

MechaTronix in LED

– PRODUCT BRIEF –

IceLED Xtra Modular Active Star LED Cooler ø99mm



Features & Benefits

- For spot and downlight designs from 10,500 to 21,000 lumen
- Thermal resistance range Rth 0.46°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 Z3 / Z4, Philips Fortimo SLM, Sharp INTERMO, Tridonic Talexx Stark SLE G3 / G4, Vossloh Schwabe Luga Shop, ...
 - Bridgelux ESR, Vero & Décor Vero 13/18/29, V-series LED arrays
 - Cree XLamp CXA15, CXB15, CXA18, CXB18, CXA25, CXB25, CXA30, CXB30
 - Edison EdiPower II HM / HR / SD series
 - GE Infusion M series, DLM series, NPM series
 - Lumileds Luxeon COB's 1208, 1211, 1216
 - Osram Soleriq P9, P13, S19
 - Prolight Opto PACF, PACG, PABA, PACD
 - Sharp Mega Zenigata, Tiger Zenigata
- Diameter 99mm - Height 55mm
Other heights on request
- High lifetime design > 60Khrs (L 10 life time @40°C)
- Warranty 5 years



Order Information



Example : IceLED Xtra 550

IceLED Xtra **1**

- 1** Height (mm)
Overall height top to bottom
(Fan height 25mm)
IceLED 550 - 55mm

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

MechaTronix *in* LED

– PRODUCT BRIEF –

IceLED Xtra Modular Active Star LED Cooler ø99mm



Product Details

Model n°	IceLED Xtra S50
Dimension (mm) ^{*1}	ø99 x h55
Fan Voltage (Vdc) ^{*2}	12
Fan Speed (RPM)	1500
Noise @ 1m (dBA)	<21
Weight (gr)	266
Thermal Resistance (°C/W) ^{*3}	0.46
Power Pd (W) ^{*4}	109
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, 50mA

^{*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

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.

MechaTronix *in* LED

– DRAWING & DIMENSIONS –

IceLED Xtra Modular Active Star LED Cooler ø99mm



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Dimension (mm) ^{*1}	ø99 x h55
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Notes:

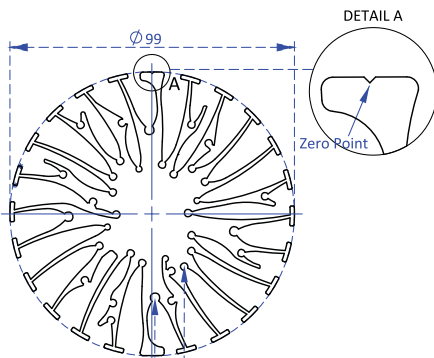
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MechaTronix in LED

– DRAWING & DIMENSIONS –
IceLEDxtra Modular Active Star LED Cooler $\phi 99$ mm

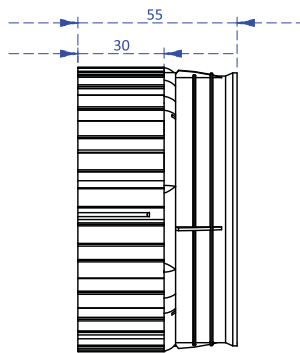


Drawings & Dimensions

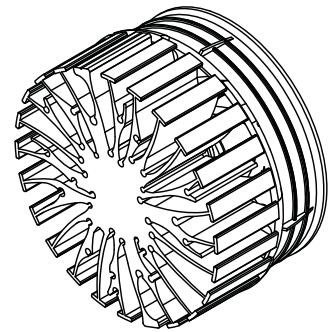


For M4 self tapping screws
Recommended screw force 6lb/in

For M3 self tapping screws
Recommended screw force 6lb/in



Example: IceLED Xtra 550



MechaTronix *in* LED

– MOUNTING INSTRUCTION –
IceLED Xtra Modular Active Star LED Cooler ø99mm



Product Details

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Pd - Dissipated power

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ηL = Light efficiency of the LED module

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MechaTronix *in* LED

– MOUNTING INSTRUCTION –
IceLEDxtra Modular Active Star LED Cooler ø99mm



Mounting Instruction

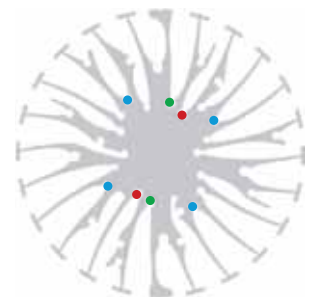
Bridgelux LED Arrays



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 Vero 13 / Vero 18 LED Array

Model names

- Vero 13 BXRC-27x2000
- Vero 13 BXRC-30x2000
- Vero 13 BXRC-35E2000
- Vero 13 BXRC-40x2000
- Vero 13 BXRC-50x2000
- Vero 18 BXRC-27x4000
- Vero 18 BXRC-30x4000
- Vero 18 BXRC-35E4000
- Vero 18 BXRC-40E4000
- Vero 18 BXRC-50C4000

