

# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler ø99mm



### Features & Benefits

- For spot and downlight designs from 1,600 to 6,400 lumen
- Thermal resistance range Rth 1.02 - 1.34°C/W
- Modular design with mounting holes foreseen for a wide range of LED modules and COB's:
  - Zhaga Book 3 Spot Light Modules Edison Edilex SLM, Osram PrevaLED Core AC / AC PRO / Z3 / Z4, Philips Fortimo SLM, Seoul Semiconductor ACrich AC Zhaga, Sharp INTERMO, Tridonic Talexx Stark SLE G3 / G4, Vossloh Schwabe Luga Shop, ...
  - Bridgelux BXRA ESS, ESR, RS, V-series
  - Citizen Citiled CLL032-CLU034-CLU036-CLU038, CLL042-CLU044-CLU046-CLU048, CLU710, CLU720
  - Edison EdiPower II HM/CAC series
  - LG Innotek LEMWM18 10W, 13W, 17W, 24W, LEMWM28
  - Luminus CXM-11 (ACxx), CHM-11, CLM-14, CXM-14 (ACxx), CHM-14 (ACxx), CXM-18 (AC30), CLM-22, CXM-22
  - Lustrous LUSTRON 6 series LL613F, LL620F, LL630F, LL630D, LL660D
  - Prolight Opto PACF, PACG, PABA, PABB, PACC, PACD
  - Seoul Semiconductor ZC18, ZC25, ZC40, ZC60
  - Tridonic TALEXX Stark SLE GEN3-19, -23, Mini LES-17, TALEXXmodule SLE GEN4 15/19/23mm, 15mm D50, SLE GEN5 15/19/23mm, SLE GEN6 19/23mm, 15/17mm D50
- Diameter 99mm - Standard height 50mm & 80mm  
Other heights on request
- Extruded from highly conductive aluminum



### Order Information



Example : ModuLED 9950-B

ModuLED 99 **1** - **2**

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

ModuLED is designed in this way that you can mount LED modules from various manufacturers on the same LED cooler

Simple mounting with M3 x 6mm self tapping screws  
Recommended screw force 6lb/in  
Screws are available from MechaTronix

# MechaTronix in LED

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### Product Details

Model n°	ModuLED 9950	ModuLED 9980
Dimension (mm) <sup>*1</sup>	ø99 x h50	ø99 x h80
Volume (mm <sup>3</sup> )	137181	219491
Cooling Surface (mm <sup>2</sup> )	104563	164008
Weight (gr)	356	573
Thermal Resistance (°C/W) <sup>*2</sup>	1.34	1.02
Power Pd (W) <sup>*3</sup>	37.3	48.9
Heat Sink Material	AL6063-T5	AL6063-T5

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

<sup>\*2</sup> 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

<sup>\*3</sup> 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.

# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler ø99mm



### Mounting Options

The ModuLED 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 LED modules and COB's which standard fit on the ModuLED LED cooler.

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

For more details about the required mounting holes and thermal results for your specific LED brand and model, please refer to the brand LED cooler datasheets under "Brand Products" and the brand LED cooler overview under the "Download" menu.

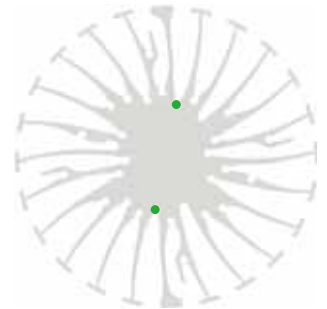
## Zhaga



The Zhaga Consortium is developing specifications that enable the interchangeability of LED light sources made by multiple different manufactures. The Zhaga specifications, known as Books, describe the interfaces between LED luminaires and LED light engines. Zhaga's members include hundreds of companies from throughout the global lighting industry. The cooperation is governed by a consortium agreement that defines rules regarding confidentiality, intellectual property and decision making.

