

MechaTronix in LED

ModuLED Nano Modular Passive LED Cooler



Features & Benefits

- For spot and downlight designs from 600 to 3,000 lumen
- Thermal resistance range Rth 1.8 - 2.2°C/W
- Modular design with mounting holes foreseen for direct mounting of a wide range of LED modules and COB's:
 - Zhaga book 3 Spot Light Modules Edison Edilex, Tridonic Talexx Stark SLE, Philips Fortimo SLM, VS Luga Shop,...
 - Bridgelux BXRA ESS, ESR, Ver0 10, Ver0 13, Ver0 18, V-series
 - Citizen Citiled CL-L022, CL-L032
 - Edison Opto Edipower II HM/HR/HS/HV/SD series
 - LG Innotek PKG 10/13/17/24W
 - Philips Lumileds Luxeon COB's 1204, 1205 and 1208
 - Prolight Opto PANA and PABA COB series
 - Tridonic Talexx Stark SLE and Mini G3
 - Xicato XSM and XPM LED modules
- Diameter 70mm - Standard height 50mm & 80mm
Other heights on request
- Extruded from highly conductive aluminum



Order Information



Example : ModuLED Nano 7050-B

ModuLED Nano 70 **1** - **2**

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

ModuLED Nano 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

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Product Details

Model n°	ModuLED Nano 7050	ModuLED Nano 7080
Dimension (mm) ^{*1}	ø70 x h50	ø70 x h80
Volume (mm ³)	69498	112480
Cooling Surface (mm ²)	66919	104875
Weight (gr)	188	304
Thermal Resistance (°C/W) ^{*2}	2.2	1.8
Power Pd (W) ^{*3}	22.7	27.8
Heat Sink Material	AL6063-T5	AL6063-T5

^{*1} 3D files are available in ParaSolid, STP and IGS on request

^{*2} The thermal resistance Rth is determined with a calibrated heat source of 30mm x 30mm central placed on the heat sink, Tamb 40° and an open environment. Reference data @ heat sink to ambient temperature rise Ths-amb 50°C
The thermal resistance of a LED cooler is not a fix value and will vary with the applied dissipated power Pd

^{*3} Dissipated power Pd. Reference data @ heat sink to ambient temperature rise Ths-amb 50°C
The maximal dissipated power needs to be verified in function of required case temperature Tc or junction temperature Tj and related to the estimated ambient temperature where the light fixture will be placed
Please be aware the dissipated power Pd is not the same as the electrical power Pe of a LED module

To calculate the dissipated power please use the following formula: $Pd = Pe \times (1 - \eta_L)$

Pd - Dissipated power

Pe - Electrical power

η_L = Light efficiency of the LED module

Notes:

- MechaTronix reserves the right to change products or specifications without prior notice.
- Mentioned models are an extraction of full product range.
- For specific mechanical adaptations please contact MechaTronix.

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Mounting Options

The ModuLED Nano 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 Nano cooler.

The ModuLED Nano 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 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
- Philips Fortimo SLM
- Tridonic Talexx Stark SLE
- Vexica Lumaera
- Vossloh Schwabe Luga Shop

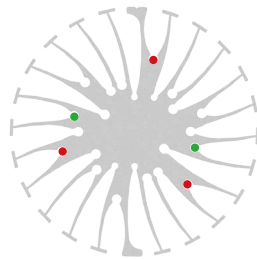
*1 This is a non-binding overview of available Zhaga book 3 LED modules at press

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, Tyco Electronics Connectivity (TE), Molex, AAG Stucchi and Ideal.

