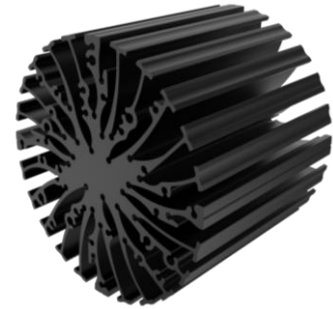


**EtraLED**

**EtraLED-GE-9680 GE Modular Passive Star Heat Sink Ø96mm**

**Features VS Benefits**

- \* The EtraLED-GE-9680 GE Lighting Modular Passive Star LED Heat Sinks are specifically designed luminaires using the GE Lighting 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 2500 to 6,200 lumen.
- \* Thermal resistance range Rth 1.20°C/W.
- \* Modular design with mounting holes foreseen for direct mounting of GE lighting Infusion™ LED engines.
- \* Diameter 96.0mm - standard height 80mm Other heights on request.
- \* Forged from highly conductive aluminum.

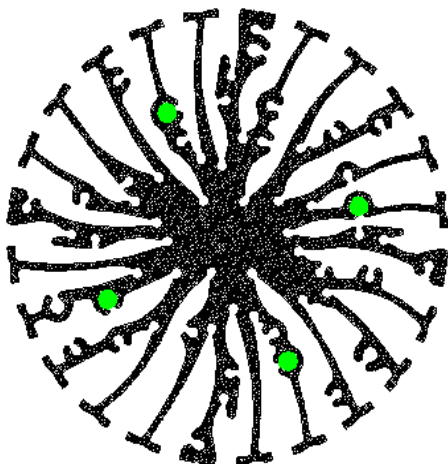


**Zhaga LED engine and radiator assembly is a unified future international standardization**

- \* Below you find an overview of GE 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.



**GE Lighting**



**GE lighting LED engines for which Zhaga book5 LED Modules holders are available.**

For the GE lighting Infusion™ M LED modules.

**Infusion™ M3000**

- M3000/827/W/G4;
- M3000/830/W/G4;
- M3000/835/W/G4;
- M3000/840/W/G4;
- M3000/930/W/G4;

**Infusion™ M4500**

- M4500/827/W/G4;
- M4500/830/W/G4;
- M4500/835/W/G4;
- M4500/840/W/G4;
- M4500/930/W/G4;

For the GE lighting Infusion™ DLM LED modules.

**Infusion™ DLMM3000**

- DLM3000/927;
- DLM3000/930;
- DLM3000/935;
- DLM3000/940;

**Infusion™ DLM4000**

- DLM4000/927;
- DLM4000/930;
- DLM4000/935;
- DLM4000/940;

Please refer to the "<http://www.gelighting.com/LightingWeb/emea/>" data provided on the manual.

Zhaga Book5 Green indicator marks:  
Direct mounting with machine screws M3.5x6.5mm;



for

LED



EtraLED

EtraLED-GE-9680 GE Modular Passive Star Heat Sink  $\Phi$ 96mm

Mounting Options and Drawings & Dimensions

Example: EtraLED-GE-9680-B-1

Example: EtraLED-GE-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

Ex.order code - 12

means option 1 and 2 combined

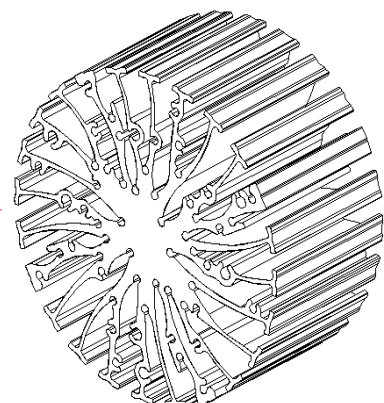
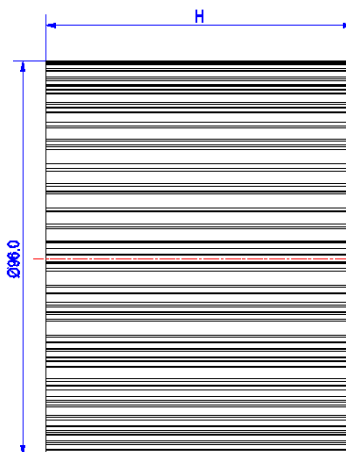
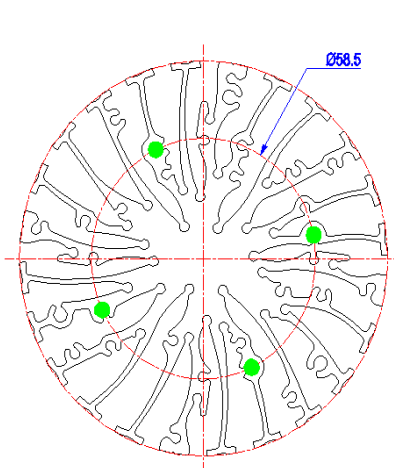


GE Lighting

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	Infusion™ M Infusion™ DLM	GE Lighting	M3.5	6.5mm	$\Phi$ 58.4mm/ 4-M3.5 (Zhaga book5)





for

LED



EtraLED

EtraLED-GE-9680 GE Modular Passive Star Heat Sink  $\Phi$ 96mm

The product data table

	Model No.	EtraLED-GE-9680
	Heatsink Size	$\Phi$ 96xH80mm
	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)

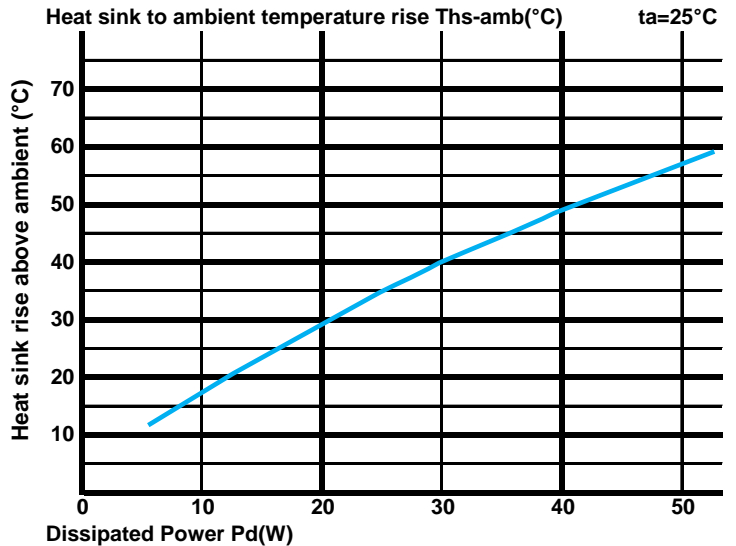
The thermal data table

\* 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: Pd = Pe x (1-ηL).

Pd - Dissipated power ; Pe - Electrical power ; ηL = Light efficiency of the LED module;

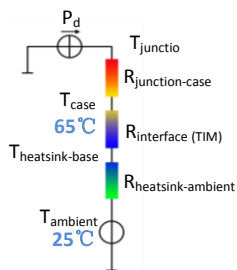
Dissipated Power Pd(W)	Pd = Pe x (1-ηL)	
	Heat sink to ambient thermal resistance R <sub>hs-amb</sub> (°C/W)	Heat sink to ambient temperature rise T <sub>hs-amb</sub> (°C)
EtraLED-GE-9680		
10.0	1.70	17.0
20.0	1.45	29.0
30.0	1.33	40.0
40.0	1.20	48.0
50.0	1.12	56.0



\*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

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

\*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:

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

