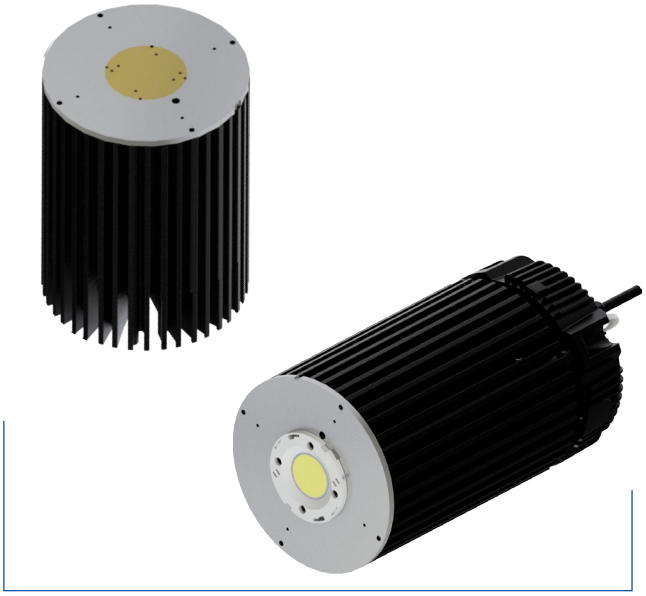
CoolBay® Giga - Advanced High Bay LED Cooler up to 22.000lm

Features & Benefits

- Advanced High Bay and industrial LED cooler with pure passive cooling up to 22.000 lumen
- CoolTube® patented quadruple closed-loop heat pipe inside - extreme conduction capacity for high power LED COBs
- Cooling performance 12.000 - 22.000 lumen
- Thermal resistance Rth 0.34°C/W
- Modular design with mounting holes foreseen for direct connection of various brands high power COB LEDs, Mean Well HBG-160 LED driver or external driver box, various optic lenses and reflectors
- Diameter 152mm - Height 200mm



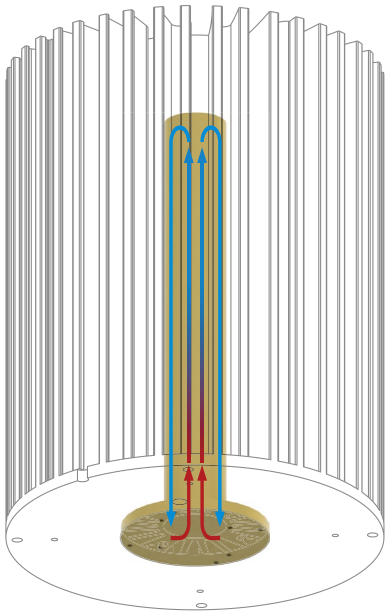
The CoolTube® Principle

Zhaga · LG Innotek · BJB · LUMILEDS The Brighter Choice · IDEAL · LUSTROUS Green Technology of Lighting · MEAN WELL · ProLight Opto Technology Corporation · bridgelux · SEOUL SEMICONDUCTOR · CITIZEN Micro HumanTech · SHARP · CREE · TRIDONIC enlightening your ideas · EDISON

The CoolTube® is a patented quadruple closed-loop heat pipe, with an enormous conduction capacity.

In this way the heat from a small LED engine or COB area will be transported away to the rest of the cooler in an absolute minimum of time.

A second advantage of the CoolTube® closed-loop heat pipe, is the possible use under as well vertical as horizontal positioning.



No.818, Dashun 2nd Rd., Sanmin Dist., Kaohsiung City 80787, Taiwan
sales@mechatronix-asia.com www.led-heatsink.com www.mechatronix-asia.com
Tel: +886-7-381-5892 Fax: +886-7-383-9293 VAT: 28600841

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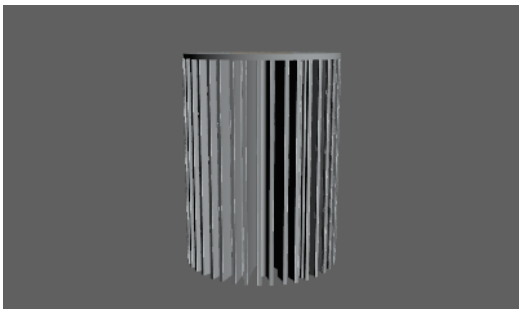
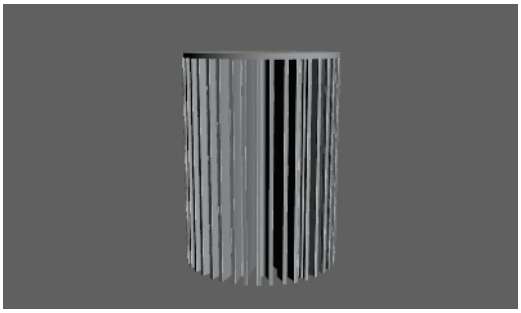
CoolBay® Giga - Advanced High Bay LED Cooler up to 22.000lm

