

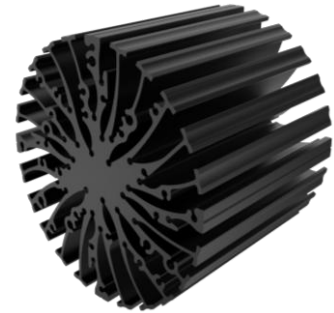


**EtraLED**

**EtraLED-CIT-9680 Citizen Modular Passive Star LED Heat Sink  $\Phi$ 96mm**

**Features VS Benefits**

- \* The EtraLED-CIT-9680 Citizen modular passive star LED heat sink are specifically designed for luminaires using the Citizen 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 2,500 to 6,200 lumen.
- \* Thermal resistance range  $R_{th}$  1.20°C/W.
- \* Modular design with mounting holes foreseen for direct mounting of citizen COB series.
- \* Diameter 96mm - standard height 80mm 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 Citizen 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.



**Citizen LED Modules directly Mounting Options**

**Citizen COB version 4, version 5, version 6 Series:**

- CLU046-12xxxx; CLU048-12xxxx;
- CLU046-18xxxx; CLU048-18xxxx;

**Citizen High intensity COB Series:**

- CLU731-12xxxx;
- With the Zhaga Book 3 holders for the green indicator marks. BJB holder: 47.319.2030.50; AAG.STUCCHI: 8102-G2
- Without the holders for the blue indicator marks.
- Direct mounting with machine screws M3x6.5mm.

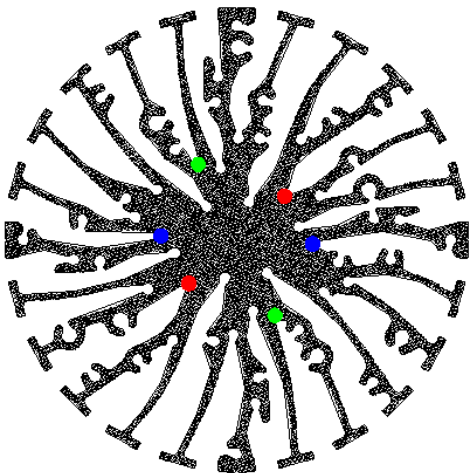
**Citizen LED Modules directly Mounting Options**

**Citizen COB version 4, version 5, version 6 Series:**

- CLU036-12xxxx;
- CLU038-12xxxx;

**Citizen High intensity COB Series:**

- CLU721-12xxxx;
- CLU711-12xxxx;
- With the Zhaga Book 3 holders for the green indicator marks. BJB holder: 47.319.2021.50; AAG.STUCCHI: 8101-G2
- Without the holders for the red indicator marks.
- Direct mounting with machine screws M3x6.5mm.



# EtraLED

EtraLED-CIT-9680 Citizen Modular Passive Star LED Heat Sink  $\Phi$ 96mm

## Mounting Options and Drawings & Dimensions

Example: EtraLED-CIT-9680-B-1,2

Example: EtraLED-CIT-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

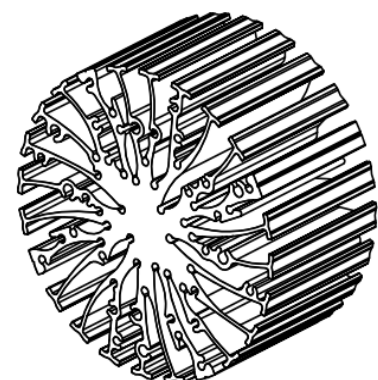
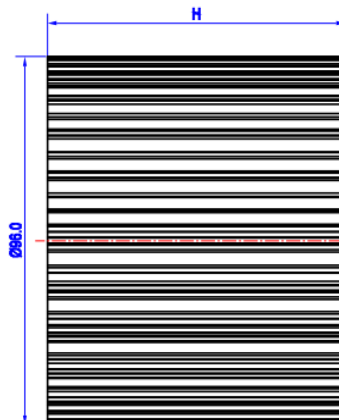
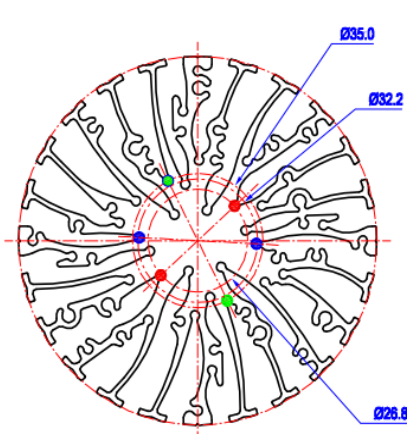
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means option 1 and 2 combined