 Zhaga



Zhaga Book 3 Spot Light Modules

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


- Bridgelux ES rectangular LED array
- Citizen CitiLED CL-L030, CL-L032, CL-L040, CL-L042
- Cree XLamp CXA18xx, CXA25xx, CXA30xx
- Edison Opto HM16 and HM30
- LG Lighting MCP 10-24W
- Osram Soleriq E30
- Philips Lumileds Luxeon 1204, 1205 and 1208, Luxeon K12 and K16
- Prolight Opto PABA 10-50W
- Sharp Mega Zenigata and Tiger Zenigata
- Tridonic Talexx Stark LES 17

Mounting

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

Reflector ring

- 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

 Zhaga



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ModuLED Nano Modular Passive LED Cooler



Mounting Options

Bridgelux LED Modules

Bridgelux Vero 10 LED Module

Model names

- Vero 10 BXRC-27E1000-B-xx
- Vero 10 BXRC-27G1000-B-xx
- Vero 10 BXRC-27H1000-B-xx
- Vero 10 BXRC-30E1000-B-xx
- Vero 10 BXRC-30G1000-B-xx
- Vero 10 BXRC-30H1000-B-xx
- Vero 10 BXRC-35E1000-B-xx
- Vero 10 BXRC-40E1000-B-xx
- Vero 10 BXRC-50C1000-B-xx

Mounting

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

Bridgelux Vero 13 LED Module

Model names

- Vero 13 BXRC-27E2000-C-xx
- Vero 13 BXRC-27G2000-C-xx
- Vero 13 BXRC-27H2000-C-xx
- Vero 13 BXRC-30E2000-C-xx
- Vero 13 BXRC-30G2000-C-xx
- Vero 13 BXRC-30H2000-C-xx
- Vero 13 BXRC-35E2000-C-xx
- Vero 13 BXRC-40E2000-C-xx
- Vero 13 BXRC-50C2000-C-04

Mounting

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

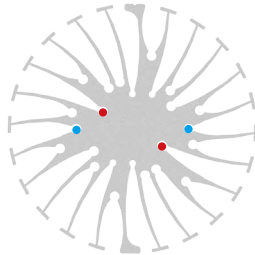
Bridgelux Vero 18 LED Module

Model names

- Vero 18 BXRC-27E4000-F-xx
- Vero 18 BXRC-27G4000-F-xx
- Vero 18 BXRC-27H4000-F-xx
- Vero 18 BXRC-30E4000-F-xx
- Vero 18 BXRC-30G4000-F-xx
- Vero 18 BXRC-30H4000-F-xx
- Vero 18 BXRC-35E4000-F-xx
- Vero 18 BXRC-40E4000-F-xx
- Vero 18 BXRC-50C4000-F-04

Mounting

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



Bridgelux LED Modules

Bridgelux V series V6/V8/V10 COB

Model names

- BXRE-27E0800-A-03
- BXRE-27E0800-B-03
- BXRE-27G0800-A-03
- BXRE-27G0800-B-03
- BXRE-30E0800-A-03
- BXRE-30E0800-B-03
- BXRE-30G0800-A-03
- BXRE-30G0800-B-03
- BXRE-30H0800-A-03
- BXRE-30H0800-B-03
- BXRE-40E0800-A-03
- BXRE-40E0800-B-03
- BXRE-50C0800-A-04
- BXRE-50C0800-B-04

Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm. Red indicator marks
- With Bridgelux V8 holder BATLAB-0401

Bridgelux ES Star array COB

Model names

- BXRA-27E0540-A-03
- BXRA-27E0740-A-03
- BXRA-27G0540-A-03
- BXRA-27G0740-A-03
- BXRA-30E0540-A-03
- BXRA-30E0740-A-03
- BXRA-30G0540-A-03
- BXRA-30G0740-A-03
- BXRA-40E0600-A-03
- BXRA-40E0810-A-03
- BXRA-50C1000-A-xx
- BXRA-56C0700-A-xx
- BXRA-56C1000-A-xx