Product Details

Model n°	 CoolBay® Giga-A	 CoolBay® Giga-B
Dimension (mm)*1	ø152 x h200	ø152 x h200
Weight (gr)	2795	2795
Thermal Resistance (°C/W)*2	0.34	0.34
Power Pd (W)*3	150	150
Heat Sink body	AL6063-T5	AL6063-T5
Heat sink core	CoolTube® quadruple heat pipe structure	
Surface finishing*4	Nano coating black	

*1 3D files are avaliable 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

*4 By use of this black Nano coating finish, the radiation of the CoolBay® Giga improves with 15% compared with standard anodizing – Overall cooling performance raises around 7%

To calculate the dissipated power please use the following formula: Pd = Pe x (1-ηL)
Pd - Dissipated power
Pe - Electrical power
ηL = Light effciency 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 CoolBay® Giga high performance passive LED coolers are standard foreseen from a variety of mounting holes which allow direct mounting of LED engines, COB's, reflectors, lenses and drivers 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 standard LED modules, COB's and accesories which standard fit on the CoolBay® Giga LED cooler.

For further mechanical modifications please contact MechaTronix.

CoolBay® Giga-A: LED module and COB mounting patterns

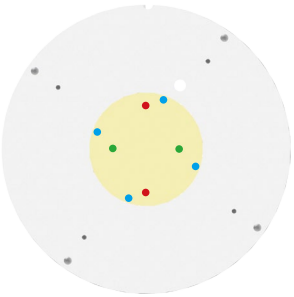
CITIZEN Micro HumanTech | EDISON | SEOUL SEMICONDUCTOR | Zhaga

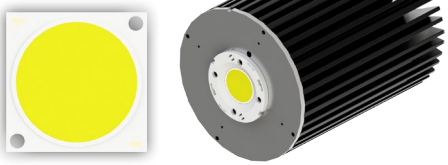
The CoolBay® Giga-A comes with mounting patterns for the broadly used 28x28mm COB and 38x38mm COB sizes, as well as with the Zhaga Book 3 mounting holes to accomodate a wide range of LED holders for various brands.

The wetting (contact between the LED engine and the LED cooler) is lifespan for these high power leds, so we suggest you to measure besides the Tc point also a place on the LED cooler near the contact area - when a temperature difference is observed than 10°C between these 2 points there is a potential contact issue.

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.

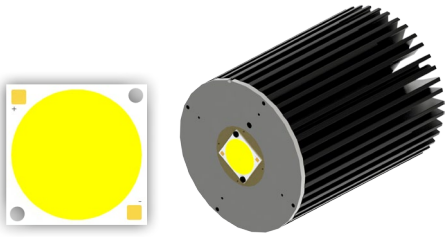




Citizen Citiled CLL052 - CLU054 - CLU056

Model names
- CLL052-xxxx
- CLU054-xxxx
- CLU056-1825C1
- CLU056-3618C1

Mounting
- Direct mounting with 2 screws M3 x 6mm
  Red indicator marks
- With LED holder
  BJB spotlight connector 47.319.4160.50
  Mounting with 4 screws M3 x 6mm
  Blue indicator marks



Edison Opto EdiPower III HM High Power series

Model names
- 2PHMA2xW27P29xxx
- 2PHMA5xW27P29xxx

Mounting
- Direct mounting with 2 screws M3 x 6mm
  Red indicator marks
- With LED holder
  BJB spotlight connector 47.319.4160.50
  Mounting with 4 screws M3 x 6mm
  Blue indicator marks

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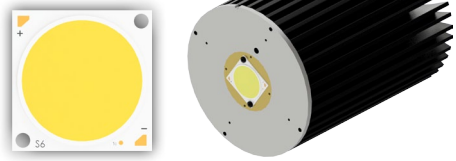
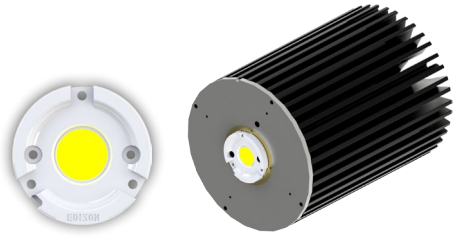
Mounting Options