### 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.



### 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 maximum 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 \*1

- Edison Edilex SLM
- Osram PrevaLED CORE
- Philips Fortimo SLM
- Seoul Semiconductor ACrich3
- Sharp INTERMO
- Tridonic Talexx Stark SLE
- Vexica Lumaera
- Vossloh Schwabe Luga Shop

\*1 This is a non-binding overview of available Zhaga book 3 LED modules at press

#### 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 compatible LED holders can be found from BJB, TE Connectivity (Tyco), Molex and Ideal Industries.





# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler ø99mm



### Mounting Options



#### Zhaga Book 3 Spot Light Modules

##### LED COB's for which Zhaga book 3 LED holders are available

- Bridgelux V15, V18, ES rectangular LED array
- Citizen CitiLED CLL032, CLU034, CLL042, CLU044
- Cree XLamp CXA18xx, CXA25xx, CXA30xx
- Edison Opto HM16, HM30, HM40
- Lextar Nimbus 2000, 3000
- LG Innotek LEMWM18 (10W, 13W, 17W, 24W), LEMWM28 (40W)
- Lustrous Lustron LL613F, LL620F, LL630F, LL630D, LL660D
- Nichia J216, J360, L110, L121, L204
- Osram Soleriq P13, S13, S19, E30
- Lumileds Luxeon 1203, 1204, 1205, 1208, 1211 and 1216 Luxeon K12 and K16
- Prolight Opto PABA, PACC, PACD, PACF, PACG
- Samsung LC026, LC040
- Seoul Semiconductor ZC12, ZC18, ZC25, ZC40, ZC60
- Sharp Mega Zenigata and Tiger Zenigata
- Tridonic Talexx Stark SLE Gen3 Mini LES 17

##### Mounting

- Direct mounting with 2 M3 self tapping screws
- Green indicator marks

# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler ø99mm



### Mounting Options

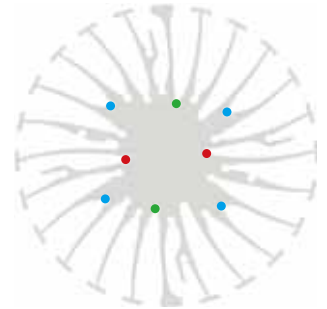
#### Bridgelux LED Arrays



Bridgelux is a leading provider of high power, cost effective and energy efficient light emitting diode (LED) solutions. Leveraging patented light source technology, Bridgelux LED Arrays replace traditional technologies (such as incandescent, halogen, fluorescent and high intensity discharge lighting) with integrated solid state light sources enabling high performance and energy-efficient products for the general lighting market.

#### 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.



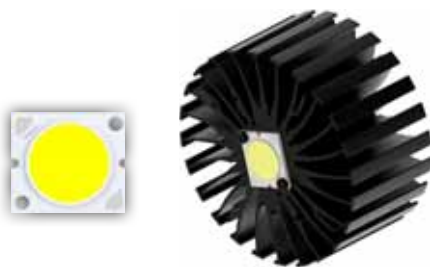
#### Bridgelux V series V 15 / V 18 LED Array

##### Model names

- V15 BXRE-xxx3001-D-xx
- V18 BXRE-xxx4000-F-xx

##### Mounting

- With Zhaga Book 3 LED holder  
BJB spotlight connector 47.319.2224  
Mounting with 2 self tapping screws M3 x 10mm  
Green indicator marks



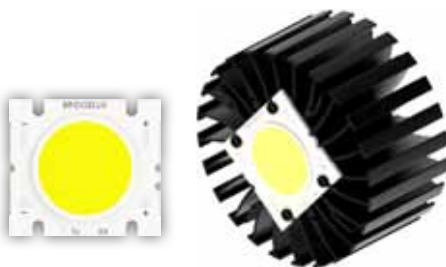
#### Bridgelux ES Rectangle LED Array

##### Model names

- BXRA-xxx0800
- BXRA-xxx1200
- BXRA-xxx2000
- BXRA-40E0950
- BXRA-40E1350
- BXRA-40E2200
- BXRA-xxC1100
- BXRA-xxC1600
- BXRA-xxC2600

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Red indicator marks
- With Zhaga Book 3 LED holder  
BJB spotlight connector 47.319.2040  
Mounting with 2 self tapping screws M3 x 6mm  
Green indicator marks