Mounting

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

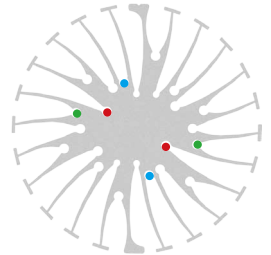
Bridgelux ES Rectangle array COB

Model names

- BXRA-27E0800-B-03
- BXRA-27E1200-B-03
- BXRA-27E2000-B-03
- BXRA-27G0800-B-03
- BXRA-27G1200-B-03
- BXRA-27G2000-B-03
- BXRA-30E0800-B-03
- BXRA-30E1200-B-03
- BXRA-30E2000-B-03
- BXRA-30G0800-B-03
- BXRA-30G1200-B-03
- BXRA-30G2000-B-03
- BXRA-35E0800-B-03
- BXRA-35E1200-B-03
- BXRA-35E2000-B-03
- BXRA-40E0950-B-03
- BXRA-40E1350-B-03
- BXRA-40E2200-B-03
- BXRA-50C1100-B-xx
- BXRA-50C2600-B-xx
- BXRA-56C1100-B-xx
- BXRA-56C1600-B-xx
- BXRA-56C2600-B-xx

Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm. Blue indicator marks
- With Zhaga Book 3 LED holder
- Green indicator marks
- BJB spotlight connector 47.319.2040
- Tyco Electronics Z50 holder with optic attachment 2213130-2



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Mounting Options

Citizen Citeded

Citizen Citeded CLL022 LED COB

Model names

- CLL022-1202A5
- CLL022-1203A5
- CLL022-1204A5

Mounting

- Direct mounting with 2 self tapping screws
M3 x 6mm
Red indicator marks
- With Zhaga Book 3 LED holder
Green indicator marks
Tyco Electronics Z50 low profile holder 2213130-1
Tyco Electronics Z50 holder with optic attachment 2213130-2
- With spotlight connector
Green indicator marks
BJB Spotlight connector 47.319.6060

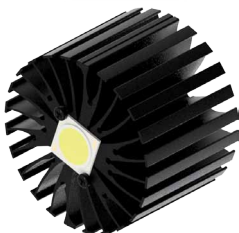
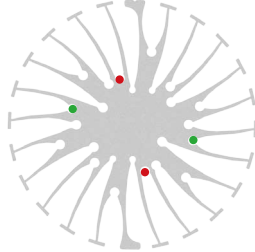
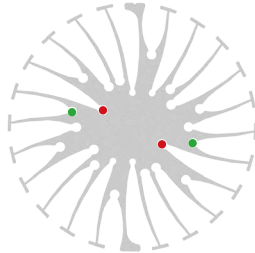
Citizen Citeded CLL032 LED COB

Model names

- CLL032-1205A5
- CLL032-1206A5
- CLL032-1208A5
- CLL032-1212A5

Mounting

- Direct mounting with 2 self tapping screws
M3 x 6mm
Red indicator marks
- With Zhaga Book 3 LED holder
Green indicator marks
BJB Spotlight connector 47.319.2020
Tyco Electronics Z50 low profile holder 2213130-1
Tyco Electronics Z50 holder with optic attachment 2213130-2



Edison Opto LED Modules

Edison Opto EdiPower II SD series

Model names 15W-24W

- EdiPower II SD 2PSD15WW01P0200
- EdiPower II SD 2PSD24WW01P0200

Mounting

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

Model names 40W-50W

- EdiPower II SD 2PSD40NW05P03001
- EdiPower II SD 2PSD50NW05P03001

Mounting

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

Edison Opto EdiPower II HS-HV series

Model names 15W-24W

- EdiPower II HS 2PHV15CW06P02001
- EdiPower II HS 2PHV15NW05P02001
- EdiPower II HS 2PHV15WW03P02001
- EdiPower II HS 2PHV24CW06P02001
- EdiPower II HS 2PHV24NW05P02001
- EdiPower II HS 2PHV24WW03P02001

Mounting

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

Edison Opto EdiPower II HR

Model names 13W

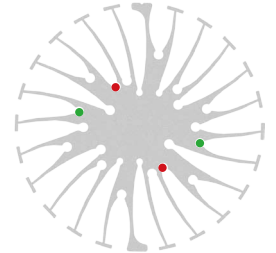
- EdiPower II HR 2PHR13CW11P02001
- EdiPower II HR 2PHR13NW11P02001
- EdiPower II HR 2PHR13WW05P02001

