



POLARVrTX

HIGH-CAPACITY COOLING

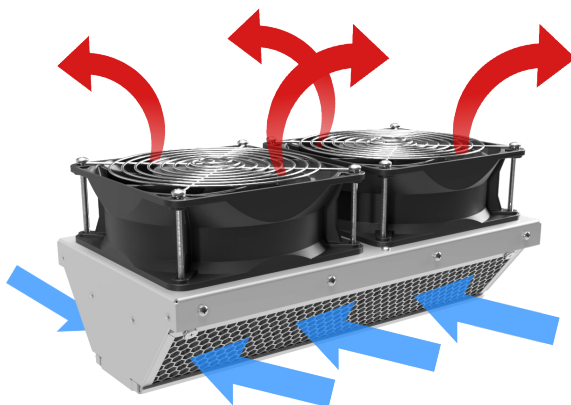
The ATS POLARVrTX™ family delivers high-performance active cooling that surpasses liquid cooling systems, making it a cost-effective and low-maintenance thermal solution. Designed for high-power applications, POLARVrTX achieves the thermal resistance of water using air, eliminating the need for complex liquid cooling infrastructure.

WHY CHOOSE POLARVrTX OVER LIQUID COOLING?

- » **Water-like thermal resistance using air** – No liquid handling or leakage concerns
- » **Lower maintenance & longer lifespan** – No pumps, tubing, or risk of clogging
- » **Uniform cooling for high-output devices** – Ideal for diverse high-power applications
- » **Easy installation & integration** – No need for water loops or external cooling units

GENERAL FEATURES

- » **Length:** 139 to 680 mm (5.5 to 26.8")
- » **Width:** 105 to 215 mm (4.1 to 8.5")
- » **Height:** 104 to 129 mm (4.1 to 5.1")
- » **Available with or without fans** – Configurable for your system requirements
- » **High-efficiency, high-density fin design** – Maximizes cooling performance
- » **Ultra-low thermal resistance** – Ideal for high-power electronics and processors
- » **Optional removable air filters** – Keeps cooling fins clean for extended reliability
- » **Outperforms liquid cooling** – No leaks, no pumps, no complexity
- » **Customizable solutions** – Tailored to specific cooling requirements



Airflow through POLARVrTX



Heat sink located behind the removable filters



POLARVrTX attaches to PCBs on the bottom of the unit

» Active Cooling

High-capacity active cooling outperforms liquid cooling options

» Air Cooling vs Liquid Cooling

Air cooling provides the added benefits of less maintenance, uniform cooling, and easy installation

» Fans

All POLARVrTX models come with PWM enabled fans

» Heat Sink Design

POLARVrTX employs a high-efficiency and high density fin design

» Removable Filters

Polyurethane filters keep the heat sink fin field clear of debris for consistent cooling performance

» Plug and Play

Easy set-up allows for quick implementation into the system

APPLICATIONS

- » **High-Power Computing**
(AI, HPC, data centers)
- » **Industrial Electronics**
(power modules, automation systems)
- » **Telecom & Networking**
(5G, high-density servers)
- » **Automotive & Aerospace**
(inverters, power electronics)
- » **UV-C LED Cooling**

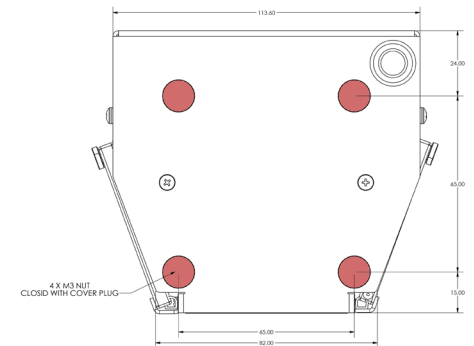
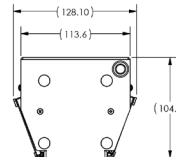
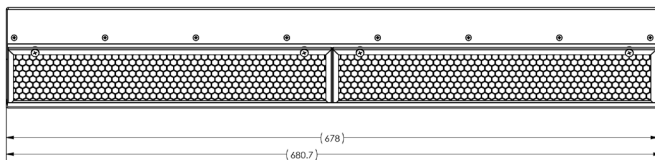


