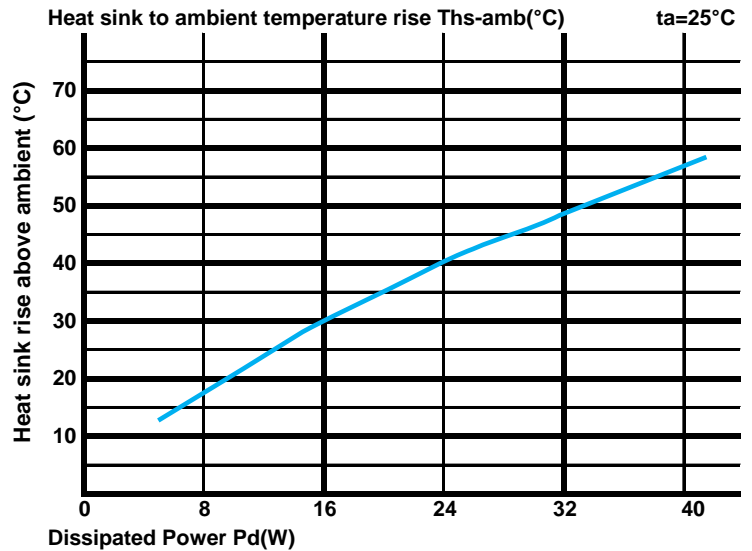
#### The thermal data table

\* Please be aware the dissipated power Pd is not the same as the electrical power Pe of a LED module.

\* To calculate the dissipated power please use the following formula:  $P_d = P_e \times (1 - \eta_L)$ .

Pd - Dissipated power ; Pe - Electrical power ;  $\eta_L$  = Light efficiency of the LED module;

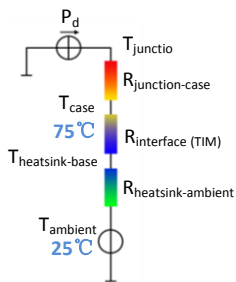
Dissipated Power Pd(W)	Pd = Pe x (1- $\eta_L$ )	Heat sink to ambient thermal resistance R <sub>hs-amb</sub> (°C/W)	Heat sink to ambient temperature rise Ths-amb (°C)
		EtraLED-BRI-9650	
8.0		2.25	18.0
16.0		1.88	30.0
24.0		1.67	40.0
32.0		1.50	48.0
40.0		1.40	56.0



\*The aluminum substrate side of the package outer shell is thermally connected to the heat sink via TIM (Thermal interface material).

MingFa recommends the use of a high thermal conductive interface between the LED module and the LED cooler.

Either thermal grease, A thermal pad or a phase change thermal pad thickness 0.1-0.15mm is recommended.



\*Thermal resistance is a heat property and a measurement of a temperature difference by which an object or material resists a heat flow.

Geometric shapes are different, the thermal resistance is different. Formula:  $\theta = (T_{hs} - T_a) / P_d$

$\theta$  - Thermal Resistance [°C/W]; T<sub>hs</sub> - Heatsink temperature ; T<sub>a</sub> - Ambient temperature ;

\*The thermal resistance between the junction section of the light-emitting diode and the aluminum substrate side of the package outer shell is R<sub>junction-case</sub>, the thermal resistance of the TIM outside the package is R<sub>interface (TIM)</sub> [°C/W], the thermal resistance with the heat sink is R<sub>heatsink-ambient</sub> [°C/W], and the ambient temperature is T<sub>ambient</sub> [°C].

\*Thermal resistances outside the package R<sub>interface (TIM)</sub> and R<sub>heatsink-ambient</sub> can be integrated into the thermal resistance R<sub>case-ambient</sub> at this point. Thus, the following formula is also used:

$$T_{\text{junction}} = (R_{\text{junction-case}} + R_{\text{case-ambient}}) \cdot P_d + T_{\text{ambient}}$$