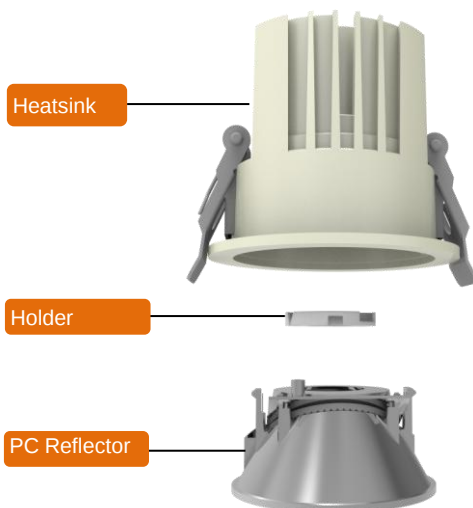


Polar

Polar-2511 Lighting Kits product brief

Features & Benefits

- * Mechanical compatibility with direct mounting of the COB products to the LED thermal body and thermal performance matching the lumen packages.
- * For Down light designs from 1000 to 1500 lumen.
- * Thermal resistance range Rth 3.53°C/W.
- * Full accessory kit with LED cooler Body, PSU mounting shrapnel & lens holder.
- * Other accessories like COB holder & lens separate available.
- * Modular design with mounting holes foreseen for direct mounting of a wide range of LED modules and COB's.
- * Forged from highly conductive aluminum (ADC12) .
- * Diameter 85mm - Standard height 70mm , Other heights on request.
- * 3 standard colors - white powder,black powder and gray powder.



- 01) Bridelux: Vero 10 Vero SE 10 LED engines;
- 02) Cree: XLamp CXA 13xx, XLamp CXB 15xx Series engines;
- 03) Citizen: CLU026,CLU027,CLU028,CLU721,CLU711,CLU701 LED engines;
- 04) Edison: EdiLex III COB LED engines;
- 05) GE lighting: Infusion™ LED engines;
- 06) LG Innotek: 7W, 10W LED engines;
- 07) LumiLEDs: LUXEON 1202/1203 LED engines;
- 08) Lumens: Ergon-COB 1304, 15xx LED engines;
- 09) Luminus: CXM-6, CHM/CLM/CXM-9 LED engines;
- 10) Nichia: NVxxx024Z,NVxxx036Z, NFCWxxxB Series LED engines;
- 11) Osram: SOLERIQ® S9 LED engines;
- 12) Philips: Fortimo SLM LED engines;
- 13) Prolight Opto: PACJ-7xxx/14xxx/21xxx/28xxx-xxxx engines;
- 14) Samsung: LCxxxC Series, LCxxxD Series LED engines;
- 15) Seoul Semiconductor:SAWxxxxxx Series, DC COB LED engines;
- 16) Tridonic: SLE G5, SLE G6 LES10mm LED engines;
- 17) Vossloh-Schwabe: LUGA Shop and LUGA C LED engines;

Order Information

Example: Polar-2511-12-WH

Polar - **1** - **2** - **3**

1

Product model
- 2511

2

Beam Angel
- 12 12°
- 24 24°
- 36 36°

3

Finish
- WH White
- BK Black
- GY Gray

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.



The product data table

	 <i>Polar</i>
Model No.	Polar-2511
Heatsink Size	Φ85xH70mm
Heatsink Material	ADC12
Heatsink Finish	White/Black/Gray
Weight	219g
Dissipated power (Ths-amb,50°C)	12 (W)
Beam Angle	12° / 24° / 36°
Thermal Resistance (Rhs-amb)	3.53 (°C/W)

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

* The thermal resistance R_{th} is determined with a calibrated heat source of 14mm×14mm central placed on the heat sink, T_{amb} 40° and an open environment. Reference data @ heat sink to ambient temperature rise T_{hs-amb} 50°C

The thermal resistance of a LED cooler is not a fix value and will vary with the applied dissipated power P_d

* Dissipated power P_d . Reference data @ heat sink to ambient temperature rise T_{hs-amb} 50°C

The maximal dissipated power needs to be verified in function of required case temperature T_c or junction temperature T_j and related to the estimated ambient temperature where the light fixture will be placed
Please be aware the dissipated power P_d is not the same as the electrical power P_e of a LED module

To calculate the dissipated power please use the following formula: $P_d = P_e \times (1-\eta_L)$

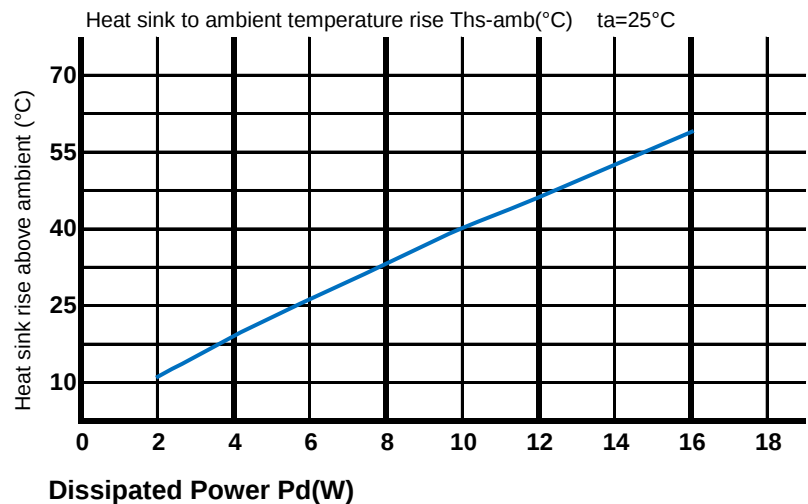
P_d - Dissipated power

P_e - Electrical power

η_L = Light efficiency of the LED module

The thermal data table

$P_d = P_e \times (1 - \eta_L)$		Heat sink to ambient thermal resistance $R_{hs-amb} (^{\circ}C/W)$	Heat sink to ambient temperature rise $\Delta T_{hs-amb} (^{\circ}C)$
		Polar-2511	
Dissipated Power $P_d(W)$	2	4.75	9.9
	4	4.23	17.7
	6	3.97	25
	8	3.76	31.7
	10	3.60	38
	12	3.53	44.7
	15	3.33	53



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

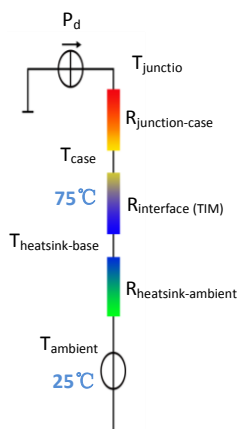
*To calculate the dissipated power please use the following formula: $P_d = P_e \times (1 - \eta_L)$.

P_d - Dissipated power ; P_e - Electrical power ; η_L = 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: $\theta = (\Delta T_{hs} - T_a) / P_d$

θ - Thermal Resistance [$^{\circ}C/W$]; ΔT_{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 $R_{interface (TIM)}$ [$^{\circ}C/W$], the thermal resistance with the

heat sink is $R_{heatsink-ambient}$ [$^{\circ}C/W$], and the ambient temperature is $T_{ambient}$ [$^{\circ}C$].

*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:

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