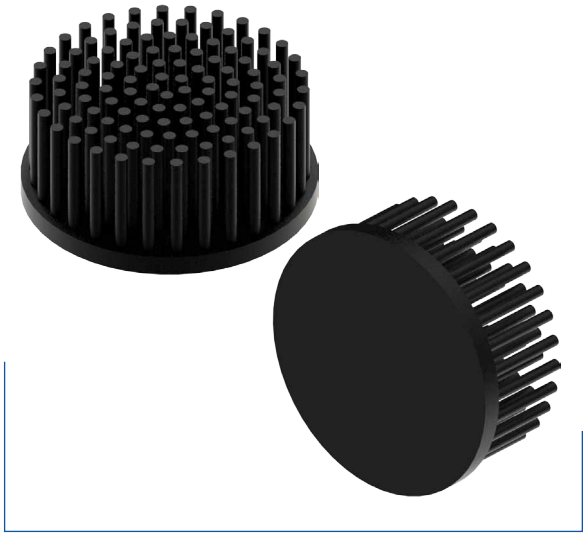
LPF70 LED Pin Fin Heatsink ø 70mm

Features & Benefits

- Designed for high-performance convection cooling of power LEDs, COB modules and LED engines
- Thermal resistance range Rth 3.0 - 4.1°C/W
  Cooling performance up to 22.66W (see thermal details)
- Diameter 60mm base
- Standard heights 30 - 40 - 50 mm
  Overall height can be customized from 10 to 60 mm
- Standard base thickness 5 mm
  Other base thicknesses on request
- Easy base plate customisation with mounting holes, cable guidance, reflector mounting options,...
- Forged from highly conductive aluminum with 117 round pins for maximum cooling surface
  Better performance under tilted positions compared to extruded LED heat sinks
- Standard colors clear anodised - black anodised



Order Information

Thermal Interface Material

Please make sure to apply a high thermal conductive material between the heat sink base and the LED engine with an applied thickness between 0.1mm and 0.2mm

Advised materials:

- Thermally Conductive Grease
  High performance, more difficult to apply and control the thickness
  Example Laird Technologies Tgrease 880
- Thermal Gap Filler Pad with eletrical insulation
  Medium to high performance, easy to apply
  Example Laird Technologies Tgard 500-A1
- Phase Change Thermal Interface Material
  This material applies like a thermal pad but becomes fluid and creates a perfect wetting at the first heating cycle
  Extra high performance, easy to apply
  Example Laird Technologies TPCM 585

Not using a suitable thermal conductive material will lead to either an insufficient wetting area or a high thermal resistance between LED engine and heat sink base both immediately resulting in an extra temperature increase of the LED junction

We do not advise the use of double sided thermal tapes without using extra mounting screws to create pressure

Thermal gap filler pads and phase change pads can be pre-applied by MechaTronix with specific cutting designs

Example: LPF70A30-5-B

LPF70 **1** **2** - **3** - **4**

1 Mechanical version
- A] Solid base
- B] Center hole ø 11.5mm
- C] 3*M3 mounting hole
- D] Center hole ø 11mm.5 + 3*M3 mounting hole
- XX] Customised

2 Height (pins+base) (mm) – 30, 40 or 50

3 Base thickness (mm) – 5 or customised

4 Anodising color
- B – Black
- C – Clear

customised painting colors on request

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MechaTronix

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Product Details

Model n°	LPF70A30	LPF70A40	LPF70A50
			
Dimension (mm)*1	ø70 x h30	ø70 x h40	ø70 x h50
Volume (mm^3)	39917	48188	56458
Cooling Surface (mm^2)	36363	47390	58417
Weight (gr)	107.78	130.11	152.44
Thermal Resistance (°C/W)*2	4.1	3.4	3.0
Power Pd (W)*3	12	15	17
Heat Sink Material	AL1070	AL1070	AL1070

*1 3D files are avaliable in ParaSolid, STP and IGS on request

*2 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

*3 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 x (1-ηL)
Pd - Dissipated power
Pe - Electrical power
ηL = Light effciency 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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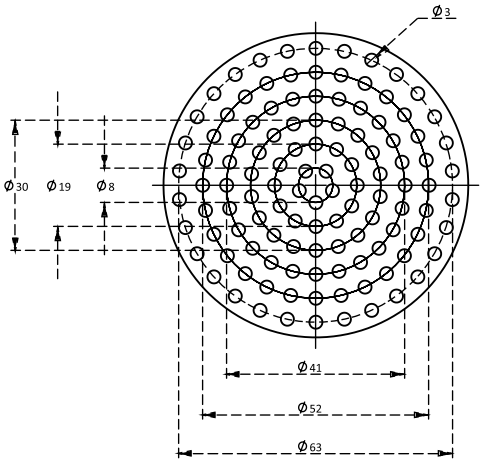
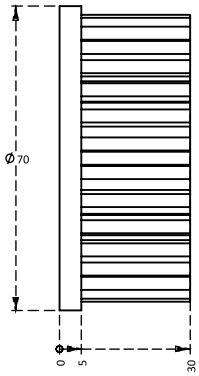
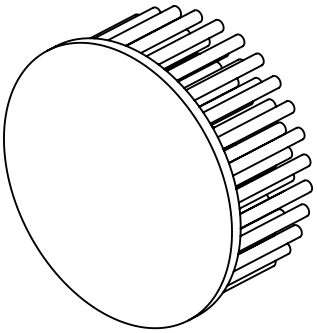
Drawings & Dimensions





