

## XSA-301 Xicato Modular Passive Star LED Cooler ø86mm

### Features & Benefits

- The XSA-301 Xicato modular passive LED cooler is specifically designed for luminaires using Xicato LED modules. 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 3,200 to 6,400 lumen
- Thermal resistance Rth 1.5°C/W
- Xicato thermal class H
- Modular design with mounting holes foreseen for direct mounting of Xicato XIM, XTM and XCA LED modules.
- Diameter 86mm - Standard height 50mm  
Other heights on request
- Extruded from highly conductive aluminum



### Order Information

 Zhaga

 Xicato®

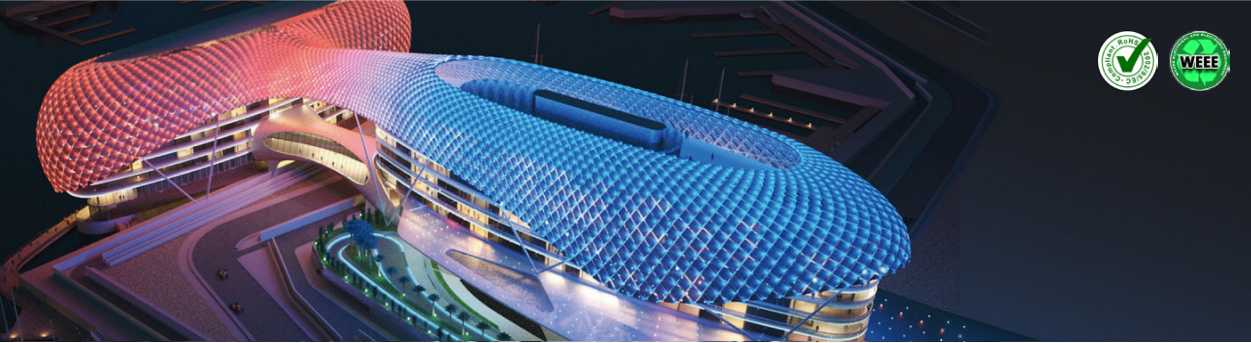
Example : XSA-301-B

XSA-301- 1

1 Anodising Color

B - Black  
C - Clear

Simple mounting with M3 screws  
Recommended screw force 6lb/in



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### Product Details



**Model n°**

**XSA-301**

Dimension (mm) <sup>*1</sup>	ø86 x h50
Volume (mm <sup>3</sup> )	105077
Cooling Surface (mm <sup>2</sup> )	95520
Weight (gr)	273
Thermal Resistance (°C/W) <sup>*2</sup>	1.5
Power Pd (W) <sup>*3</sup>	33
Heat Sink Material	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:  $Pd = Pe \times (1 - \eta_L)$

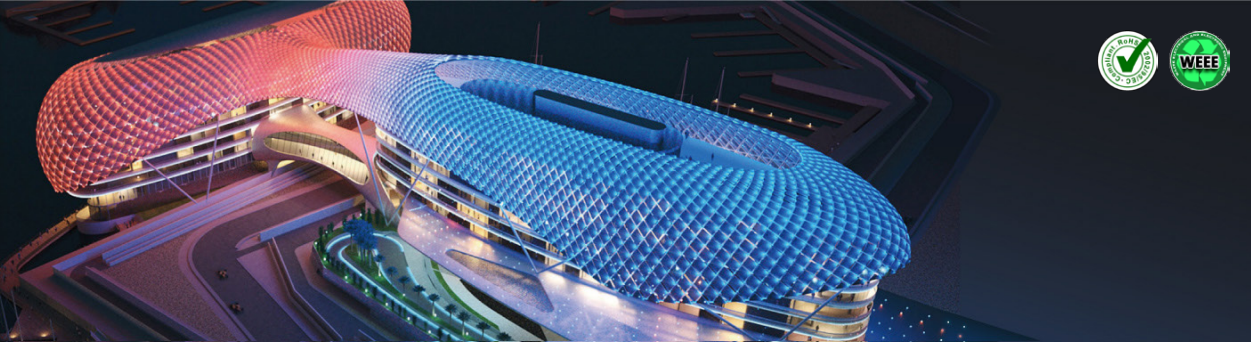
Pd - Dissipated power

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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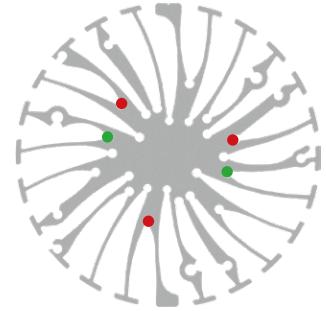
### Mounting Instructions



Xicato is changing the way the world looks at light – and enabling everyone to experience it. Xicato believes that with better light, shoppers will buy more, diners will order more and guests will be happier and feel more comfortable. In turn, for owners, operators and managers of environments, better lighting will contribute to high sales, margins and brand perception.

