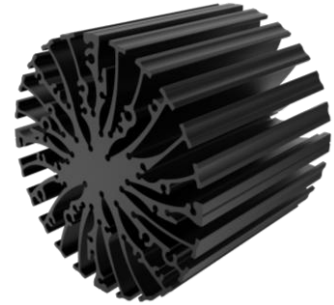


**EtraLED**

**EtraLED-NIC-9680 Nichia Modular Passive Star LED Heat Sink  $\Phi$ 96mm**

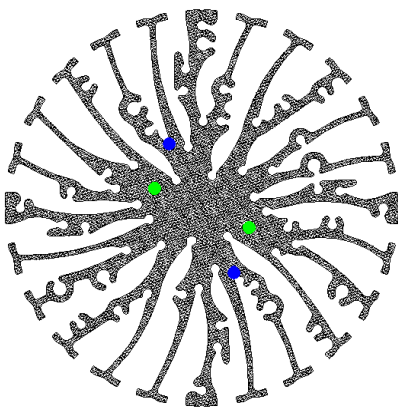
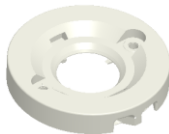
**Features VS Benefits**

- \* The EtraLED-NIC-9680 Nichia Passive Star LED Heat Sinks are specifically designed for luminaires using the Nichia 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  $R_{th}$  1.20°C/W.
- \* Modular design with mounting holes foreseen for direct mounting of Nichia COB series.
- \* Diameter 96.0mm - standard height 80.0mm, 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 Nichia 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.



**Nichia LED Modules directly Mounting Options**

**Nichia COB LED modules name:**

- NFCWL036B;
- NFCLL036B;
- NFCWL060B;
- NFCLL060B;

**With the Zhaga Book 3 Holders:**

- Ideal Holder:50-2100NC;
- TE LED Holder:2213382-2;

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

**With the LEDiL products:**

- Lena series: CN14xxx; C13xxx; C12xxx;
- Ronda series: FN15xxx-xx;

**Nichia COB LED modules name:**

- NVCWL024Z;
- NVCLL024Z;
- NVNS007Z;
- NJCWS024Z;

**With the Zhaga Book 11 Holders:**

- BJB holder:47.319.6180.50;
- TE LED Holder:2213118-1;

Direct mounting with machine screws M3x8mm, Red indicator marks.

**With the LEDiL products:**

- Lena series: CN14xxx; C13xxx; C12xxx;
- Ronda series: FN15xxx-xx;

**EtraLED**

**EtraLED-NIC-9680 Nichia Modular Passive Star LED Heat Sink  $\Phi$ 96mm**

**Mounting Options and Drawings & Dimensions**

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

Example: EtraLED-NIC-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

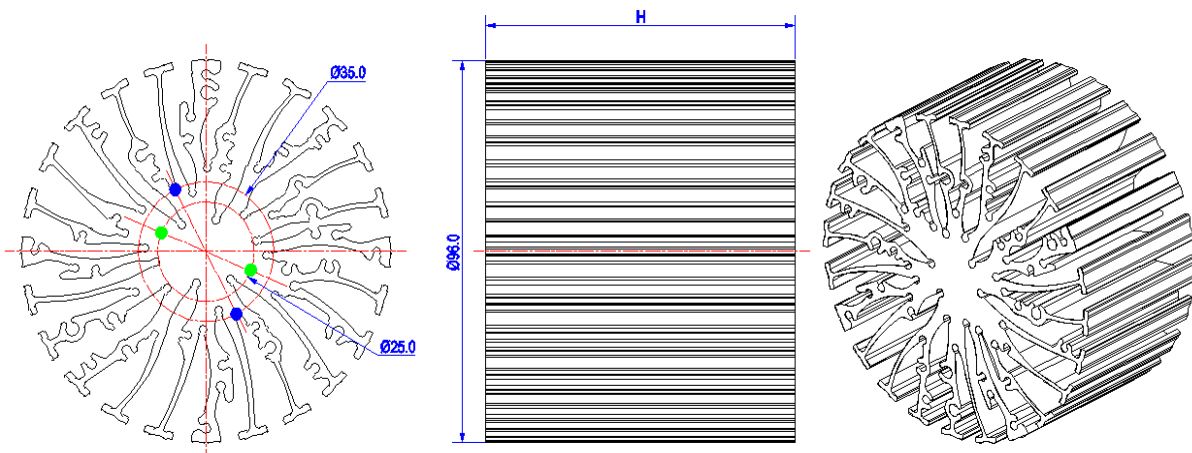
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means option 1 and 2 combined