#### Bridgelux RS LED Array

##### Model names

- BXRA-xxx3500-F
- BXRA-xxx4000-H
- BXRA-xxx7000-J
- BXRA-40E4000-F
- BXRA-40E4500-H
- BXRA-40E7500-J
- BXRA-xxC4500-F
- BXRA-xxC5300-H
- BXRA-xxC9000-J

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Blue indicator marks

# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler ø99mm



### Mounting Options

#### 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 LED lamps. The second generation CITED LED 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 CLL032 - CLU034 - CLU036 - CLU038

##### Model names

- CLL032-xxxx
- CLU034-xxxx
- CLU036-xxxxxx
- CLU038-xxxxxx

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Red indicator marks
- With Zhaga Book 3 LED holder  
BJB spotlight connector 47.319.2021  
Ideal Industries Chip-Lok™ holder 50-2103CT  
TE Connectivity Lumawise type Z50 2213254-1  
TE Connectivity Lumawise type Z50 2213254-2  
Mounting with 2 self tapping screws M3 x 6mm  
Green indicator marks



#### Citizen Cited CLL042 - CLU044 - CLU046 - CLU048

##### Model names

- CLL042-xxxx
- CLU044-xxxx
- CLU046-xxxxxx
- CLU048-xxxxxx

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Blue indicator marks
- With Zhaga Book 3 LED holder  
BJB spotlight connector 47.319.2033  
Ideal Industries Chip-Lok™ holder 50-2204CT  
Mounting with 2 self tapping screws M3 x 6mm  
Green indicator marks





# MechaTronix *in* LED

## ModuLED Modular Passive Star LED Cooler ø99mm



### Mounting Options



#### Citizen Cited High Intensity Type CLU710 - CLU720

##### Model names

- CLU710-1204B8
- CLU720-1206B8

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Red indicator marks
- With Zhaga Book 3 LED holder  
BJB spotlight connector 47.319.2021  
Ideal Industries Chip-Lok™ holder 50-2103CT  
TE Connectivity Lumawise type Z50 2213254-1  
TE Connectivity Lumawise type Z50 2213254-2  
Mounting with 2 self tapping screws M3 x 6mm  
Green indicator marks

# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler ø99mm



### Mounting Options

### Edison Opto LED Modules and COB's



Edison Opto with headquarters in Chung-Ho Dist, New Taipei City, Taiwan is a professional LED manufacture with specializes in designing and producing High-power LEDs, solid state lighting applications, LED sensors and SPDIFs. In response to rapid growth of capacity demand, Edison Opto has established factories in Dongguan and Yangzhou China and subsidiaries in USA and Germany. Edison Opto COB LED modules outstand in light quality and are available in the broadest lumen and CRI range available on the market.

#### 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.



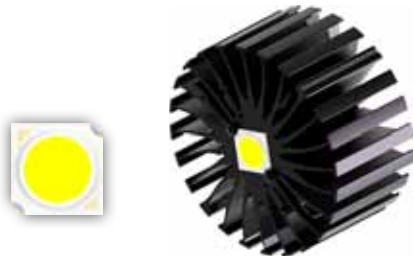
#### Edison Opto Edipower II HM

##### Model Names 16W - 30W

- 2PHM16xxxx
- 2PHM30xxxx

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Red indicator marks
- With Zhaga Book 3 LED holder  
BJB Spotlight connector 47.319.2020  
Ideal Industries Chip-Lok™ holder 50-2103CT  
TE Connectivity Lumawise type Z50 2213254-1  
TE Connectivity Lumawise type Z50 2213254-2  
Mounting with 2 self tapping screws M3 x 8mm  
Green indicator marks



##### Model Names 40W

- 2PHM40xxxx

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Blue indicator marks
- With Zhaga Book 3 LED holder  
BJB spotlight connector 47.319.2033  
Ideal Industries Chip-Lok™ holder 50-2204CT  
Mounting with 2 self tapping screws M3 x 8mm  
Green indicator marks



