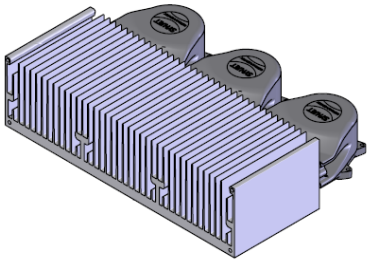
SynJet® LED Cooler L100-270

SynJet cooling provides the most reliable thermal management solution available. This LED cooler has been developed by Nuventix for cooling high power LED Luminaires.



- Cools up to 235 W[4]
- Reliable 100K Hours Lifetime
- Energy Efficient
- 5 Yr Warranty
- Small Form Factor
- Light Weight

Specifications[1]

Thermal & Acoustic (Single LED Heat Source 25cm^2)

SynJet Setting[2]	Θs-a[3] 3 SJ	TDP[4] (W) ΔT = 30° / 40°C 3 SJ	SPL (dBA)[5] 1 SJ / 3 SJ	Wire Connections	
High Performance	0.22	136 / 182	33	Red to +VDC Black & Blue to Ground	
PWM at 100% duty cycle	0.21	143 / 190	34	Red to +VDC Black only to Ground Blue to PWM Signal	

Thermal & Acoustic (3 LED Heat Sources 25cm^2 or One LED Heat Source 75cm^2)

SynJet Setting[6]	Θs-a[7] 3 SJ	TDP[8] (W) ΔT = 30° / 40°C 3 SJ	SPL (dBA)[9] 1 SJ / 3 SJ	Wire Connections	
High Performance	0.18	167 / 222	33	Red to +VDC Black & Blue to Ground	
PWM at 100% duty cycle	0.17	176 / 235	34	Red to +VDC Black only to Ground Blue to PWM Signal	

[1] All values are typical at 25ºC unless otherwise stated.
[2] The Level Select model should be used for discrete performance settings. Follow the instructions in the Product Design Guide for adjusting settings.
[3] Thermal resistance values are given as reference only and are measured in free air without airflow obstructions. Thermal resistance is measured from the bottom middle of the heat sink to ambient air measured at the inlet to the SynJet, with a heat source at least 15cm^2 using a reference heat sink. Actual thermal performance may vary by application and final product design should be tested to assure proper thermal performance.
[4] Thermal Design Power is based on a 30ºC or 40ºC temperature rise of heat sink mounting surface above ambient temperature around cooler.
[5] Sound Pressure Level is measured at 1 meter distance per ISO 7779.
[6] The Level Select model should be used for discrete performance settings. Follow the instructions in the Product Design Guide for adjusting settings.
[7] Thermal resistance values are given as reference only and are measured in free air without airflow obstructions. Thermal resistance is measured from the bottom middle of the heat sink to ambient air measured at the inlet to the SynJet, with a heat source at least 25cm^2 using a reference heat sink. Actual thermal performance may vary by application and final product design should be tested to assure proper thermal performance.
[8] Thermal Design Power is based on a 30ºC or 40ºC temperature rise of heat sink mounting surface above ambient temperature around cooler.
[9] Sound Pressure Level is measured at 1 meter distance per ISO 7779.