### 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	CLU036; CLU038 CLU721; CLU711	/	M3	6.5mm	26.8mm/ 2-@180°
2		/	M3	6.5mm	32.2mm/ 2-@180°
3	CLU046; CLU048 CLU731	BJB Holder 47.319.2030.50	M3	6.5mm	35.0mm/ 2-@180° (Zhaga book 3)
		AAG.STUCCHI 8102-G2			
	CLU036; CLU038 CLU721; CLU711	BJB Holder 47.319.2021.50			
		AAG.STUCCHI 8101-G2			



# EtraLED

## EtraLED-CIT-9680 Citizen Modular Passive Star LED Heat Sink $\Phi 96\text{mm}$

### The product data table

	Model No.	EtraLED-CIT-9680
	Heatsink Size	$\Phi 96 \times H 80\text{mm}$
	Heatsink Material	AL6063-T5
	Finish	Black Anodized
	Weight (g)	575.0
	Dissipated power (T <sub>hs-amb</sub> , 50°C)	41.5 (W)
	Cooling surface area (mm <sup>2</sup> )	180427
	Thermal Resistance (R <sub>hs-amb</sub> )	1.2 (°C/W)

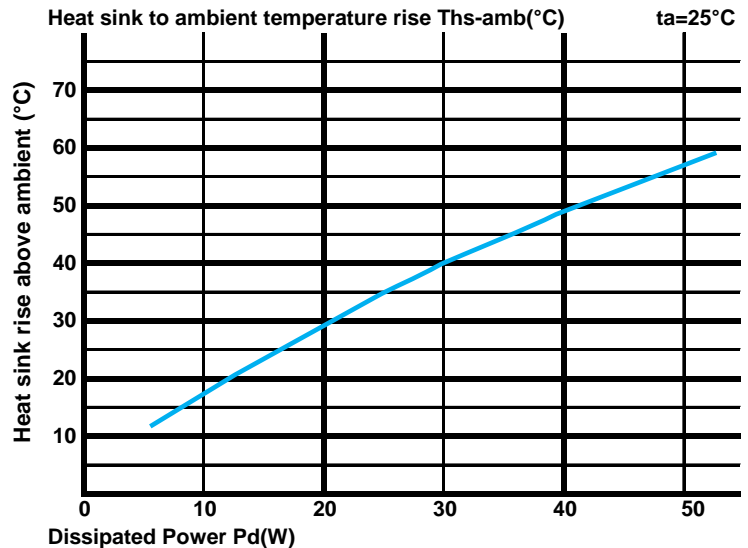
### The thermal data table

\* 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;

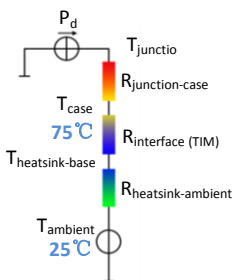
Dissipated Power Pd(W)	Pd = Pe x (1- $\eta_L$ )	Heat sink to ambient thermal resistance R <sub>hs-amb</sub> (°C/W)	Heat sink to ambient temperature rise T <sub>hs-amb</sub> (°C)
		EtraLED-CIT-9680	
10.0		1.70	17.0
20.0		1.45	29.0
30.0		1.33	40.0
40.0		1.20	48.0
50.0		1.12	56.0



\*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:

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