#### Edison Opto EdiLex Spot Light Module (SLM)

##### Model names

- 5PHR09xxxx
- 5PHR11xxxx
- 5PHR22xxxx
- 5PHV35xxxx

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 10mm  
Green indicator marks





# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler ø99mm



### Mounting Options

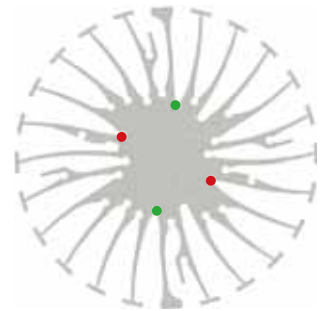
#### LG Innotek LED COB



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 10W/13W/17W/24W COB

##### Model names

- LEMWM18580xxxx
- LEMWM18680xxxx
- LEMWM18780xxxx
- 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 8mm
- Green indicator marks



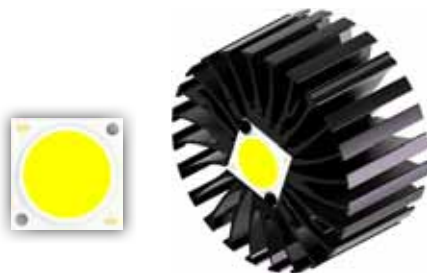
#### LG LEMWM28 COB

##### 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 47.319.2033
- Ideal Industries Chip-Lok™ holder 50-2204CT
- Mounting with 2 self tapping screws M3 x 8mm
- Green indicator marks



# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler ø99mm



### Mounting Options

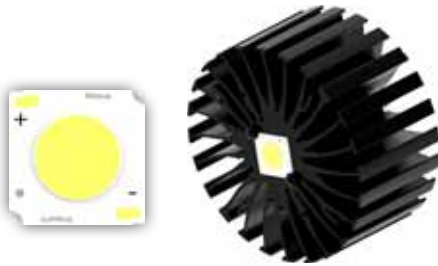
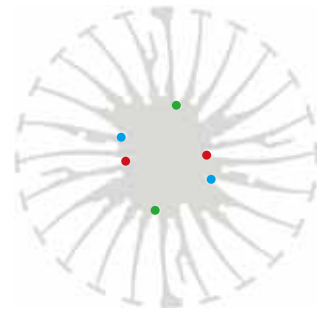
#### Luminus COB Arrays



Patented, high performance Luminus LEDs are the brightest and most versatile solid state light sources available today, redefining the solid state lighting landscape by enabling the adoption of LED technology into emerging markets. Luminus technology is used in commercial and industrial lighting fixtures, theatrical lighting, projectors, signs, medical equipment, UV curing... just about anywhere a bright, efficient, reliable, long-life light source is needed.

#### 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.



#### Luminus Xnova COB Array

##### Model names

- CXM-11 (ACxx)
- CHM-11

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Red indicator marks
- With Zhaga Book 3 LED holder  
BJB spotlight connector 47.319.2021  
Mounting with 2 self tapping screws M3 x 6mm  
Green indicator marks



#### Luminus Xnova COB Array

##### Model names

- CLM-14
- CXM-14 (ACxx)
- CHM-14 (ACxx)

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Red indicator marks
- With Zhaga Book 3 LED holder  
BJB spotlight connector 47.319.2021  
Mounting with 2 self tapping screws M3 x 6mm  
Green indicator marks



# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler ø99mm



### Mounting Options



#### Luminus Xnova COB Array

##### Model names

- CLM-22
- CXM-22

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Blue indicator marks
- With Zhaga Book 3 LED holder  
BJB spotlight connector 47.319.2033  
TE Connectivity Lumawise type Z50 2213480-1  
Mounting with 2 self tapping screws M3 x 6mm  
Green indicator marks

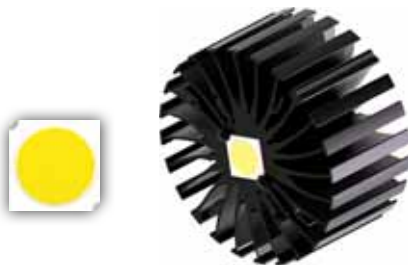
### Lustrous LED COB

**LUSTROUS**  
Green Technology of Lighting

LUSTROUS unique Chip-on-Board (COB) packaging technology of High Power LED leads the core competence of LUSTROUS. COB packaging technology shows excellent thermal management and high efficiency performance. One of the benefits of COB is bright, uniform light output. The excellent low thermal resistance is achieved through state of the art COB technology on highly conductive substrates. This enables low junction temperatures at chip level for much higher efficiencies.

