

MechaTronix *in* LED

ModuLED Giga-HBG LG Innotek High Bay LED Cooler ø152mm



Features & Benefits

- The ModuLED Giga HBG modular passive LED coolers are specifically designed for Low Bay, Mid Bay and High Bay luminaries with the driver mounted on the LED cooler.
- Cooling performance 8,000 to 16,000 lumen.
- Thermal resistance range Rth 0.46 - 0.52°C/W.
- Modular design with mounting holes foreseen for LG Innotek LEMWM18 24W, LEMWM28 LED COB's, direct mounting or by use of Zhaga Book 3 LED holder, MEAN WELL HBG-160 LED drivers and driver box for various LED driver manufacturers.
- Diameter 152mm - Standard height 100 / 150mm. Other heights on request.
- Extruded from highly conductive aluminum.



Order Information



Example : ModuLED Giga 152100-B-HBG

ModuLED Giga 152 **1** - **2** -HBG

- 1** Height (mm)
- 2** Anodising Color
B - Black
C - Clear

ModuLED Giga-HBG is designed in this way that you can mount various LED modules on the same LED cooler

Simple mounting with self tapping screws
Recommended screw force 6lb/in
Screws are available from MechaTronix

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Product Details

Model n°	ModuLED Giga 152100-HBG	ModuLED Giga 152150-HBG
Dimension (mm) ^{*1}	ø152 x h100	ø152 x h150
Volume (mm ³)	566553	857898
Cooling Surface (mm ²)	363547	541592
Weight (gr)	1530	2316
Thermal Resistance (°C/W) ^{*2}	0.52	0.46
Power Pd (W) ^{*3}	95	110
Heat Sink Material	AL6063-T5	AL6063-T5

^{*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: $Pd = Pe \times (1 - \eta_L)$

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 ModuLED Giga-HBG modular passive LED coolers are 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 LG Innotek LED modules and COB's, MEAN WELL HBG series LED drivers and external driver connection options which standard fit on the ModuLED Giga-HBG LED cooler.

The ModuLED Giga-HBG is probably the most complete standard High Bay LED cooler with regards to mounting possibilities of Zhaga and the latest generation of COB LED modules.

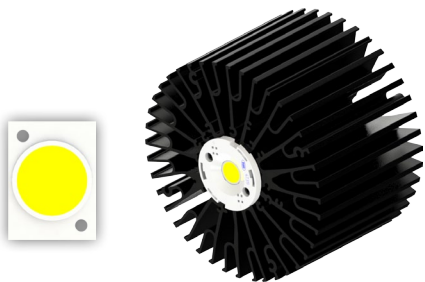
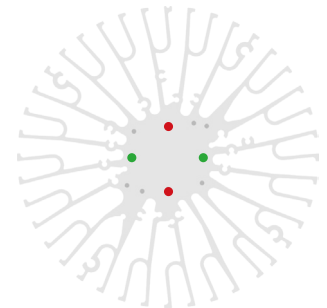
LG Innotek LED COB



LG Innotek is a global specialized material and component manufacturer who is making a better world through cutting edge core component technology that is leading the market and opening a smarter future through the development of new eco-friendly materials. With the world's highest production capacity as a single factory and a solid LED business base built over more than a decade, LG Innotek's Paju LED factory produces 2 billion chips a month. Their LEMWM COB LED modules deliver a perfect lumen per watt ratio in an uncompromised lighting quality.

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.



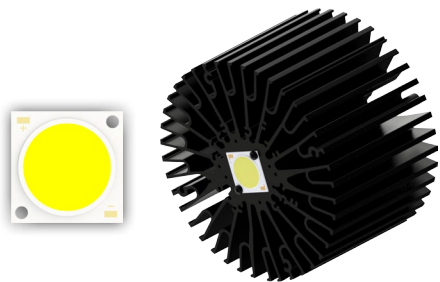
LG LEMWM18 24W COB

Model names

- LEMWM18880xxxx

Mounting

- With Zhaga Book 3 LED holder
BJB Spotlight connector 47.319.2080
Ideal Industries Chip-Lok™ holder 50-2100LG
Mounting with 2 self tapping screws M3 x 6mm
Green indicator marks



LG LEMWM28 COB

Model names

- LEMWM28xxxx

Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm
Red indicator marks
- With Zhaga Book 3 LED holder
BJB Spotlight connector 47.319.2030
Ideal Industries Chip-Lok™ holder 50-2204CT
Mounting with 2 self tapping screws M3 x 6mm
Green indicator marks