Mounting

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

Model names 24W-35W

- EdiPower II HR 2PHR24CW11P03001
- EdiPower II HR 2PHR24NW11P03001
- EdiPower II HR 2PHR24WW05P03001
- EdiPower II HR 2PHR35CW11P03001
- EdiPower II HR 2PHR35NW11P03001
- EdiPower II HR 2PHR35WW05P03001



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ModuLED Nano Modular Passive LED Cooler



Mounting Options

LG Innotek

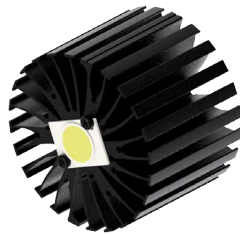
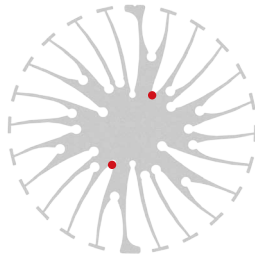
LG Innotek 10/13/17/24W COB

Model names

- LEMWWM18580HGxxxx
- LEMWWM18580JGxxxx
- LEMWWM18580LGxxxx
- LEMWWM18580MGxxxx
- LEMWWM18680HGxxxx
- LEMWWM18680JGxxxx
- LEMWWM18680LGxxxx
- LEMWWM18680MGxxxx
- LEMWWM18690LG10A0
- LEMWWM18780HGxxxx
- LEMWWM18780JGxxxx
- LEMWWM18780LGxxxx
- LEMWWM18780MGxxxx
- LEMWWM18880HGxxxx
- LEMWWM18880LGxxxx

Mounting

- Direct mounting with 2 self tapping screws
M2 x 6mm
Red indicator marks
- With Zhaga Book 3 LED holder
Green indicator marks



Edison Opto LED Modules EdiPower II HR – continued

Mounting

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

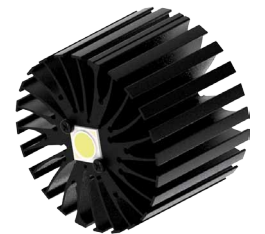
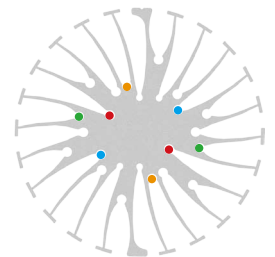
Edison Opto Edipower II HM

Model Names 5W - 9W

- 2PHM05WW27P12001
- 2PHM05NW27P12001
- 2PHM05CW27P12001
- 2PHM09WW27P12001
- 2PHM09NW27P12001
- 2PHM09CW27P12001

Mounting

- Direct mounting with 2 self tapping screws
M3 x 6mm
Red indicator marks
- With Zhaga Book 3 LED holder
Green indicator marks
Tyco Electronics Z50 low profile holder
2213130-1
Tyco Electronics Z50 holder with optic
attachment 2213130-2
- With Spotlight connector
Blue indicator marks
BJB Spotlight connector 47.319.6060

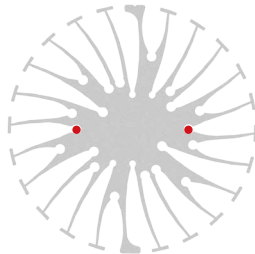


Philips Lumileds

Luxeon COB 1204 - 1205 - 1208

Model names

- Luxeon COB LHC1-2780-1204
- Luxeon COB LHC1-3080-1204
- Luxeon COB LHC1-3090-1204
- Luxeon COB LHC1-4080-1204
- Luxeon COB LHC1-5080-1204
- Luxeon COB LHC1-2780-1205
- Luxeon COB LHC1-3080-1205
- Luxeon COB LHC1-3090-1205
- Luxeon COB LHC1-4080-1205
- Luxeon COB LHC1-5080-1205
- Luxeon COB LHC1-2780-1208
- Luxeon COB LHC1-3080-1208
- Luxeon COB LHC1-3090-1208
- Luxeon COB LHC1-4080-1208
- Luxeon COB LHC1-5080-1208



