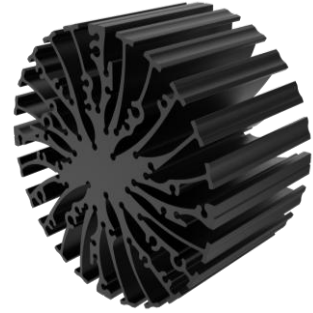


EtraLED

EtraLED-LUME-9650 Lumens Modular Passive Star LED Heat Sink Φ 96mm

Features VS Benefits

- * The EtraLED-LUME-9650 Lumens Pin Fin LED Heat Sinks are specifically designed for luminaires using the Lumens 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 2000 to 5,100 lumen.
- * Thermal resistance range R_{th} 1.45°C/W.
- * Modular design with mounting holes foreseen for direct mounting of Lumens Ergon COB series, and AC-ALL series LED engines.
- * Diameter 96.0mm - 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 Lumens 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.

LUMENS



Lumens LED Modules directly Mounting Options

Lumens Ergon COB_HO, COB_HO+, COB_HE Series :

- ERC1812xxxxHO; ERC1812xxxxHE;
- ERC1820xxxxHO; ERC1820xxxxHE;

With the Zhaga Book 3 holders for the red indicator marks.
 (Ideal Holder:50-2101CR);
 (BJB holder:47.319.2131.50);
 Without the holders for the green indicator marks.
 Direct mounting with machine screws M3x6.5mm.

Lumens Ergon COB_HO, COB_HO+, COB_HE Series :

- ERC1507xxxxHO; ERC1507xxxxHO+;
- ERC1512xxxxHO; ERC1512xxxxHO+;
- ERC1507xxxxHE;

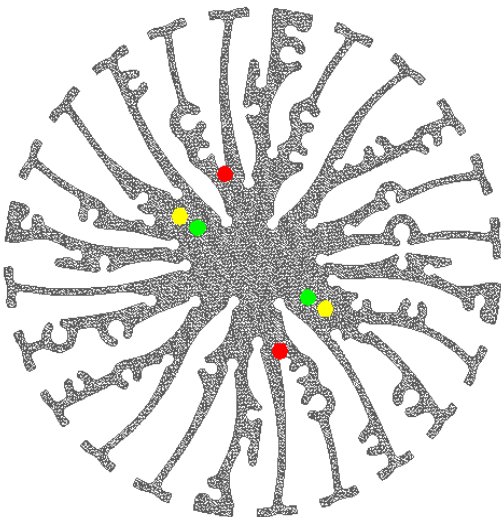
With the Zhaga Book 11 holders for the green indicator marks.
 IDEAL Holder:50-2001CR;
 BJB Holder:47.319.6104.50;
 Without the holders for the blue indicator marks.
 Direct mounting with machine screws M3x6.5mm.

Lumens AC-ALL Series :

- EDC/38C/8W/xxx/120V/B; EDC/38C/8W/xxx/230V/A;
- EDC/47C/10W/xxx/120V/B; EDC/47C/10W/xxx/230V/A;
- EDC/47C/12W/xxx/120V/B; EDC/47C/12W/xxx/230V/A;
- EDC/47C/15W/xxx/120V/B; EDC/47C/15W/xxx/230V/A;

With the Zhaga Book 3 holders for the red indicator marks.
 Direct mounting with machine screws M3x6.5mm.

Please refer to the www.lumensleds.com data provided on the manual.