**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
			Lena series	Ronda series			
N	/	None	None	None	None	None	None
1	NVCWL024Z; NVCLL024Z; NVNWS007Z; NJCWS024Z;	BJB Holder 47.319.6180.50	CN14xxx; C13xxx; C12xxx;	FN15xxx-xx	M3	6.5mm	25.0mm/ 2-@180° (Zhaga book 11)
		TE Holder 2213118-1					
2	NFCWL036B; NFCLL036B; NFCWL060B; NFCLL060B;	Ideal Holder 50-2100NC			M3	6.5mm	35.0mm/ 2-@180° (Zhaga book 3)
		TE Holder 2213382-2					



**EtraLED**

**EtraLED-NIC-9680 Nichia Modular Passive Star LED Heat Sink Φ96mm**

**The product data table**

	<b>Model No.</b>	EtraLED-NIC-9680
	<b>Heatsink Size</b>	Φ96xH80mm
	<b>Heatsink Material</b>	AL6063-T5
	<b>Finish</b>	Black Anodized
	<b>Weight (g)</b>	575.0
	<b>Dissipated power (T<sub>hs-amb</sub>,50°C)</b>	41.5 (W)
	<b>Cooling surface area (mm<sup>2</sup>)</b>	180427
	<b>Thermal Resistance (R<sub>hs-amb</sub>)</b>	1.2 (°C/W)

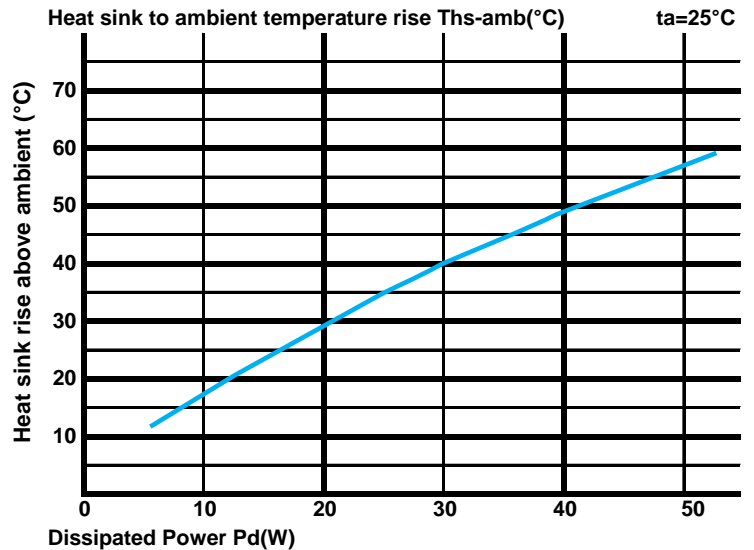
**The thermal data table**

\* 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;

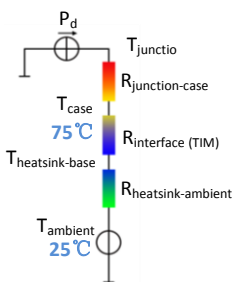
Dissipated Power Pd(W)	Pd = Pe x (1-ηL)	Heat sink to ambient thermal resistance R <sub>hs-amb</sub> (°C/W)	Heat sink to ambient temperature rise T <sub>hs-amb</sub> (°C)
		EtraLED-NIC-9680	
10.0		1.70	17.0
20.0		1.45	29.0
30.0		1.33	40.0
40.0		1.20	48.0
50.0		1.12	56.0



\*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:

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