Model Names 16W - 30W

- 2PHM16WW27P13001
- 2PHM16NW27P13001
- 2PHM16CW27P13001
- 2PHM30WW27P13001
- 2PHM30NW27P13001
- 2PHM30CW27P13001

Mounting

- Direct mounting with 2 self tapping screws
M3 x 6mm
Orange indicator marks
- With Zhaga Book 3 LED holder
Green indicator marks
BJB Spotlight connector 47.319.2020
Tyco Electronics Z50 low profile holder
2213130-1
Tyco Electronics Z50 holder with optic
attachment 2213130-2

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ModuLED Nano Modular Passive LED Cooler



Mounting Options

Philips Lumileds Luxeon COB 1204 - 1205 - 1208 – continued

Mounting

- Direct mounting with 2 self tapping screws M3 x 6 mm
Red indicator marks
- With Zhaga Book 3 LED holder
Green indicator marks
BJB spotlight connector 47.319.2010
Tyco Electronics Z50 low profile holder 2213130-1
Tyco Electronics Z50 holder with optic attachment 2213130-2

Luxeon K12 - K16

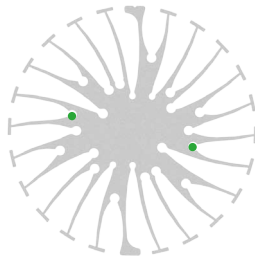
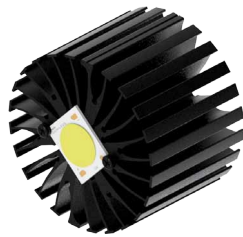
Model names

- Luxeon K12 LXX8-PW27-0012A
- Luxeon K12 LXX8-PW30-0012A
- Luxeon K12 LXX8-PW35-0012
- Luxeon K12 LXX8-PW40-0012A
- Luxeon K12 LXX8-PW50-0012
- Luxeon K12 LXX9-PW27-0012
- Luxeon K12 LXX9-PW30-0012
- Luxeon K12 LXX8-PW27-0012
- Luxeon K12 LXX8-PW30-0012
- Luxeon K12 LXX8-PW40-0012
- Luxeon K16 LXX8-PW27-0016A
- Luxeon K16 LXX8-PW30-0016A
- Luxeon K16 LXX8-PW35-0016A
- Luxeon K16 LXX8-PW40-0016A
- Luxeon K16 LXX8-PW50-0016
- Luxeon K16 LXX9-PW27-0016
- Luxeon K16 LXX9-PW30-0016
- Luxeon K16 LXX8-PW27-0016
- Luxeon K16 LXX8-PW30-0016
- Luxeon K16 LXX8-PW40-0016

Mounting

- With Zhaga Book 3 LED holder
Green indicator marks
BJB spotlight connector 47.319.2070

PHILIPS LUMILEDS



Prolight Opto

Prolight Opto PACB COB series

Model names

- PACB-5xxx-xxxx
- PACB-7xxx-xxxx
- PACB-9xxx-xxxx

Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm
Red indicator marks
- With Zhaga Book 3 LED holder
Green indicator marks
Tyco Electronics Z50 low profile holder 2213130-1
Tyco Electronics Z50 holder with optic attachment 2213130-2
- With Spotlight connector
Blue indicator marks
BJB Spotlight connector 47.319.6060