#### 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.



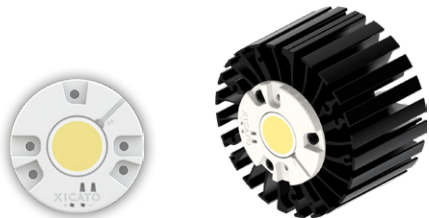
#### Xicato XIM LED modules

##### Model names

- XIM09xxxx
- XIM19xxxx

##### Mounting

- Direct mounting with 3 screws M3 x 20mm
- Red indicator marks



#### Xicato XTM LED modules

##### Model names

- XTM09xxxx
- XTM19xxxx

##### Mounting

- Direct mounting with 3 screws M3 x 8mm
- Red indicator marks
- Direct mounting by Zhaga mounting holes with 2 self tapping screws M3 x 8mm
- Green indicator marks



#### Xicato XCA LED Core Array

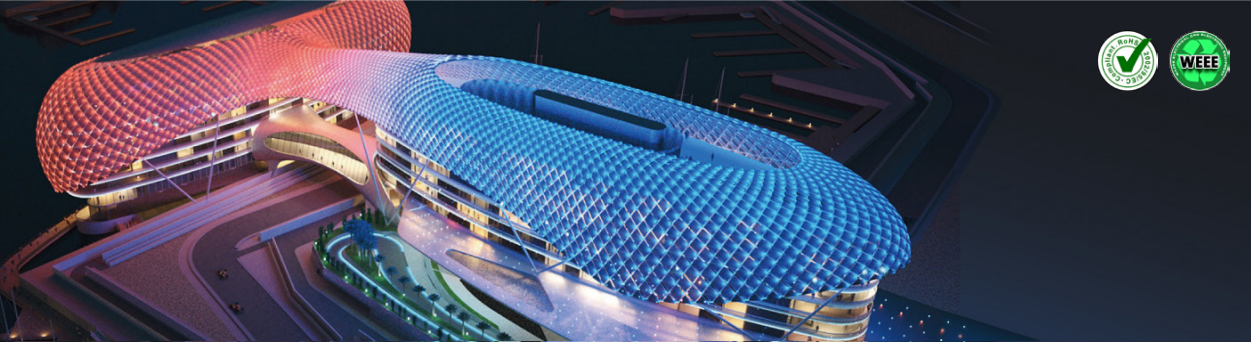
##### Model names

- XCA09xxxx
- XCA19xxxx

##### Mounting

- With Xicato XSA-401 LED holder
- Mounting with 3 screws M3 x 8mm
- Red indicator marks
- On Zhaga mounting holes with 2 screws M3 x 8mm
- Green indicator marks



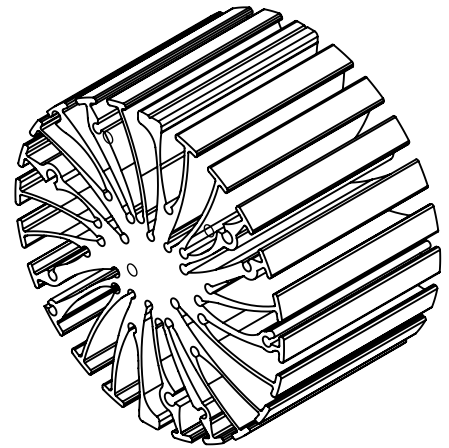
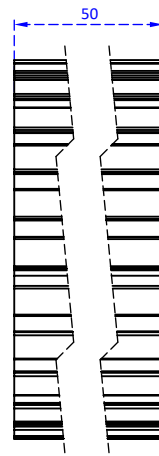
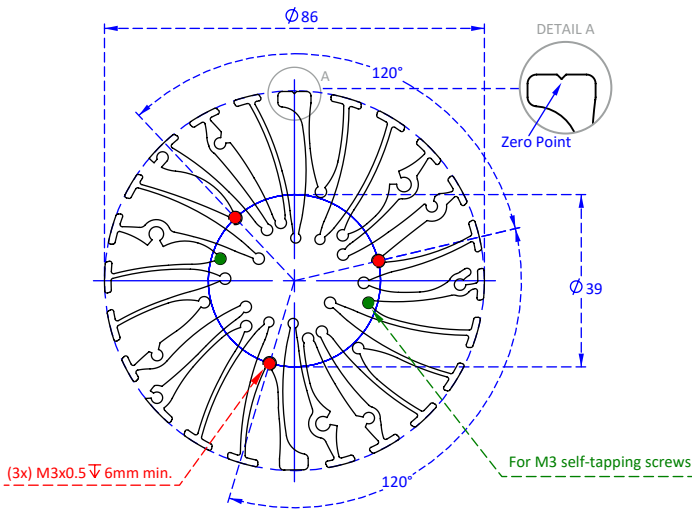


