



**GooLED GooLED-86 Series Pin Fin Sinks Ø86mm 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 Rth (2.5°C/W; 1.85°C/W; 1.47°C/W).
  - \* Modular design with mounting holes foreseen for direct mounting of a wide range of LED modules and COB's:
  - \* Diameter 86mm - Standard height 30.0mm / 50.0mm / 65.0mm , 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

			<ol style="list-style-type: none"> <li>1) Xicato XSM, XIM,XTM;(XSA-307,XSA-308)</li> <li>2) Bridgelux ES Rectangle Array Series Vero 13 and Vero18 COB engines.</li> <li>3) Citizen CLL022-CLU024, CLL032-CLU034;</li> <li>4) Cree XLamp CXA13xx, CXA15xx,CSA18xx;</li> <li>5) Lumileds Luxeon COB's 1203, 1204, 1205, Luxeon K arrays K12, K16;</li> <li>6) Osram PrevaLED Core,SOLERIQ P and SOLERIQ S LED engines.</li> <li>7) Seoul Semiconductor ZC6, ZC12, ZC18,ZC25;</li> <li>8) Tridonic TALEXXmodule SLE modules engines.</li> <li>9) LG Innotek LEMWM18 10W, 13W, 17W</li> <li>10) Edison EdiLex SLM and EdiLex II COB LED engines.</li> <li>11) Lustrous LUSTRON 6 series LL604F, LL608D, LL613F, LL620F</li> <li>12) Prolight Opto PABS, PABA, PACB, PANA</li> <li>13) Samung LC013,LC019,LC026,LC033 COB LED engines.</li> <li>14) SHARP Mini Zenigata,Tiger Zenigataand and Mega Zenigata LED engines.</li> <li>15) Philips Fortimo SLM LED engines.</li> <li>16) Vossloh-Schwabe LUGA Shop and LUGA C LED engines.</li> <li>17) Luminus C##9,C##14 LED engines.</li> </ol>

**Order Information**

Example:GooLED-8630-B-#  
 Example:GooLED-86 **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.



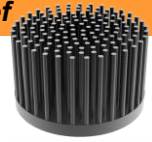


for

LED



**GooLED** GooLED-86 Series Pin Fin Sinks  $\Phi 86$ mm for COB Modular Product Brief



The product data table

Brand	<b>Mingfa Tech</b>		
Series Name	GooLED star heat sinks		
Series Number	GooLED-86		
Manufacturing Technology	Aluminum extrusion		
Material	AL 1070		
Color & Finishing	Black Anodized		
Certification	CE, ROHS, WEEE		
Diameter(mm)	$\Phi 86$		
Height(mm)	30.0mm	50.0mm	65.0mm
Item Number	GooLED-8630	GooLED-8650	GooLED-8665
Max. Lumen	2900 lm	3800 lm	4600 lm
Dissipated Power (Ths-amb,50°C)	20.0 W	27.0 W	32.0 W
Thermal Resistance Rth (°C/W)	2.50 °C/W	1.85 °C/W	1.56°C/W
Cooling Surface Area (mm <sup>2</sup> )	48926.0 mm <sup>2</sup>	77577.0 mm <sup>2</sup>	95583.0 mm <sup>2</sup>
Net Weight (g)	152.0g	210.0 g	293.0 g
Quantity (pcs/CTN)	40 pcs	24 pcs	24 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	Adura,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

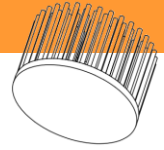
To calculate the dissipated power please use the following formula:  $Pd = Pe \times (1-\eta L)$

