



for

LED



eLED

### eLED-70 Series Star Heat Sinks $\Phi$ 70mm for COB Modular Product Brief

#### Features VS Benefits

- \* Mechanical compatibility with direct mounting of the LED modules to the LED cooler and thermal performance matching the lumen packages.
  - \* Thermal resistance range  $R_{th}(3.0^{\circ}C/W; 2.18^{\circ}C/W; 1.77^{\circ}C/W)$ .
  - \* Modular design with mounting holes foreseen for direct mounting of a wide range of LED modules and COB's:
  - \* Diameter 70mm - Standard height 20.0mm / 50.0mm / 80.0mm , Other heights on request.
  - \* Extruded from highly conductive aluminum.
- 2 standard colors - clear anodised - black anodised
- Zhaga Book 3 Spot Light Modules Edison ,Xicato ,Bridgelux , Osram ,Citizen ,Lumileds ,Cree , Tridonic , Vossloh-Schwabe ,Seoul ,LG ,Lustrous ,Prolight ,Samung ,SHARP , Luminus .Philips



- 1) Xicato XSM, XIM,XTM;(XSA-307,XSA-308)
- 2) Bridgelux ES Rectangle Array Series Vero 13 and Vero18 COB engines.
- 3) Citizen CLL022-CLU024, CLL032-CLU034;
- 4) Cree XLamp CXA13xx, CXA15xx,CSA18xx;
- 5) Lumileds Luxeon COB's 1203, 1204, 1205, Luxeon K arrays K12, K16;
- 6) Osram Soleriq S13, S19, E30
- 7) Seoul Semiconductor ZC6, ZC12, ZC18,ZC25;
- 8) Tridonic TALEXXmodule SLE nodules engines.
- 9) LG Innotek LEMWM18 10W, 13W, 17W
- 10) Edison EdiLex SLM and EdiLex II COB LED engines.
- 11) Lustrous LUSTRON 6 series LL604F, LL608D, LL613F, LL620F
- 12) Prolight Opto PABS, PABA, PACB, PANA
- 13) Samung LC013,LC019,LC026 COB LED engines.
- 14) SHARP Mini Zenigata,Tiger Zenigataand and Mega Zenigata LED engines.
- 15) Philips Fortimo SLM LED engines.
- 16) Vossloh-Schwabe LUGA Shop LED engines.
- 17) Luminus C##9,C##14 LED engines.

#### Order Information

Example:eLED-7020-B-#

Example:eLED-70 **1** - **2** - **3**

- 1** Hight (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

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.

- 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.

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The product data table



Brand	Mingfa Tech		
Series Name	eLED star heat sinks		
Series Number	eLED-70		
Manufacturing Technology	Aluminum extrusion		
Material	AL6063-T5		
Color & Finishing	Black Anodized		
Certification	CE, ROHS, WEEE		
Diameter(mm)	$\Phi$ 70		
Height(mm)	20.0mm	50.0mm	80.0mm
Item Number	eLED-7020	eLED-7050	eLED-7080
Max. Lumen	2300 lm	3200 lm	3900 lm
Dissipated Power (Ths-amb,50°C)	16.5 W	22.9 W	28.2 W
Thermal Resistance Rth (°C/W)	3.0 °C/W	2.18 °C/W	1.77 °C/W
Cooling Surface Area (mm <sup>2</sup> )	31175.0 mm <sup>2</sup>	73369.0 mm <sup>2</sup>	115563.0 mm <sup>2</sup>
Net Weight (g)	83.0 g	206.0 g	329.0 g
Quantity (pcs/CTN)	128 pcs	64 pcs	48 pcs
Modular Types	COB	COB	COB
For Environments	Indoor area		
For Lightings	Down lights,Architectural lights		
For Application	Retail & Hospitality,Mall & Food,Architectural & Museums,Office & Education, Station & Airport,Healthcare		
For LED brands	Aaura,Bridgelux,BJB,Citizen,Cree,Edison,GE,LG,Lumileds,Lumens,Luminus,Ledil,Nichia, Osram,Philips,Prolight Opto,Samsung,Seoul,Sharp,Tridonic,Vossloh Schwabe,Xicato,Zhaga		

