IceLED Xtra GE Infusion Modular Active LED Cooler

Features & Benefits

- The IceLED Xtra active LED coolers are specifically designed for luminaires using the GE Infusion Spot Light Modules (GEN2 & GEN3) and the GE Infusion Down Light 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 3,000 to 10,000 lumen
- Thermal resistance Rth 0.46°C/W
- Modular design with mounting holes foreseen for direct mounting of the GE Infusion collar - Infusion module mounting by twist and lock operation
  - GE Infusion M1000 series - DLM1000 series
  - GE Infusion M1500 series - DLM1500 series
  - GE Infusion M2000 series - DLM2000 series
  - GE Infusion M3000 series - DLM3000 series
  - GE Infusion M4500 series - DLM4000 series
- Diameter 99mm - Height 55mm
- High lifetime design > 60Khrs (L 10 life time @40°C)
- Warranty 5 years

Order Information

Zhaga

GE Lighting

IceLED Xtra is designed in this way that you can mount various LED modules on the same LED cooler

Simple mounting with self tapping screws

Recommened screw force 6lb/in

Screws are avaliable from MechaTronix

Example : IceLED Xtra 550

IceLED Xtra	1

1 Height (mm)

Overall height top to bottom

(Fan height 25mm)

IceLED 550 - 55mm

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IceLED Xtra GE Infusion Modular Active LED Cooler

Product Details

Model n°	IceLED Xtra 550
Dimension (mm)*1	ø99 x h55
Fan Voltage (Vdc)*2	12
Fan Speed (RPM)	1500
Noise @ 1m (dBA)	<21
Weight (gr)	266
Thermal Resistance (°C/W)*3	0.46
Power Pd (W)*4	109
Heat Sink Material	AL6063-T5

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

*2 The fan requires a constant voltage power source of 12Vdc, 50mA

*3 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

*4 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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Mounting Options

The IceLED Xtra active LED coolers are standard foreseen from a variety of mounting holes which allow direct mounting of LED engines, COB's and secondary optics on the LED heat sink.

In this way mechanical afterwork and related costs can be avoided, and lighting designers can standardize their designs on a limited number of LED coolers.

Below you find an overview of GE Infusion LED modules which standard fit on the IceLED Xtra cooler.

For a full overview of avaliable LED coolers for GE Lighting, please refer to the GE Infusion LED cooler overview on www.led-heatsink.com/Download.php or scan the QR code here.

GE Lighting

Infusion M-series GEN2 & GEN3 Spot Light Modules

With lumen package from 1000-4500, a choice of colour temperatures, and a wide range of optics, the Infusion™ M-series offers almost unlimited versatility, enabling high efficacy solutions for offices, healthcare, hospitality, museums, retail and more. This flexbility, together with the innovative, easy-to-upgrade twist-fit design of the GE Infusion™ LED module, makes this one of the most popular LED lighting solutions on the market.

GE Lighting

Model names

- Infusion M1000 series
- Infusion M1500 series
- Infusion M2000 series
- Infusion M3000 series
- Infusion M4500 series

Mounting

- Direct mounting of the LED collar with 4 self tapping screws M4 x 6mm
  Mounting of the LED engine by twist and lock operation
  Green indicator marks

To determine the mounting holes you need, please use the corresponding flip chart on www.led-heatsink.com/download.php , or request a hard copy flip chart with easy to use transparant overlays.

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.

All GE Infusion LED modules are already foreseen from a thermal interface pad on the back side of the LED module, so extra precautions will not be necessary.

GE Lighting

Infusion DLM-series Down Light Modules

The Infusion™ DLM (Downlight Module) range is a versatile solution suitable for general lighting in retail and commercial office environments. Built with its own white light, excellent lumen performance and outstanding colour rendering.
And, like all GE Infusion™ modules, twist/ fit replacement means future-proof peace of mind.

GE Lighting

Model names

- Infusion DLM1000 series
- Infusion DLM1500 series
- Infusion DLM2000 series
- Infusion DLM3000 series
- Infusion DLM4000 series

Infusion NPM-series Narrow Punch Modules

The Infusion™ NPM (Narrow Punch Module) works with GE's innovative optical system to deliver a high-intensity, narrow-spot beam suitable for galleries, museums and others specialist applications requiring dramatic, controlled light. Suitable for track mounting, recessed accent lighting and spotlighting, no other product matches the quality NPM system in such a tight beam angle.

Model names

- MP30/827/W/N
- MP30/830/W/N
- MP30/930/W/N
- MP30/850/W/N

Mounting

- Direct mounting of the LED collar with 4 self tapping screws M4 x 6mm
  Mounting of the LED engine by twist and lock operation
  Green indicator marks

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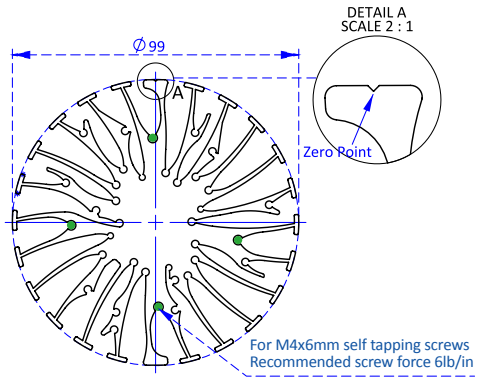
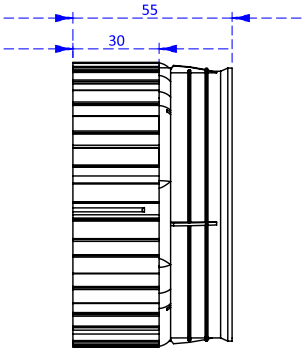
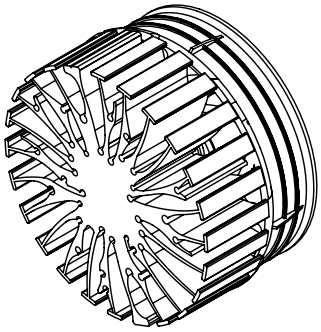
Drawings & Dimensions