Electrical

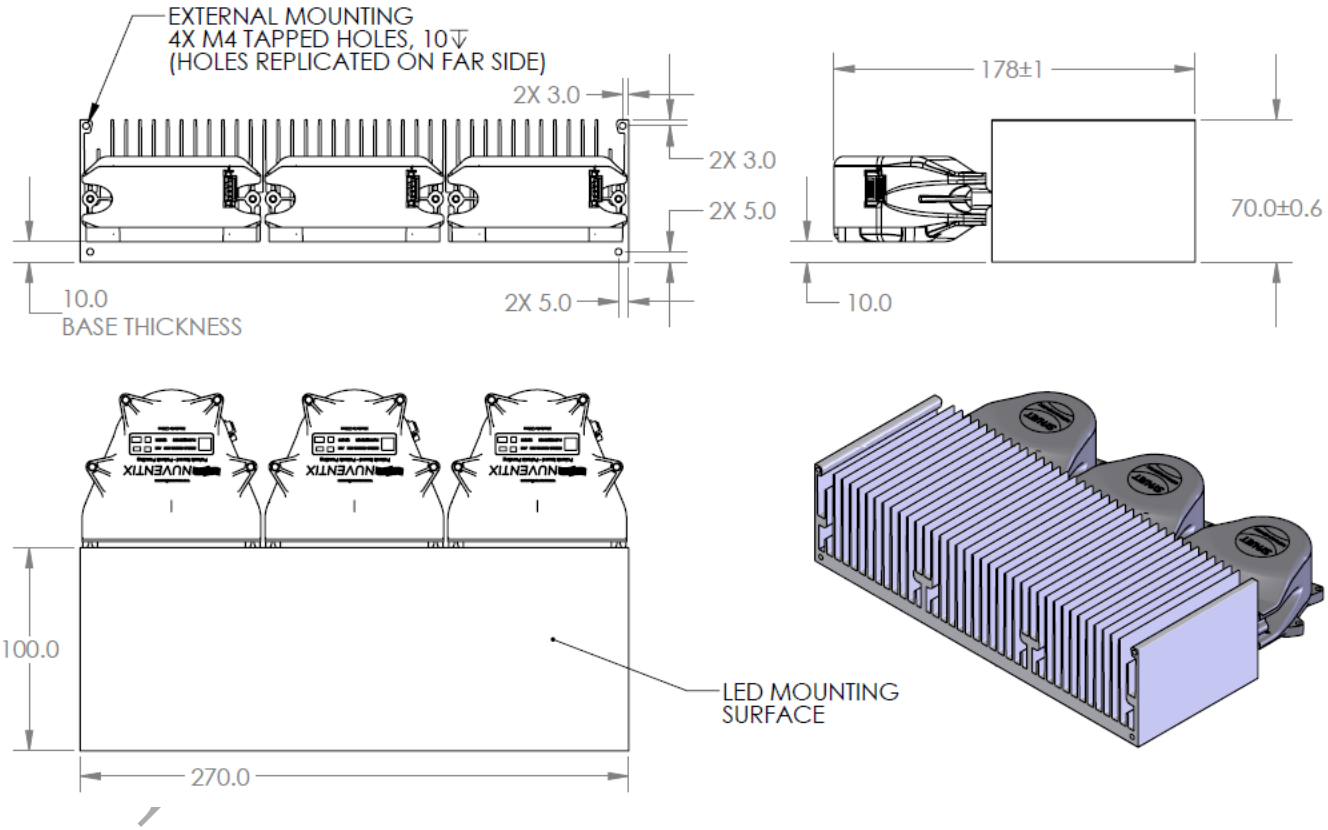
SynJet Setting[2]	Voltage (VDC) +/- 10%	Current (mA)[10]			Pavg (mW) 1/3 SJ	Voltage (VDC) +/- 10%	Current (mA)[6]			Pavg (mW) 1/3 SJ
		Imin 1/3 SJ	Iavg 1/3 SJ	Ipeak 1/3 SJ			Imin 1/3 SJ	Iavg 1/3 SJ	Ipeak 1/3 SJ	
High Performance	5	20/60	180/540	360/1080	0.90/2.70	12	10/30	92/276	184/552	1.10/3.30
PWM at 100% duty cycle		20/60	220/660	440/1320	1.10/3.30		10/30	115/345	230/690	1.38/4.14

Environmental

All Settings	Min	Max	Units	Conditions
Operating Temperature	-40	70	°C	Air temperature surrounding cooler
Storage Temperature	-50	75	°C	Air temperature surrounding cooler
Storage Altitude		15K	m	Above sea level
Operating Relative Humidity	5	95	%	Non-condensing
Weight		400	g	SynJet with Al heat sink
Reliability		100K	hrs	L10 @ 60°C
Regulatory Compliance				RoHS, UL, FCC Part 15 Class B, CE

Mechanical

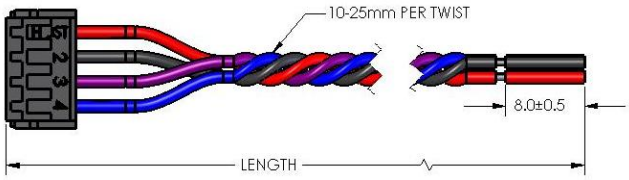
SynJet Cooling Solution shown with Configurable heat sink



All dimensions are nominal and in mm unless otherwise stated. See product drawings for more detail.

[10] The SynJet has a time varying current. The current waveform is sinusoidal and the average current (Iavg) is used to calculate the average power consumption (Pavg) at nominal input voltage (VDC). See the Electrical section in the Product Design Guide for a detailed explanation.

SynJet Wire Harness



Connector Pinout

Pin	Wire Color	Symbol	Description
1	Red	+VDC	5 V or 12 V depending on model
2	Black	GND	Ground
3	Purple	CTRL2	Input for Level Select model Status signal for PWM model
4	Blue	CTRL1	Input for Level Select model PWM input for PWM model

IMPORTANT: SynJets should be completely wired to the power supply before the power supply is energized. The power supply should be turned off before the SynJet Cooler is disconnected. SynJet Coolers are not designed for “hot swap” or “hot plug” applications.

Part Numbers

Part Number	Description	Notes
NX202100	SynJet, XFlow 42, PWM, 5V, Black	Use with PWM input to control performance setting
NX202101	SynJet, XFlow 42, Level Select, 5V, Black	Configurable to discrete performance settings
NX202102	SynJet, XFlow 42, PWM, 12V, Black	Use with PWM input to control performance setting
NX202103	SynJet, XFlow 42, Level Select, 12V, Black	Configurable to discrete performance settings
NX302103	Heatsink, LED Cooler L100-270, Configurable, Black	Contact sales for other heatsink options
WALLS-C4150-001	Wire Harness, 4-Wire, 150 mm Length	Contact sales for other wire harness options
WALLS-C4600-001	Wire Harness, 4-Wire, 600 mm Length	Contact sales for other wire harness options