MechaTronix in LED

ModuLED Giga-HBG LG Innotek High Bay LED Cooler ø152mm



Mounting Options

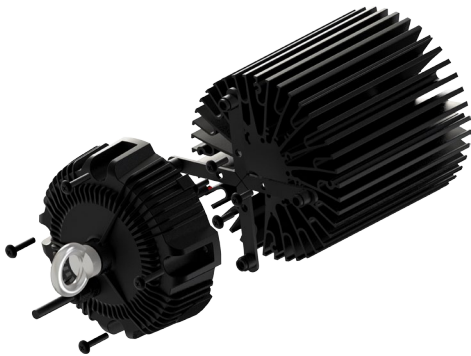
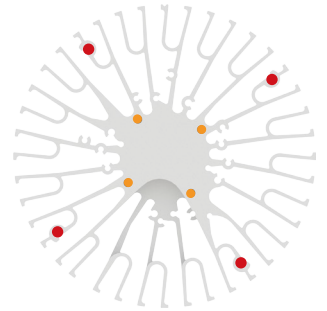
MEAN WELL HBG series LED Drivers



The Mean Well HBG LED drivers are specifically developed for mid bay and high bay applications. The round shape of the HBG LED drivers gives an ergonomic fitting with the ModuLED high bay cooler. Thermally this driver is specific designed to sit on top of a LED cooler, with the critical components thermally coupled to the top of the driver so free air convection can be optimal. In combination with the MechaTronix ModuLED Mega HBG this makes your ideal LED engine up to 10,000 lumen.

Mounting indicator marks overview

Keep in mind to keep a gap at least 10mm between the LED cooler and the driver to allow free air convection - this can be obtained with spacers or with the MTX dedicated mounting options.



MEAN WELL HBG-160 series LED driver

Model Names

- HBG-160-24
- HBG-160-36
- HBG-160-48
- HBG-160-60

Driver mounting

- Direct mounting with 4 spacers + (4x) M5 screws
keep minimal 10mm gap between the LED cooler
Red indicator marks
- With Connector set for HBG-160 + (4x) M5 x 20mm screws
Red indicator marks

Model Names

- Connector set for HBG-160

Connector set mounting

- Direct mounting on the LED cooler with 4 screws M5 x 12mm
Orange indicator marks

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Mounting Options

External driver box connection option



MechaTronix was formed in 2007, comprised of five already successful manufacturing companies, with each of them in excess of a decade of continuous operation. MechaTronix provides a wide variety of mechanical and electromechanical parts as well as assemblies for the international Original Equipment Manufacturers market.

Mounting indicator marks overview

The CoolBox driver box design keeps automatically the necessary space towards the LED cooler, so free air convection will not be blocked - no extra spacer needed.



MechaTronix driver box

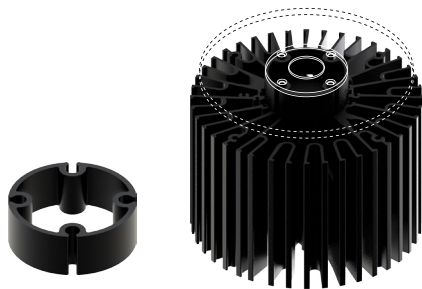
This universal driver box is designed in this way that almost all drivers available in the market up to 160 Watt can be mounted inside without the need of drilling or mechanical adaptations. The universal drivers clamping fixation also creates the perfect locking of your driver towards the top shell, so conduction can easily occur and convection towards the outside will guarantee the driver to keep within temperature specs.

Model Names

- CoolBox
Universal driver box for ModuLED and CoolBay® high bay LED coolers

Mounting

- Direct mounting on the LED cooler with 4 screws M5 x 10mm
Orange indicator marks



MechaTronix driver box connector ring

The driver box connector ring guarantees you the ideal space between the ModuLED LED cooler and your external driver box. With its open structure and aluminium conductivity, this is the ideal bridge between any driver box in the market and our high bay coolers.

