

# SynJet® LED Cooler L100-180





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 174 W<sup>4</sup>
- Reliable 100K Hours Lifetime
- Energy Efficient
- 5 Yr Warranty
- Small Form Factor
- Light Weight







## Specifications<sup>1</sup>

### Thermal & Acoustic (Single LED Heat Source 25cm<sup>2</sup>)

SynJet Setting <sup>2</sup>	$\Theta_{s-a}$ <sup>3</sup> 2 SJ	TDP <sup>4</sup> (W) $\Delta T = 30^\circ / 40^\circ C$ 2 SJ	SPL (dBA) <sup>5</sup> 1 SJ / 2 SJ	Wire Connections	
PWM at 100% duty cycle	0.25	120 / 160	30 / 32	Red to +VDC Black only to Ground Blue to PWM Signal	
High Performance	0.26	115 / 154	29 / 31	Red to +VDC Black & Blue to Ground	
Standard Performance	0.34	88 / 118	22 / 23	Red to +VDC Black only to Ground	
Silent Performance	0.43	70 / 93	18 / 19	Red to +VDC Black & Purple to Ground	

### Thermal & Acoustic (2 LED Heat Sources 25cm<sup>2</sup> or One LED Heat Source 75cm<sup>2</sup>)

SynJet Setting <sup>6</sup>	$\Theta_{s-a}$ <sup>3</sup> 2 SJ	TDP <sup>4</sup> (W) $\Delta T = 30^\circ / 40^\circ C$ 2 SJ	SPL (dBA) <sup>5</sup> 1 SJ / 2 SJ	Wire Connections	
PWM at 100% duty cycle	0.23	130 / 174	30 / 32	Red to +VDC Black only to Ground Blue to PWM Signal	
High Performance	0.24	125 / 167	29 / 31	Red to +VDC Black & Blue to Ground	
Standard Performance	0.32	94 / 125	22 / 23	Red to +VDC Black only to Ground	
Silent Performance	0.41	73 / 98	18 / 19	Red to +VDC Black & Purple to Ground	

<sup>1</sup> All values are typical at 25°C unless otherwise stated.

<sup>2</sup> The Level Select model should be used for discrete performance settings. Follow the instructions in the Product Design Guide for adjusting settings.

<sup>3</sup> 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<sup>2</sup> using a reference heat sink. Actual thermal performance may vary by application and final product design should be tested to assure proper thermal performance.

<sup>4</sup> Thermal Design Power is based on a 30°C or 40°C temperature rise of heat sink mounting surface above ambient temperature around cooler.

<sup>5</sup> Sound Pressure Level is measured at 1 meter distance per ISO 7779.

<sup>6</sup> The Level Select model should be used for discrete performance settings. Follow the instructions in the Product Design Guide for adjusting settings.