Mounting

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



Bridgelux 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

Mounting

- Direct mounting with 4 self tapping screws M3 x 6mm
- Blue indicator marks



Bridgelux Décor Vero 13 / Vero 18 LED Array

Model names

- BXRC-xxA2001-C-23
- BXRC-xxH2000-C-xx
- BXRC-xxA4001-F-23
- BXRC-xxH4000-F-xx
- BXRC-xxE4000-F-04
- BXRC-56G4000-F-04

Mounting

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



MechaTronix *in* LED

– MOUNTING INSTRUCTION –
IceLEDxtra Modular Active Star LED Cooler ø99mm



Mounting Instruction



Bridgelux Décor Vero 29 LED Array

Model names

- BXRC-xxA10K1-L-23
- BXRC-56G10K0-L-04

Mounting

- Direct mounting with 4 self tapping screws M3 x 6mm
- Blue indicator marks



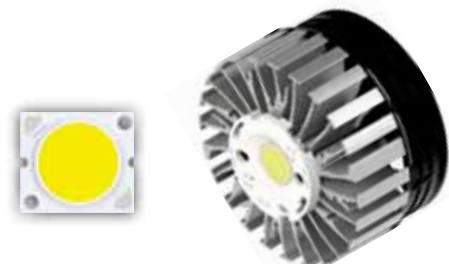
Bridgelux V series V 15 / V 18 LED Array

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

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

MechaTronix *in* LED

– MOUNTING INSTRUCTION –
IceLED Xtra Modular Active Star LED Cooler ø99mm



Product Details

Model n°	<i>IceLED Xtra</i> S50
Dimension (mm) ^{*1}	ø99 x h55
Fan Voltage (Vdc) ^{*2}	12
Fan Speed (RPM)	1500
Noise @ 1m (dBA)	<21
Weight (gr)	266
Thermal Resistance (°C/W) ^{*3}	0.46
Power Pd (W) ^{*4}	109
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, 50mA

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Pd - Dissipated power

Pe - Electrical power

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MechaTronix in LED

– MOUNTING INSTRUCTION –
IceLED^{extra} Modular Active Star LED Cooler ø99mm



Mounting Instruction

Cree XLamp LED Array

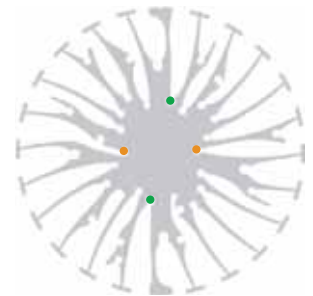


Cree XLamp® LEDs deliver the industry's best lighting-class performance and are application-optimized to enable the lowest system cost.

Cree's new CXA LED Arrays deliver high lumen output and efficacy in a family of single, easy-to-use components. Optimized to simplify designs and lower system cost, Cree's CXA LED arrays are available in system level performance from 300 to over 16,000 lumens and can enable applications ranging from GU10s and commercial downlights to outdoor area lighting and high-bay lighting.

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.



Cree XLamp CXA15 / CXB15 LED Array

Model names

- CXA1512-xxxx
- CXB1512-xxxx
- CXA1520-xxxx

Mounting

- With Zhaga Book 11 LED holder
BJB Spotlight connector 47.319.6101
Ideal Industries Chip-Lok™ holder 50-2001CR
Mounting with 2 self tapping screws M3 x 8mm
Orange indicator marks



Cree XLamp CXA18 / CXB18 LED Array

Model names

- CXA1816-xxxx
- CXB1816-xxxx
- CXA1820-xxxx
- CXB1820-xxxx
- CXA1830-xxxx
- CXB1830-xxxx
- CXA1850-xxxx

Mounting

- With Zhaga Book 3 LED holder
BJB Spotlight connector 47.319.2131 (CXA/CXB1830 excluded)
Ideal Industries Chip-Lok™ holder 50-2101CR
TE Connectivity Lumawise type Z50 2213401-1
TE Connectivity Lumawise type Z50 2213401-2
Mounting with 2 self tapping screws M3 x 8mm
Green indicator marks



Cree XLamp CXA25 / CXB25 LED Array

Model names

- CXA2520-xxxx
- CXA2530-xxxx
- CXB2530-xxxx
- CXA2540-xxxx
- CXB2540-xxxx
- CXA2590-xxxx

Mounting

- With Zhaga Book 3 LED holder
BJB Spotlight connector 47.319.2141
Ideal Industries Chip-Lok™ holder 50-2102CR
TE Connectivity Lumawise type Z50 2213407-1
TE Connectivity Lumawise type Z50 2213407-2
Mounting with 2 self tapping screws M3 x 8mm
Green indicator marks



MechaTronix *in* LED

– MOUNTING INSTRUCTION –
IceLEDxtra Modular Active Star LED Cooler \varnothing 99mm