Model Names

- Driver box connector ring

Mounting

- Direct mounting on the LED cooler with 4 screws M5 x 30mm
Orange indicator marks

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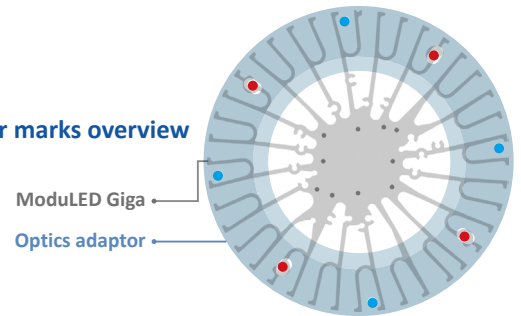
Mounting Options

MechaTronix High Bay LED accessories



With regards to reflectors we have equipped our high bay with the most common high bay reflector standard, the 143mm pitch. For the lenses the standard mounting pattern is foreseen for all 100mm lenses with or without rubber gasket. Although we don't produce our own lenses and reflectors, we keep a limited number of models from stock available for your urgent needs. Below you can find an overview of these models as well as the mounting patterns which go along.

Mounting indicator marks overview



Adaptor plate for connection of reflector & lens

With the ModuLED Giga optics adaptor you get an unprecedented flexibility in choices of optics. Equipping your high bays with a wide variety of reflectors in metal or plastic, adding lenses for a controlled light image,... it all becomes plug-and-play.

Model Names

- ModuLED Giga optics adaptor

Mounting

- Direct mounting on the LED cooler with 4 screws M5 x 6mm
- Red indicator marks

CoolBay® Lens

A wide variety of diameter 100mm lenses made out of glass with beam angles 60 degrees, 90 degrees or 120 degrees - Comes together with a high quality rubber gasket. Plastic varieties in clear and milk colored are also available on request.

Model names

- CoolBay® Lens 60
- CoolBay® Lens 90
- CoolBay® Lens 120

Mounting

- With optics adaptor + (4x) screws M5 x 6mm
- Red indicator marks



Dust Protection Plate

When you are using lenses on the ModuLED high bay coolers, the open structure of the cooling fins might lead to dust accumulation in the lens. To avoid this MechaTronix has developed a range of dust protection plates (DPP) which go along with various COB sizes and LED holders. This option is of course not needed when you equip your high bay with a reflector only.

Example DPP-Giga-2828 :

28mm x 28mm COB, Cable hole position for HBG-160 LED driver

DPP-Giga- **1**

1 COB dimension (mm)

Model Names

- DPP-Giga-2828
- DPP-Giga-3838
- DPP-Giga-ZHAGA3

Mounting

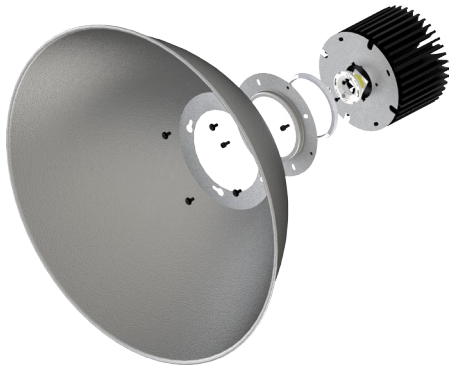
- Direct mounting on the LED cooler with 4 screws M5 x 6mm
- Red indicator marks

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Mounting Options



CoolBay® Reflector

A limited range of high-end off-the-shelf available high bay reflectors in high transfective coated aluminium or polycarbonate. All our reflectors follow the most common mounting standard with a pitch of 143mm and can be fixed with the ModuLED Giga optics adaptor towards the LED cooler. All our reflectors are transported in a special adapted packaging for damage prevention.

Model names

- CoolBay® Reflector 45
- CoolBay® Reflector 45 PC
- CoolBay® Reflector 90
- CoolBay® Reflector 120

Mounting

- Direct mounting on optics adaptor with 4 screws M5 x 6mm
Blue indicator marks

MechaTronix in LED

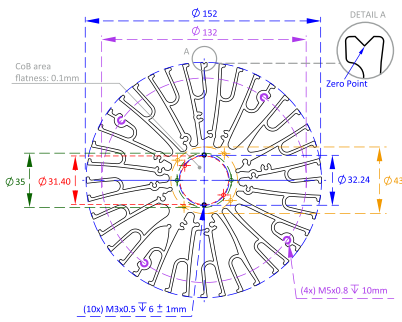
ModuLED Giga-HBG LG Innotek High Bay LED Cooler $\phi 152$ mm