\* 3D files are available in ParaSolid, STP and IGS on request

\* The thermal resistance Rth is determined with a calibrated heat source of 14mmx14mm central placed on the heat sink, Tamb 40° and an open environment. Reference data @ heat sink to ambient temperature rise Ths-amb 50°C  
The thermal resistance of a LED cooler is not a fix value and will vary with the applied dissipated power Pd

\* Dissipated power Pd. Reference data @ heat sink to ambient temperature rise Ths-amb 50°C  
The maximal dissipated power needs to be verified in function of required case temperature Tc or junction temperature Tj and related to the estimated ambient temperature where the light fixture will be placed  
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:  $P_d = P_e \times (1 - \eta_L)$

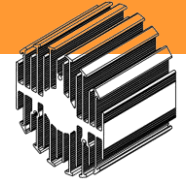
Pd - Dissipated power

Pe - Electrical power

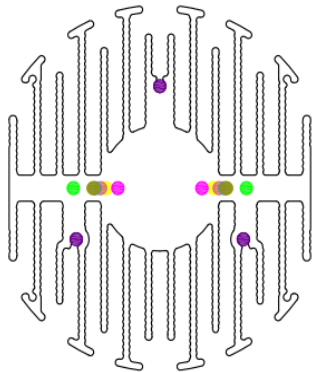
$\eta_L$  = Light efficiency of the LED module

eLED

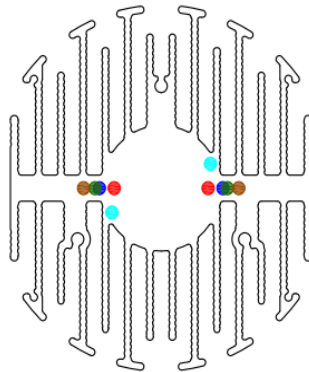
eLED-70 Series  $\Phi 70$ mm COB Heat Sink Drawings



Drawings & Type Selection



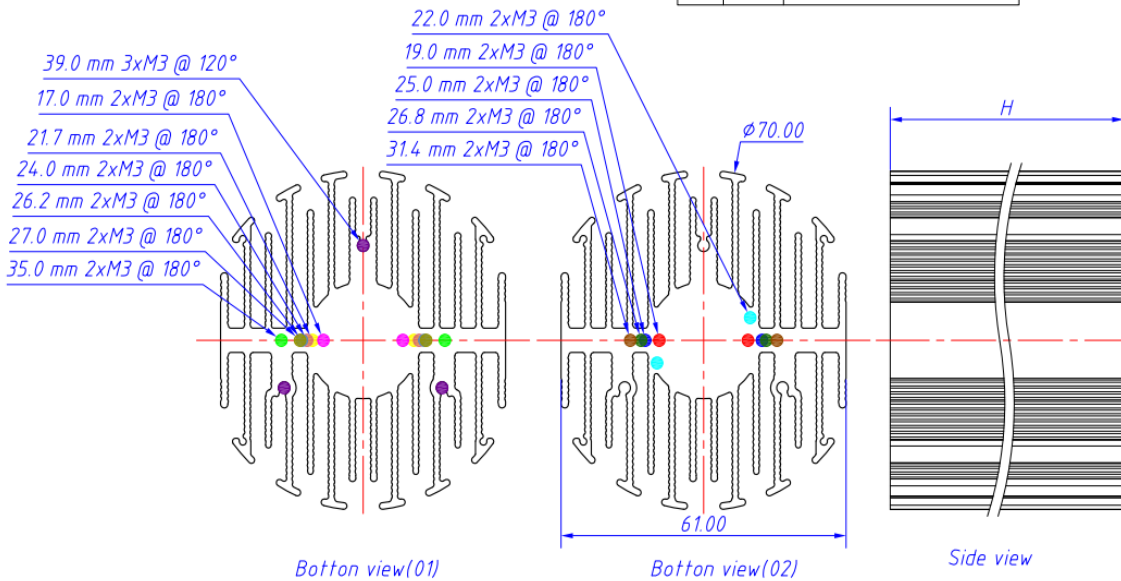
Bottom view(01)