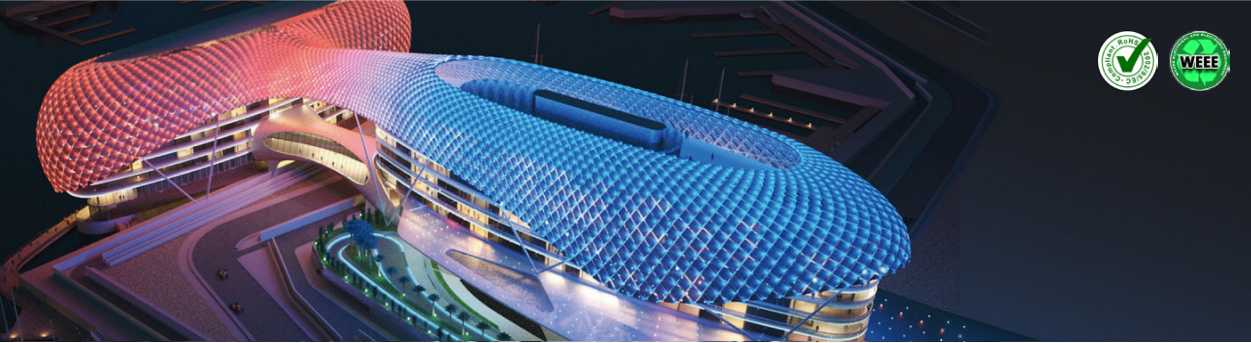
## XSA-301 Xicato Modular Passive Star LED Cooler $\phi 86\text{mm}$

### Drawings & Dimensions

Example: XSA-301

Unit: mm





## XSA-301 Xicato Modular Passive Star LED Cooler ø86mm

### Thermal Data

The thermal performance of a LED cooler, expressed as Thermal Resistance  $R_{th}$  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  $P_d$ .

This dissipated power  $P_d$  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  $P_e$  on the same LED cooler for the same temperature rise  $\Delta T$ .

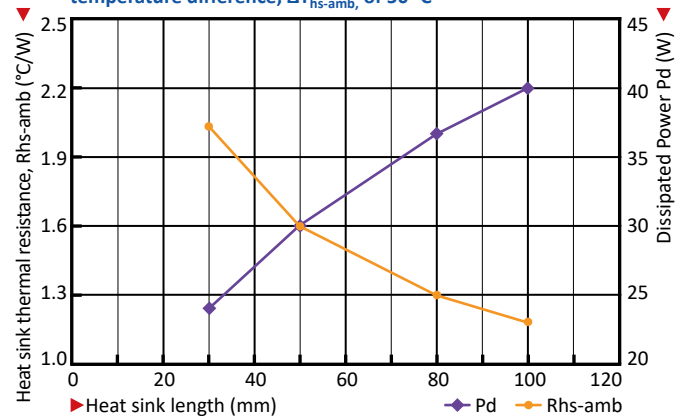
Next the Thermal Resistance  $R_{th}$  is not a fix value – the nominal value we declare corresponds with a 50°C temperature rise – The table below explains the thermal resistance  $R_{th}$  for various dissipated power values.

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

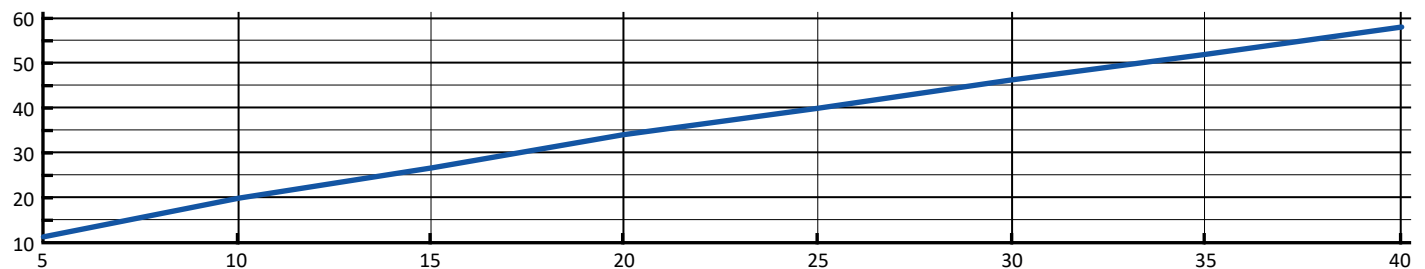
Difficulties figuring it out – just let us know and our engineers will do the math for you.

$P_d = P_e \times (1-\eta_L)$	Heat sink to ambient thermal resistance $R_{hs-amb}$ (°C/W)	
	XSA-301	XSA-301
5	2.4	12
10	2.0	20
15	1.8	27
20	1.7	34
25	1.6	40
30	1.53	46
35	1.48	52
40	1.45	58
45	-	-

XSA-300 / 301 / 302 performance data at a heat sink to ambient temperature difference,  $\Delta T_{hs-amb}$ , of 50 °C



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



Dissipated Power  $P_d$  (W)