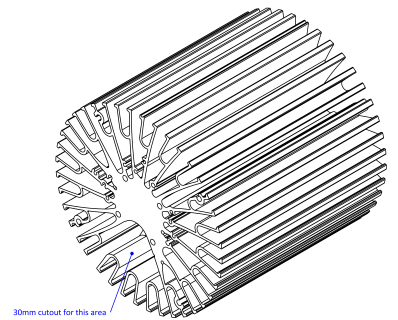
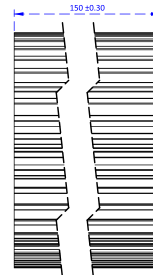
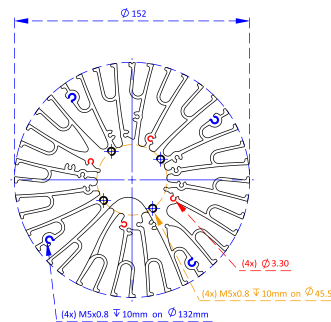
Drawings & Dimensions

Example: ModuLED Giga 152150-HBG

Bottom - LED & optics side



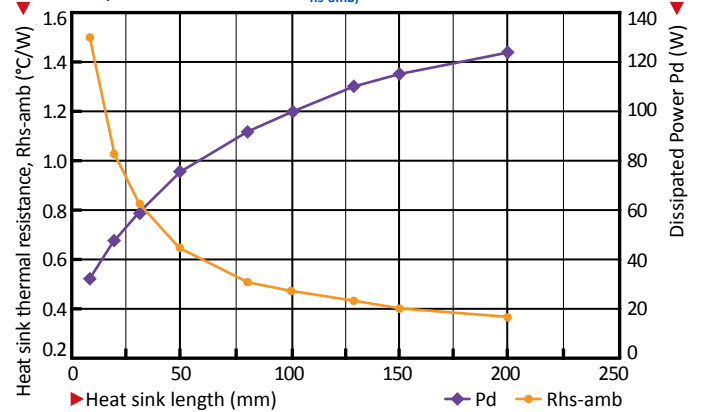
Top - Driver side



Thermal Data

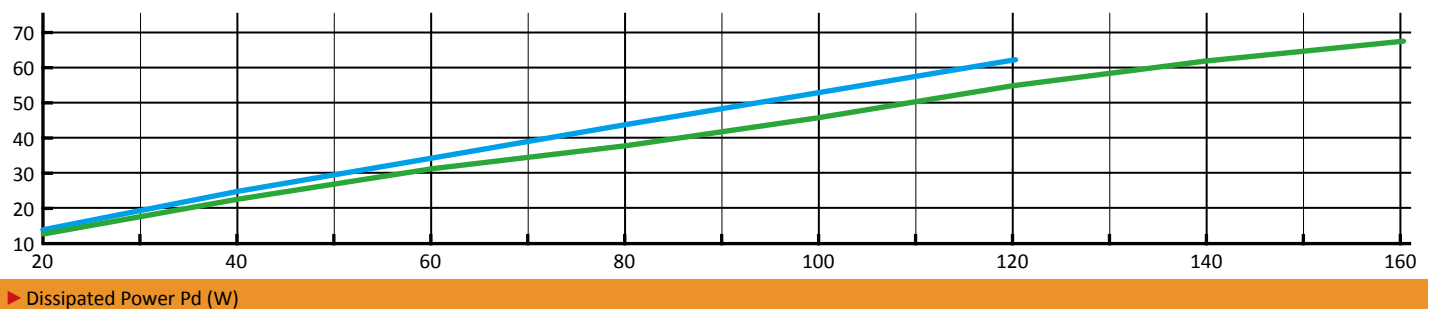
$P_d = P_e \times (1-\eta_L)$	Heat sink to ambient thermal resistance R_{hs-amb} ($^{\circ}C/W$)		Heat sink to ambient temperature rise T_{hs-amb} ($^{\circ}C$)	
	ModuLED Giga 152100-HBG	ModuLED Giga 152150-HBG	ModuLED Giga 152100-HBG	ModuLED Giga 152150-HBG
20	0.69	0.60	14	12
40	0.61	0.55	25	22
60	0.57	0.51	34	31
80	0.54	0.48	43	39
100	0.52	0.46	52	46
120	0.51	0.45	61	54
140	-	0.44	-	61
160	-	0.43	-	69

ModuLED Giga performance data at a heat sink to ambient temperature difference, ΔT_{hs-amb} , of $50^{\circ}C$



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

ModuLED Giga 152100-HBG (blue line) ModuLED Giga 152150-HBG (green line)



Dissipated Power P_d (W)