#### 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.



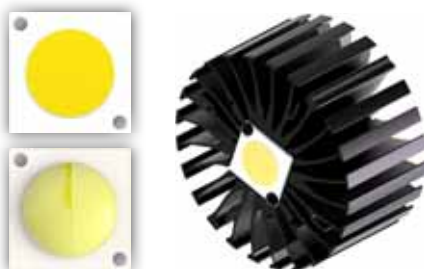
#### Lustrous Lustron LL613F - LL620F LED COB

##### Model names

- Lustron LL613F1206-xxx
- Lustron LL620F1208-xxx

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Red indicator marks
- With Zhaga Book 3 LED holder  
BJB spotlight connector 47.319.2021  
Ideal Industries Chip-Lok™ holder 50-2103CT  
Mounting with 2 self tapping screws M3 x 8mm  
Green indicator marks



#### Lustrous Lustron LL630F - LL630D - LL660D LED COB

##### Model names

- Lustron LL630F1210-xxx
- Lustron LL630D1210-xxx
- Lustron LL660D1210-xxx

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Blue indicator marks
- With Zhaga Book 3 LED holder  
BJB spotlight connector 47.319.2033  
Ideal Industries Chip-Lok™ holder 50-2204CT  
Mounting with 2 self tapping screws M3 x 8mm  
Green indicator marks



# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler ø99mm



### Mounting Options

#### Prolight Opto LED COB's



Founded in October 2004, Prolight Opto Technology Corporation is a professional manufacturer of LED packaging, dedicated to the research, development, and manufacturing of mid-to-high-power, high reliability LED packages. Prolight Opto continually invests over 6% of sales revenue in R&D and patents. With own package patents from the US and Taiwan they insure a wide range of LED emitters in the smallest foot prints and COB LED modules with perfect thermal management and high density lumen output.

#### 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.



#### Prolight Opto BI series PABA COB



##### Model names

- PABA-10xx-xxxx
- PABA-15xx-xxxx
- PABA-22xx-xxxx
- PABA-26xx-xxxx
- PABA-35xx-xxxx
- PABA-50xx-xxxx

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Red indicator marks
- With Zhaga Book 3 LED holder  
BJB spotlight connector 47.319.2040  
Mounting with 2 self tapping screws M3 x 8mm  
Green indicator marks

#### Prolight Opto BII series PABB COB



##### Model names

- PABB-65xx-xxxx

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Blue indicator marks

#### Prolight Opto CF series PACF COB



##### Model names

- PACF-57xx-xxxx

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Red indicator marks
- With Zhaga Book 3 LED holder  
BJB Spotlight connector 47.319.2021  
TE Connectivity Lumawise type Z50 2213254-1  
TE Connectivity Lumawise type Z50 2213254-2  
Mounting with 2 self tapping screws M3 x 8mm  
Green indicator marks

# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler $\phi$ 99mm



### Mounting Options



#### Prolight Opto CG series PACG COB

##### Model names

- PACG-110xxx-xxxx

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Yellow indicator marks
- With Zhaga Book 3 LED holder  
BJB Spotlight connector 47.319.2033  
Mounting with 2 self tapping screws M3 x 8mm  
Green indicator marks



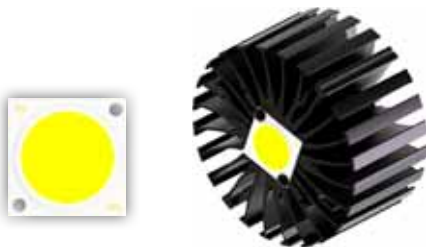
#### Prolight Opto CII series PACC COB

##### Model names

- PACC-18xxx-xxxx

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Red indicator marks
- With Zhaga Book 3 LED holder  
BJB Spotlight connector 47.319.2021  
TE Connectivity Lumawise type Z50 2213254-1  
TE Connectivity Lumawise type Z50 2213254-2  
Mounting with 2 self tapping screws M3 x 8mm  
Green indicator marks