Mounting Instruction



Cree XLamp CXA30 / CXB30 LED Array

Model names

- CXA3050-xxxx
- CXB3050-xxxx
- CXA3070-xxxx
- CXB3070-xxxx

Mounting

- With Zhaga Book 3 LED holder
BJB Spotlight connector 47.319.2151
Ideal Industries Chip-Lok™ holder 50-2234C
Mounting with 2 self tapping screws M3 x 8mm
Green indicator marks

MechaTronix *in* LED

– MOUNTING INSTRUCTION –
IceLED Xtra Modular Active Star LED Cooler ø99mm



Product Details

Model n°	<i>IceLED Xtra</i> S50
Dimension (mm) ^{*1}	ø99 x h55
Fan Voltage (Vdc) ^{*2}	12
Fan Speed (RPM)	1500
Noise @ 1m (dBA)	<21
Weight (gr)	266
Thermal Resistance (°C/W) ^{*3}	0.46
Power Pd (W) ^{*4}	109
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, 50mA

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 The thermal resistance of a LED cooler is not a fix value and will vary with the applied dissipated power Pd

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 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

ηL = Light efficiency of the LED module

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MechaTronix in LED

– MOUNTING INSTRUCTION –

IceLEDxtra Modular Active Star LED Cooler ø99mm



Mounting Instruction

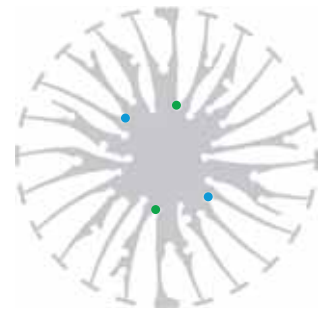
Edison Opto LED Modules and COB's



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 30W

- 2PHM30xxxx

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



Model Names 40W

- 2PHM40xxxx

Mounting

- 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



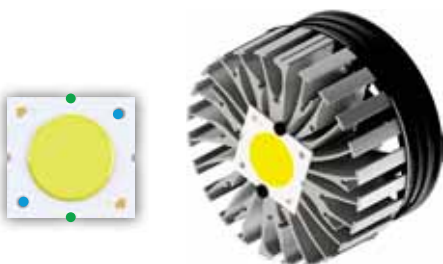
Edison Opto EdiPower II HR / SD

Model names

- 2PHR35xxxx
- 2PSD40xxxx
- 2PSD50xxxx

Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm side holes
- Green indicator marks
- Direct mounting with 2 self tapping screws M3 x 6mm corner holes
- Blue indicator marks



MechaTronix *in* LED

– MOUNTING INSTRUCTION –

IceLEDxtra Modular Active Star LED Cooler \varnothing 99mm



Mounting Instruction



Edison Opto EdiLex Spot Light Module (SLM)

Model names

- 5PHR22xxxx
- 5PHV35xxxx

Mounting

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

MechaTronix *in* LED

– MOUNTING INSTRUCTION –
IceLED Xtra Modular Active Star LED Cooler ø99mm



Product Details

Model n°	<i>IceLED Xtra S50</i>
Dimension (mm) ^{*1}	ø99 x h55
Fan Voltage (Vdc) ^{*2}	12
Fan Speed (RPM)	1500
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MechaTronix *in* LED

– MOUNTING INSTRUCTION –
IceLEDxtra Modular Active Star LED Cooler ø99mm



Mounting Instruction

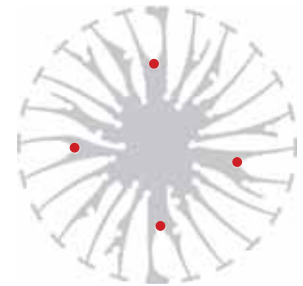
GE Lighting LED Modules



GE Infusion™ is a game-changing technology and one of the most flexible LED lighting solutions on the market. As a designer, OEM or end-users, you can choose from an extensive selection of modules. Plus, there's the assurance of GE reliability and performance.

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Infusion M-series Spot Light Modules

Model names

- Infusion M2000 series
- Infusion M3000 series
- Infusion M4500 series

Mounting

- Twist and lock LED engine
- Mounting with GE LED collar by 4 self tapping screws M4 x 6mm or 8mm
- Red indicator marks



Infusion DLM-series Down Light Modules

Model names

- Infusion DLM2000 series
- Infusion DLM3000 series
- Infusion DLM4000 series

Mounting

- Twist and lock LED engine
- Mounting with GE LED collar by 4 self tapping screws M4 x 6mm or 8mm
- Red indicator marks



Infusion NPM-series Narrow Punch Modules

Model names

- MP30/827/W/N
- MP30/830/W/N
- MP30/930/W/N
- MP30/840/W/N

Mounting

- Twist and lock LED engine
- Mounting with GE LED collar by 4 self tapping screws M4 x 6mm or 8mm
- Red indicator marks

MechaTronix *in* LED

– MOUNTING INSTRUCTION –
IceLED Xtra Modular Active Star LED Cooler ø99mm



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MechaTronix in LED

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IceLEDxtra Modular Active Star LED Cooler ø99mm



