



for

LED



xLED

xLED-PHI-4568 Pin Fin Heat Sink Φ 45mm for Philips

Features VS Benefits

- * The xLED-PHI-4568 Philips Pin Fin LED Heat Sinks are specifically designed for luminaires using the Philips LED engines.
- * Mechanical compatibility with direct mounting of the LED engines to the LED cooler and thermal performance matching the lumen packages.
- * For spotlight and downlight designs from 300 to 1,400 lumen.
- * Thermal resistance range Rth 4.76°C/W.
- * Modular design with mounting holes foreseen for direct mounting of Philips LED engines.
- * Diameter 45.0mm - standard height 68.0mm, Other heights on request.
- * Forged from highly conductive aluminum.



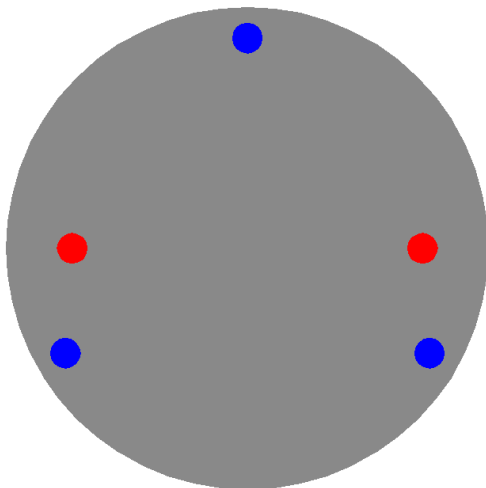
Zhaga LED engine and radiator assembly is a unified future international standardization

- * Below you find an overview of Philips COB's and LED modules which standard fit on the Pin Fin LED Heat Sinks.
- * In this way mechanical after work and related costs can be avoided, and lighting designers can standardize their designs on a limited number of LED Pin Fin LED Heat Sink.

PHILIPS



LEDiL



Philips LED Modules directly Mounting Options

Philips Fortimo SLM LED modules name:

- Fortimo SLM C xxx 1203 L09 1619 G6
- Fortimo SLM C xxx 1205 L13 2024 G6;
- Fortimo SLM C xxx 1208 L15 2024 G6;
- Fortimo SLM C xxx xx 1203 L09 1619 G6
- Fortimo SLM C xxx xx 1205 L13 2024 G6;
- Fortimo SLM C xxx xx 1208 L13 2024 G6;
- Fortimo SLM C xxx xx 1208 L15 2024 G6;

NO`1:With the Zhaga Book 3 standard, Red indicator marks.

NO`2: Blue indicator marks.

Direct mounting with machine screws M3x6.5mm.

With the LEDiL products:

Ronda series: FN15xxx;

Olivia series: FN14828-M; FN14637-S;

xLED

xLED-PHI-4568 Pin Fin Heat Sink Φ 45mm for Philips

Mounting Options and Drawings & Dimensions

Example:xLED-PHI-4568-B-1,2

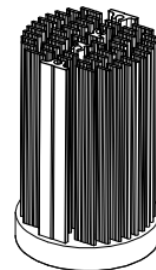
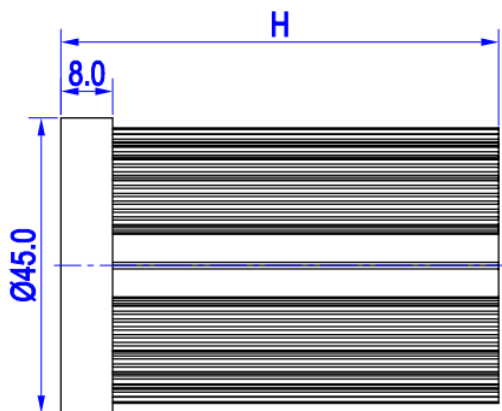
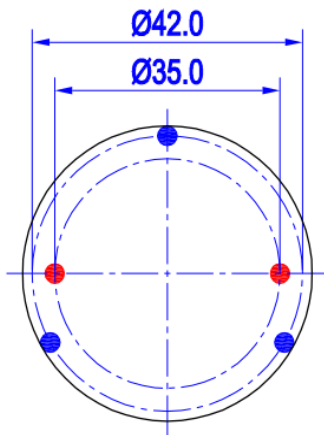
Example:xLED-PHI-45 **1** - **2** - **3**

- 1** Height (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

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.

MOUNTING OPTION	Module type	Holder NO.	LEDiL products		THREAD	THREAD DEPTH	THREAD HOLE DISTANCE
			Olivia series	Ronda series			
N	/	None	None	None	None	None	None
1	Fortimo SLM	/	FN14828-M; FN14637-S;	FN15xxx;	M3	6.5mm	35.0mm/ 2-@180° (Zhaga book 3)
2					M3	6.5mm	42.0mm/ 3-@120°



xLED

xLED-PHI-4568 Pin Fin Heat Sink $\Phi 45\text{mm}$ for Philips

The product data table

	Model No.	xLED-PHI-4568
	Heatsink Size	$\Phi 45 \times H 68\text{mm}$
	Heatsink Material	AL1070
	Finish	Black Anodized
	Weight (g)	90.0
	Dissipated power (T_{hs-amb}, 50°C)	10.5 (W)
	Cooling surface area (mm²)	49775
	Thermal Resistance (R_{hs-amb})	4.76 (°C/W)

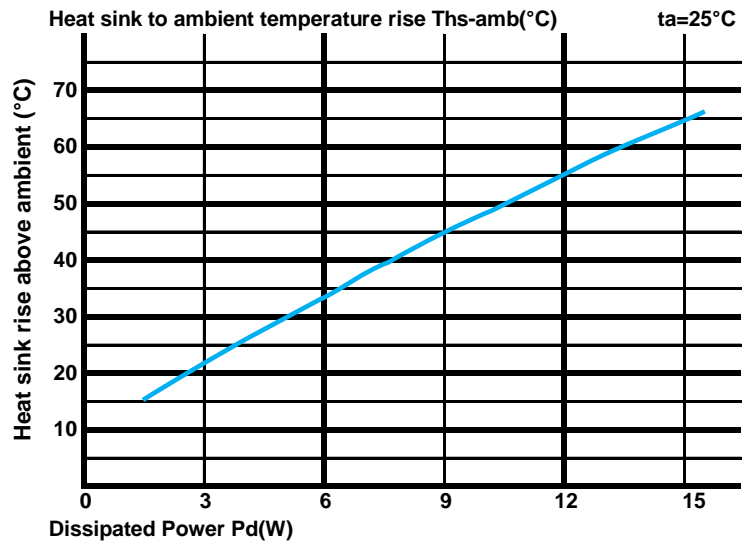
The thermal data table

* 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: $P_d = P_e \times (1 - \eta_L)$.

Pd - Dissipated power ; Pe - Electrical power ; η_L = Light efficiency of the LED module;

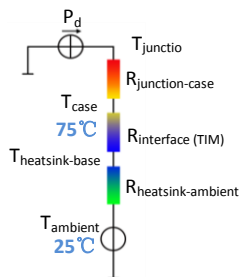
Dissipated Power Pd(W)	Pd = Pe x (1- η_L)	Heat sink to ambient thermal resistance R _{hs-amb} (°C/W)	Heat sink to ambient temperature rise T _{hs-amb} (°C)
		xLED-PHI-4568	
3.0		7.00	21.0
6.0		5.50	33.0
9.0		5.00	45.0
12.0		4.58	55.0
15.0		4.27	64.0



*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: $\theta = (T_{hs} - T_a) / P_d$

θ - Thermal Resistance [°C/W] ; T_{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)} [°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:

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