

**EtraLED**

**EtraLED-LG-7020 LG Innotek Modular Passive Star Heat Sink  $\Phi$ 70mm**

**Features VS Benefits**

- \* The EtraLED-LG-7020 LG Innotek Modular Passive Star LED Heat Sinks are specifically designed for luminaires using the LG Innotek 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  $R_{th}$  3.70°C/W.
- \* Modular design with mounting holes foreseen for direct mounting of LG Innotek 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 LG Innotek COB's and LED modules which standard fit on the star 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 star LED heat sinks.



**LG Innotek LED Modules directly Mounting Options**

**LG Innotek 7W&10W COB series.**

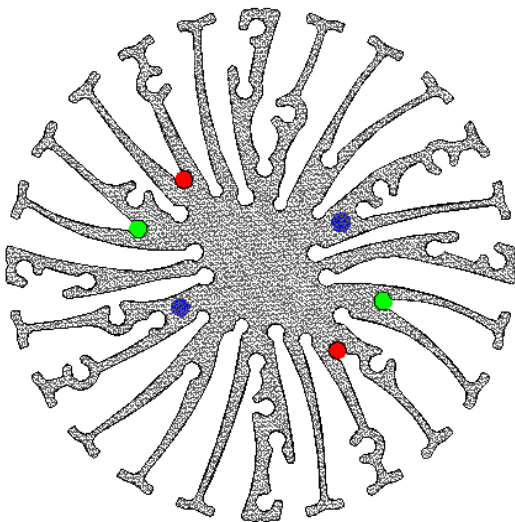
- LEMWM19480xxxxxx;
- LEMWM19490xxxxxx;
- LEMWM19680xxxxxx;
- LEMWM19690xxxxxx;

- With the Zhaga Book 3 holders for the green indicator marks.
- TE Connectivity Holder: 2213382-1;
- Without the holders for the blue indicator marks.
- Direct mounting with machine screws M3x6.5mm.

**LG Innotek 16W&21W COB series.**

- LEMWM24780xxxxxx;
- LEMWM24790xxxxxx;
- LEMWM24980xxxxxx;
- LEMWM24990xxxxxx;

- With the Zhaga Book 3 holders for the green indicator marks.
- TE Connectivity Holder: 2213130-1;
- BJB Holder: 47.319.2011.50;
- Without the holders for the red indicator marks.
- Direct mounting with machine screws M3x6.5mm.



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**Mounting Options and Drawings & Dimensions**

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

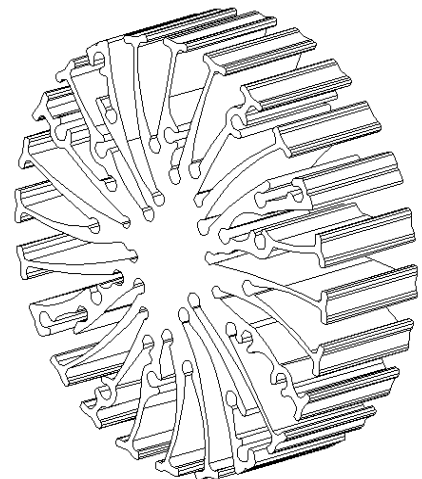
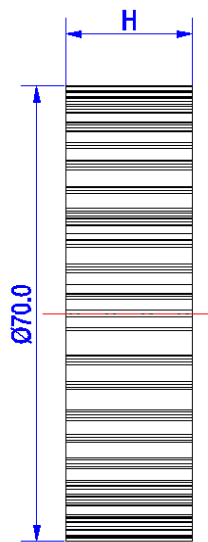
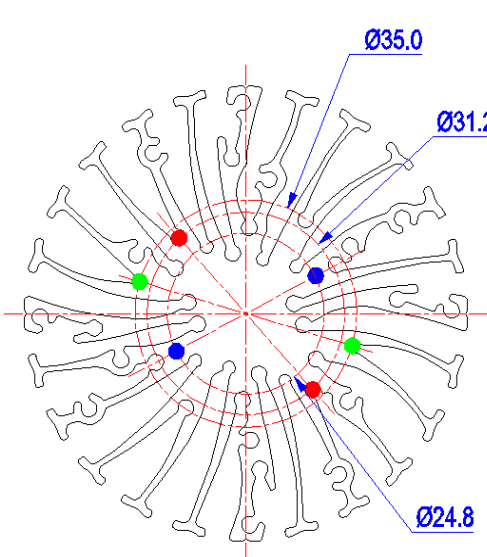
Example: EtraLED-LG-70 **1** - **2** - **3**

