

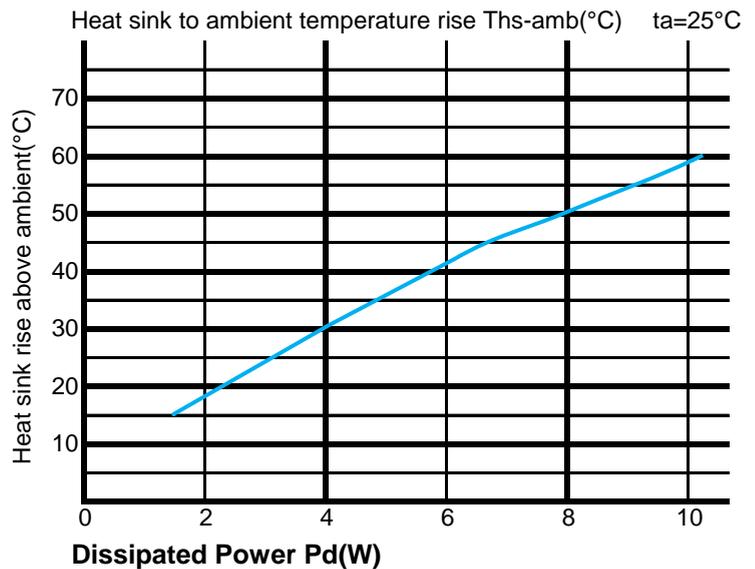
**GooLED** GooLED-48 Series  $\Phi$ 48mm Material AL1070 Pin Fin Heat Sinks Thermal Data

The thermal data table



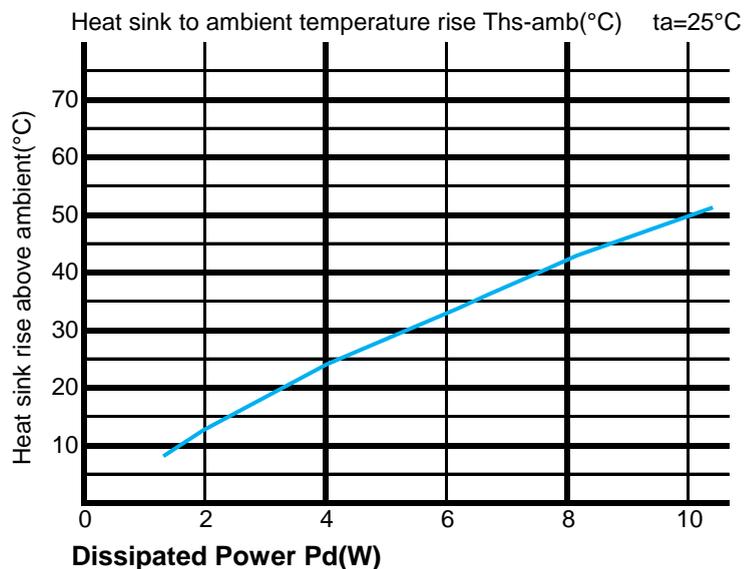
**GooLED-4830 thermal data**

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-4830	GooLED-4830
2		9	18
4		7.5	30
6		7	42
8		6.25	50
10		5.9	59



**GooLED-4850 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-4850	GooLED-4850
2		7	14
4		6.25	25
6		5.67	34
8		5.38	43
10		5	50



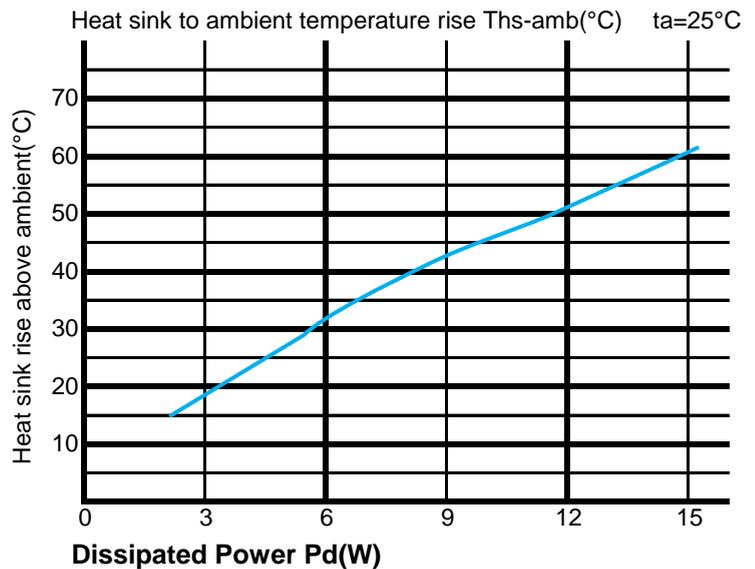
**GooLED** GooLED-48 Series  $\Phi$ 48mm Material AL1070 Pin Fin Heat Sinks Thermal Data

The thermal data table



GooLED-4868 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-4868	GooLED-4868
3.0	6.00	18
6.0	4.83	29
9.0	4.56	41
12.0	4.33	52
15.0	4.13	62



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

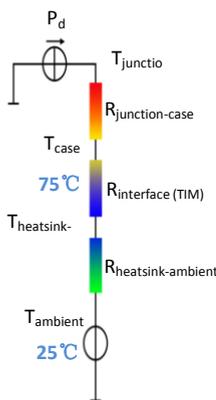
\*To calculate the dissipated power please use the following formula: Pd = Pe x (1-ηL).

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:

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