Pd - Dissipated power

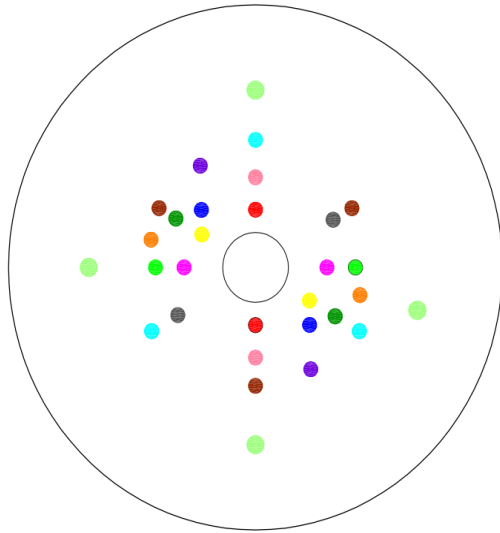
Pe - Electrical power

$\eta L$  = Light efficiency of the LED module

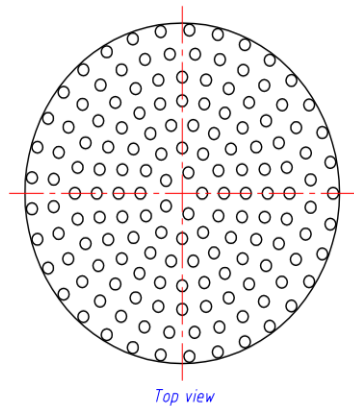
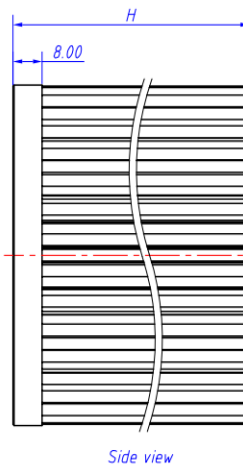
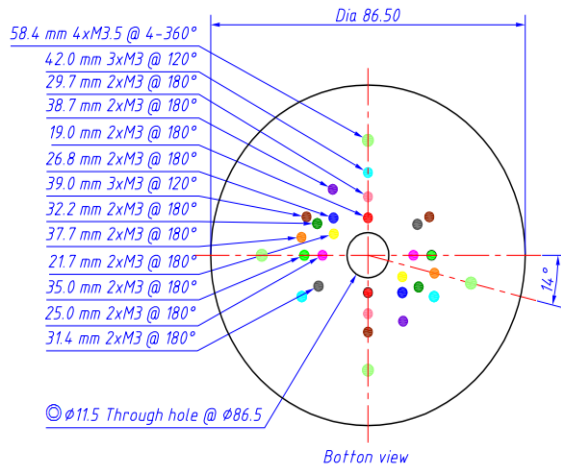
**GooLED** GooLED-86 Series  $\Phi 86\text{mm}$  Pin Fin Heat Sink Drawings



**Drawings & Type Selection**



No.	Finish	Mounting Hole
A1	●	19.0 mm 2xM3 @ 180°
A2	●	21.7 mm 2xM3 @ 180°
A3	●	25.0 mm 2xM3 @ 180°
A4	●	26.8 mm 2xM3 @ 180°
A5	●	29.7 mm 2xM3 @ 180°
A6	●	31.4 mm 2xM3 @ 180°
A7	●	32.2 mm 2xM3 @ 180°
A8	●	35.0 mm 2xM3 @ 180°
A9	●	37.7 mm 2xM3 @ 180°
A10	●	38.7 mm 2xM3 @ 180°
A11	●	39.0 mm 3xM3 @ 120°
A12	●	42.0 mm 3xM3 @ 120°
A13	●	58.4mm 4xM3.5 @ 4-360°
A14		◎ $\Phi 11.5$ Through hole @ $\Phi 86.5$



**Product display**



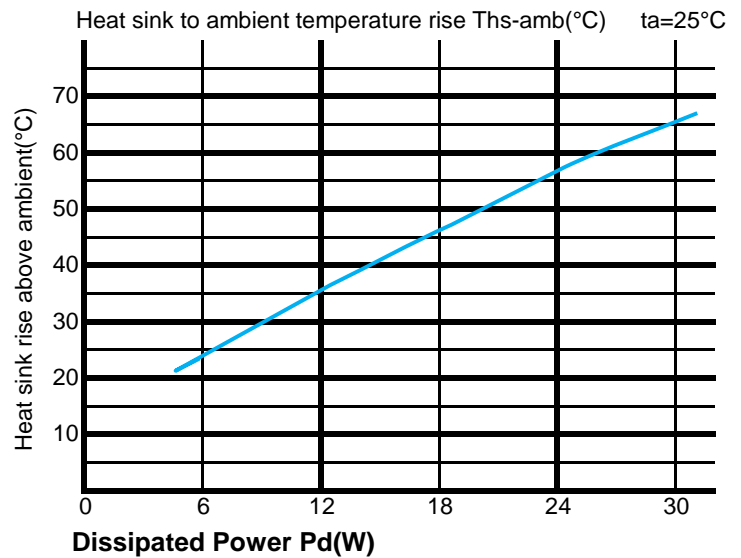
**GooLED** GooLED-86 Series  $\Phi$ 86mm Material AL1070 Pin Fin Heat Sinks Thermal Data