Mounting Instruction

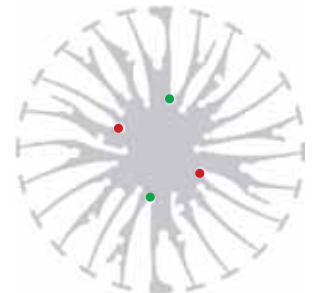
Lumileds LED Array & COB



Lumileds LUXEON COB is a new breakthrough in efficacy for arrays. Due to its industry leading small Light Emitting Surfaces (LES), the COB array is very easy work with and will enable easier and less expensive designs. All LUXEON COBs are available in a single 3-step as well as a single 5-step MacAdam Ellipse, ensuring uniform optical performance in the application. Ideal applications include down lights and directional lamps.

Mounting indicator marks overview

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Luxeon COB 1208

Model names

- Luxeon COB LHC1-xxxx-1208

Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm
Red indicator marks
- With Zhaga Book 3 LED holder
BJB spotlight connector 47.319.2011
Ideal Industries Chip-Lok™ holder 50-2100SH
TE Connectivity Lumawise type Z50 2213130-1
TE Connectivity Lumawise type Z50 2213130-2
Mounting with 2 self tapping screws M3 x 8mm
Green indicator marks



Luxeon COB 1211

Model names

- Luxeon COB LHC1-xxxx-1211

Mounting

- 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



Luxeon COB 1216

Model names

- Luxeon COB LHC1-xxxx-1216

Mounting

- 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

– MOUNTING INSTRUCTION –
IceLED Xtra Modular Active Star LED Cooler ø99mm



Product Details

Model n°	<i>IceLED Xtra</i> S50
Dimension (mm) ^{*1}	ø99 x h55
Fan Voltage (Vdc) ^{*2}	12
Fan Speed (RPM)	1500
Noise @ 1m (dBA)	<21
Weight (gr)	266
Thermal Resistance (°C/W) ^{*3}	0.46
Power Pd (W) ^{*4}	109
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, 50mA

*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

ηL = 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

– MOUNTING INSTRUCTION –
IceLEDxtra Modular Active Star LED Cooler ø99mm



Mounting Instruction

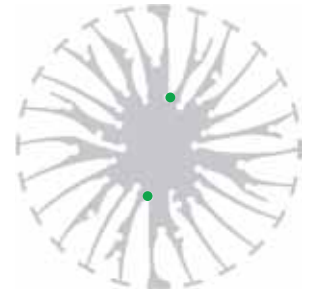
Osram PrevaLED LED Modules



With the PrevaLED Core and PrevaLED Core AC, Osram leads the path of versatile LED light modules interchangeable according Zhaga book 3 specifications. With an initial color binning below 3 steps Mc Adam, a wide range of lumen packages from 1.100lm all the way up to 5.000lm and a broad availability of color temperatures, the Osram PrevaLED Core found it's strive in high-end shop and down light applications with 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-ap



Osram PrevaLED Core Z3

Model names

- PL-CORE-5000-xxx-Z3

Mounting

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



Osram PrevaLED Core Z4

Model names

- PL-CORE-Z4-5000-xxx

Mounting

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

MechaTronix *in* LED

– MOUNTING INSTRUCTION –
IceLED Xtra Modular Active Star LED Cooler ø99mm



Product Details

Model n°	<i>IceLED Xtra S50</i>
Dimension (mm) ^{*1}	ø99 x h55
Fan Voltage (Vdc) ^{*2}	12
Fan Speed (RPM)	1500
Noise @ 1m (dBA)	<21
Weight (gr)	266
Thermal Resistance (°C/W) ^{*3}	0.46
Power Pd (W) ^{*4}	109
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, 50mA

*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

ηL = Light efficiency of the LED module

Notes:

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MechaTronix in LED

– MOUNTING INSTRUCTION –
IceLEDxtra Modular Active Star LED Cooler ø99mm



Mounting Instruction

Osram Opto Semiconductors LED COB



Osram SOLERIQ® LEDs are designed to meet the requirements of professional indoor general lighting applications. Large flux output, small light emitting surfaces, variation, CRI greater than 80 and easy to use Chip-on-Board technology support easy and creative lighting design. These properties make SOLERIQ® LED COB modules a high efficient, high-quality and price-performance-optimized solution for all demanding and at the same time cost-conscious lighting manufactures and designers.

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.