EtraLED

EtraLED-LUME-9650 Lumens Modular Passive Star LED Heat Sink Φ 96mm

Mounting Options and Drawings & Dimensions

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

Example: EtraLED-LUME-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

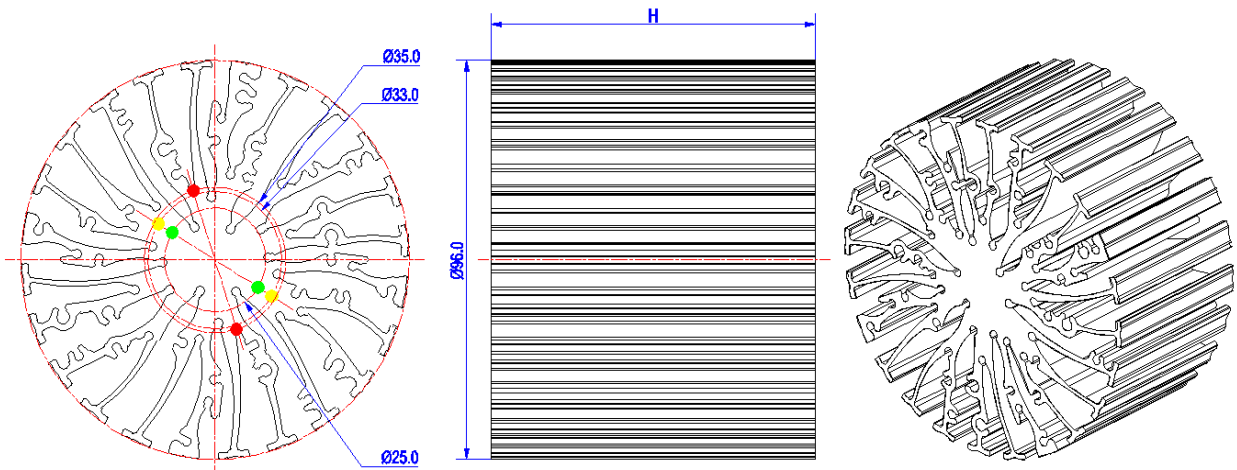
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means option 1 and 2 combined

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.	THREAD	THREAD DEPTH	THREAD HOLE DISTANCE
1	Ergon COB (15.85x15.85)	/	M3	6.5mm	22.0mm/ 2-@180°
2	Ergon COB (17.85x17.85)	/	M3	6.5mm	25.0mm/ 2-@180° (Zhaga book 11)
	Ergon COB (15.85x15.85)	BJB Holder 47.319.6104.50 Ideal Holder 50-2001CR			
3	AC-ALL Series	Lumens	M3	6.5mm	35.0mm/ 2-@180° (Zhaga book 3)
	Ergon COB (17.85x17.85)	BJB Holder 47.319.2131.50 Ideal Holder 50-2101CR			



EtraLED

EtraLED-LUME-9650 Lumens Modular Passive Star LED Heat Sink Φ96mm

The product data table

	Model No.	EtraLED-LUME-9650
	Heatsink Size	Φ96xH50mm
	Heatsink Material	AL6063-T5
	Finish	Black Anodized
	Weight (g)	458.0
	Dissipated power (T_{hs-amb},50°C)	34.5 (W)
	Cooling surface area (mm²)	114836
	Thermal Resistance (R_{hs-amb})	1.45 (°C/W)

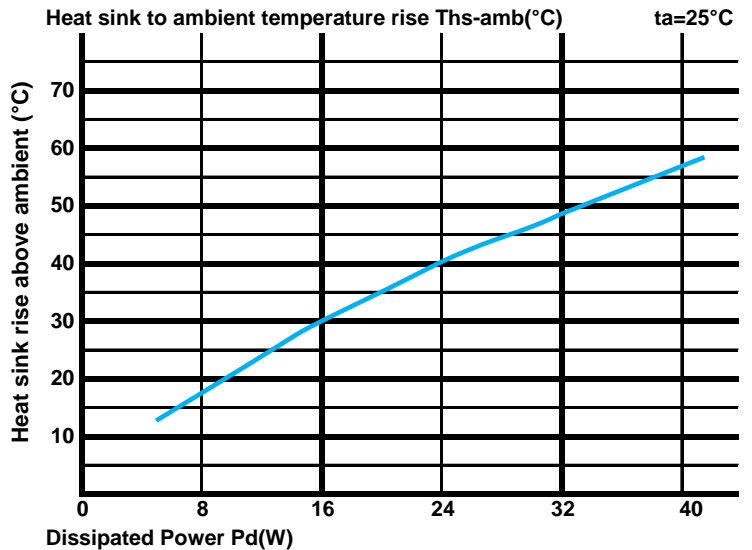
The thermal data table

* 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: Pd = Pe x (1-ηL).

Pd - Dissipated power ; Pe - Electrical power ; ηL = 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)
		EtraLED-LUME-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: $\theta = (T_{hs} - T_a) / P_d$

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:

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