



LED

GooLED

GooLED-PHI-6860 Pin Fin Heat Sink Φ 68mm for Philips

Features VS Benefits

- * The GooLED-PHI-6860 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 1,000 to 2,800 lumen.
- * Thermal resistance range R_{th} 2.94°C/W.
- * Modular design with mounting holes foreseen for direct mounting of Philips LED engines.
- * Diameter 68.0mm - standard height 60.0mm, Other heights on request.
- * Forged from highly conductive aluminum.



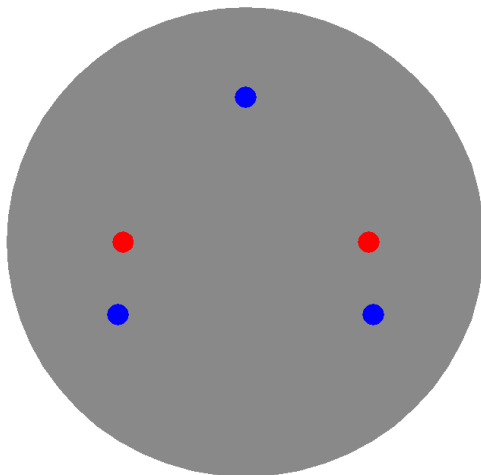
Zhaga LED engine and radiator assembly is a unified future international standardization

- * 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;

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Http://www.mingfatech.com



Mounting Options and Drawings & Dimensions

Example:GooLED-PHI-6860-B-1,2

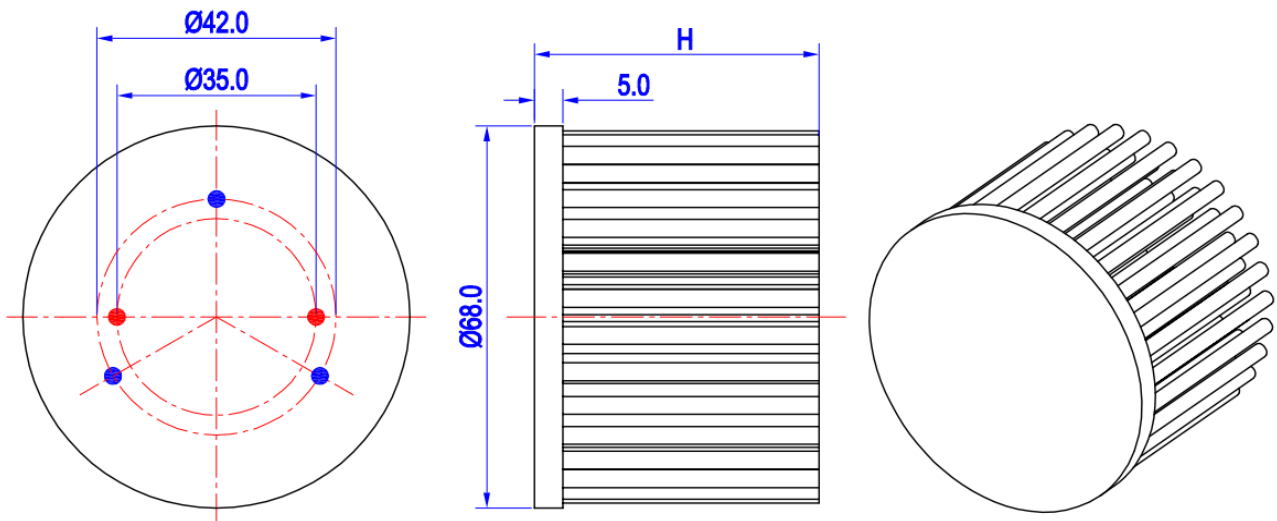
Example:GooLED-PHI-68 **1** - **2** - **3**

- 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°



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The product data table

	Model No.	GooLED-PHI-6860
	Heatsink Size	Φ 68xH60mm
	Heatsink Material	AL1070
	Finish	Black Anodized
	Weight (g)	176.0
	Dissipated power (Ths-amb,50°C)	17.0 (W)
	Cooling surface area (mm²)	70017
	Thermal Resistance (Rhs-amb)	2.94 (°C/W)

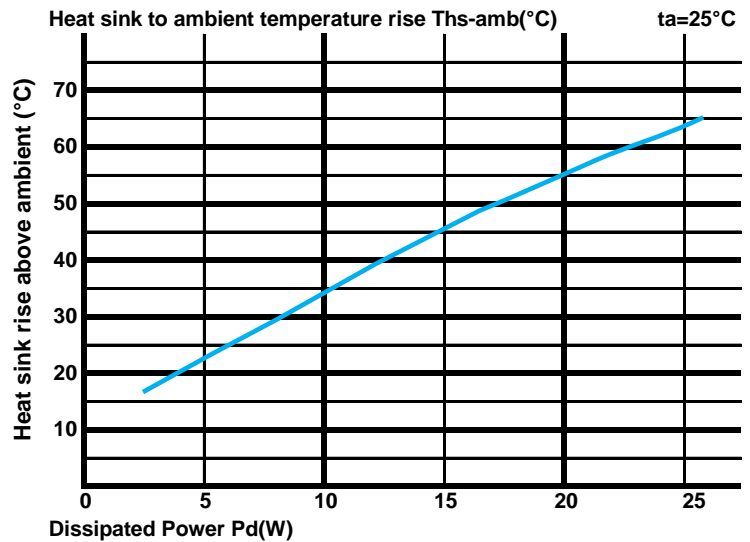
The thermal data table

* 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;

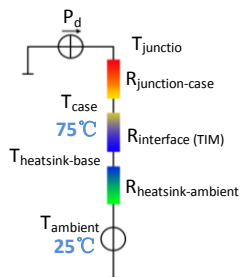
Dissipated Power Pd(W)	Pd = Pe x (1- η_L)	Heat sink to ambient thermal resistance Rhs-amb (°C/W)	Heat sink to ambient temperature rise Ths-amb (°C)
		GooLED-PHI-6860	
5.0		4.60	23.0
10.0		3.40	34.0
15.0		3.00	45.0
20.0		2.75	55.0
25.0		1.84	46.0



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

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:

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