



ActiLED ActiLED-F9670 Series Active Heat Sinks Ø96mm for COB Modular Product Brief

Features VS Benefits

- * Mechanical compatibility with direct mounting of the LED modules to the LED cooler and thermal performance matching the lumen packages.
- * Thermal resistance range Rth (0.64°C/W).
- * Modular design with mounting holes foreseen for direct mounting of a wide range of LED modules and COB's:
- * Diameter 96mm - Standard height 70.0mm , Other heights on request.
- * Extruded from highly conductive aluminum.
- 2 standard colors - clear anodised - black anodised
- Zhaga Book 3 Spot Light Modules Edison ,Xicato ,Bridgelux , Osram ,Citizen ,Lumileds ,Cree ,
- Tridonic , Vossloh-Schwabe ,Seoul ,LG ,Lustrous ,Prolight ,Samung , SHARP , Luminus .Philips



- 1) Bridgelux ESS, ESR, Vero 10, Vero 13, Vero 18, V-series;
- 2) Citizen CLL022-CLU028, CLL032-CLU038, CLL040-CLU048, CLL055-CLU058;
- 3) Cree XLamp CXA13xx, CXA15xx, CXA18xx, CXA25xx, CXA30xx;
- 4) Philips Fortimo SLM LED engines.
- 5) Lumileds Luxeon COB's 1203, 1204, 1205, 1208, 1212, Luxeon K arrays K12, K16;
- 6) LG Innotek LEMWM18 27W, 24W, 40W, 60W, 80W;
- 7) Seoul Semiconductor ZC25, ZC40, ZC60, ZC100 Series;
- 8) Tridonic TALEXX module SLE Modules engines;
- 9) Edison EdiLex SLM and EdiLex II COB LED engines;
- 10) OSRAM PrevaLED Core, SOLERIQ P, SOLERIQ E and SOLERIQ S LED engines;
- 11) Prolight Opto PABS, PABA, PACB, PANA;
- 12) SHARP Tiger Zenigata and Mega Zenigata LED engines;
- 13) Samung COB LC026B, LC033B, LC040BCOB LED engines;
- 14) Vossloh-Schwabe Vossloh-Schwabe LUGA Shop LED engines;

Order Information

Example: FanLED-F9670-B-#

Example: FanLED-F96 **1** - **2** - **3**

- 1** Hight (mm)
- 2** Anodising Color
- B-Black
- C-Clear
- Z-Custom
- 3** Mounting Options - see graphics for details Combinations available
- Ex.order code - 12
- means option 1 and 2 combined

MingFa 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.

Notes:

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



ActiLED ActiLED-F9670 Series Active Heat Sinks $\Phi 96\text{mm}$ for COB Modular Product Brief

The product data table



Brand	Mingfa Tech		
Series Name	ActiLED Active heat sink		
Seriest Number	ActiLED-F9670		
Manufacturing Technology	Aluminum extrusion		
Material	AL6063-T5		
Color & Finishing	Black Anodized		
Certification	CE, ROHS, WEEE		
Fan date	Size:60x60x20mm;	Electric power:0.48W;	Speed:2900RPM ;
Diameter(mm)	$\Phi 96$		
Heat sink Height(mm)	50.0mm		
Max. Lumen	9000lm		
Dissipated Power (Ths-amb,50°C)	85.0W		
Thermal Resistance Rth (°C/W)	0.64°C/W		
Cooling Surface Area (mm²)	93676.2 mm²		
Net Weight (g)	315.0g		
Quantity(pcs/CTN)	24 pcs		
Modular Types	COB		
For Environments	Indoor area		
For Lightings	Down lights,Architectural lights		
For Application	Retail & Hospitality,Mall & Museums,Office		
For LED brands	Bridgelux,BJB,Citizen,Cree,Edison,GE,LG,Lumileds,Lumens,Luminus,Ledil,Nichia,Osram, Philips,Prolight Opto,Samsung,Seoul,Sharp,Tridonic,Vossloh Schwabe,Xicato,Zhaga		

* 3D files are available in ParaSolid, STP and IGS on request

* The thermal resistance Rth is determined with a calibrated heat source of 14mm×14mm 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

* 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: $P_d = P_e \times (1 - \eta_L)$