Seoul Semiconductor ZC 100 LED COB

Model names
- SDW07F1C
- SDW87F1C
- SDW97F1C

Mounting
- Direct mounting with 2 screws M3 x 6mm
  Red indicator marks
- With LED holder
  BJB spotlight connector 47.319.4160.50
  Mounting with 4 screws M3 x 6mm
  Blue indicator marks



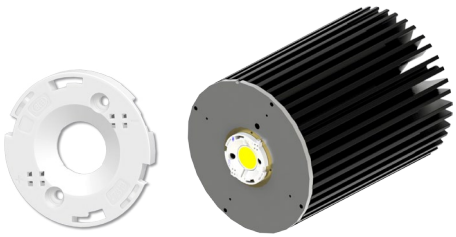
Zhaga Book 3 Spot Light Modules

Zhaga Interface Specification Book 3 defines the interfaces of a type-D LED light engine (non-socketable LED module with separate electronic control gear). The LED light engine LLE has a round disc shape with a maxium height of 7.2 mm and a typical diameter of 50 mm. It is suitable for spot-lighting and other applications that benefit from a small, circular source. Book 3 specifies a circular light-emitting surface (LES) that can have a range of diameters, namely 9 mm, 13.5 mm, 19 mm and 23 mm.

Zhaga book 3 compliant LED Spot Light modules
- Edison Edilex SLM

Zhaga Book 3 mounting through the use of LED holders and connectors

With the use of Zhaga Book 3 mechanical compatible LED holders, a wide variety of LED COB's can be mounted in the same way on these LED coolers.
Zhaga Book 3 compatiable LED holders can be found from BJB, TE Connectivity (Tyco), Molex and Ideal Industries.



LED COB's for which Zhaga book 3 LED holders are available
- Citizen CitiLED CLU044, CLU046
- Cree XLamp CXA / CXB 25xx, 30xx
- Edison Opto HM40
- Lextar Nimbus 5000
- LG Innotek LEMWM28 (40W)
- Lumileds Luxeon 1208, 1211 and 1216
- Lustrous Lustron LL630F, LL630D, LL660D
- Prolight Opto PACG
- Seoul Semiconductor ZC60
- Sharp Mega Zenigata

Mounting
- Direct mounting with 2 screws
  M3 x 8mm
  Green indicator marks

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Mounting Options

CoolBay® Giga-B: LED module and COB mounting patterns

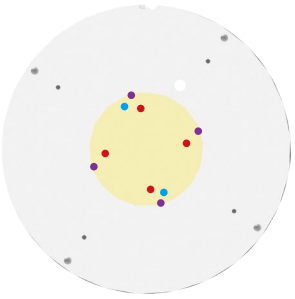
bridgelux CREE TRIDONIC enlightening your ideas

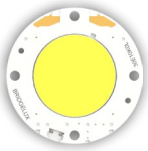
The CoolBay® Giga-B comes with specific mounting patterns for the Bridgelux Vero 29, Cree CXA35/CXB35 and Tridonic Talexx FLE LED engines.

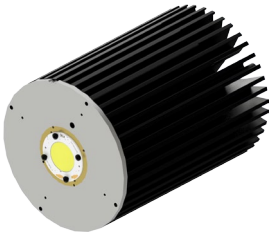
The wetting (contact between the LED engine and the LED cooler) is lifespan for these high power leds, so we suggest you to measure besides the Tc point also a place on the LED cooler near the contact area - when a temperature difference is observed than 10°C between these 2 points there is a potential contact issue.

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.







Bridgelux Vero 29 & Décor Vero 29 LED Array

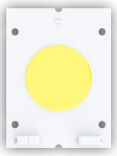
Model names
- Vero 29 BXRC-27x10K0
- Vero 29 BXRC-30x10K0
- Vero 29 BXRC-35E10K0
- Vero 29 BXRC-40E10K0
- Vero 29 BXRC-50C10K0
- BXRC-xxA10K1-L-23
- BXRC-56G10K0-L-04

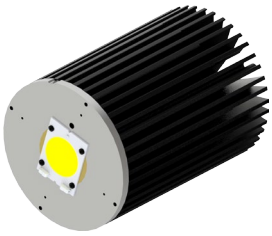
Mounting
- Direct mounting with 4 screws M3 x 6mm
  Red indicator marks