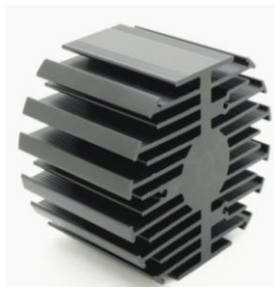
Bottom view(02)

No.	Finish	Mounting Hole
A1		17.0 mm 2xM3 @ 180°
A2		19.0 mm 2xM3 @ 180°
A3		21.7 mm 2xM3 @ 180°
A4		22.0 mm 2xM3 @ 180°
A5		24.0 mm 2xM3 @ 180°
A6		25.0 mm 2xM3 @ 180°
A7		26.2 mm 2xM3 @ 180°
A8		26.8 mm 2xM3 @ 180°
A9		27.0 mm 2xM3 @ 180°
A10		31.4 mm 2xM3 @ 180°
A11		35.0 mm 2xM3 @ 180°
A12		39.0 mm 3xM3 @ 120°

**NOTE!** If there are two rows of holes, please keep the row distance at least 4mm.

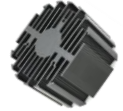


Product display



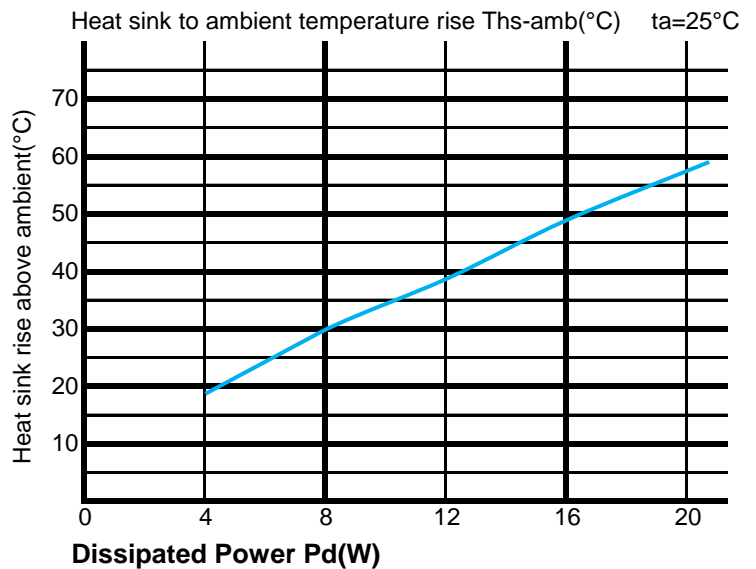
**eLED eLED-70 Series Φ70mm Material AL6063-T5 COB Star Heat Sinks Thermal Data**