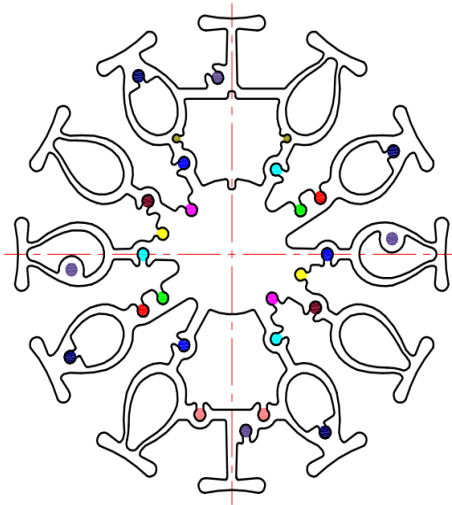
Pd - Dissipated power












Pe - Electrical power

η_L = Light efficiency of the LED module

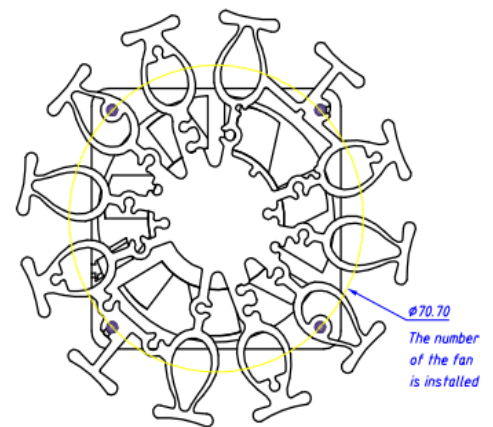
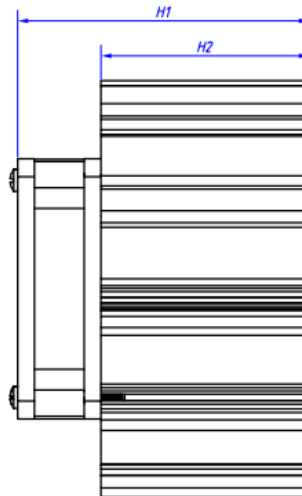
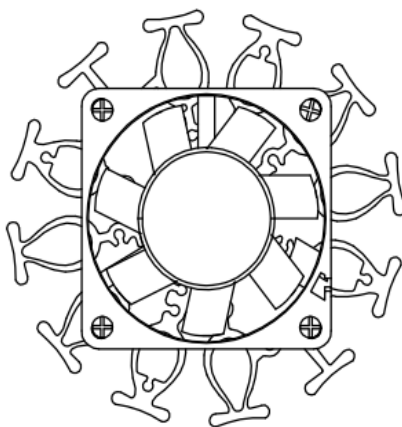
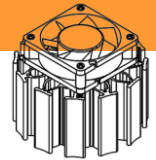
ActiLED ActiLED-F9670 Series $\Phi 96\text{mm}$ COB Active Heat Sink Drawings

Drawings & Type Selection

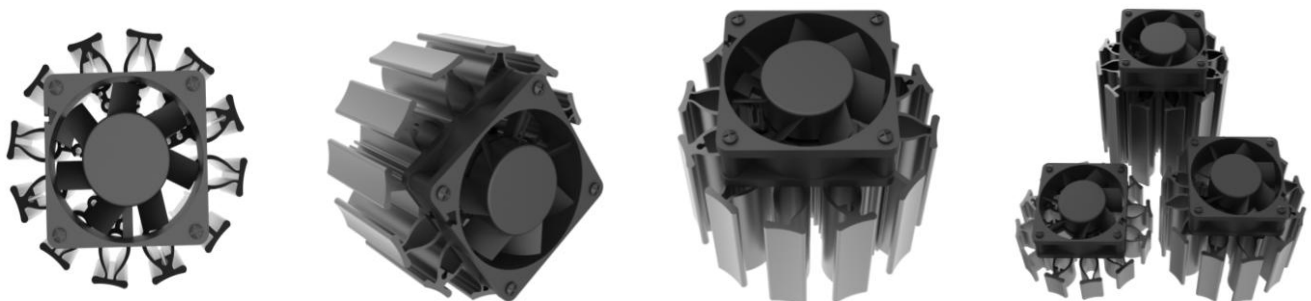


No.	Finish	Mounting hole
A1		25.0mm; 2xM3@180°
A2		31.4mm; 2xM3@180°
A3		35.0mm; 2xM3@180°
A4		39.0mm; 3xM3@120°
A5		42.0mm; 3xM3@120°
A6		42.5mm; 2xM3@180°
A7		45.0mm; 2xM3@180°
A8		70.7mm; 4xM3@90°
A9		82.0mm; 4xM3@90°
A10		14.0mm; 2xM3
A11		22.2mm; 2xM2