Cree XLamp CXA35 / CXB35 LED Array

Model names
- CXA3590-xxxx
- CXB3590-xxxx

Mounting
- With LED holder
  Ideal Industries Chip-Lok™ holder 50-2303CR
  Mounting with 2 screws M3 x 6mm
  Blue indicator marks





Tridonic TALEXXmodule Stark FLE GEN1

Model names
- STARK-FLE-G1-30-xxx
- STARK-FLE-G1-40-xxx

Mounting
- Direct mounting with 4 screws M3 x 6mm
  Purple indicator marks

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Mounting Options

MechaTronix High Bay LED accessories

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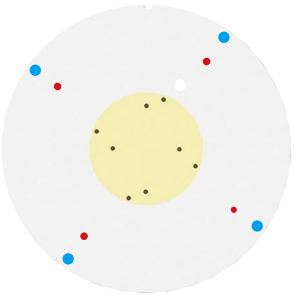
With regards to reflectors we have equipped our high bay with the most common high bay reflector standard, the 143mm pitch. For the lenses the standard mounting pattern is foreseen for all 100mm lenses with or without rubber gasket.
Although we don't produce our own lenses and reflectors, we keep a limited 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



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
- Direct mounting with 4 screws M3 x 6mm
  Red indicator marks

CoolBay® Reflector

A limited range of high-end off-the-shelf available high bay reflectors in high transflective 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 Mega 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 with 4 screws M5 x 6mm
  Blue indicator marks

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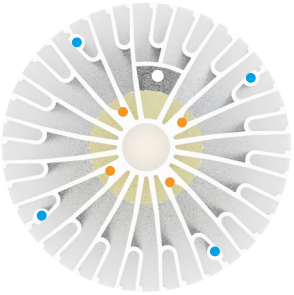
Mounting Options

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
  Blue indicator marks
- With Connector set for HBG-160 + (4x) M5 x 30mm screws
  Blue 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

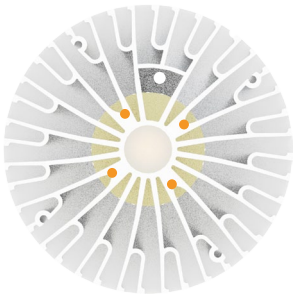
External driver box connection option

MechaTronix

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

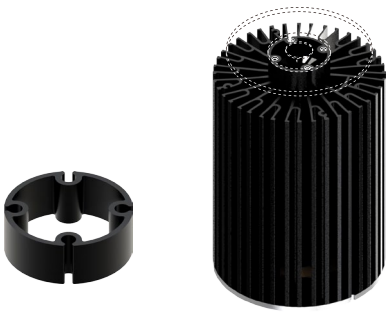
This universal driver box is designed in this way that almost all drivers available in the market up to 160 Watt can be mounted inside without the need of drilling or mechanical adaptations.
The universal drivers clamping fixation also creates the perfect locking of your driver towards the top shell, 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 it's 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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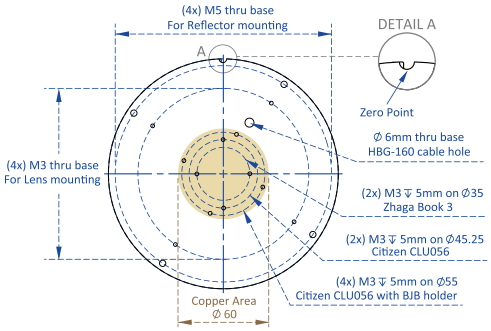
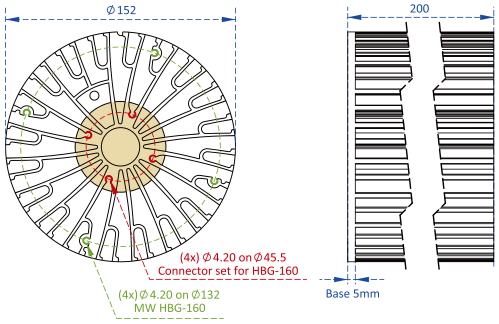
Drawings & Dimensions

