

Mastering LED Cooling

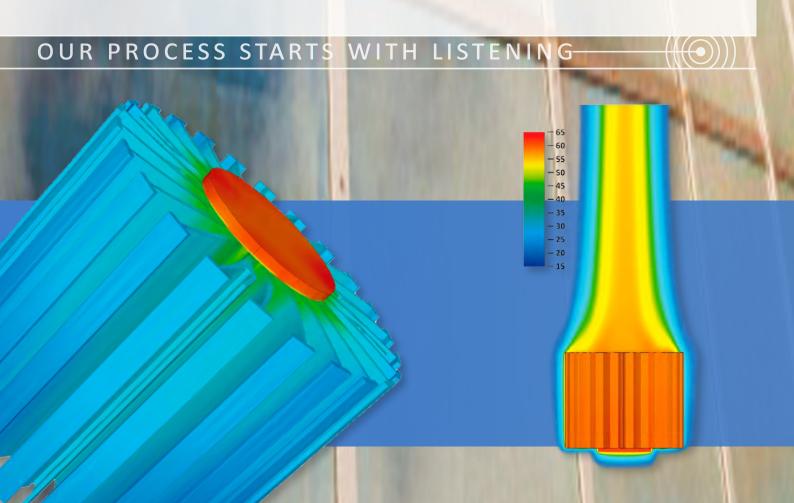
With the evolution of LED lighting over the last years, the demand for professional thermal solutions has grown exponentially. And now that we no longer remain in the realm of low power LED's, thermal management becomes a critical factor within LED fixtures. To that end, MechaTronix has developed several 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 Philips LED modules. 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 Philips Fortimo LED modules 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.



PHILIPS FORTIMO LED COOLING

Philips Fortimo SLM Gen4, Gen6 Philips Fortimo DLM Gen5

LPF4768-ZHP

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



Zhaga holder	Philips Fortimo LED COB
	SLM Gen 4 1100, 2000
✓	SLM Gen6 1202
✓	SLM Gen6 1203, 1205, 1208
	V

LPF6050-ZHC

Philips Fortimo LED Pin Fin cooler Ø60mm - h50mm - Rth 4.0°C/W Cooling performance 1,200 - 2,300 lm



mount	Zhaga holder	Philips Fortimo LED CO
V		SLM Gen 4 1100, 2000 SLM Gen6 1202, 1205, 1208
	✓	SLM Gen6 1202, 1205, 1208
V	U U	SIM Gen6 1203

LPF6768-ZHP

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



Cooling performance 2,500 - 4,600 im			
Direct mount	Zhaga holder	Philips Fortimo LED COB	
▽	☑	SLM Gen4 1100, 2000, 3000 SLM Gen6 1203, 1205, 1208	

LPF8050-ZHC

Philips Fortimo LED Pin Fin cooler Ø80mm - h50mm - Rth 2.34°C/W Cooling performance 2,000 - 4,000 lm



Direct mount	Zhaga holder	Philips Fortimo LED COB		
▽	▽	SLM Gen4 1100 , 2000 , 3000 SLM Gen6 1205, 1208 SLM Gen6 1203		

LPF8668-ZHC



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

Direct mount	Zhaga holder	Philips Fortimo LED COB
▽	V	SLM Gen4 2000, 3000, 4500, 3800 SLM Gen6 1205, 1208, 1211, 1216

LPF11180-ZHE

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

Direct mount	Zhaga holder	Philips Fortimo LED COB
✓	✓	SLM Gen4 3000, 4500, 3800 SLM Gen4 1205, 1208, 1211, 1216

PHILIPS FORTIMO LED COOLING

Philips Fortimo SLM Gen4, Gen6 **Philips Fortimo DLM Gen5**

CoolStar® White 4740

Philips Fortimo Designer LED Star cooler ø47mm - h40mm - Rth 5°C/W Cooling performance 1,000 - 2,000 lm



ct int	Zhaga holder	Philips Fortimo LED
ī		SLM Gen4 1100
	✓	SLM Gen6 1202
	✓	SLM Gen6 1203

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CoolStar® White 4760

Philips Fortimo DesignerLED Star cooler ø47mm - h60mm - Rth 4.17°C/W Cooling performance 1,200 - 2,400 lm

Direct mount	Zhaga holder	Philips Fortimo LED COB
V		SLM Gen4 1100
	✓	SLM Gen6 1202
✓	✓	SLM Gen6 1203

CoolStar® White 6730

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



Direct Z	haga	Philips	Fortimo	LED COB
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	SLM G	en4 110	0, 2000	
√	SLM G	en6 120	3, 1205	, 120



CoolStar® White 6760

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

Direct mount	Zhaga holder	Philips Fortimo LED COB
V	▼	SLM Gen4 1100, 2000, 3000 SLM Gen6 1203, 1205, 1208 SLM Gen6 1203

CoolStar® White 8630

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



Direct	Zhaga	Philips Fortimo LED COB	
mount	holder	r milips i oi timo ello cob	

SLM Gen4 1100, 2000, 3000 SLM Gen6 1203, 1205, 1208



CoolStar® White 8660

Philips Fortimo Designer LED Star cooler ø86mm - h60mm - Rth 1.56°C/W Cooling performance 3,100 - 6,100 lm

Direct	Zhaga holder	Philips Fortimo LED COB
▼	Z	SLM Gen4 1100, 2000, 3000 SLM Gen4 4500, 3800 SLM Gen6 1205, 1208, 1211, 1216

ModuLED Pico 4750

Philips Fortimo Modular LED Star cooler ø47mm - h50mm - Rth 5.3°C/W Cooling performance 400 - 1,400 lm