**The thermal data table**



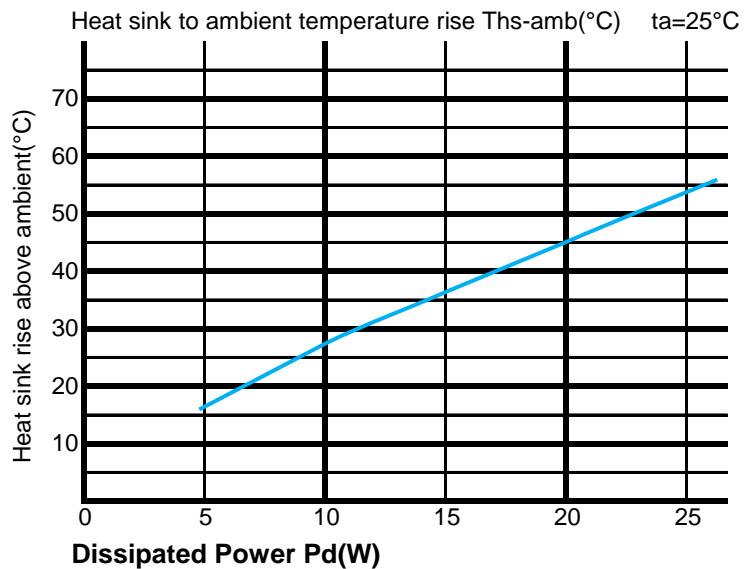
**eLED-7020 thermal data**

Dissipated Power Pd(W)	Pd = Pe x (1-ηL)	Heat sink to ambient thermal resistance Rhs-amb (°C/W)	Heat sink to ambient temperature rise Ths-amb (°C)
		eLED-7020	eLED-7020
4		4.75	19
8		3.75	30
12		2.7	38
16		3.06	49
20		2.9	58



**eLED-7050 thermal data**

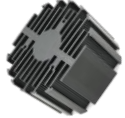
Dissipated Power Pd(W)	Pd = Pe x (1-ηL)	Heat sink to ambient thermal resistance Rhs-amb (°C/W)	Heat sink to ambient temperature rise Ths-amb (°C)
		eLED-7050	eLED-7050
5		3.4	17
10		2.8	28
15		2.7	37
20		2.25	45
25		2.16	54





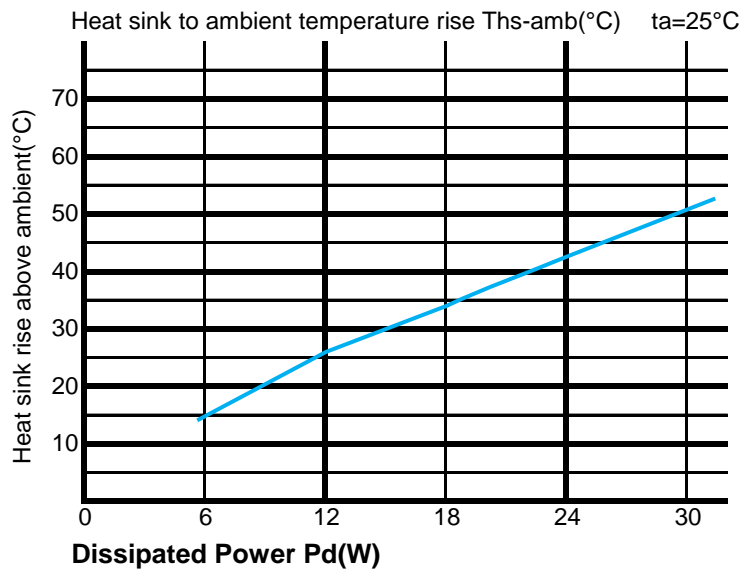
**eLED eLED-70 Series Φ70mm Material AL6063-T5 COB Star Heat Sinks Thermal Data**

**The thermal data table**



**eLED-7080 thermal data**

Dissipated Power Pd(W)	Pd = Pe x (1-ηL)	Heat sink to ambient thermal resistance Rhs-amb (°C/W)	Heat sink to ambient temperature rise Ths-amb (°C)
		eLED-7080	eLED-7080
6		2.5	15
12		2.2	26
18		1.9	34
24		1.8	43
30		1.7	51



\* Please be aware the dissipated power Pd is not the same as the electrical power Pe of a LED module.

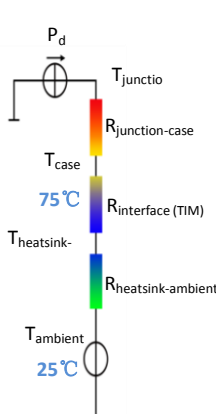
\*To calculate the dissipated power please use the following formula: Pd = Pe x (1-ηL).

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

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

$\theta$  - Thermal Resistance [°C/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  $R_{interface (TIM)}$  [°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:

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