Osram Soleriq P9 LED COB

Model names

- GW MAFJB1.EM
- GW MAFJB1.CM

Mounting

- With Zhaga Book 11 LED holder
BJB Spotlight connector 47.319.6200
Mounting with 2 self tapping screws M3 x 8mm
Orange indicator marks



Osram Soleriq P13 LED COB

Model names

- GW MAGMB1.EM
- GW MAGMB1.CM

Mounting

- With Zhaga Book 3 LED holder
Ideal Industries Chip-Lok™ holder 50-2101CR
Mounting with 2 self tapping screws M3 x 8mm
Green indicator marks
- With Zhaga Book 11 LED holder
BJB Spotlight connector 47.319.6111
Mounting with 2 self tapping screws M3 x 8mm
Orange indicator marks



Osram Soleriq S19 LED COB

Model names

- GW-KAHLB1-xxxx

Mounting

- With Zhaga Book 3 LED holder
BJB spotlight connector 47.319.2170
TE Connectivity Lumawise type Z50 2213407-1
TE Connectivity Lumawise type Z50 2213407-2
Mounting with 2 self tapping screws M3 x 8mm
Green indicator marks



MechaTronix *in* LED

– MOUNTING INSTRUCTION –
IceLED Xtra Modular Active Star LED Cooler ø99mm



Product Details

Model n°	<i>IceLED Xtra</i> S50
Dimension (mm) ^{*1}	ø99 x h55
Fan Voltage (Vdc) ^{*2}	12
Fan Speed (RPM)	1500
Noise @ 1m (dBA)	<21
Weight (gr)	266
Thermal Resistance (°C/W) ^{*3}	0.46
Power Pd (W) ^{*4}	109
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, 50mA

*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

ηL = Light efficiency of the LED module

Notes:

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- For specific mechanical adaptations please contact MechaTronix.

MechaTronix *in* LED

– MOUNTING INSTRUCTION –
IceLEDxtra Modular Active Star LED Cooler ø99mm



Mounting Instruction

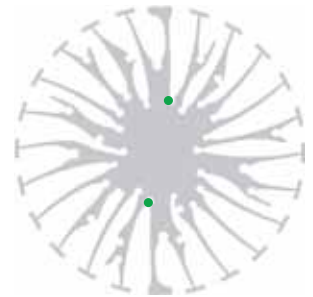
Philips LED Modules

PHILIPS

The third Philips Fortimo LED SLM generation is the ideal solution for spot lighting fixtures and highly efficient compact down light luminaires. It is specifically designed for the retail market showcasing retail merchandise in bright and vivid light. This generation is equipped with new Chip-On-Board (COB) LED technology. This technology enables the creation of the most efficient point source Philips LED system available.

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.



Philips Fortimo SLM GEN3 / GEN4 LED Modules

Model names

- Fortimo LED SLM 4000 G3
- Fortimo LED SLM 4500 G3
- Fortimo LED SLM 4500 G4

Mounting

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

MechaTronix *in* LED

– MOUNTING INSTRUCTION –

IceLED Xtra Modular Active Star LED Cooler ø99mm



Product Details

Model n°	<i>IceLED Xtra</i> S50
Dimension (mm) ^{*1}	ø99 x h55
Fan Voltage (Vdc) ^{*2}	12
Fan Speed (RPM)	1500
Noise @ 1m (dBA)	<21
Weight (gr)	266
Thermal Resistance (°C/W) ^{*3}	0.46
Power Pd (W) ^{*4}	109
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, 50mA

*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

ηL = Light efficiency of the LED module

Notes:

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MechaTronix in LED

– MOUNTING INSTRUCTION –
IceLEDxtra Modular Active Star LED Cooler ø99mm



Mounting Instruction

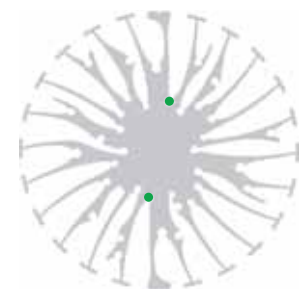
Prolight Opto LED COB's



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-22xxx-xxxx
- PABA-26xxx-xxxx
- PABA-35xxx-xxxx
- PABA-50xxx-xxxx

Mounting

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

Prolight Opto CF series PACF COB



Model names

- PACF-57xxx-xxxx

Mounting

- 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 6mm
- Green indicator marks

Prolight Opto CG series PACG COB



Model names

- PACG-110xxx-xxxx

Mounting

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

MechaTronix *in* LED

– MOUNTING INSTRUCTION –
IceLEDxtra Modular Active Star LED Cooler ø99mm



Mounting Instruction



Prolight Opto CIII series PACD COB

Model names

- PACD-40xxx-xxxx

Mounting

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

MechaTronix *in* LED

– MOUNTING INSTRUCTION –

IceLED Xtra Modular Active Star LED Cooler ø99mm



Product Details

Model n°	<i>IceLED Xtra</i> S50
Dimension (mm) ^{*1}	ø99 x h55
Fan Voltage (Vdc) ^{*2}	12
Fan Speed (RPM)	1500
Noise @ 1m (dBA)	<21
Weight (gr)	266
Thermal Resistance (°C/W) ^{*3}	0.46
Power Pd (W) ^{*4}	109
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, 50mA

*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

ηL = Light efficiency of the LED module

Notes:

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- For specific mechanical adaptations please contact MechaTronix.

