



for

LED



xLED

xLED-PRO-4530 Pin Fin LED Heat Sink Φ 45mm for Prolight Opto

Features VS Benefits

- * The xLED-PRO-4530 Prolight Opto Pin Fin LED Heat Sinks are specifically designed for luminaires using the Prolight Opto 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 1,200 lumen.
- * Thermal resistance range Rth 7.14°C/W.
- * Modular design with mounting holes foreseen for direct mounting of Prolight Opto COB series.
- * Diameter 45.0mm - standard height 30.0mm 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 Prolight Opto 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.



Prolight Opto LED Modules directly Mounting Options

Prolight Opto COB G-II and COB Series:

- PACJ-7xxx-xxxx; PACE-7xxx-xxxx;
- PACJ-14xxx-xxxx; PACE-14xxx-xxxx;
- PACJ-21xxx-xxxx; PACE-21xxx-xxxx;
- PACJ-28xxx-xxxx; PACE-28xxx-xxxx;

With the Zhaga Book 11 holders for the green indicator marks.
BJB holder: 47.319.6294.50;

AAG.STUCCHI: 8100-G2

Without the holders for the pink indicator marks.
Direct mounting with machine screws M3x6.5mm.

- With the LEDiL products:
- Olivia series: FN14637-S
 - Ronda series: FN15xxx-xx;
 - Molly series: C15xxx;

Prolight Opto LED Modules directly Mounting Options

Prolight Opto COB G-II and COB Series:

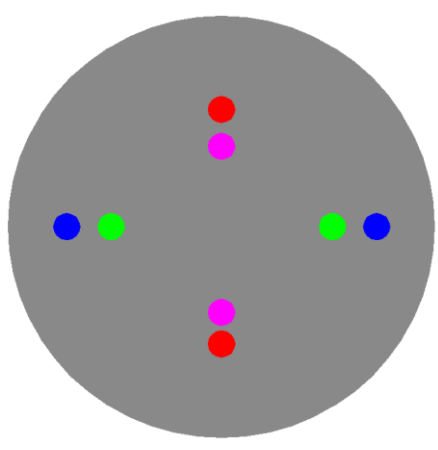
- PACK-35xxx-xxxx; PACF-40xxx-xxxx;
- PACK-42xxx-xxxx; PACF-35xxx-xxxx;
- PACK-57xxx-xxxx;

With the Zhaga Book 3 holders for the green indicator marks.
BJB holder: 47.319.2021.50;

AAG.STUCCHI: 8101-G2

Without the holders for the red indicator marks.
Direct mounting with machine screws M3x6.5mm.

- With the LEDiL products:
- Olivia series: FN14637-S
 - Ronda series: FN15xxx-xx;



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Mounting Options and Drawings & Dimensions

Example: xLED-PRO-4530-B-1,2

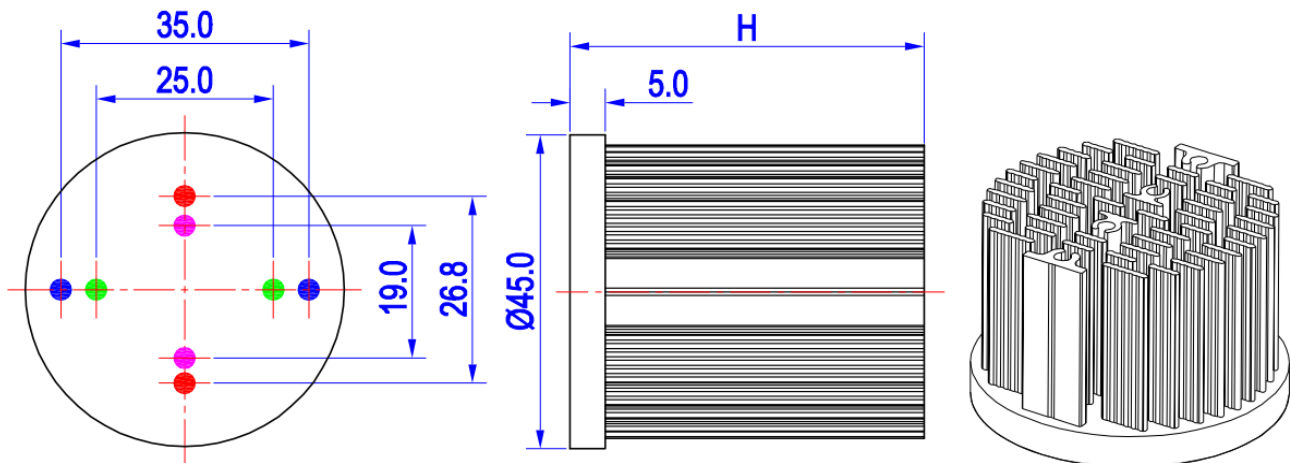
Example: xLED-PRO-45 **1** - **2** - **3**

