

## Mastering LED Cooling

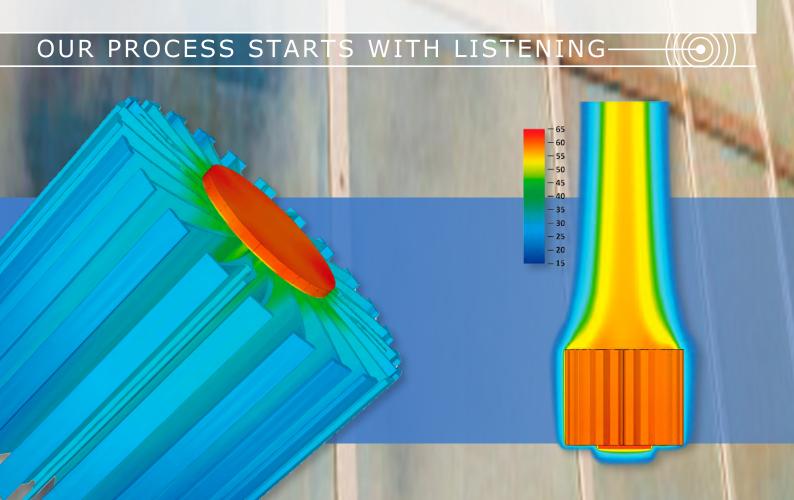
With the evolution of LED lighting over the last years, the demand for professional thermal solutions has grown exponentially. And now that we no longer remain in the realm of low power LED's, thermal management becomes a critical factor within LED fixtures. To that end, MechaTronix has developed several series of pin-fin and star heat sinks, manufactured through die casting, forging or extrusion. This has resulted in a comprehensive range of more than 400 off-the-shelf available LED coolers, for passive or active heat dissipation.

After initial reservations concerning active LED coolers, specialists have found that there really is no better option, when closing in on the 8000 lumen mark. Admittedly, the fan's lifespan becomes somewhat of a focal point in the application of an active LED cooler, but given that the lifespan of the LED engine itself dramatically decreases at high temperatures, the lifespan of the fan looks rather favourable all of a sudden.

MechaTronix' ground breaking ModuLED coolers and its actively cooled sibling IceLED have garnered a lot of attention and positive reviews in the LED market. ModuLED and IceLED are just precursors of a complete range of dedicated and highly effective LED coolers for professional deployment in spotlights, downlights, high bays and a further score of architectural and utility LED applications.

Both ModuLED and IceLED, as well as their upcoming descendants are Zhaga-ready and have a matrix of mounting holes that allows for very easy attachment of a great number of various Luminus LED arrays. Simply apply a thermal interface of your choice, put the LED engine in place and fasten with self-tapping screws and you are good to go! No drilling, customisation or special mounting brackets are needed.

Thanks to an extremely thorough thermal verification of all heat sink lines, MechaTronix provides total thermal disclosure for each model, coupled with all Luminus XNova LED Arrays and engines. All thermal data is available in the product specifications, that come with every MechaTronix heat sink. In this way, engineers save time and effort during the design stage of their LED fixture and will significantly shorten their time to market.



## **LUMINUS LED COOLING**

## XNova<sup>™</sup> series LED Arrays

CLM-9, CXM-9, CHM-9, CXM-11, CHM-11, CLM-14, CXM-14, CHM-14, CVM-14, CXM-18, CVM-18, CLM-22, CXM-22, CHM-22, CXM-32, CVM-32

#### LPF3550-ZHC



Luminus LED Pin Fin cooler ø35mm - h50mm - Rth 7.41°C/W Cooling performance 700 - 1,300 lm

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Direct	Zhaga holder	Luminus XNova LED array
▼	✓	CLM-9 (AC), CXM-9 (AC)

#### LPF4768-ZHP



Luminus LED Pin Fin cooler Ø47mm - h68mm - Rth 3.9°C/W Cooling performance 1,300 - 2,500 lm

Direct	Zhaga	Luminus XNova LED array
- Inount		
	✓	CLM-9 (AC), CXM-9 (AC), CHM-9 (AC) CXM-11 (AC) CLM-14 (AC), CXM-14 (AC)
	✓	CXM-11 (AC)
	✓	CLM-14 (AC), CXM-14 (AC)

#### LPF6050-ZHC



Luminus LED Pin Fin cooler ø60mm - h50mm - Rth 4.0°C/W Cooling performance 1,200 - 2,300 lm