#### Prolight Opto CIII series PACD COB

##### Model names

- PACD-40xxx-xxxx

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Yellow indicator marks
- With Zhaga Book 3 LED holder  
BJB Spotlight connector 47.319.2033  
Mounting with 2 self tapping screws M3 x 8mm  
Green indicator marks



# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler ø99mm



### Mounting Options

#### Seoul Semiconductor LED COB

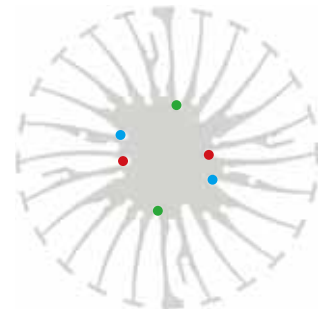


SEOUL SEMICONDUCTOR

The new Seoul Semiconductor ZC series Chip-On-Board (COB) LED Arrays offer high lumen density and efficacies of up to 140lm/W in a single, easy-to-use LED component family. Available in all major color temperatures from 2700K up to 6000K, these high flux packages deliver system level performance of 700 lumens to over 6,000 lumens. The new ZC series family is available in a single 3-step MacAdam Ellipse binning, ensuring excellent color consistency with minimum CRI options of 70, and 80 combining high quality of light with high efficacy.

#### 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.



#### Seoul Semiconductor ZC 18 LED COB

##### Model names

- SDW03F1C
- SDW83F1C
- SDW93F1C

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Red indicator marks
- With Zhaga Book 3 LED holder  
BJB Spotlight connector 47.319.2021  
Ideal Industries Chip-Lok™ holder 50-2103CT  
TE Connectivity Lumawise type Z50 2213254-1  
TE Connectivity Lumawise type Z50 2213254-2  
Mounting with 2 self tapping screws M3 x 8mm  
Green indicator marks



#### Seoul Semiconductor ZC 25 / ZC 40 / ZC 60 LED COB

##### Model names

- SDW04F1C
- SDW84F1C
- SDW94F1C
- SDW05F1C
- SDW85F1C
- SDW95F1C
- SDW06F1C
- SDW86F1C
- SDW96F1C

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Blue indicator marks
- With Zhaga Book 3 LED holder  
BJB spotlight connector 47.319.2033  
Ideal Industries Chip-Lok™ holder 50-2204CT  
Mounting with 2 self tapping screws M3 x 8mm  
Green indicator marks



#### Seoul Semiconductor ACrich AC Zhaga LED COB

##### Model names

- ACrich AC Zhaga COB 30W

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Green indicator marks





# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler ø99mm



### Mounting Options

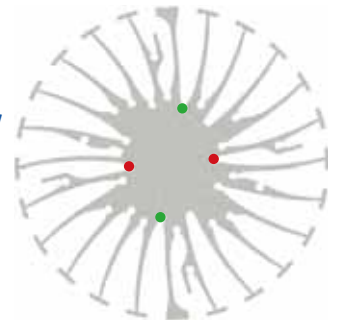
### Tridonic LED Modules and COB



With the TALEXX LED products Tridonic gives you the confidence that your chosen lighting solution will give you precisely the results you want. Thanks to Tridonic's many years of experience in product development they have been able to raise the quality of light from their LEDs to new levels. The production series have an exceptionally constant light color so they guarantee a uniform and crystal clear color appearance. In addition to high efficiency and balanced distribution of light Tridonic offers you impressive robustness in the latest generation of their products and the resultant long life will save you maintenance and repair costs.

