

MechaTronix in LED

LPF6050-ZHC Citizen Pin Fin LED Cooler ø60mm



Features & Benefits

- The LPF6050-ZHC Zhaga Pin Fin LED cooler is specifically designed for luminaires using the Citizen CITELED LED COB. Mechanical compatibility with direct mounting of the LED modules to the LED cooler and thermal performance matching the lumen packages.
- For spot and downlight designs from 500 to 1,700 lumen
- Thermal resistance Rth 4.0°C/W
- Modular design with mounting holes foreseen for Citizen CITELED CLL022, CLU024, CLU026, CLL032, CLU034, CLU036, CLU700, CLU710 LED COB's, direct mounting or by use of Zhaga Book 3 / Book 11 LED holder.
- Diameter 60mm - Standard height 50mm
Other heights on request
- Forged from highly conductive aluminum



Order Information

 Zhaga

CITIZEN
Micro HumanTech

Example : LPF6050-ZHC-B

LPF6050-ZHC- **1**

- 1** Anodising Color
B - Black
C - Clear
Z - Custom (specify)

The LPF6050-ZHC pin fin LED cooler is designed in this way that you can mount various LED modules on the same LED cooler

Simple mounting with 2 screws

Recommended screw force 6lb/in

Screws are available from MechaTronix

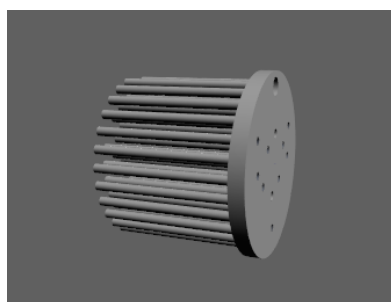
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Product Details

Model n°



LPF6050-ZHC

Dimension (mm)* ¹	ø60 x h50
Volume (mm ³)	41094
Cooling Surface (mm ²)	43447
Weight (gr)	110.95
Thermal Resistance (°C/W)* ²	4.0
Power Pd (W)* ³	12
Heat Sink Material	AL1070

*¹ 3D files are available in ParaSolid, STP and IGS on request

*² The thermal resistance Rth is determined with a calibrated heat source of 30mm x 30mm 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

*³ 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: $P_d = P_e \times (1 - \eta_L)$

Pd - Dissipated power

Pe - Electrical power

η_L = Light efficiency of the LED module

Notes:

- MechaTronix reserves the right to change products or specifications without prior notice.
- Mentioned models are an extraction of full product range.
- For specific mechanical adaptations please contact MechaTronix.

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Mounting Options

The LPF6050-ZHC Pin Fin LED cooler is standard foreseen from a variety of mounting holes which allow direct mounting of LED engines, COB's and secondary optics on the LED heat sink.

In this way mechanical afterwork and related costs can be avoided, and lighting designers can standardize their designs on a limited number of LED coolers.

Below you find an overview of Citizen Cited LED COB's which standard fit on the LPF6050-ZHC Pin Fin LED cooler.

MechaTronix performs thermal validation tests on each of the LED modules mounted on the LED cooler and publishes this data in the LED brand thermal validation reports.

For a full overview of available LED coolers for Citizen LEDs, please refer to the Citizen LED cooler overview on www.led-heatsink.com/Download.php or scan the QR code here.



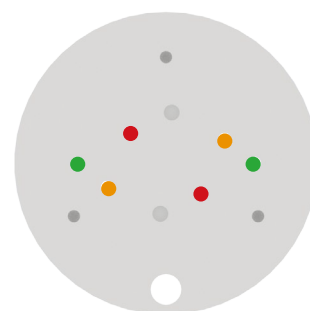
Citizen LED COB

CITIZEN
Micro HumanTech

Citizen Electronics Co., Ltd. Is a precision electronics manufacturer with headquarters in Fujiyoshida City, Yamanash Japan. Prefecture and a subsidiary of Citizen Holdings Co., Ltd. Citizen Electronics is a leader in LED light sources for electronic devices and high power white LED lamps. The second generation CITELED CLL LED COB modules and the new upcoming generation CLU distinguish themselves through the combination of high lumen per watt performance combined with a perfect light quality control.