Direct mount		Luminus XNova LED array
<b>✓</b>	<b>✓</b>	CLM-9 (AC), CXM-9 (AC), CHM-9 (AC)
		CXM-11 (AC)
	✓	CLM-14 (AC), CXM-14 (AC), CHM-14 (AC)

#### LPF6768-ZHP



Luminus LED Pin Fin cooler Ø67mm - h68mm - Rth 2.1°C/W Cooling performance 2,300 - 4,600 lm

Direct mount		Luminus XNova LED array
	V V V	CLM-9 (AC), CXM-9 (AC), CHM-9 (AC) CXM-11 (AC), CHM-11-XH00 CLM-14 (AC), CXM-14 (AC), CHM-14 (AC) CXM-18

#### LPF8050-ZHC



Luminus LED Pin Fin cooler ø80mm - h50mm - Rth 2.34°C/W Cooling performance 2,000 - 4,000 lm

mount	holder	Luminus XNOVa LED array
✓		CXM-11 (AC), CHM-11-XH00
✓		CLM-14 (AC), CXM-14 (AC), CHM-14 (AC)
	✓	CXM-18

#### LPF8668-ZHC



Luminus LED Pin Fin cooler Ø86mm - h68mm - Rth 1.46°C/W Cooling performance 3,300 - 6,500 lm

mount	holder	Luminus XNova LED array
✓	✓	CXM-11 (AC), CHM-11-XH00
✓	✓	CLM-14 (AC), CXM-14 (AC), CHM-14 (AC)
		, CVM-14
✓	✓	CXM-18
	✓	CLM-22

#### **LPF11180-ZHE**



Luminus LED Pin Fin cooler ø111mm - h80mm - Rth 1.07°C/W Cooling performance 4,800 - 9,600 lm

Direct mount	Zhaga holder	Luminus XNova LED array
	<b>₹</b>	CXM-11 (AC), CHM-11-XH00 CLM-14 (AC), CXM-14 (AC), CHM-14 (AC)
	<b>✓</b>	, CVM-14 CXM-18, CVM-18 CLM-22, CXM-22

### CoolStar® White 4740



Luminus Designer LED Star cooler Ø47mm - h40mm - Rth 5°C/W

Cooling performance 1,000 - 2,000 im		
Direct mount	Zhaga holder	Luminus XNova LED array
	<b>V</b>	CLM-9 (AC), CXM-9 (AC)

#### CoolStar® White 4760



Luminus Designer LED Star cooler ø47mm - h60mm - Rth 4.17°C/W Cooling performance 1,200 - 2,400 lm

Direct mount	Zhaga holder	Luminus XNova LED array
✓	✓	CLM-9 (AC), CXM-9 (AC), CHM-9 (AC)

#### CoolStar® White 6730



Luminus Designer LED Star cooler ø67mm - h30mm - Rth 3.13°C/W Cooling performance 1,600 - 3,100 lm

Direct mount	Zhaga holder	Luminus XNova LED array
<b>▼</b>	<b>▽</b>	CLM-9 (AC), CXM-9 (AC), CHM-9 (AC) CXM-11 (AC) CLM-14 (AC), CXM-14 (AC)



#### **CoolStar® White 6760**

Luminus Designer LED Star cooler ø67mm - h60mm - Rth 2.27°C/W Cooling performance 2,100 - 4,200 lm

Direct mount		Luminus XNova LED array
<b>V</b>	<b>V</b>	CLM-9 (AC), CXM-9 (AC), CHM-9 (AC) CXM-11 (AC) CLM-14 (AC), CXM-14 (AC), CHM-14 (AC)



#### CoolStar® White 8630

Luminus Designer LED Star cooler ø86mm - h30mm - Rth 2.08°C/W Cooling performance 2,300 - 4,600 lm

Direct mount	Zhaga holder	Luminus XNova LED array
<b>✓</b>	<b>✓</b>	CXM-11 (AC) CLM-14 (AC), CXM-14 (AC), CHM-14 (AC)



#### CoolStar® White 8660

Luminus Designer LED Star cooler Ø86mm - h60mm - Rth 1.56°C/W Cooling performance 3,100 - 6,100 lm

Direct mount	Zhaga holder	Luminus XNova LED array
<b>✓</b>	7 7	CHM-11-XH00 CHM-14 (AC) CLM-22, CXM-22



