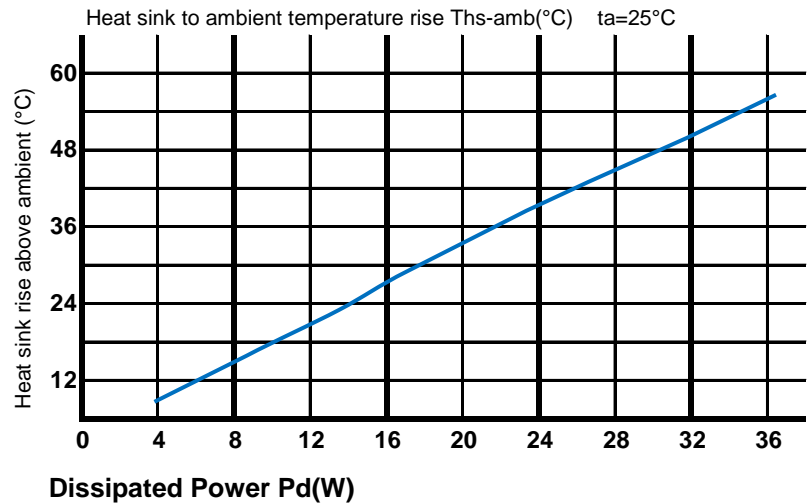


The thermal data table

| 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) |
|------------------------|----------------|---|---|
| | | Cube-130 | |
| 5 | | 1.80 | 10 |
| 10 | | 1.60 | 18 |
| 15 | | 1.53 | 26 |
| 20 | | 1.48 | 33.5 |
| 25 | | 1.44 | 41 |
| 30 | | 1.43 | 49 |
| 35 | | 1.39 | 55.5 |



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

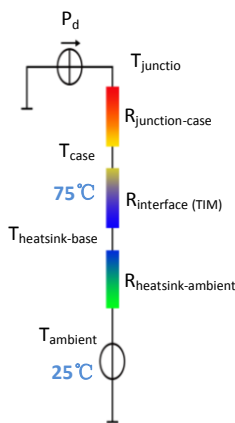
*To calculate the dissipated power please use the following formula: Pd = Pe x (1-ηL).

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

θ - 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:

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