#### 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.



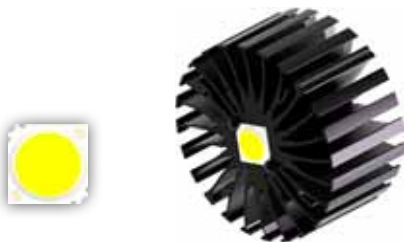
#### TALEXX Stark SLE GEN3 19 - 23 Select / Classic / Food / Art

##### Model names

- STARK-SLE-G3-19-xxx
- STARK-SLE-G3-23-xxx

##### Mounting

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



#### TALEXX Stark SLE GEN3 Mini LES-17 Select / Classic / Art

##### Model names

- STARK-SLE-PURE-G3-17-xxx

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm
- Red indicator marks
- With Zhaga Book 3 LED holder
- BJB Spotlight connector 47.319.2021
- Mounting with 2 self tapping screws M3 x 8mm
- Green indicator marks



#### TALEXXmodule SLE GEN4 15mm Excite / Advanced

##### Model names

- SLE G4 15mm 2000lm xxx x EXC/ADV

##### 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 self tapping screws M3 x 8mm
- Green indicator marks

# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler ø99mm



### Mounting Options



#### TALEXXmodule SLE GEN4 15mm D50 - 19mm - 23mm Excite / Advanced

##### Model names

- SLE G4 15mm 2000lm xxx H EXC/ADV D50
- SLE G4 19mm 3000lm xxx x EXC/ADV
- SLE G4 23mm 5000lm xxx x EXC/ADV

##### Mounting

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



#### TALEXXmodule SLE GEN5 15mm Excite / Advanced

##### Model names

- SLE G5 15mm 2000lm xxx x EXC/ADV
- SLE G5 15mm 3000lm xxx x EXC/ADV
- SLE G5 15mm 4000lm xxx x EXC/ADV
- SLE G5 15mm 5000lm xxx x EXC/ADV

##### 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 self tapping screws M3 x 8mm
- Green indicator marks



#### TALEXXmodule SLE GEN5 19mm - 23mm Excite / Advanced

##### Model names

- SLE G5 19mm 5000lm xxx x EXC/ADV
- SLE G5 23mm 6000lm xxx x EXC/ADV

##### Mounting

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



#### TALEXX STARK SLE GEN6 15mm D50 Advanced

##### Model names

- SLE G6 15mm 3000lm XXX H ADV D50

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm
- Green indicator marks

# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler ø99mm



### Mounting Options



#### TALEXX STARK SLE GEN6 17mm D50 Advanced

##### Model names

- SLE G6 17mm 4000lm XXX H ADV D50

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Green indicator marks



#### TALEXX STARK SLE GEN6 19mm Advanced

##### Model names

- SLE G6 19mm 5000lm XXX X ADV

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Green indicator marks



#### TALEXX STARK SLE GEN6 23mm Advanced

##### Model names

- SLE G6 23mm 6000lm XXX X ADV

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Green indicator marks



# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler ø99mm



### Mounting Options

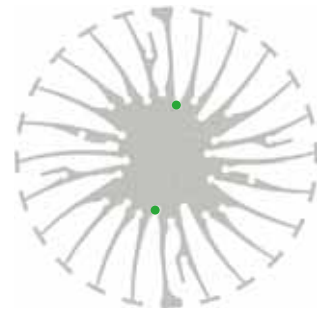
### Vossloh Schwabe LED Modules



Vossloh-Schwabe is an independent brand within the Panasonic Group responsible for the global development of the business area "Components for light technology". Panasonic employs 367,000 members of staff with an annual turnover of 76.75 billion Euros (8692.7 billion yen) and is represented throughout the world by more than 634 companies or representations in Asia, America and Europe. The Vossloh Schwabe Luga Shop LED modules are ideal solution for high-end luminaire designs where quality stands at the first place.

