

# MechaTronix *in* LED

## ModuLED Nano Seoul Semiconductor Star LED Cooler $\phi$ 70mm



### Features & Benefits

- The ModuLED modular Nano passive LED coolers are specifically designed for luminaires using the Seoul Semiconductor LED COB. Mechanical compatibility with direct mounting of the LED modules to the LED cooler and thermal performance matching the lumen packages.
- 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 Seoul Semiconductor ZC 6, ZC 12, ZC 18, ZC 25, ZC 40 COB LED, direct mounting or with Zhaga Book 3 / Book 11 LED holder.
- Diameter 70mm - Standard height 50mm & 80mm  
Other heights on request
- Extruded from highly conductive aluminum



### Order Information

 Zhaga



SEOUL SEMICONDUCTOR

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 various LED modules on the same LED cooler

Simple mounting with self tapping screws

Recommended screw force 6lb/in

Screws are available from MechaTronix

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## Product Details

Model n°	ModuLED Nano 7050	ModuLED Nano 7080
Dimension (mm) <sup>*1</sup>	ø70 x h50	ø70 x h80
Volume (mm <sup>3</sup> )	69498	112480
Cooling Surface (mm <sup>2</sup> )	66919	104875
Weight (gr)	188	304
Thermal Resistance (°C/W) <sup>*2</sup>	2.2	1.8
Power Pd (W) <sup>*3</sup>	22.7	27.8
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.

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## ModuLED Nano Seoul Semiconductor Star LED Cooler ø70mm



### Mounting Options

The ModuLED modular 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 Seoul Semiconductor COB's which standard fit on the ModuLED Nano LED cooler.

MechaTronix performs thermal validation tests on each of the LED modules mounted on the LED cooler and publishes this data in the LED brand thermal validation reports.

For a full overview of available LED coolers for Seoul Semiconductor LEDs, please refer to the Seoul Semiconductor LED cooler overview on [www.led-heatsink.com/Download.php](http://www.led-heatsink.com/Download.php) or scan the QR code here.



## 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.



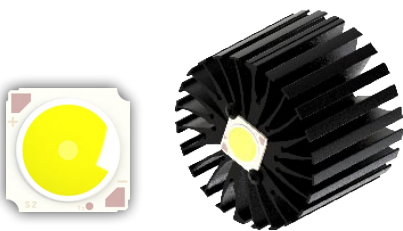
### Seoul Semiconductor ZC 6 LED COB

#### Model names

- SDW01F1C
- SDW81F1C
- SDW91F1C

#### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Red indicator marks
- With spotlight connector  
BJB Spotlight connector 47.319.6060  
Mounting with 2 self tapping screws M3 x 8mm  
Orange indicator marks



### Seoul Semiconductor ZC 12 / ZC 18 LED COB

#### Model names

- SDW02F1C
- SDW82F1C
- SDW92F1C
- SDW03F1C
- SDW83F1C
- SDW93F1C

#### Mounting

- Direct mounting with 2 self tapping screws M3 x 6mm  
Blue indicator marks
- With Zhaga Book 3 LED holder  
BJB Spotlight connector 47.319.2020  
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 Nano Seoul Semiconductor Star LED Cooler  $\phi$ 70mm



## Mounting Options



### Seoul Semiconductor ZC 25/ 40 LED COB

#### Model names

- SDW04F1C
- SDW84F1C
- SDW94F1C
- SDW05F1C
- SDW85F1C
- SDW95F1C

#### Mounting

- With Zhaga Book 3 LED holder  
BJB Spotlight connector 47.319.2030  
Mounting with 2 self tapping screws M3 x 8mm  
Green indicator marks

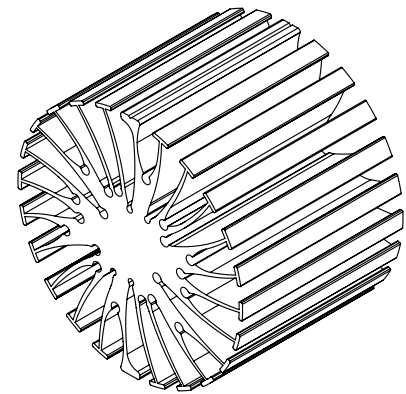
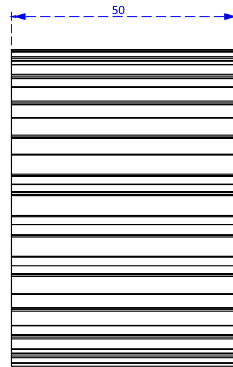
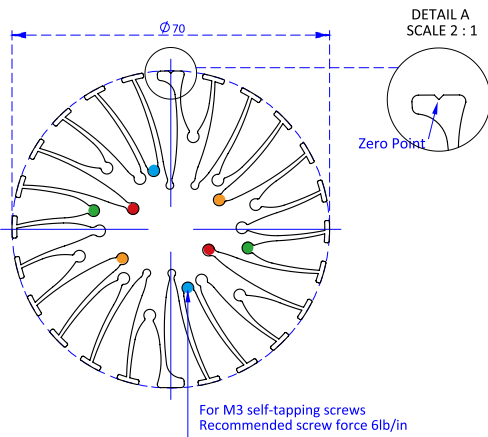
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## ModuLED Nano Seoul Semiconductor Star LED Cooler $\phi 70\text{mm}$



### Drawings & Dimensions

### Example: ModuLED Nano 7050

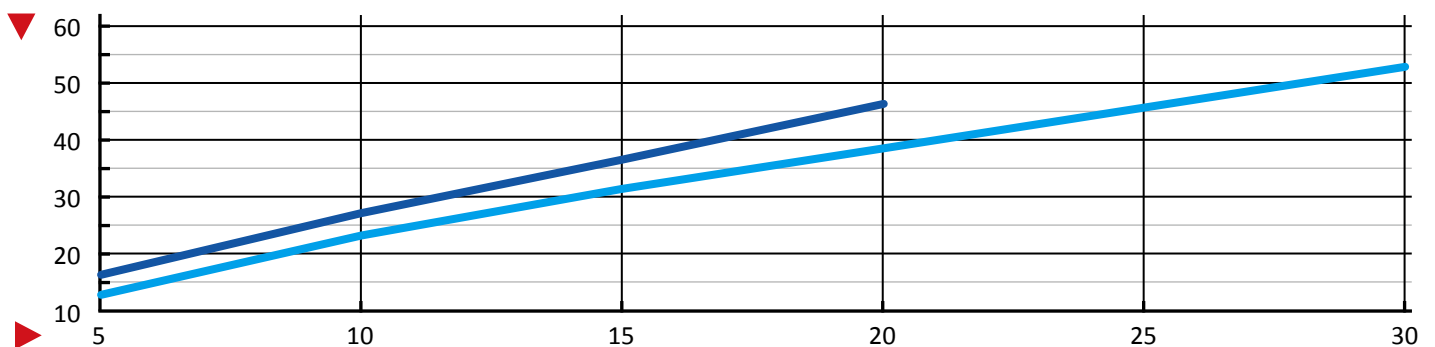


### Thermal Data

$P_d = P_e \times (1 - \eta_L)$			LED Light efficiency, $\eta_L$ (%)			Heat sink to ambient thermal resistance $R_{hs-amb}$ ( $^{\circ}\text{C}/\text{W}$ )		Heat sink to ambient temperature rise $T_{hs-amb}$ ( $^{\circ}\text{C}$ )	
			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  $T_{hs-amb}$  ( $^{\circ}\text{C}$ )

— ModuLED Nano 7050 — ModuLED Nano 7080



Dissipated Power  $P_d$ (W)