

xLED

xLED-BRI-4550 Pin Fin LED Heat Sink Φ 45mm for Bridgelux

Features VS Benefits

- * The xLED-BRI-4550 Bridgelux Pin Fin LED Heat Sinks 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 400 to 1,500 lumen.
- * Thermal resistance range R_{th} 5.55°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 45.0mm - standard height 50.0mm, Other heights on request.
- * Forged 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 Pin Fin 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 LED Pin Fin LED Heat Sink.



Bridgelux LED Modules directly Mounting Options

Bridgelux V8, V10, V13 LED Array Series:

- BXRE-20xxxxxx-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;

V13 LED Array Serie with the BJB holder:47.319.2025.50, Blue indicator marks.
 V10 LED Array Serie with the BJB holder:47.319.6060.50, Green indicator marks.
 V8 LED Array Serie with the Bridgelux holder, yellow 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-27xxxxxx-x-xx; BXRC-50xxxxxx-x-xx;
- BXRC-30xxxxxx-x-xx; BXRC-57xxxxxx-x-xx;
- BXRC-35xxxxxx-x-xx; BXRC-65xxxxxx-x-xx;
- BXRC-40xxxxxx-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:

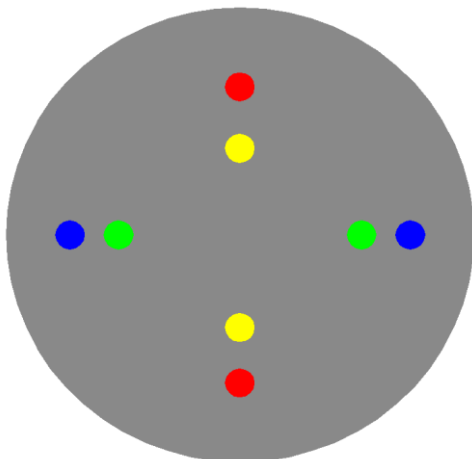
- BXRH-27xxxxxx-x-xx; BXRH-35xxxxxx-x-xx;
- BXRH-30xxxxxx-x-xx; BXRH-40xxxxxx-x-xx;

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.



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Mounting Options and Drawings & Dimensions

Example: xLED-BRI-4550-B-1,2

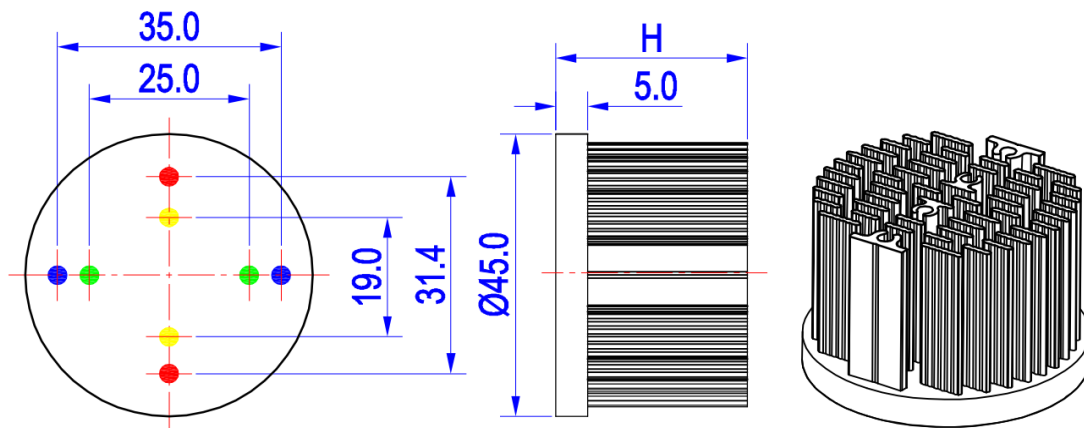
Example: xLED-BRI-45 **1** - **2** - **3**