MechaTronix *in* LED

– MOUNTING INSTRUCTION –

IceLEDxtra Modular Active Star LED Cooler ϕ 99mm



Mounting Instruction

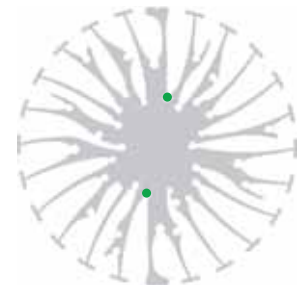
Sharp LED Modules & COB

SHARP

Sharp Zenigata Chip on Board (COB) technology leverages 40 years of LED expertise to help your products outshine the competition with some of the highest brightness-per-watt in the industry. Sharp's new Mega Zenigata 50W – 80W modules take traditional, high-power lighting applications head on with power-saving LED alternatives. Sharp Devices Europe has launched an important new portfolio of LED modules dubbed INTERMO. The Standard INTERMO is a Zhaga Book 3 form-factor module, which ensures compatibility with a large eco-system of third-party products.

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.



Sharp INTERMO Standard / Slim LED Modules

Model names

- GW7MMCxxGZC - 3000 lm
- GW7MGDxxGZC - 3000 lm
- GW7MMDxxGZC - 4000 lm
- GW7MGExxGZC - 4000 lm
- GW7MMExxGZC - 5000 lm

Mounting

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



Sharp Mega Zenigata 25-40W/35-50W/50-80W LED COB

Model names

- GW5DxCxxM04
- GW6DxCxxNFC
- GW6DxDxxNFC
- GW5DxExxMR5
- GW6DxExxNFC

Mounting

- With Zhaga Book 3 LED holder
- BJB spotlight connector 47.319.2011
Ideal Industries Chip-Lok™ holder 50-2100SH
- Mounting with 2 self tapping screws M3 x 6mm
- Green indicator marks



MechaTronix *in* LED

– MOUNTING INSTRUCTION –

IceLEDxtra Modular Active Star LED Cooler ϕ 99mm



Mounting Instruction



Sharp Tiger Zenigata 25W LED COB

Model names

- GW6TGCBG40C

Mounting

- With Zhaga Book 3 LED holder
- BJB spotlight connector 47.319.2051
- Mounting with 2 self tapping screws M3 x 6mm
- Green indicator marks

MechaTronix *in* LED

– MOUNTING INSTRUCTION –
IceLED Xtra Modular Active Star LED Cooler ø99mm



Product Details

Model n°	<i>IceLED Xtra S50</i>
Dimension (mm) ^{*1}	ø99 x h55
Fan Voltage (Vdc) ^{*2}	12
Fan Speed (RPM)	1500
Noise @ 1m (dBA)	<21
Weight (gr)	266
Thermal Resistance (°C/W) ^{*3}	0.46
Power Pd (W) ^{*4}	109
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, 50mA

*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

ηL = Light efficiency of the LED module

Notes:

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MechaTronix in LED

– MOUNTING INSTRUCTION –

IceLED^{xtra} Modular Active Star LED Cooler ø99mm



Mounting Instruction

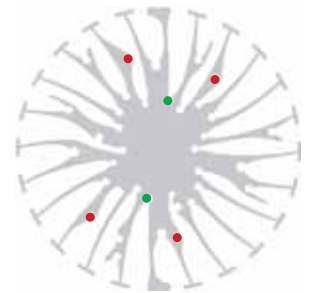
Vossloh Schwabe LED Modules



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 Industrial LED modules

Model names

- WU-M-467 / WU-M-443

Mounting

- Direct mounting with 4 self tapping screws M3 x 10mm
- Red indicator marks



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

- DMS128
- DMS158

Mounting

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

MechaTronix *in* LED

– MOUNTING INSTRUCTION –
IceLEDxtra Modular Active Star LED Cooler ø99mm



Mounting Instruction



Luga Shop C 2016 COB 3000lm - 15000lm

Model names

- DMC18CxxxF

Mounting

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

MechaTronix in LED

– MOUNTING INSTRUCTION –
IceLED Xtra Modular Active Star LED Cooler ø99mm



Product Details

Model n°	<i>IceLED Xtra S50</i>
Dimension (mm) ^{*1}	ø99 x h55
Fan Voltage (Vdc) ^{*2}	12
Fan Speed (RPM)	1500
Noise @ 1m (dBA)	<21
Weight (gr)	266
Thermal Resistance (°C/W) ^{*3}	0.46
Power Pd (W) ^{*4}	109
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, 50mA

*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

ηL = Light efficiency of the LED module

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MechaTronix in LED

– MOUNTING INSTRUCTION –

IceLED Xtra Modular Active Star LED Cooler ø99mm



Mounting Instruction

The IceLED Xtra modular active 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 LED modules and COB's which standard fit on the IceLED Xtra LED cooler.

The IceLED Xtra 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 mounting instruction and the overview. For further mechanical modifications please contact MechaTronix.