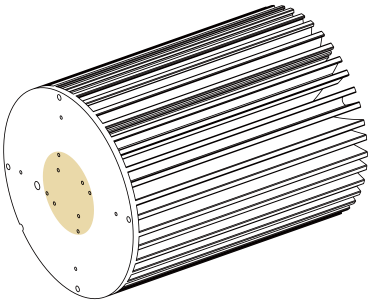
CoolBay® Giga-A

Bottom - LED & optics side



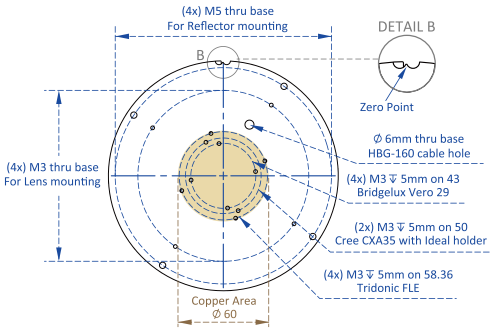
Top - Driver side



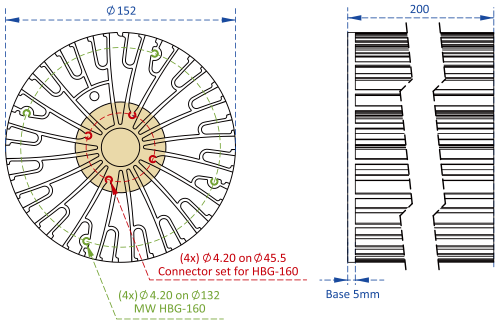


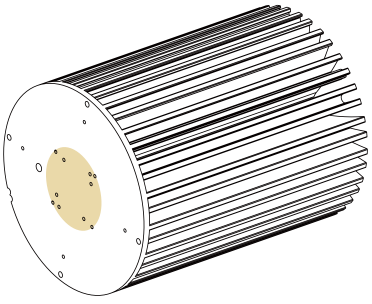
CoolBay® Giga-B

Bottom - LED & optics side



Top - Driver side





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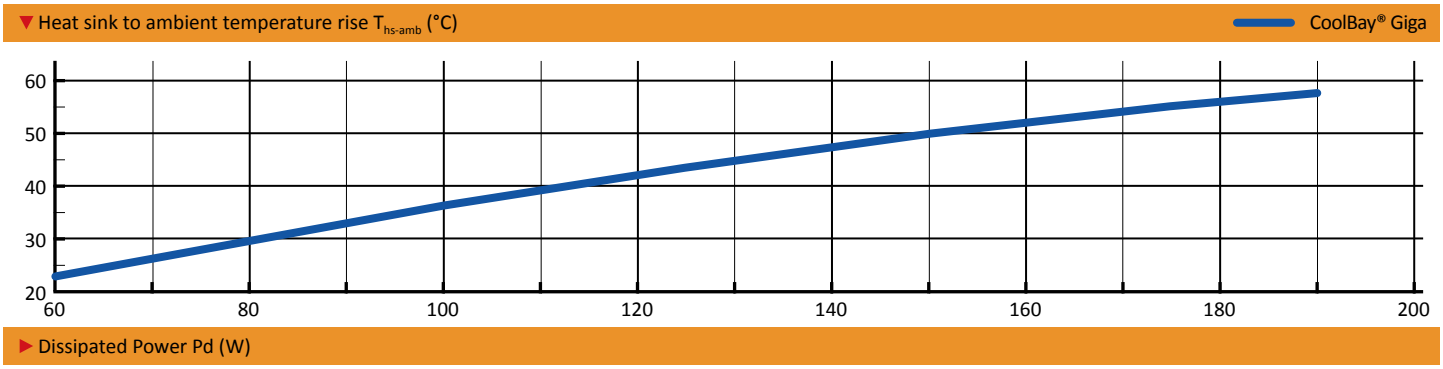
Thermal Data

Pd = Pe x (1-ηL)			LED Light efficiency, ηL (%)			Heat sink to ambient thermal resistance $R_{hs\text{-}amb}$ (°C/W)	Heat sink to ambient temperature rise $T_{hs\text{-}amb}$ (°C)
			17%	20%	25%	CoolBay® Giga	CoolBay® Giga
Dissipated Power Pd(W)	60	Electrical Power Pe(W)	72.3	75.0	80.0	0.39	23.2
	75		90.4	93.8	100.0	0.38	28.2
	100		120.5	125.0	133.3	0.36	36.4
	125		150.6	156.3	166.7	0.35	43.9
	150		180.7	187.5	200.0	0.34	50.4
	175		210.8	218.8	233.3	0.32	55.5
	190		228.9	237.5	253.3	0.30	57.6



No.818, Dashun 2nd Rd., Sanmin Dist., Kaohsiung City 80787, Taiwan
sales@mechatronix-asia.com www.led-heatsink.com www.mechatronix-asia.com
Tel: +886-7-381-5892 Fax: +886-7-383-9293 VAT: 28600841

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