Mounting indicator marks overview

MechaTronix 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 pads or phase change thermal pads can be pre-applied from MechaTronix.



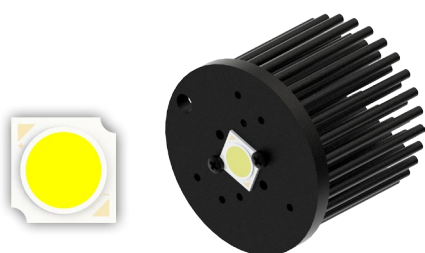
Citizen Cited CLL022 - CLU024 - CLU026

Model names

- CLL022-xxxx
- CLU024-xxxx
- CLU026-xxxxxx

Mounting

- Direct mounting with 2 screws M3 x 6mm
Red indicator marks
- With Zhaga Book 11 LED holder
BJB Spotlight connector 47.319.6060
Ideal Industries Chip-Lok™ holder 50-2002CT
TE Connectivity 1pc LED holder 6-2154874-1
TE Connectivity Scalable 2pc LED holder 2-2154857-1
Mounting with 2 screws M3 x 10mm
Orange indicator marks



Citizen Cited CLL032 - CLU034 - CLU036

Model names

- CLL032-xxxx
- CLU034-xxxx
- CLU036-xxxxxx

Mounting

- With Zhaga Book 3 LED holder
BJB Spotlight connector 47.319.2021
Ideal Industries Chip-Lok™ holder 50-2103CT
TE Connectivity Lumawise type Z50 2213254-1
TE Connectivity Lumawise type Z50 2213254-2
Mounting with 2 screws M3 x 10mm
Green indicator marks

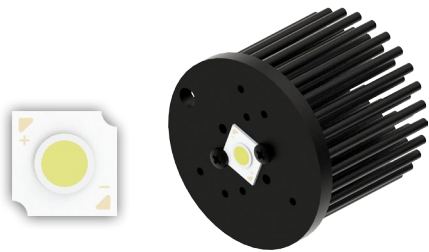


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Mounting Options



Citizen Cited High Intensity Type CLU700

Model names

- CLU700-1002B8

Mounting

- Direct mounting with 2 screws M3 x 6mm
Red indicator marks
- With Zhaga Book 11 LED holder
BJB Spotlight connector 47.319.6060
Ideal Industries Chip-Lok™ holder 50-2002CT
TE Connectivity 1pc LED holder 6-2154874-1
TE Connectivity Scalable 2pc LED holder 2-2154857-1
Mounting with 2 screws M3 x 10mm
Orange indicator marks



Citizen Cited High Intensity Type CLU710

Model names

- CLU710-1204B8

Mounting

- With Zhaga Book 3 LED holder
BJB Spotlight connector 47.319.2021
Ideal Industries Chip-Lok™ holder 50-2103CT
TE Connectivity Lumawise type Z50 2213254-1
TE Connectivity Lumawise type Z50 2213254-2
Mounting with 2 screws M3 x 10mm
Green indicator marks