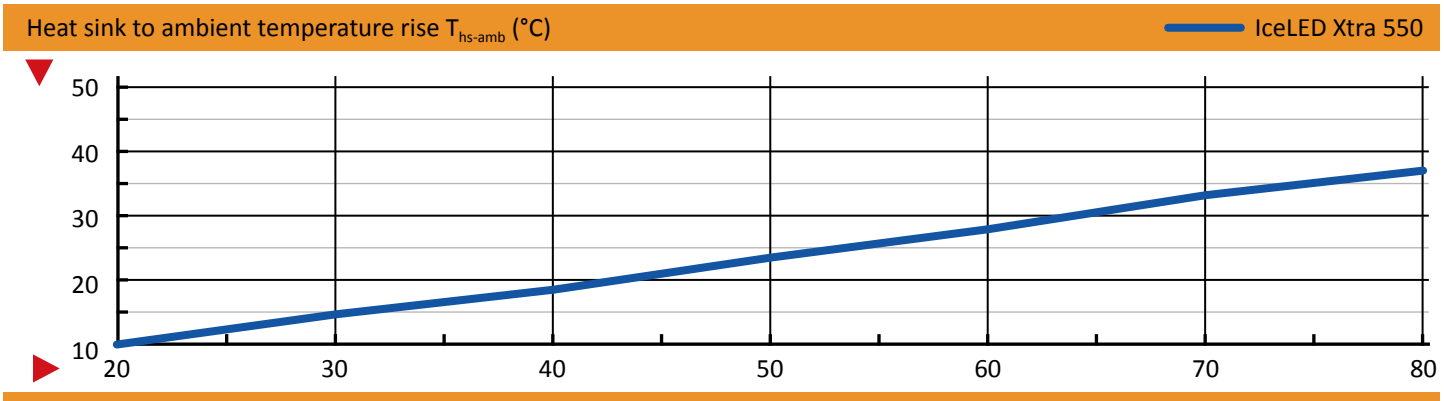


Example: IceLED Xtra 550



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%	IceLED Xtra 550	IceLED Xtra 550
Dissipated Power Pd(W)	20	Electrical Power Pe(W)	24.1	25.0	26.7	0.50	10
	25		30.1	31.3	33.3	0.49	12
	30		36.1	37.5	40.0	0.49	15
	35		42.2	43.8	46.7	0.49	17
	40		48.2	50.0	53.3	0.48	19
	50		60.2	62.5	66.7	0.48	24
	60		72.3	75.0	80.0	0.47	28
	70		84.3	87.5	93.3	0.47	33
	80		96.4	100.0	106.7	0.47	37



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Thermal Data

GE Lighting Infusion M-series recommended case temperature Tc≤80°C					
Model	Forward Current If (mA)	Electrical Power Pe (W)	Case Temperature Tc (°C) @Ambient Temperature Ta 25°C	Case Temperature Tc (°C) @Ambient Temperature Ta 40°C	Case Temperature Tc (°C) @Ambient Temperature Ta 50°C
			IceLED Xtra 550	IceLED Xtra 550	IceLED Xtra 550

Preliminary

GE Lighting Infusion DLM-series recommended case temperature Tc≤80°C					
Model	Forward Current If (mA)	Electrical Power Pe (W)	Case Temperature Tc (°C) @Ambient Temperature Ta 25°C	Case Temperature Tc (°C) @Ambient Temperature Ta 40°C	Case Temperature Tc (°C) @Ambient Temperature Ta 50°C
			IceLED Xtra 550	IceLED Xtra 550	IceLED Xtra 550

Preliminary

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IceLED Xtra GE Infusion Modular Active LED Cooler

Thermal Data

GE Lighting Infusion NPM-series recommended case temperature Tc≤80°C					
Model	Forward Current If (mA)	Electrical Power Pe (W)	Case Temperature Tc (°C) @Ambient Temperature Ta 25°C	Case Temperature Tc (°C) @Ambient Temperature Ta 40°C	Case Temperature Tc (°C) @Ambient Temperature Ta 50°C
			IceLED Xtra 550	IceLED Xtra 550	IceLED Xtra 550

Preliminary

Notes:

Above data is a compilation of real thermal measurements with the GE Infusion LED module mounted on the LED cooler.
As interface material between the LED module and the LED cooler we used thermal grease from Laird Technologies Tgrease 880.
The setup is placed in a vertical direction with the LED module facing down and in a free air convection environment (no forced air cooling)

For those combinations of LED module and LED cooler where the recommended case temperature is exceeded, this is indicated by the "-" symbol.
For those combinations of LED module and LED cooler where the field is left empty, this means the cooling power of the LED cooler is largely exceeding the needed cooling performance for that LED.
A suitable LED cooler for this combination can be found in the GE Infusion LED cooler overview on www.led-heatsink.com/Download.php

In case assistance is needed or for a thermal validation of your complete LED lighting design, please contact MechaTronix on led@mechatronix-asia.com

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