The thermal data table



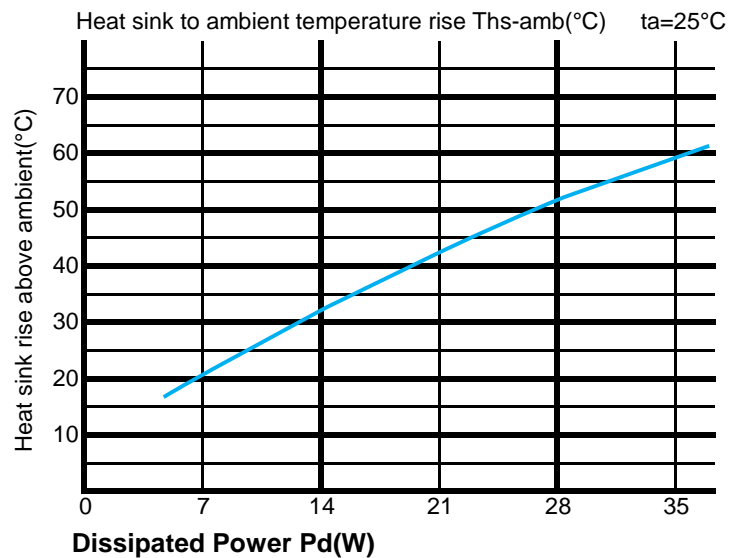
**GooLED-8630 thermal data**

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)
		GooLED-8630	GooLED-8630
6		4	24
12		2.92	35
18		2.56	46
24		2.33	56
30		2.03	65



**GooLED-8650 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)
		GooLED-8650	GooLED-8650
7		2.86	20
14		2.21	31
21		2	42
28		1.82	51
35		1.69	59



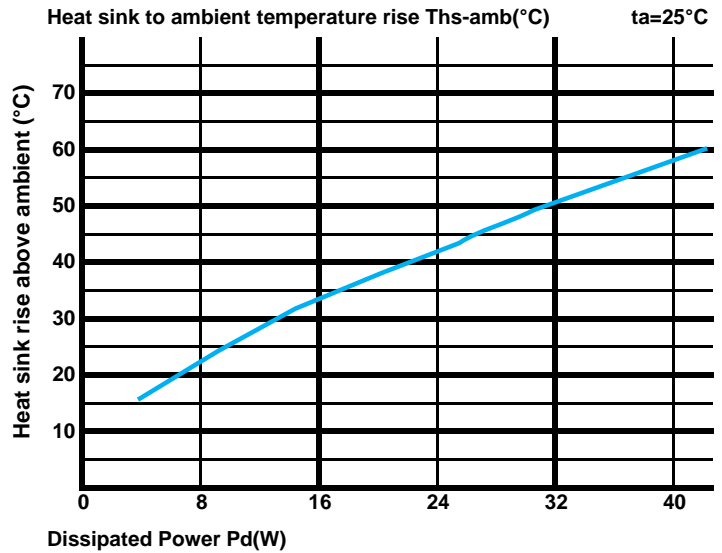
**GooLED** GooLED-86 Series  $\Phi$ 86mm Material AL1070 Pin Fin Heat Sinks Thermal Data

The thermal data table



GooLED-8665 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)
			GooLED-8665	GooLED-8665
8.0			2.75	22.0
16.0			2.13	34.0
24.0			1.75	42.0
32.0			1.56	50.0
40.0			1.45	58.0



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

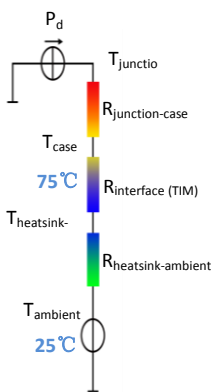
\*To calculate the dissipated power please use the following formula: Pd = Pe x (1-ηL).

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:

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