- 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
			Molly Series	Olivia series	Ronda series			
1	COB series (13.5*13.5)	/	C15xxx;	FN14637-S	FN15xxx-xx;	M3	6.5mm	19.0mm/ 2-@180°
2		BJB Holder 47.319.6294.50				M3	6.5mm	25.0mm/ 2-@180° (Zhaga book 11)
		AAG.STUCCHI 8100-G2						
3	COB series (19.0*19.0)	/	C15xxx;	FN14637-S	FN15xxx-xx;	M3	6.5mm	26.8mm/ 2-@180°
4		BJB Holder 47.319.2134.50				M3	6.5mm	35.0mm/ 2-@180° (Zhaga book 3)
		AAG.STUCCHI 8101-G2						



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The product data table

	Model No.	xLED-PRO-4530
	Heatsink Size	$\Phi 45 \times H 30\text{mm}$
	Heatsink Material	AL1070
	Finish	Black Anodized
	Weight (g)	45.0
	Dissipated power (Ths-amb,50°C)	7.0 (W)
	Cooling surface area (mm ²)	22830
	Thermal Resistance (Rhs-amb)	7.14 (°C/W)

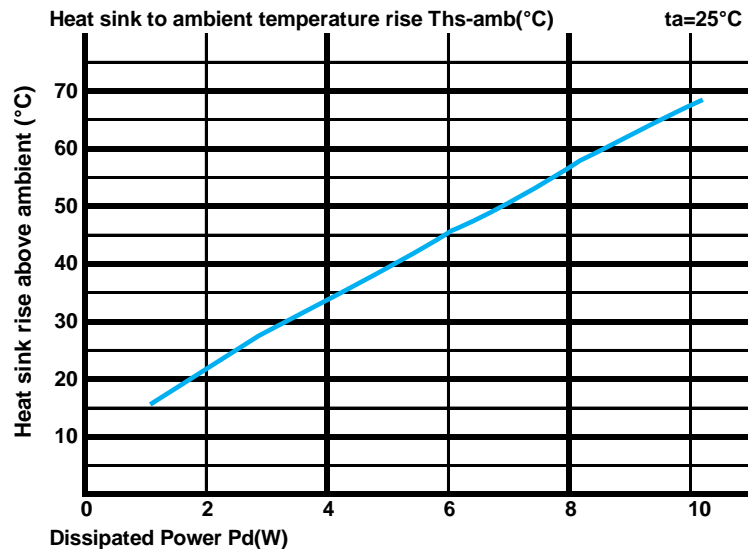
The thermal data table

* 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;

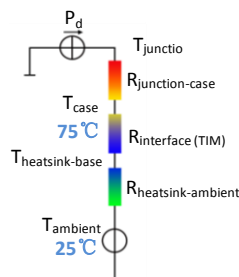
Dissipated Power Pd(W)	Pd = Pe x (1- η_L)	Heat sink to ambient thermal resistance Rhs-amb (°C/W)	Heat sink to ambient temperature rise Ths-amb (°C)
		xLED-PRO-4530	
2.0		10.50	21.0
4.0		8.50	34.0
6.0		7.50	45.0
8.0		7.00	56.0
10.0		6.70	67.0



*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] ; 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 $R_{\text{junction-case}}$, the thermal resistance of the TIM outside the package is $R_{\text{interface (TIM)}}$ [°C/W], the thermal resistance with the heat sink is $R_{\text{heatsink-ambient}}$ [°C/W], and the ambient temperature is T_{ambient} [°C].

*Thermal resistances outside the package $R_{\text{interface (TIM)}}$ and $R_{\text{heatsink-ambient}}$ can be integrated into the thermal resistance $R_{\text{case-ambient}}$ at this point. Thus, the following formula is also used:

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