#### **ModuLED Pico 4750**

Luminus Modular LED Star cooler Ø47mm - h50mm - Rth 5.3°C/W Cooling performance 900 - 1,800 lm

Direct mount	Zhaga holder	Luminus XNova LED array
<b>✓</b>	<b>✓</b>	CLM-9 (AC), CXM-9 (AC), CHM-9 (AC)



#### **ModuLED Pico 4780**

Luminus Modular LED Star cooler ø47mm - h80mm - Rth 4.2°C/W Cooling performance 1,200 - 2,300 lm

Direct mount		Luminus XNova LED array
✓ ✓	<b>₩</b>	CLM-9 (AC), CXM-9 (AC), CHM-9 (AC) CXM-11 (AC) CLM-14 (AC), CXM-14 (AC), CHM-14 (AC)



#### **ModuLED Nano 7050**

Luminus Modular LED Star cooler ø70mm - h50mm - Rth 2.2°C/W Cooling performance 2,200 - 4,300 lm

mount	Zhaga holder	Luminus XNova LED array
V	✓	CLM-9 (AC), CXM-9 (AC), CHM-9 (AC) CXM-11 (AC), CHM-11-XH00
✓		
✓		CLM-14 (AC), CXM-14 (AC), CHM-14 (AC)
	✓	CXM-18



#### **ModuLED Nano 7080**

Luminus Modular LED Star cooler Ø70mm - h80mm - Rth 1.8°C/W Cooling performance 2,700 - 5,300 lm

Direct mount	Zhaga holder	Luminus XNova LED array
7	<b>777 77</b>	CLM-9 (AC), CXM-9 (AC), CHM-9 (AC) CXM-11 (AC), CHM-11-XH00 CLM-14 (AC), CXM-14 (AC), CHM-14 (AC) , CVM-14 CXM-18 CLM-22



#### **ModuLED Micro 8650**

Luminus Modular LED Star cooler Ø86mm - h50mm - Rth 1.5°C/W Cooling performance 3,200 - 6,400 lm

Direct mount	Zhaga holder	Luminus XNova LED array
<b>✓</b>	V V	CHM-9 (AC) CXM-11 (AC), CHM-11-XH00 CLM-14 (AC), CXM-14 (AC), CHM-14 (AC) , CVM-14
	<b>V</b>	CXM-18 CLM-22



#### **ModuLED Micro 8680**

Luminus Modular LED Star cooler ø86mm - h80mm - Rth 1.2°C/W Cooling performance 4,000 - 8,000 lm

Direct mount	Zhaga holder	Luminus XNova LED array
<b>✓</b>	<b>✓</b>	CXM-11 (AC), CHM-11-XH00
✓	✓	CLM-14 (AC), CXM-14 (AC), CHM-14 (AC)
		, CVM-14
	✓	CXM-18, CVM-18
	✓	CLM-22, CXM-22



#### **ModuLED 9950**

Luminus Modular LED Star cooler ø99mm - h50mm - Rth 1.34°C/W Cooling performance 3,600 - 7,200 lm

Direct Zhaga mount holder		Luminus XNova LED array
	<b>✓</b>	CXM-11 (AC), CHM-11-XH00
	✓	CXM-11 (AC), CHM-11-XH00 CLM-14 (AC), CXM-14 (AC), CHM-14 (AC)
		, CVM-14
	✓	CXM-18
✓	✓	CLM-22, CXM-22

# ModuLED 9980 Modular LED Star cooler

Luminus Modular LED Star cooler ø99mm - h80mm - Rth 1.02°C/W Cooling performance 4,700 - 9,400 lm

Direct mount	Zhaga holder	Luminus XNova LED array
	✓	CXM-11 (AC), CHM-11-XH00
	✓	CXM-11 (AC), CHM-11-XH00 CLM-14 (AC), CXM-14 (AC), CHM-14 (AC)
		, CVM-14
	✓	CXM-18, CVM-18
✓	✓	CLM-22, CXM-22

## ModuLED Mega 13420

Luminus Modular LED Star cooler ø134mm - h20mm - Rth 1.32°C/W Cooling performance 3,700 - 7,300 lm

Direct mount	Zhaga holder	Luminus XNova LED array
	✓	CHM-11-XH00
	✓	CHM-14 (AC), CVM-14
	✓	CXM-18, CVM-18
✓	✓	CLM-22, CXM-22



#### **ModuLED Mega 13450-HBG**

Luminus High Bay LED cooler with direct mounting holes for Mean Well HBG series driver