Prolight Opto PANA COB series

Model names

- PANA-10xxx-xxxx
- PANA-12xxx-xxxx
- PANA-17xxx-xxxx
- PANA-24xxx-xxxx

Mounting

- Direct mounting with 2 self tapping screws M2 x 6mm
Orange indicator marks

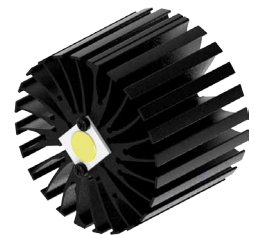
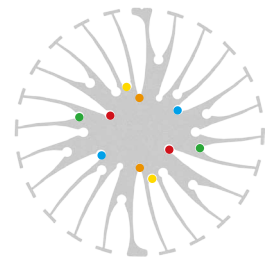
Prolight Opto PABA COB series

Model names

- PABA-10Fxx-xxxx
- PABA-15Fxx-xxxx
- PABA-22xxx-xxxx
- PABA27xxx-xxxx
- PABA35xxx-xxxx
- PABA50xxx-xxxx

Mounting

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



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ModuLED Nano Modular Passive LED Cooler



Mounting Options

Tridonic

Tridonic Talexx Stark SLE GEN3

Model names

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

Mounting

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

Tridonic Talexx Stark SLE Mini Classic GEN3 LES-10

Model names

- STARK-SLE-PURE-G3-10-xxx

Mounting

- With Zhaga Book 3 LED holder
- Green indicator marks
- BJB spotlight connector 47.319.2070
- With spotlight connector
- Blue indicator marks
- BJB Spotlight connector 47.319.6060

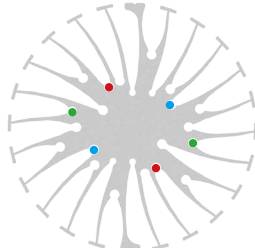
Tridonic Talexx Stark SLE Mini Classic GEN3 LES-17

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
- Green indicator marks
- BJB Spotlight connector 47.319.2020



Xicato

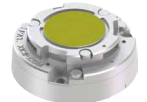
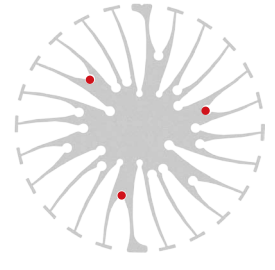
Xicato XSM LED modules

Model names

- XSM8027-xxx
- XSM8030-xxx
- XSM-8040-xxx
- XSM-9527-xxx
- XSM-9530-xxx
- XSM-9540-xxx
- XSMV830-xxx

Mounting

- Direct mounting with 2 self tapping screws M3 x 12mm
- Red indicator marks



COB's with a small LES area through use of external LED holder BJB

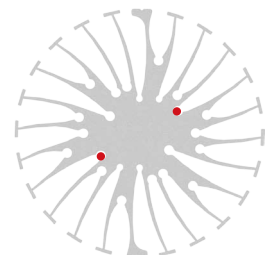
Specifically for COB's with a small LES area, BJB has developed a new range of LED spotlight connectors which standard fit on the MechaTronix LED coolers

Model names

- Citizen CitiLED COB CL-L020 - LC-L022
- BJB Spotlight connector 47.319.6060
- Cree COB CXA 13xx series
- BJB Spotlight connector 47.319.6101
- Cree COB CXA 1507 - CXA 1512
- BJB Spotlight connector 47.319.6120
- Edison Opto COB HM05 - HM09
- BJB Spotlight connector 47-319-6060
- Lextar COB Nimbus 1500
- BJB Spotlight connectors 47.319.6110
- Osram COB Soleric S13 - X13
- BJB Spotlight connectors 47.319.6110
- Tridonic Talexx Stark COB SLE LES 10
- BJB Spotlight connector 47.319.6060

Mounting

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



To determine the mounting holes you need, please use the corresponding flip chart on www.led-heatsink.com/download, or request a hard copy flip chart with easy to use transparent overlays.

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.