# PRODUCT DATASHEET

## Electrical

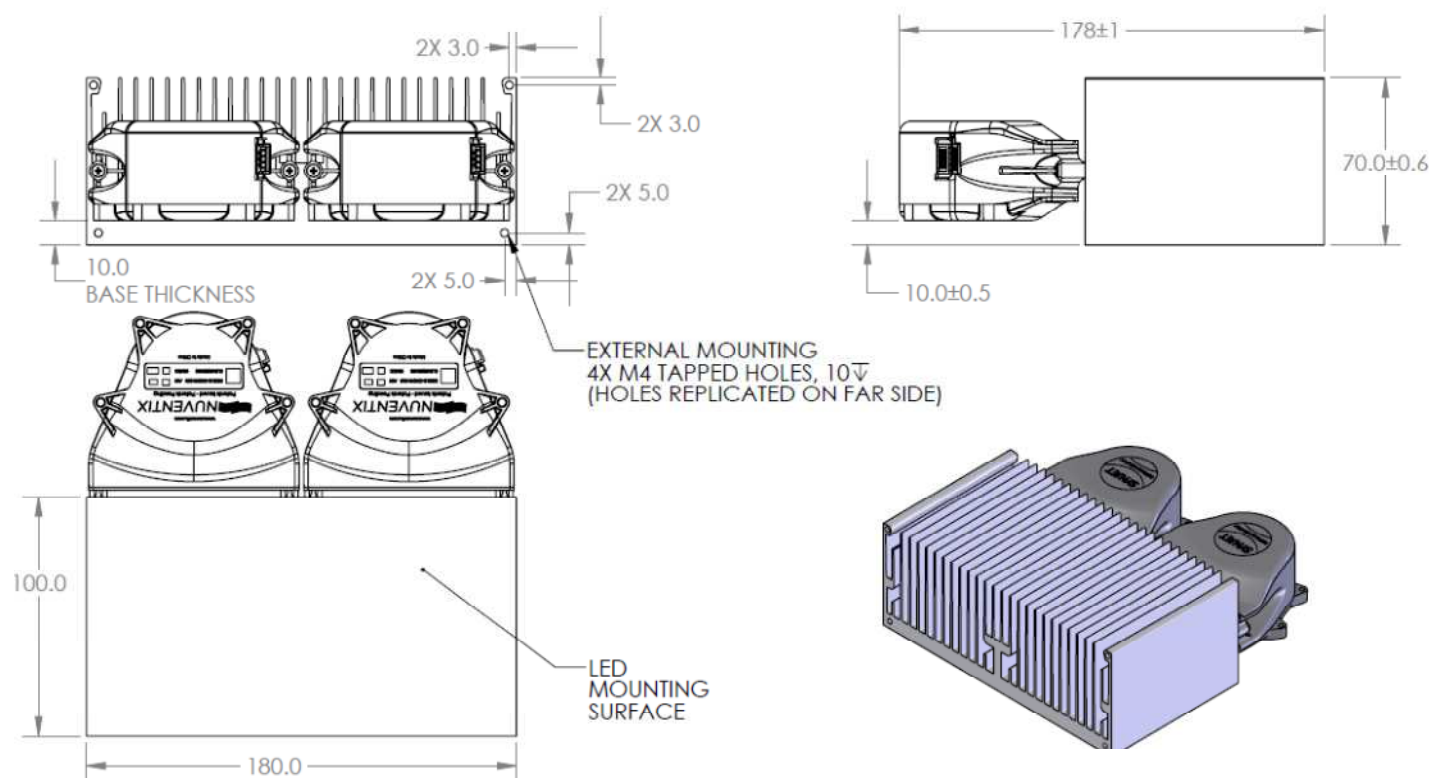
SynJet Setting <sup>2</sup>	Voltage (VDC) +/- 10%	Current (mA) <sup>7</sup>			Pavg (W) 1/2 SJ	Voltage (VDC) +/- 10%	Current (mA) <sup>6</sup>			Pavg (W) 1/2 SJ
		Imin 1/2 SJ	Iavg 1/2 SJ	Ipeak 1/2 SJ			Imin 1/2 SJ	Iavg 1/2 SJ	Ipeak 1/2 SJ	
PWM at 100% duty cycle	5	20/40	220/440	440/880	1.10/2.20	12	10/20	115/230	230/460	1.38/2.76
High Performance		20/40	180/360	360/720	0.90/1.80		10/20	92/184	184/368	1.10/2.20
Standard Performance		20/40	80/160	160/320	0.40/0.80		10/20	46/92	92/184	0.55/1.10
Silent Performance		20/40	60/120	120/240	0.30/0.60		10/20	33/66	66/132	0.40/0.80

## 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		1.42	kg	SynJet with AI 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.

<sup>7</sup> 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.



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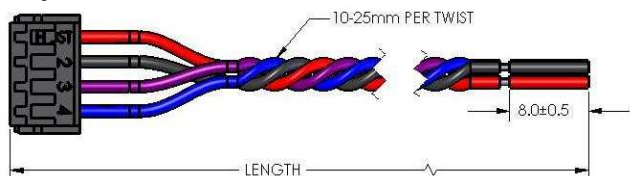
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Revision

E01  
Apr 2013

# PRODUCT DATASHEET

## 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
NX302102	Heatsink, LED Cooler L100-180, Configurable, Black	Contact sales for other heatsink options
NX302106	Heatsink, LED Cooler L100-180, Zhaga LES3, Black	Contact sales for other heatsink options
NX302107	Heatsink, LED Cooler L100-180, 2xZhaga LES 3, Black	Contact sales for other heatsink options
NX302108	Heatsink, LED Cooler L100-180, Bridgelux RS, Black	Contact sales for other heatsink options
NX302109	Heatsink, LED Cooler L100-180, 2xBridgelux RS, Black	Contact sales for other heatsink options
NX302110	Heatsink, LED Cooler L100-180, Citizen CLL050, Black	Contact sales for other heatsink options
NX302111	Heatsink, LED Cooler L100-180, 2xCitizen CLL050, Black	Contact sales for other heatsink options
NX302112	Heatsink, LED Cooler L100-180, Vossloh Schwabe/Panasonic, Black	Contact sales for other heatsink options
NX302120	Heatsink, LED Cooler L100-180, Bridgelux Vero 29, Black	Contact sales for other heatsink options
NX302121	Heatsink, LED Cooler L100-180, 2xBridgelux Vero 29, 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

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