Example: LPF70A30-5



A Mechanical version

Solid base

B Mechanical version

Center hole
ø 11.5mm

C Mechanical version

3*M3 mounting hole

D Mechanical version

Center hole
ø11.5mm + 3*M3 mounting hole

Mechanical version A is the standard model and is kept in stock for fast sample delivery or adaptation to your needs
Afterwork on this stock model will be done by CNC what results in non-anodised holes and areas - average lead time for afterwork 2 weeks
Mechanical versions B/C/D are for illustration only to show possible mechanical adaptations and are not related to any specific brand or model outline design and mounting pattern - MOQ for these models is 1000pcs from production with lead time 6 weeks
Please see also the standard available brand specific LED Pin Fin heat sinks under the related brands

Examples of customised pin fin heat sinks:

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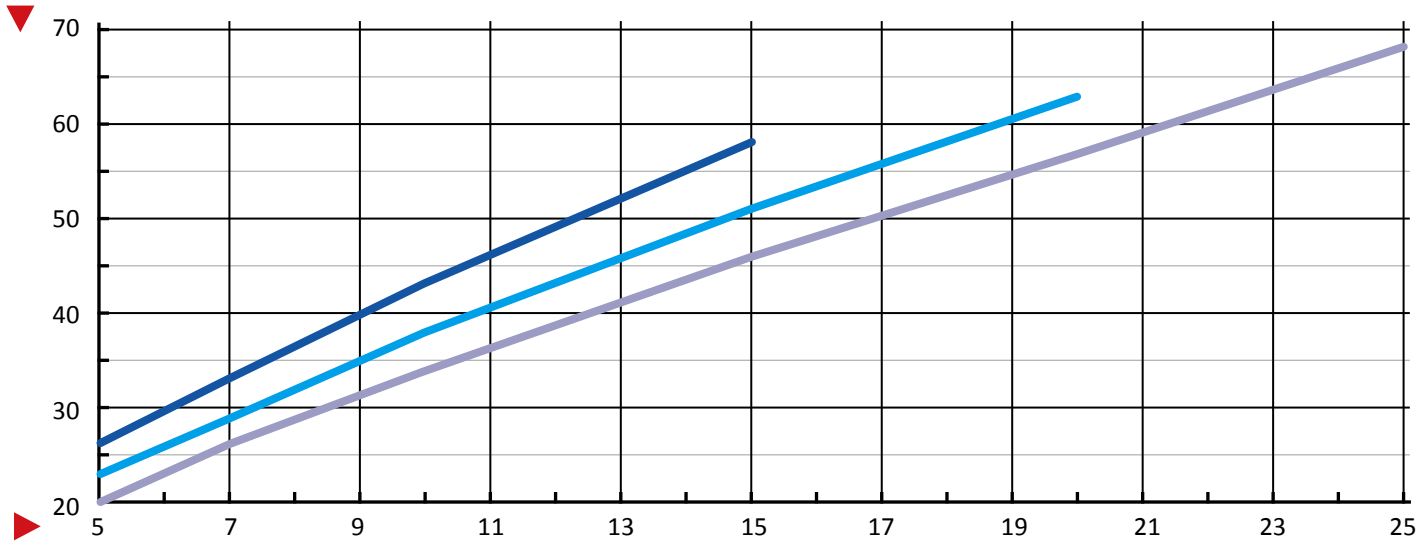
Thermal Data

Pd = Pe x (1-ηL)			LED Light efficiency, ηL (%)			Heat sink to ambient thermal resistance $R_{hs\text{-}amb}$ (°C/W)			Heat sink to ambient temperature rise $T_{hs\text{-}amb}$ (°C)		
			17%	20%	25%	LPF70A30	LPF70A40	LPF70A50	LPF70A30	LPF70A40	LPF70A50
Dissipated Power Pd(W)	5	Electrical Power Pe(W)	6.02	6.25	6.66	5.2	4.5	4.0	26	23	20
	7		8.43	8.75	9.33	4.7	4.1	3.7	33	29	26
	10		12.04	12.5	13.33	4.3	3.8	3.4	43	38	34
	15		18.07	18.75	20	3.9	3.4	3.1	58	51	46
	20		24.09	25	26.66	–	3.2	2.9	–	63	57
	25		30.12	31.25	33.33	–	–	2.7	–	–	68

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



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