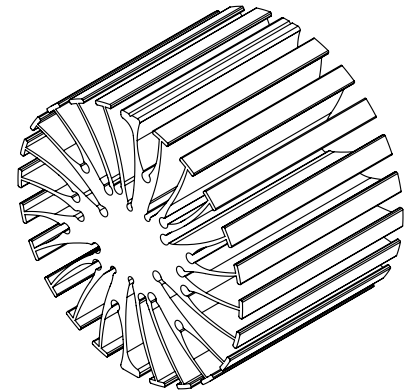
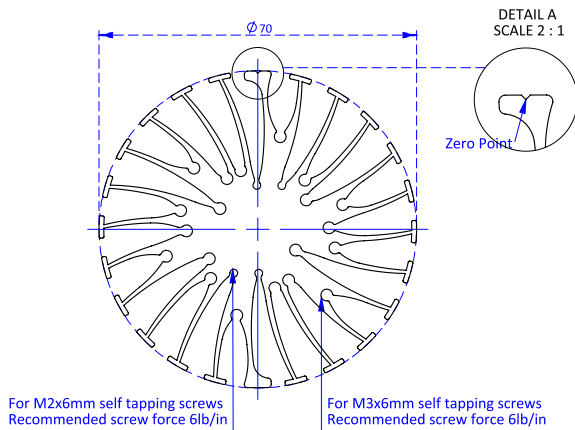
MechaTronix in LED

ModuLED Nano Modular Passive LED Cooler



Drawings & Dimensions

Example: ModuLED Nano 7050

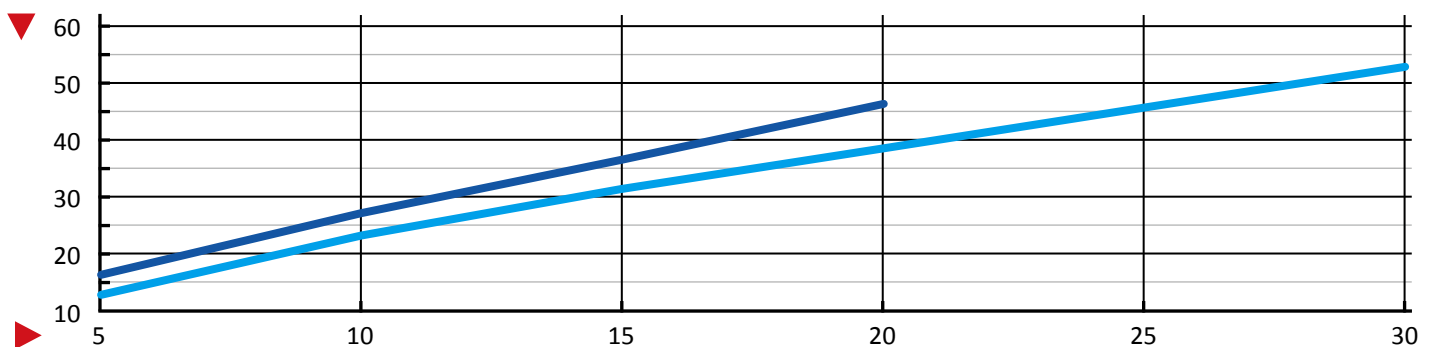


Thermal Data

$P_d = P_e \times (1 - \eta_L)$			LED Light efficiency, η_L (%)			Heat sink to ambient thermal resistance R_{hs-amb} ($^{\circ}C/W$)		Heat sink to ambient temperature rise T_{hs-amb} ($^{\circ}C$)	
			17%	20%	25%	ModuLED Nano 7050	ModuLED Nano 7080	ModuLED Nano 7050	ModuLED Nano 7080
Dissipated Power P_d (W)	5	Electrical Power P_e (W)	6.0	6.3	6.7	3.10	2.70	16	13
	10		12.0	12.5	13.3	2.70	2.30	27	23
	15		18.0	18.8	20.0	2.40	2.10	36	31
	20		24.0	25.0	26.7	2.30	1.90	46	39
	30		36.1	37.5	40.0	-	1.80	-	53

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

— ModuLED Nano 7050 — ModuLED Nano 7080



Dissipated Power P_d (W)