- 1** Height (mm)
- 2** Anodising Color
 - B-Black
 - C-Clear
 - Z-Custom
- 3** Mounting Options - see graphics for details Combinations available
Ex.order code - 12
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	Bridgelux	/	/	M3	6.5mm	19.0mm/ 2-@180°
	Vero SE 10		/	/			
	V8		/	/			
2	V10	BJB Holder 47.319.6060.50	/	FN15xxx-xx;	M3	6.5mm	25.0mm/ 2-@180° (Zhaga book 11)
	Vesta™ Series 9mm	BJB Holder 47.319.6180.50	/	/			
	H6	BJB Holder 47.319.6120.50	/	/			
	H9	BJB Holder 47.319.6104.50	/	FN15xxx-xx;			
3	Vero 13	Bridgelux	FN14637-S;	FN15xxx-xx;	M3	6.5mm	31.4mm/ 2-@180°
4	Vero SE 13		FN14828-M;	FN15xxx-xx;	M3	6.5mm	35.0mm/ 2-@180° (Zhaga book 3)
	V13	BJB Holder 47.319.2025.50		FN15xxx-xx;	M3	6.5mm	



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The product data table

	Model No.	xLED-BRI-4550
	Heatsink Size	$\Phi 45 \times H 50\text{mm}$
	Heatsink Material	AL1070
	Finish	Black Anodized
	Weight (g)	63.5
	Dissipated power (T_{hs-amb},50°C)	9.0 (W)
	Cooling surface area (mm²)	37985
	Thermal Resistance (R_{hs-amb})	5.55 (°C/W)

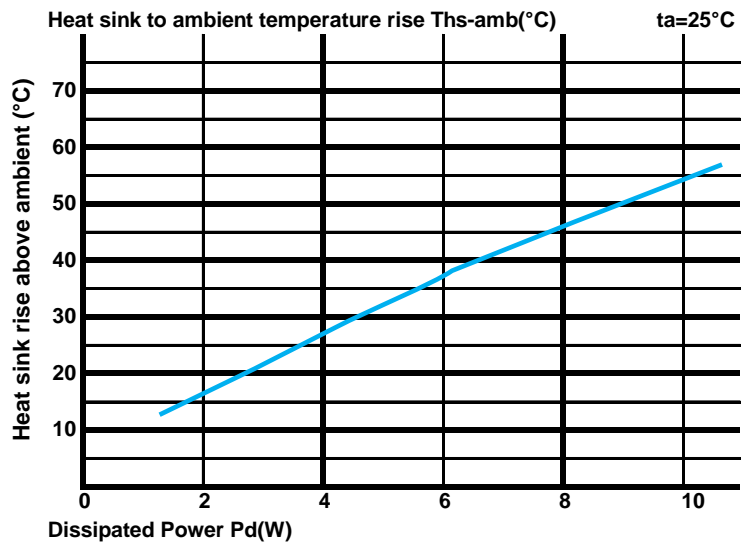
The thermal data table

* 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 ; η_L = Light efficiency of the LED module;

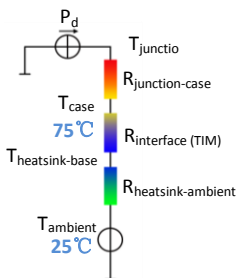
Dissipated Power Pd(W)	Pd = Pe x (1-ηL)	Heat sink to ambient thermal resistance R _{hs-amb} (°C/W)	Heat sink to ambient temperature rise T _{hs-amb} (°C)
		xLED-BRI-4550	
2.0		8.00	16.0
4.0		6.50	26.0
6.0		6.17	37.0
8.0		5.75	46.0
10.0		5.40	54.0



*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: $\theta = (T_{hs} - T_a) / P_d$

θ - Thermal Resistance [°C/W] ; T_{hs} - Heatsink temperature ; T_a - 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_{junction-case}, the thermal resistance of the TIM outside the package is R_{interface (TIM)} [°C/W], the thermal resistance with the heat sink is R_{heatsink-ambient} [°C/W], and the ambient temperature is T_{ambient} [°C].

*Thermal resistances outside the package R_{interface (TIM)} and R_{heatsink-ambient} can be integrated into the thermal resistance R_{case-ambient} at this point. Thus, the following formula is also used:

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