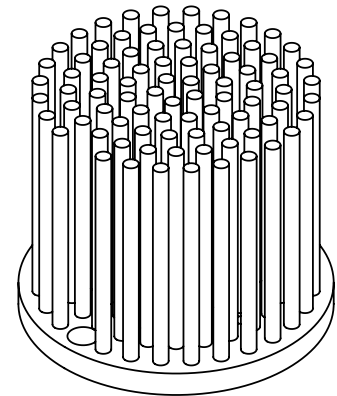
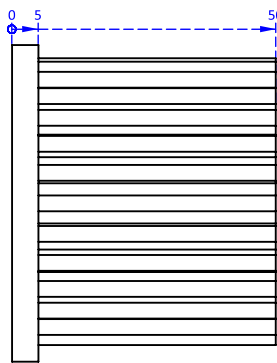
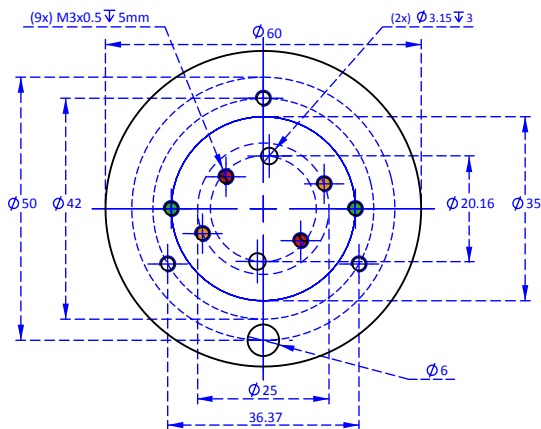
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Drawings & Dimensions

Example: LPF6050-ZHC

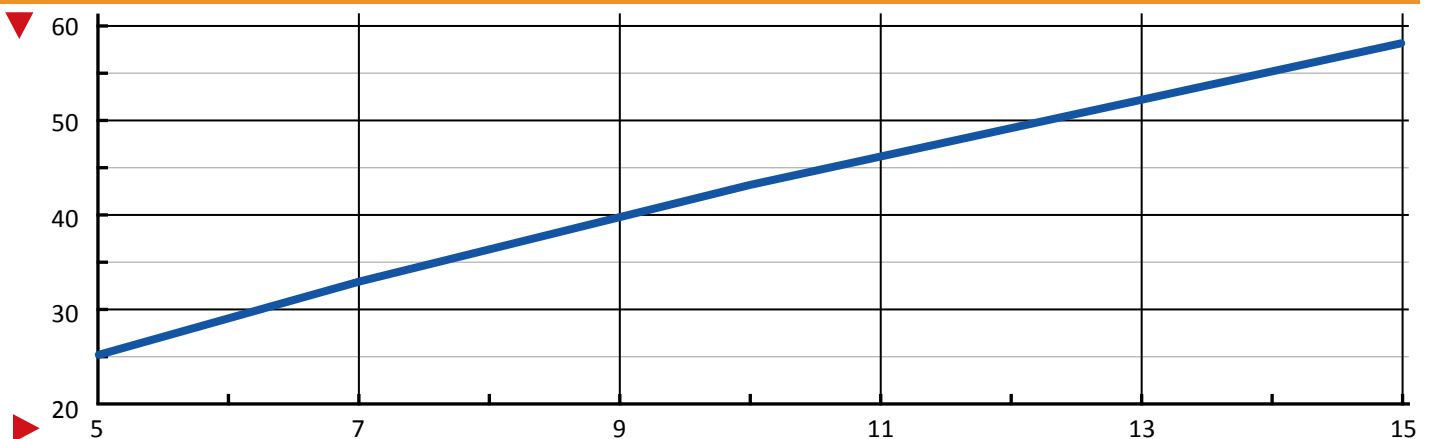


Thermal Data

$P_d = P_e \times (1 - \eta_L)$			LED Light efficiency, η_L (%)			Heat sink to ambient thermal resistance R_{hs-amb} ($^{\circ}\text{C}/\text{W}$)	Heat sink to ambient temperature rise T_{hs-amb} ($^{\circ}\text{C}$)
Dissipated Power $P_d(\text{W})$	5	Electrical Power $P_e(\text{W})$	17%	20%	25%	LPF6050-ZHC	LPF6050-ZHC
	7		6.02	6.25	6.67	5.0	25
	10		8.43	8.75	9.33	4.7	33
	15		12.05	12.50	13.33	4.3	43
			18.07	18.75	20.00	3.9	58

Heat sink to ambient temperature rise T_{hs-amb} ($^{\circ}\text{C}$)

— LPF6050-ZHC



Dissipated Power $P_d(\text{W})$