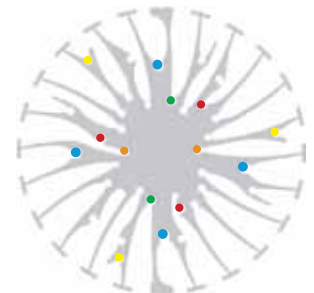
Zhaga



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 2 socketable LED engines

Zhaga Interface Specification Book 2 defines the interfaces of a socketable, circular LED light engine (LLE) with an integrated LED driver (electronic control gear).

The LLE has a round drum shape with maximum dimensions of 70.2 mm diameter and 45 mm height. It has a circular light-emitting surface with a typical diameter of 59 mm, and a PHJ65d type base. Zhaga Book 2 LED modules are mounted by 3 M3 screws evenly located on diameter of 79.5mm on the LED cooler.

Book 2 is similar to Book 8, except that the LLEs described in Book 2 have smaller dimensions.

Book 2 LLEs are intended primarily (but not exclusively) for use in LED luminaires for downlighting applications.

Zhaga Book 2 compliant LED engines *1

- Megaman Teco
- Philips Fortimo TDLM
- Tridonic Talexx Stark DLE twist

Mounting

- Direct mounting of the LED holder PHJ65d with 3 M3 self tapping screws
- Mounting of the LED engine by twist and lock operation
- Yellow indicator marks

*1 This is a non-binding overview of available Zhaga Book 2 LED modules at press



MechaTronix in LED

– MOUNTING INSTRUCTION –
IceLEDxtra Modular Active Star LED Cooler ϕ 99mm



Mounting Instruction

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.

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

Reflector ring Mounting

- This optional ring can be mounted on top of the Edison Opto EdiLex spot light module and provides in this way an easy plug-and-play attachment of various reflectors.
- Mounting with 3 self tapping screws M3 x 10mm
Red indicator marks



MechaTronix in LED

– MOUNTING INSTRUCTION –

IceLED^{xtra} Modular Active Star LED Cooler ø99mm



Mounting Instruction

Zhaga Book 5 socketable LED engines

Zhaga Interface Specification Book 5 defines the interfaces of LED light engines (LEEs) comprising a socketable, circular LED module with a separate LED driver (electronic control gear).

The circular LED modules in Book 5 have maximum dimensions of 70 mm diameter and 21 mm height. Zhaga Book 5 LED modules are mounted by 4 M4 screws on diameter of 58.42mm on the LED cooler (NOT evenly located). Book 5 allows optical accessories with defined widths of up to 180 mm and heights up to 180 mm.

Book 5 LED modules have typical light-emitting surface (LES) diameters ranging from 13.5 mm to 26 mm. Book 5 LLEs are primarily intended for use in down-lighting or spot-lighting luminaires.

Zhaga Book 5 compliant LED engines *1

- GE Infusion LED M-series Spot Light Modules
- GE Infusion LED DLM-series Down Light Modules
- GE Infusion LED NPM-series Narrow Punch Modules

*1 This is a non-binding overview of available Zhaga Book 5 LED modules at press.

Mounting

- Direct mounting of the LED collar with 4 M4 self tapping screws

Mounting of the LED engine by twist and lock operation
Blue indicator marks



Zhaga Book 6 socketable LED engines

Zhaga Interface Specification Book 6 defines the interfaces of a socketable, circular LED light engine (LLE) with an integrated LED driver (electronic control gear).

The LLE has nominal dimensions of 90 mm diameter and 42 mm height, and has a GH76p base. Zhaga Book 6 LED modules are mounted by 3 M3 screws evenly located on diameter of 79.5mm on the LED cooler.

The socketable Book 6 LLE fits into a holder, which has a diameter that does not exceed the diameter of the LLE itself. This enables compact luminaire designs.

Book 6 LLEs are applicable for downlights, pendant luminaires, and wall-mounted and recessed luminaires.

Zhaga Book 6 compliant LED engines *1

- Toshiba E-Core LED Light Engine LED LEV11 and LEV16

*1 This is a non-binding overview of available Zhaga Book 6 LED modules at press.

Mounting

- Direct mounting of the LED holder GH76p with 3 M3 self tapping screws

Mounting of the LED engine by twist and lock operation
Yellow indicator marks



MechaTronix *in* LED

– MOUNTING INSTRUCTION –

IceLEDxtra Modular Active Star LED Cooler \varnothing 99mm



Mounting Instruction

Zhaga Book 11 Spot Light Modules

Zhaga Interface Specification Book 11 defines the interfaces of LED light engines (LLEs) comprising a circular, non-socketable LED module with a separate LED driver (electronic control gear).

The LED modules in Book 11 have an overall diameter of 35 mm and a height of 3.5 mm. Zhaga Book 11 LED modules are mounted by 2 M3 screws evenly located on diameter of 25mm on the LED cooler.

There are three LLE categories in Book 11, which are defined by the maximum diameter of the circular light-emitting surface (LES): 6.3 mm, 9.0 mm, 13.5 mm

Book 11 LLEs are suitable for spot-lighting and other applications that benefit from a small, circular source.



