

# MechaTronix in LED

## IceLED Ultra Modular Active LED Cooler



### Features & Benefits

- Ultra high cooling performance
- For high bays, flood lights and industrial lighting designs from 5,000 to 20,000 lumen
- Modularity - Standard foreseen from mounting holes for most of the LED modules available on the market
- Fan rated voltage 12Vdc (3W - 230mA)
- High lifetime design > 60khrs (L 10 life time @40°C)
- Dust protection fan cover
- Warranty 5 years



### Order Information



Example : IceLED Ultra

IceLED **1**

**1** Ultra



*IceLED Ultra* is designed in this way that you can mount LED modules from various manufacturers on the same LED cooler  
 Simple mounting with M3 self tapping screws  
 Recommended screw force 6lb/in  
 Screws are available from MechaTronix

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### Product Details



IceLED Ultra

#### Model n°

|   |           |
|---|-----------|
| Dimension (mm) <sup>*1</sup>            | ø99 x h75 |
| Fan Voltage (Vdc) <sup>*2</sup>         | 12        |
| Fan Speed (RPM)                         | 3000      |
| Noise @ 1m (dBA)                        | <39       |
| Weight (gr)                             | 400.39    |
| Thermal Resistance (°C/W) <sup>*3</sup> | 0.25      |
| Power Pd (W) <sup>*4</sup>              | 200       |
| Heat Sink Material                      | AL6063-T5 |

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

\*2 The fan requires a constant voltage power source of 12Vdc, 230mA, 2.76W

\*3 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

\*4 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

$\eta_L$  = 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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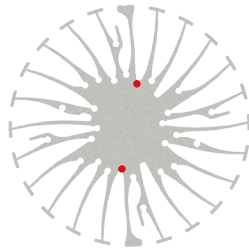
### Mounting Options

#### Zhaga LED engines

IceLED modular active LED coolers are standard foreseen for mounting of all Zhaga compliant LED modules and LED holders ( Zhaga book 3 )



Besides the known Zhaga book 3 LED modules (Edison Edilex SLM, Osram PrevaLED Core Z2, Philips Fortimo LED SLM, Vossloh Schwabe Lugashop...) most popular COB LED modules like the Sharp Mega Zenigata, Philips Lumileds Luxeon COB,... can be mounted on the same platform by using Zhaga book 3 compatible LED holders form BJB or Tyco Electronics Connectivity



Right side illustration can be used to easily determine the required mounting holes  
A flipchart with transparent overlays is available online and as hardcopy  
MechaTronix advises the use of self tapping mounting screws M3 x 6mm  
Mounting torque 6lb/in - Compliant high end screws available on request



#### Extra standard mounting options

The IceLED Ultra modular active LED cooler is standard foreseen from a sophisticated hole pattern design which allows direct mounting by self tapping screws of below LED modules and COB's

- Bridgelux RS array LED engines
- Citizen CILEDS COB's CLL030/CLL032/CLL040/CLL042/CLL050/CLL052
- Prolight Opto high lumen COB's 100W & 200W
- Vossloh Schwabe Lugashop 5,500lm
- Xicato XSM and XPM LED modules

Didn't you find the mounting pattern for your favorite LED module on this cooler?  
Let us know and we might place it on our next ModuLED and IceLED platform

#### Ultimate LED cooling

With a thermal resistance as low as 0.25°C/W and a cooling capacity of 200 Watts, the IceLED Ultra is an ideal cooling platform for high bay and industrial LED lighting designs

A few good examples are the combinations with the Citizen CILEDS CLL052 COB to achieve a 10,000 lumen design, and the high power Prolight Opto COB up to 18,000 lumen for high bay designs

#### Our ECO partners

The LED modules and COB's form below brands are thermally validated with the MechaTronix LED coolers  
All thermal measurement data is published on [www.led-heatsink.com](http://www.led-heatsink.com) and can be consulted under the menu "Brand Products"  
A completed overview of coolers per LED brand can also be found under the "Download" section



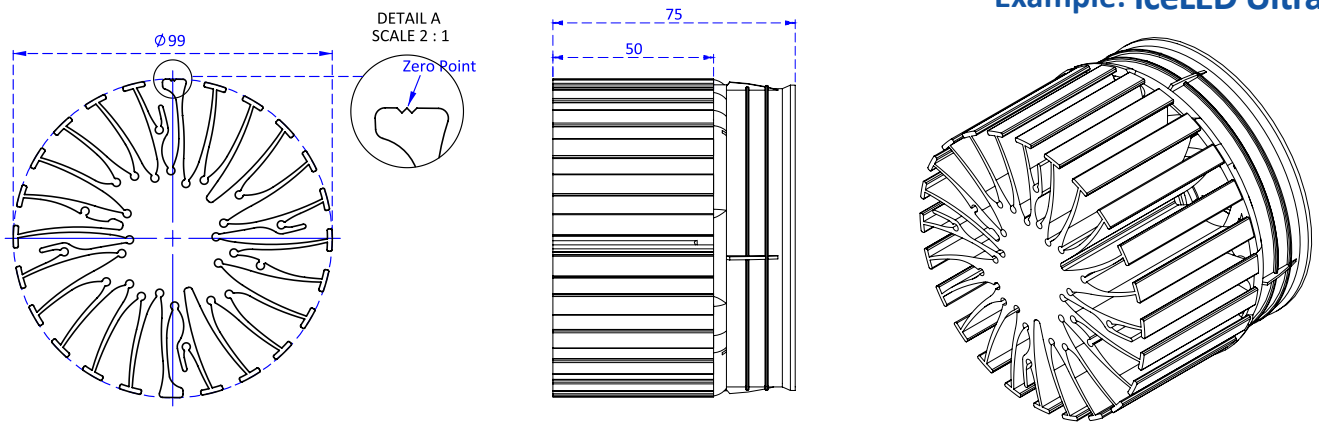
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### Drawings & Dimensions

Example: IceLED Ultra



### Thermal Data

| $P_d = P_e \times (1 - \eta_L)$ |     |                            | LED Light efficiency, $\eta_L$ (%) |       |       | Heat sink to ambient thermal resistance $R_{hs-amb}$ (°C/W) | Heat sink to ambient temperature rise $T_{hs-amb}$ (°C) |
|---------------------------------|-----|----------------------------|------------------------------------|-------|-------|---|---|
|                                 |     |                            | 17%                                | 20%   | 25%   |   |   |
| Dissipated Power $P_d$ (W)      | 50  | Electrical Power $P_e$ (W) | 60.2                               | 62.5  | 66.6  | 0.25  | 12.5  |
|                                 | 75  |                            | 90.3                               | 93.7  | 100.0 | 0.25  | 18.8  |
|                                 | 100 |                            | 120.4                              | 125.0 | 133.3 | 0.25  | 25.0  |
|                                 | 150 |                            | 180.7                              | 187.5 | 200.0 | 0.25  | 37.5  |
|                                 | 175 |                            | 210.8                              | 218.7 | 233.3 | 0.25  | 43.8  |
|                                 | 200 |                            | 240.9                              | 250.0 | 266.6 | 0.25  | 50.0  |