#### 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.



#### Luga Shop 2014 LED modules

##### Model names

- WU-M-484 / WU-M-461
- WU-M-485 / WU-M-462
- WU-M-486 / WU-M-464

##### Mounting

- Direct mounting with 2 self tapping screws M3 x 10mm
- Green indicator marks



#### Luga Shop 2014 Kit LED COB

##### Model names

- DMS088
- DMS128
- DMS158

##### Mounting

- With Luga Shop Kit holder
- Mounting with 2 self tapping screws M3 x 6mm
- Green indicator marks



#### Luga Shop C 2016 COB 3000lm - 15000lm

##### Model names

- DMC12CxxxF
- DMC18CxxxF

##### Mounting

- With Luga Shop C holder 559164
- Mounting with 2 self tapping screws M3 x 6mm
- Green indicator marks

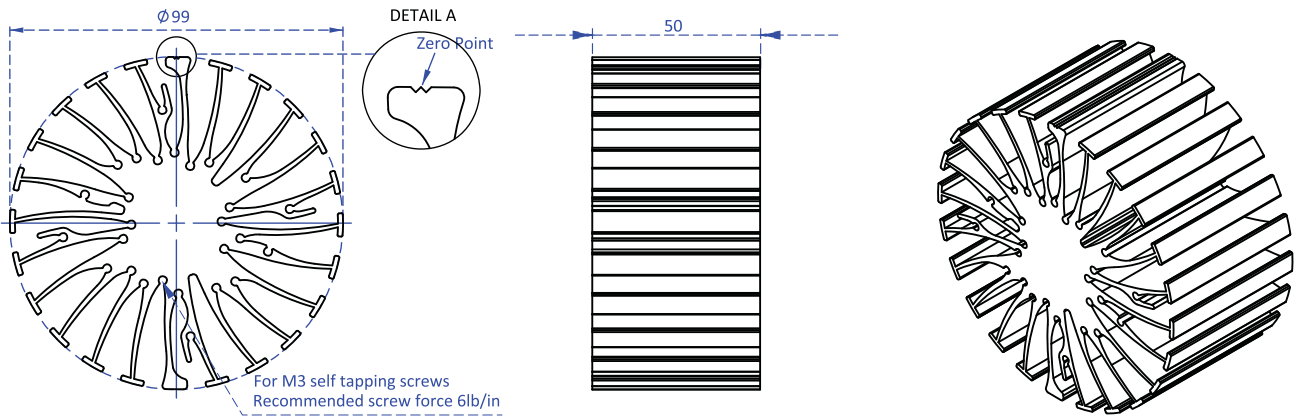
# MechaTronix in LED

## ModuLED Modular Passive Star LED Cooler $\phi 99\text{mm}$



### Drawings & Dimensions

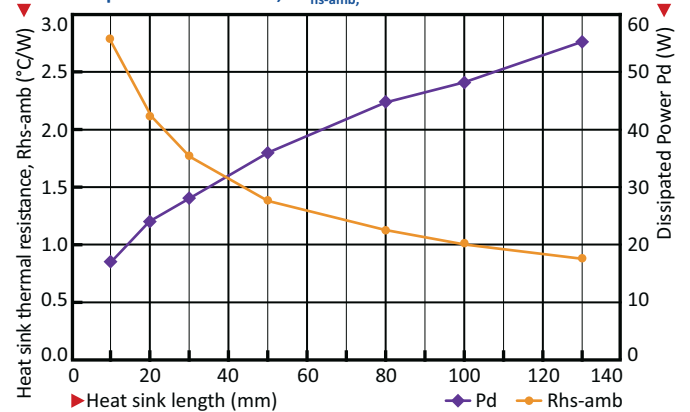
Example: ModuLED 9950



### Thermal Data

$P_d = P_e \times (1-\eta_L)$	Heat sink to ambient thermal resistance $R_{hs-amb}$ ( $^{\circ}\text{C}/\text{W}$ )		Heat sink to ambient temperature rise $T_{hs-amb}$ ( $^{\circ}\text{C}$ )	
	ModuLED 9950	ModuLED 9980	ModuLED 9950	ModuLED 9980
10	1.9	1.5	19	15
15	1.7	1.4	26	21
20	1.6	1.3	32	26
25	1.5	1.2	37	30
30	1.4	1.2	43	35
35	1.4	1.1	48	39
40	1.3	1.1	53	43
50	1.2	1.0	62	51

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



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

ModuLED 9950 ModuLED 9980