LED COB's for which Zhaga book 11 LED holders are available

- Bridgelux V10 / V13
- Citizen CitiLED CLL022, CLU024
- Cree XLamp CXA13xx, CXA15xx
- Edison Opto HM05, HM09
- Lextar Nimbus 1500
- Osram Soleriq P6, P9, P13, S13
- Prolight Opto PACB, PACE
- Seoul Semiconductor ZC6
- Sharp Mini Zenigata
- Tridonic Talexx Stark SLE Gen3 Mini LES 10

Mounting

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

MechaTronix *in* LED

– THERMAL DATA –

IceLED Xtra Modular Active Star LED Cooler ø99mm



Product Details

Model n°	IceLED Xtra S50
Dimension (mm) ^{*1}	ø99 x h55
Fan Voltage (Vdc) ^{*2}	12
Fan Speed (RPM)	1500
Noise @ 1m (dBA)	<21
Weight (gr)	266
Thermal Resistance (°C/W) ^{*3}	0.46
Power Pd (W) ^{*4}	109
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, 50mA

^{*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

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.

MechaTronix in LED

– THERMAL DATA –

IceLED Xtra Modular Active Star LED Cooler ø99mm



Thermal Data

The thermal performance of a LED cooler, expressed as Thermal Resistance Rth in K/W (or °C/W) tells you how many degrees Kelvin (or Celsius) the base of the LED cooler will incline per Watt of dissipated power Pd.

This dissipated power Pd is the heat loss a LED package or LED COB/LOB will create besides the efficient light generation.

Typically for white LED packages the efficiency varies with the color CCT and the CRI – values here below can be taken as a rule of thumb for white LED packages (phosphor corrected blue light)

CCT 4000 - 7000 and CRI 70 - 80 → 35% efficiency → 65% heat loss

CCT 2700 - 3000 and CRI 85 - 97 → 30% efficiency → 70% heat loss

For other LED packages like horticulture specific wave lengths or UV, we recommend you to look up the thermal efficiency in the datasheet or contact the supplier.

Keep in mind that for horticulture LED packages, example 660nm Deep Red, the thermal losses are drastically lower and can be as low as 40%, meaning you could almost use double the electrical power Pe on the same LED cooler for the same temperature rise dT.

Next the Thermal Resistance Rth is not a fix value – the nominal value we declare corresponds with a 50°C temperature rise – The table below explains the thermal resistance Rth for various dissipated power values.

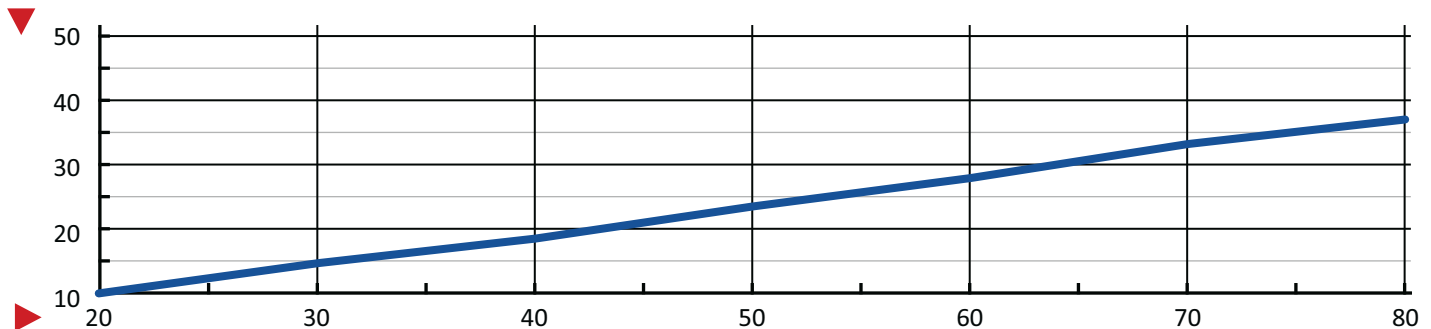
In this way you can completely predict the temperature you are going to get in your LED luminaire.

Difficulties figuring it out – just let us know and our engineers will do the math for you.

$Pd = Pe \times (1-\eta_L)$			LED Light efficiency, η_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%	IceLED Xtra 550	IceLED Xtra 550
Dissipated Power Pd(W)	20	Electrical Power Pe(W)	24.1	25.0	26.7	0.50	10
	25		30.1	31.3	33.3	0.49	12
	30		36.1	37.5	40.0	0.49	15
	35		42.2	43.8	46.7	0.49	17
	40		48.2	50.0	53.3	0.48	19
	50		60.2	62.5	66.7	0.48	24
	60		72.3	75.0	80.0	0.47	28
	70		84.3	87.5	93.3	0.47	33
	80		96.4	100.0	106.7	0.47	37

Heat sink to ambient temperature rise T_{hs-amb} (°C)

IceLED Xtra 550



Dissipated Power Pd(W)