

Nature Nature-002X-3F-xx Lighting Kits for COB Modular assembly & introduction

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 300 to 500 lumen.
- * Thermal resistance range $R_{th} 9.96^{\circ}C/W$.
- * 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.
- * Forming by ADC12.
- * Diameter 93.0mm - Standard height 98.5mm , Other heights on request.
- * standard colors - white and black



- 01) Bridelux: Vero 10 Vero SE 10 LED engines;
- 02) Cree: XLamp CXA 13xx, XLamp CXB 13xx Series engines;
- 03) Citizen: CLU024, CLU026, 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 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: Nature-002X-3F-BK

Nature-002X-3F - **1**

1 Finish

- WH White
- BK Black
- GY Gray
- GL Golden

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>Nature Series</i>
Model No.	Nature-002X-3F-xx
Heatsink Size	Ø93.0×98.5mm
Cut Out	Ø85.0mm
Heatsink Material	ADC12
Heatsink Finish	White+Black
Weight	186.5g
Lamp power (Ths-amb,50°C)	5.0 (W)
Beam Angle	15°/24°/38°
Thermal Resistance (Rhs-amb)	9.96 (°C/W)

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

* The thermal resistance Rth is determined with a calibrated heat source of 14mm×14mm 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: $Pd = Pe \times (1-\eta L)$

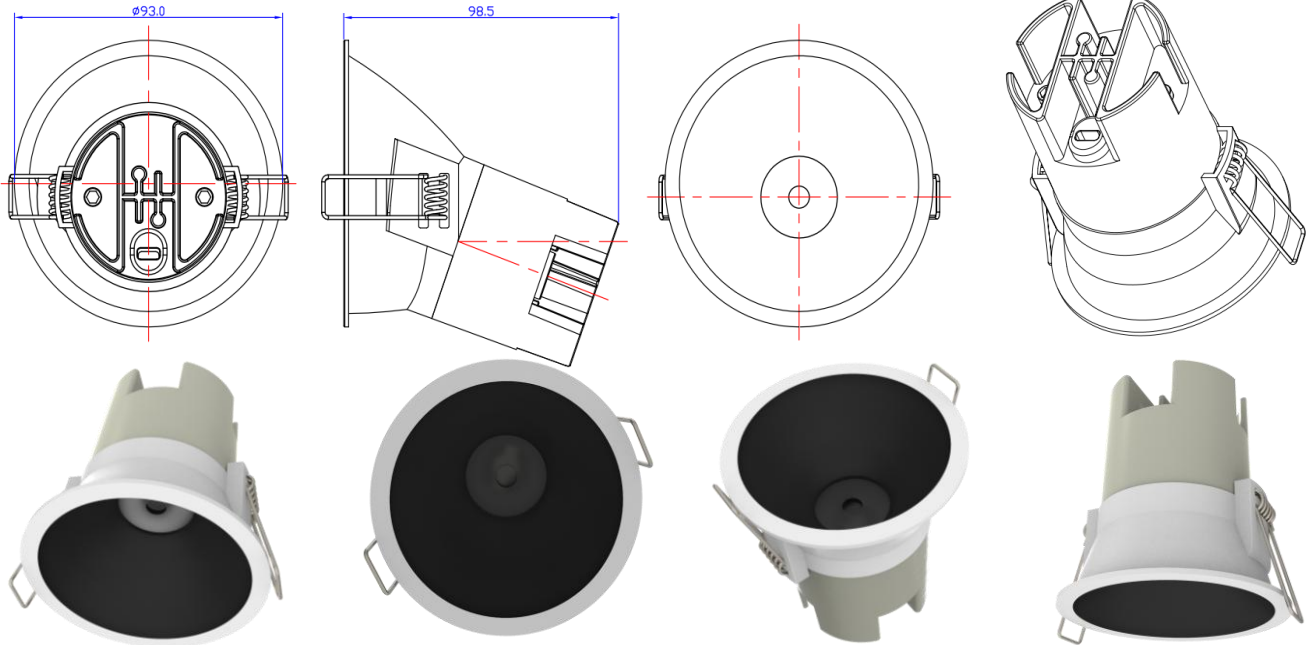
Pd - Dissipated power

Pe - Electrical power

ηL = Light efficiency of the LED module

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Drawings & Type Selection



Components introduction

1. Remove the reflector, Install the COB



2. Fix the COB by the holder and screw



3. Fix the COB by the Lens and screw



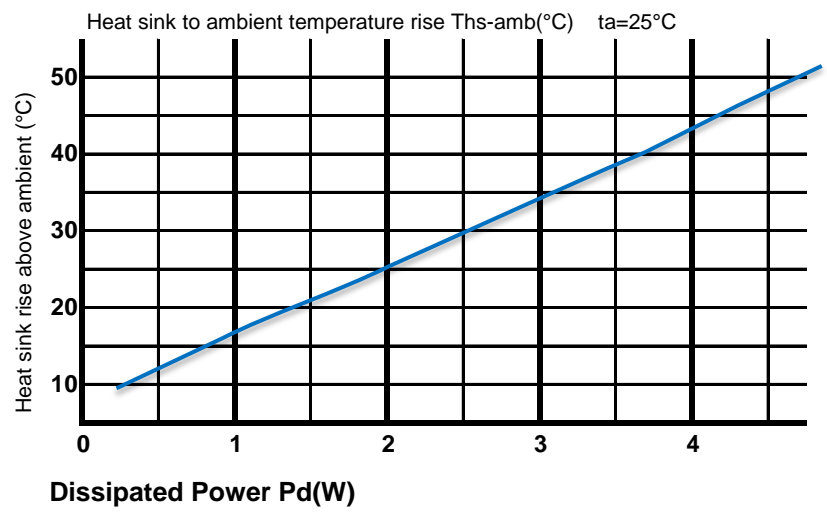
4. Vertically align the shrapnel and press down on the reflector assembly



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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)
		Nature-002X-3F-xx	
1	1	7.80	8
2	2	11.30	23
3	3	10.13	31
4	4	9.43	38.5
5	5	9.98	50
6	6	/	/
		/	/



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

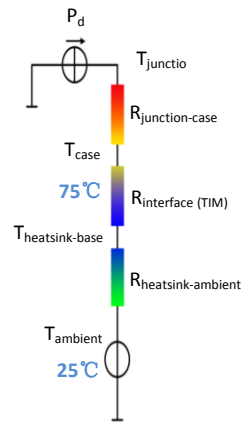
*To calculate the dissipated power please use the following formula: Pd = Pe x (1-ηL).

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:

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