ø134mm - h50mm - Rth 0.88°C/W Cooling performance 5,500 - 11,000 lm



#### **ModuLED Mega 134100-HBG**

Luminus High Bay LED cooler with direct mounting holes for Mean Well HBG series driver

ø134mm - h100mm - Rth 0.67°C/W Cooling performance 7,200 - 14,300 lm

Direct mount	Zhaga holder	Luminus XNova LED array
✓	<b>V</b>	CVM-18 CLM-22, CXM-22, CHM-22



#### **ModuLED Giga 15220**

Luminus Modular LED Star cooler ø152mm - h20mm - Rth 1.13°C/W Cooling performance 4,300 - 8,500 lm

Direct mount	Zhaga holder	Luminus XNova LED array
✓	V V	CVM-14 CVM-18 CLM-22, CXM-22, CHM-22



## ModuLED Giga 15250

Luminus Modular LED Star cooler Ø152mm - h50mm - Rth 0.7°C/W Cooling performance 6,800 - 13,500 lm

Direct mount	Zhaga holder	Luminus XNova LED array
	✓	CVM-14
✓	✓	CLM-22, CXM-22, CHM-22



#### ModuLED Giga 152100-HBG

Luminus High Bay LED cooler with direct mounting holes for Mean Well HBG series driver

ø152mm - h100mm - Rth 0.52°C/W Cooling performance 9,000 - 18,000 lm

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Direct mount	Zhaga holder	Luminus XNova LED array
✓	✓	CLM-22, CXM-22, CHM-22



## ModuLED Giga 152150-HBG

Luminus High Bay LED cooler with direct mounting holes for Mean Well HBG series driver

ø152mm - h150mm - Rth 0.46°C/W Cooling performance 10,500 - 21,000 lm

Direct mount	Zhaga holder	Luminus XNova LED array	
✓	<b>V</b>	CLM-22, CXM-22, CHM-22 CXM-32	



## CoolBay® Giga-A

Luminus High Bay LED cooler with CoolTube® heat tube and direct mounting holes for Mean Well HBG series driver Ø152mm - h200mm - Rth 0.34°C/W Cooling performance 14,500 - 29,000 lm

Direct mount	With holder	Luminus XNova LED array
<b>▼</b>	✓	CXM-32



## CoolBay® Giga-B

Luminus High Bay LED cooler with CoolTube® heat tube and direct mounting holes for Mean Well HBG series driver Ø152mm - h200mm - Rth 0.34°C/W Cooling performance 14,500 - 29,000 lm

Direct mount	With holder	Luminus XNova LED array
	<b>▼</b>	CXM-32



## CoolBay® Tera-A

Luminus High Bay LED cooler with CoolTube® heat tube and direct mounting holes for Mean Well HBG series driver ø192mm - h250mm - Rth 0.22°C/W Cooling performance 22,000 - 44,000 lm

		Luminus XNova LED array
<b>V</b>	✓	CXM-32, CVM-32



## CoolBay® Tera-B

Luminus High Bay LED cooler with CoolTube® heat tube and direct mounting holes for Mean Well HBG series driver Ø192mm - h250mm - Rth 0.22°C/W Cooling performance 22,000 - 44,000 lm

Direct mount	With holder	Luminus XNova LED array
	✓	CXM-32, CVM-32



## CoolBlock® SQ-01 2x2MX

Square Pin Fin LED Cooler for 2x2MX platform. Accommodating LED boards with 4 LEDs of Luminus CHM-9 (18V), GEN3 CXM-9 (18V) COB by using 2x2MX Bender+Wirth holder and Ledil Strada 2x2MX lenses for IP67 waterproof with just a few screws

W96mm - L96mm - H61.5mm Thermal resistance Rth 1.45°C/W Cooling performance 3,300 - 6,500 lm Black electro-coating



#### IceLED 550

Luminus Modular Active LED cooler ø99mm - h55mm - Rth 0.46°C/W Cooling performance 10,500 - 21,000 lm

Direct mount	Zhaga holder	Luminus XNova LED array
✓	<b>V</b>	CVM-14 CLM-22, CXM-22, CHM-22



Luminus Modular Active LED cooler ø99mm - h75mm - Rth 0.25°C/W Cooling performance 19,000 - 38,000 lm

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✓

rirect | Zhaga | Luminus XNova LED array

CLM-22, CXM-22, CHM-22

