EtraLED

EtraLED-NIC-7020 Nichia Modular Passive Star LED Heat Sink Φ70mm

Features VS Benefits

* The EtraLED-NIC-7020 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 800 to 2,000 lumen.
* Thermal resistance range Rth 3.70°C/W.
* Modular design with mounting holes foreseen for direct mounting of Nichia COB series.
* Diameter 70.0mm - standard height 20.0mm, 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;

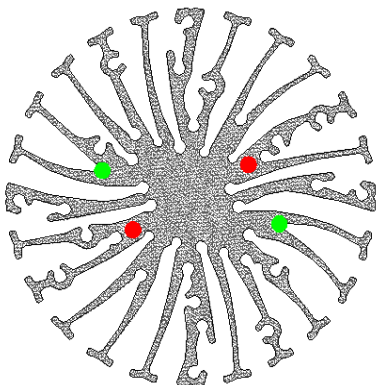**Nichia COB LED modules name:**
NVCWL024Z;
NVCLL024Z;
NVNWS007Z;
NJCWS024Z;

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;

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Mounting Options and Drawings & Dimensions

Example:EtraLED-NIC-7020-B-1,2

Example:EtraLED-NIC-70 **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
			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					
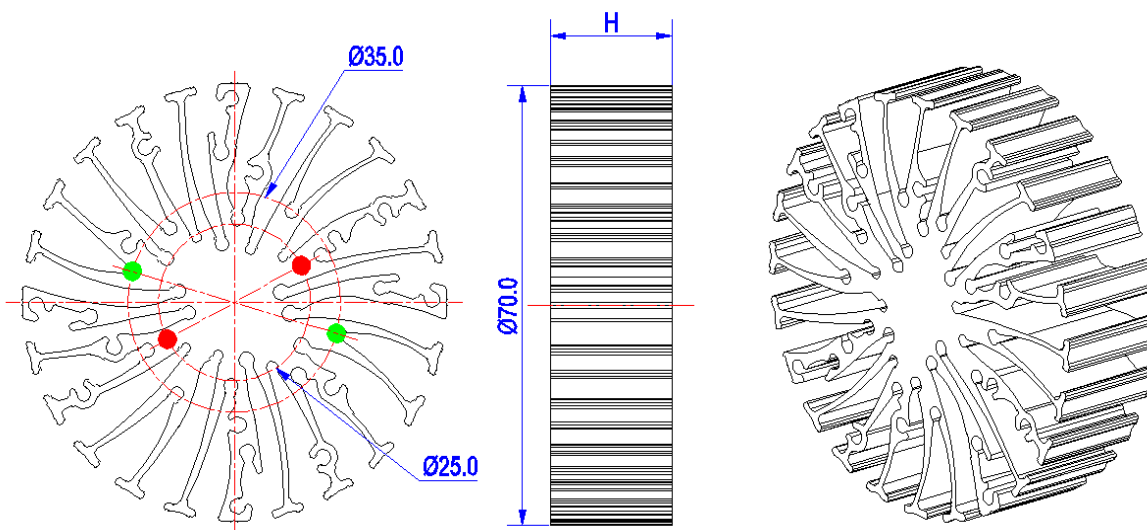
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The product deta table

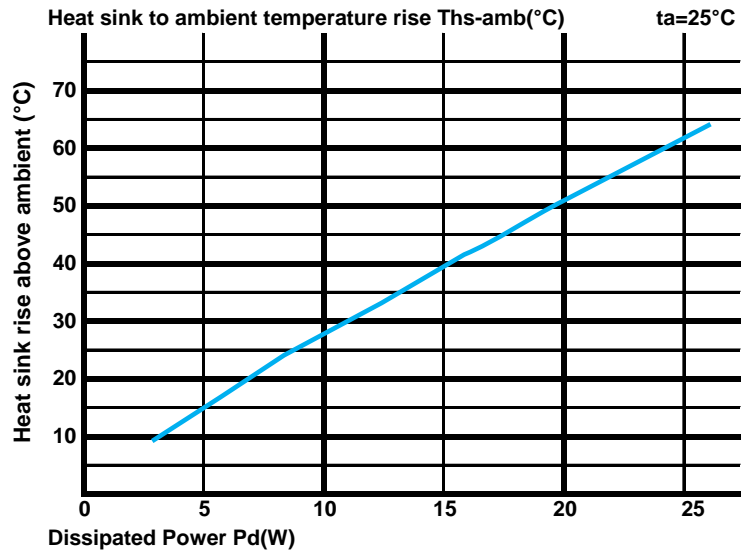| EtraLED	Model No.	EtraLED-NIC-7050
	Heatsink Size	Φ70xH50mm
	Heatsink Material	AL6063-T5
	Finish	Black Anodized
	Weight (g)	192.0
	Dissipated power (Ths-amb,50℃)	20.0 (W)
	Cooling surface area (mm²)	79093
	Thermal Resistance (Rhs-amb)	2.5 (℃/W)

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: $Pd = Pe \times (1-\eta L)$.

Pd - Dissipated power ; Pe - Electrical power ; ηL = Light effciency of the LED module;
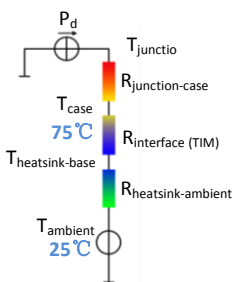
$Pd = Pe \times (1-\eta L)$		Heat sink to ambient thermal resistance Rhs-amb (℃/W)	Heat sink to ambient temperature rise Ths-amb (℃)
		EtraLED-NIC-7050	
Dissipated Power Pd(W)	5.0	3.00	15.0
	10.0	2.70	27.0
	15.0	2.60	39.0
	20.0	2.50	50.0
	25.0	2.44	61.0

Heat sink to ambient temperature rise Ths-amb(°C)   **ta=25°C**

Heat sink rise above ambient (°C) vs Dissipated Power Pd(W)

*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.

P_d

$T_{junctio}$

$R_{junction-case}$

T_{case}

75℃

$R_{interface\ (TIM)}$

$T_{heatsink-base}$

$R_{heatsink-ambient}$

$T_{ambient}$

25℃

*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: $\theta = (Ths - Ta)/Pd$

θ - Thermal Resistance [℃/W] ; Ths - Heatsink temperature ; Ta - 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 $R_{interface\ (TIM)}$ [℃/W], the thermal resistance with the heat sink is $R_{heatsink-ambient}$ [℃/W], and the ambient temperature is $T_{ambient}$ [℃].

*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:

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

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