- 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.	THREAD	THREAD DEPTH	THREAD HOLE DISTANCE
1	7W&10W COB	/	M3	6.5mm	24.8mm/ 2-@180°
2		/	M3	6.5mm	31.2mm/ 2-@180°
3	16W&21W COB	BJB Holder 47.319.2011.50	M3	6.5mm	35.0mm/ 2-@180° (Zhaga Book 3)
		TE Holder 2213130-1			
	7W&10W COB	TE Holder 2213382-1			



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**EtraLED-LG-7020 LG Innotek Modular Passive Star Heat Sink Φ70mm**

**The product data table**

	<b>Model No.</b>	EtraLED-LG-7020
	<b>Heatsink Size</b>	Φ70xH20mm
	<b>Heatsink Material</b>	AL6063-T5
	<b>Finish</b>	Black Anodized
	<b>Weight (g)</b>	77.0
	<b>Dissipated power (T<sub>hs-amb</sub>,50°C)</b>	13.5 (W)
	<b>Cooling surface area (mm<sup>2</sup>)</b>	33350
	<b>Thermal Resistance (R<sub>hs-amb</sub>)</b>	3.7 (°C/W)

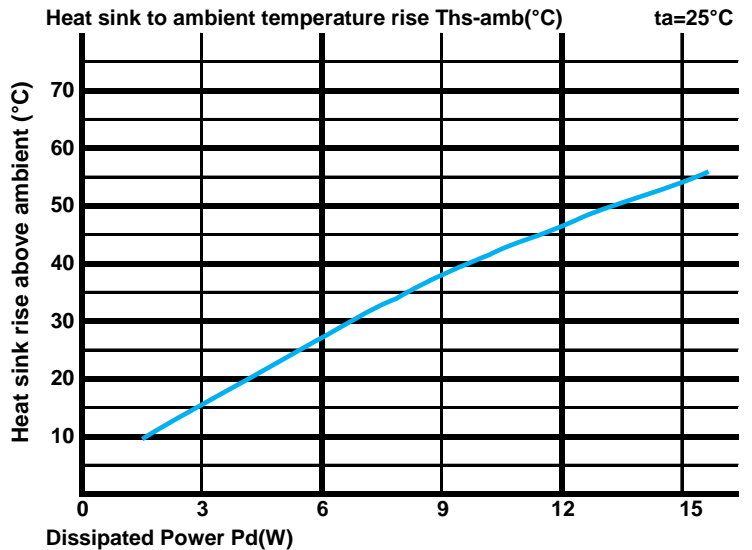
**The thermal data table**

\* 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;

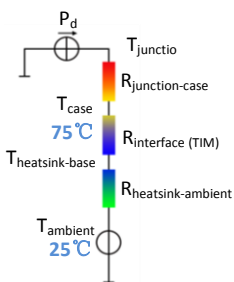
Dissipated Power Pd(W)	Pd = Pe x (1-ηL)	Heat sink to ambient thermal resistance R <sub>hs-amb</sub> (°C/W)	Heat sink to ambient temperature rise Ths-amb (°C)
		EtraLED-LG-7020	
3.0		5.00	15.0
6.0		4.50	27.0
9.0		4.22	38.0
12.0		3.83	46.0
15.0		3.60	54.0



\*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];  $T_{hs}$  - 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:

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