Fan Hole



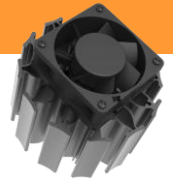
Product display



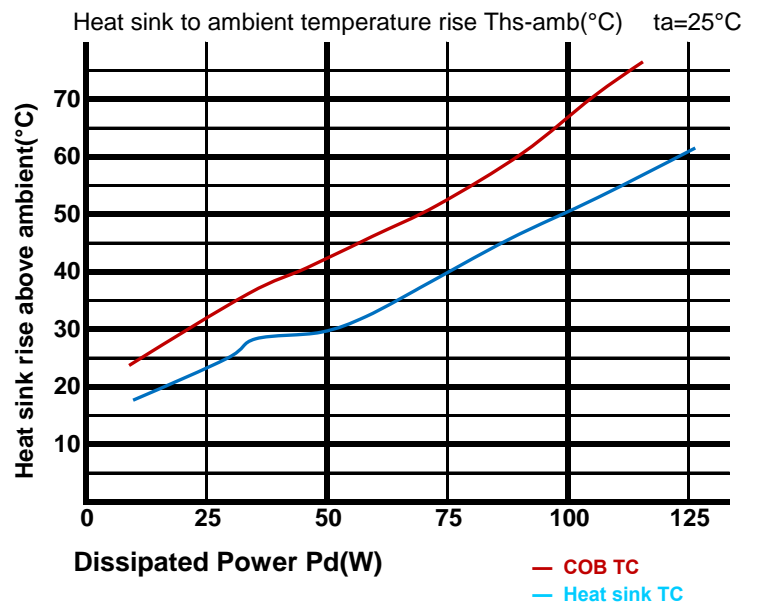


ActiLED ActiLED-F9670 Series $\Phi 96\text{mm}$ Active Cooling Thermal Data

The thermal data table



Dissipated Power Pd(W)	Pd = Pe x (1- η L)	Heat sink to ambient thermal resistance Rhs-amb (°C/W)	Heat sink to ambient temperature rise Ths-amb (°C)
		ActiLED-F9670	ActiLED-F9670
32.2		0.93	26.7
37.8		0.87	27.5
49.2		0.72	29.1
58.1		0.69	33
69.0		0.64	37.1
82.4		0.62	46.2



* Please be aware the dissipated power Pd is not the same as the electrical power Pe of a LED module.

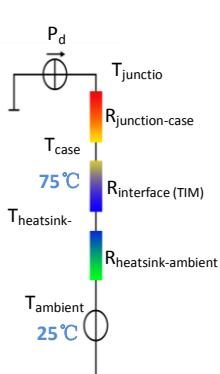
*To calculate the dissipated power please use the following formula: $P_d = P_e \times (1 - \eta_L)$.

Pd - Dissipated power ; Pe - Electrical power ; η_L = Light efficiency of the LED module;

*The aluminum substrate side of the package outer shell is thermally connected to the heat sink via TIM (Thermal interface material).

MingFa 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 resistance is a heat property and a measurement of a temperature difference by which an object or material resists a heat flow.

Geometric shapes are different, the thermal resistance is different. Formula: $\theta = (T_{hs} - T_a) / P_d$

θ - Thermal Resistance [°C/W] ; T_{hs} - Heatsink temperature ; T_a - Ambient temperature ;

*The thermal resistance between the junction section of the light-emitting diode and the aluminum substrate side of the package outer shell is $R_{\text{junction-case}}$, the thermal resistance of the TIM outside the package is $R_{\text{interface (TIM)}}$ [°C/W], the thermal resistance with the heat sink is $R_{\text{heatsink-ambient}}$ [°C/W], and the ambient temperature is T_{ambient} [°C].

*Thermal resistances outside the package $R_{\text{interface (TIM)}}$ and $R_{\text{heatsink-ambient}}$ can be integrated into the thermal resistance $R_{\text{case-ambient}}$ at this point. Thus, the following formula is also used:

$$T_{\text{junction}} = (R_{\text{junction-case}} + R_{\text{case-ambient}}) \cdot P_d + T_{\text{ambient}}$$