Direct Zhaga holder Philips Fortimo LED CC
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SLM Gen4 1100 ✓ SLM Gen6 1202 **V** SLM Gen6 1203 V



ModuLED Pico 4780

Philips Fortimo Modular LED Star cooler ø47mm - h80mm - Rth 4.2°C/W Cooling performance 600 - 1,800 lm



ount	holder	Philips Fortimo LED CO
./		SLM Gen/ 1100 2000

✓		SLM Gen4 1100, 2000
	✓	SLM Gen6 1202
✓	✓	SLM Gen4 1100, 2000 SLM Gen6 1202 SLM Gen6 1203, 1205

PHILIPS FORTIMO LED COOLING

Philips Fortimo SLM Gen4, Gen6 Philips Fortimo DLM Gen5



ModuLED Nano 7050

Philips Fortimo Modular LED Star cooler Ø70mm - h50mm - Rth 2.2°C/W Cooling performance 1,000 - 3,100 lm

Direct mount	Zhaga holder	Philips Fortimo LED COB
▽	✓	SLM Gen4 1100, 2000, 3000 SLM Gen6 1202 SLM Gen6 1203, 1205, 1208
M	M	3LW Geno 1203, 1203, 1206



ModuLED Nano 7080

Philips Fortimo Modular LED Star cooler ø70mm - h80mm - Rth 1.8°C/W Cooling performance 1,200 - 3,800 lm

Direct mount	Zhaga holder	Philips Fortimo LED COB
✓	▽	SLM Gen4 1100, 2000, 3000 SLM Gen6 1205, 1208 SLM Gen6 1216



ModuLED Micro 8630

Philips Fortimo Modular LED Star cooler ø86mm - h30mm - Rth 1.8°C/W Cooling performance 2,700 - 5,300 lm

Direct mount	Zhaga holder	Philips Fortimo LED COB
✓		SLM Gen4 1100, 2000, 3000 SLM Gen6 1205, 1208
▼	✓	SLM Gen6 1216 DLM Gen5 2000, 3000



ModuLED Micro 8650

Philips Fortimo Modular LED Star cooler ø86mm - h50mm - Rth 1.5°C/W Cooling performance 1,500 - 4,500 lm

Direct	Zhaga holder	Philips Fortimo LED COB
▼ ▼ ▼	7	SLM Gen4 1100, 2000, 3000 SLM Gen4 4500, 3800 SLM Gen6 1205, 1208 SLM Gen6 1211, 1216 DLM Gen5 3000



ModuLED Micro 8680

Philips Fortimo Modular LED Star cooler ø86mm - h80mm - Rth 1.2°C/W Cooling performance 1,800 - 5,500 lm

Direct	Zhaga holder	Philips Fortimo LED COB	
▽	V	SLM Gen4 3000, 4500, 3800 SLM Gen6 1208 SLM Gen6 1211, 1216	



ModuLED Xtra 9950

Philips Fortimo Modular LED Star cooler ø99mm - h50mm - Rth 1.34°C/W Cooling performance 1,600 - 5,000 lm

Direct mount	Zhaga holder	Philips Fortimo LED COB
▽	V	SLM Gen4 2000, 3000, 4500, 3800 SLM Gen6 1205, 1208 SLM Gen6 1211, 1216



ModuLED Xtra 9980

Philips Fortimo Modular LED Star cooler Ø99mm - h80mm - Rth 1.02°C/W Cooling performance 2,100 - 6,400 lm

Cool	Cooling performance 2,100 - 6,400 lm		
Direct mount	Zhaga holder	Philips Fortimo LED COB	
V	▽	SLM Gen4 3000, 4500, 3800 SLM Gen6 1208 SLM Gen6 1211, 1216	



ModuLED Mega 13420

Philips Fortimo Modular LED Star cooler Ø134mm - h20mm - Rth 1.32°C/W Cooling performance 1,600 - 5,000 lm

Direct mount	Zhaga holder	Philips Fortimo LED COB
₹	▽	SLM Gen4 2000, 3000, 4500, 3800 SLM Gen6 1205, 1208 SLM Gen6 1211, 1216

PHILIPS FORTIMO LED COOLING Philips Fortimo SLM Gen4, Gen6 **Philips Fortimo DLM Gen5** ModuLED Mega 13450-HBG ModuLED Mega 134100-HBG Philips Fortimo High Bay LED cooler with Philips Fortimo High Bay LED cooler with driver connection system ø134mm - h50mm - Rth 0.88°C/W driver connection system ø134mm - h100mm - Rth 0.67°C/W Cooling performance 3,300 - 10,000 lm Cooling performance 2,400 - 7,300 lm



Direct mount	Zhaga holder	Philips Fortimo LED COB
▽	▽	SLM Gen4 3000, 4500, 3800 SLM Gen6 1208 SLM Gen6 1211, 1216



Direct mount	Zhaga holder	Philips Fortimo LED COB
✓	✓	SLM Gen6 1216



ModuLED Giga 15220

Philips Fortimo Modular LED Star cooler ø152mm - h20mm - Rth 1.13°C/W Cooling performance 2,000 - 6,000 lm

Direct mount	Zhaga holder	Philips Fortimo LED COB
✓	▽	SLM Gen4 3000, 4500, 3800 SLM Gen6 1208, 1211, 1216



ModuLED Giga 15250

Philips Fortimo Modular LED Star cooler ø152mm - h50mm - Rth 0.7°C/W Cooling performance 3,000 - 9,000 lm

Direct mount	Zhaga holder	Philips Fortimo LED COB
▼	✓	SLM Gen6 1211, 1216