ATS-3012



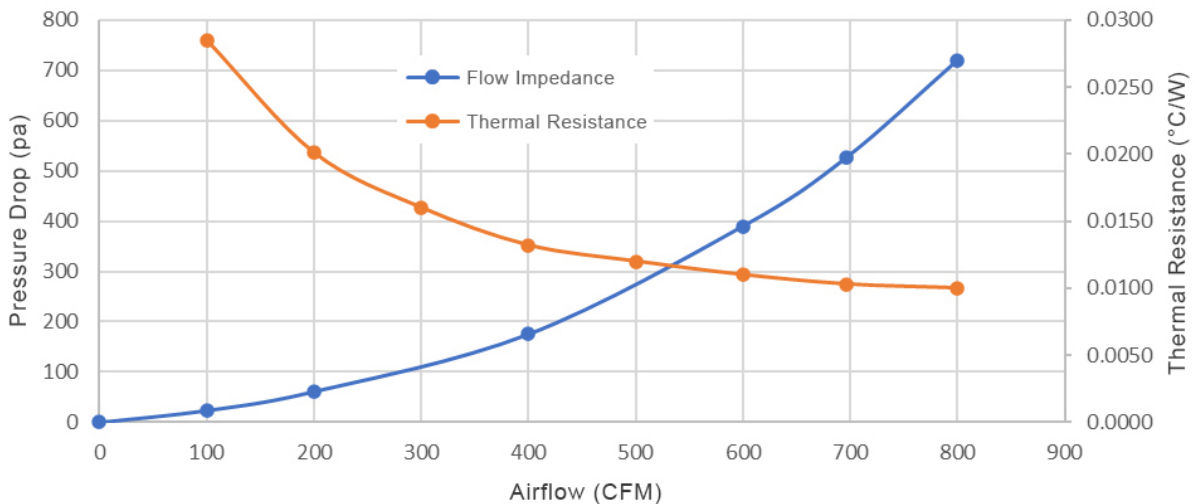
- » **Part Number:** ATS-3012
- » **Thermal Resistance:** 0.015 °C/W
- » **Max TDP:** 8.0 kW ($T_{\text{ambient}} = 20^{\circ}\text{C}$, $T_{\text{case}} = 120^{\circ}\text{C}$)
5.0 kW ($T_{\text{ambient}} = 20^{\circ}\text{C}$, $T_{\text{case}} = 95^{\circ}\text{C}$)
- » **Fan Voltage:** 12 VDC
- » **Noise:** 83 dB
- » **Total Current:** 27.2 A
- » **Material:** Aluminum Duct, Aluminum Heat Sink
- » **Filter Material:** Aluminum Frame with Polyurethane Foam
- » **Overall Dims.:** 680 x 128 x 104.3 mm (26.8 x 5.0 x 4.1")
- » **Base Dimensions:** 675 x 60 mm (26.6 x 2.4")
- » **Weight:** 5062g (11.2 lbs)
- » **Lead Wire Gauge & Pin Out:** 7 AWG Wire

Positive (+)	Negative (-)	Control
Red	Black	Brown



» User can mount the PCB that powers and houses the PWM fan controller on the side of the unit by removing the plugs highlighted in red.

ATS-3012 Impedance and Performance Without Filter



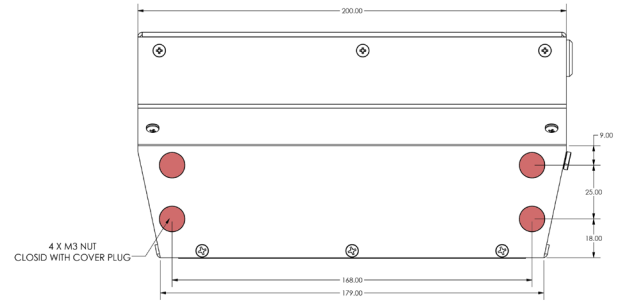
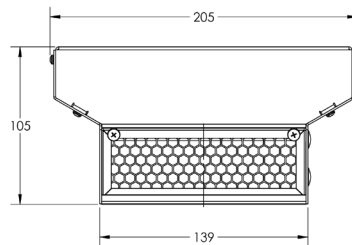
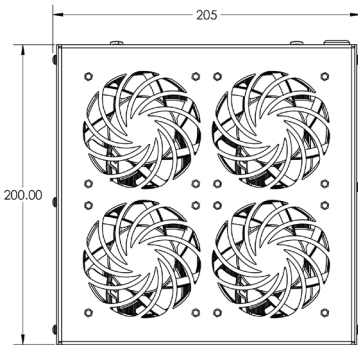


ATS-3013



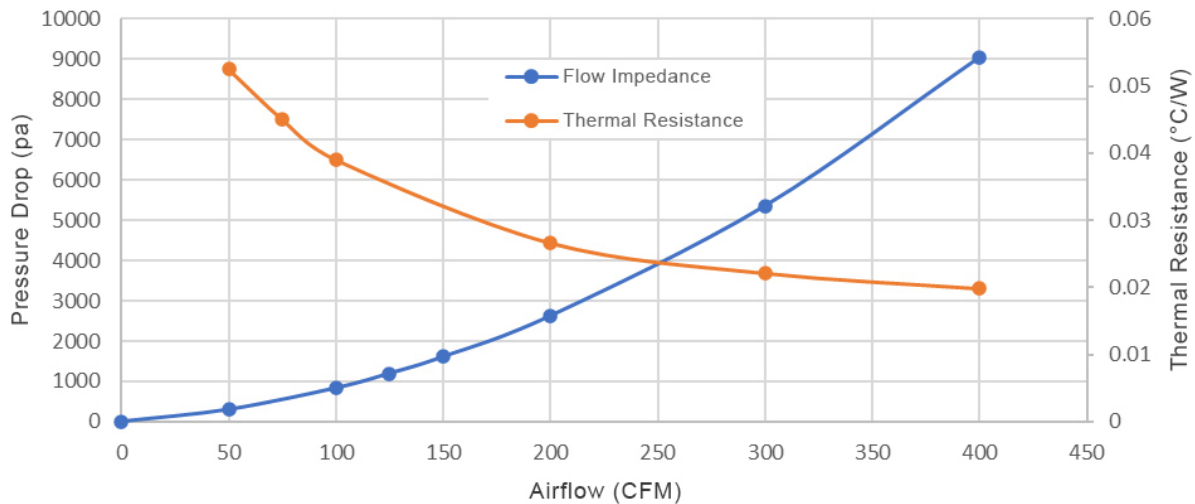
- » **Part Number:** ATS-3013
- » **Thermal Resistance:** 0.034 °C/W
- » **Max TDP:** 3.0 kW ($T_{\text{ambient}} = 20^{\circ}\text{C}$, $T_{\text{case}} = 122^{\circ}\text{C}$)
2.0 kW ($T_{\text{ambient}} = 20^{\circ}\text{C}$, $T_{\text{case}} = 88^{\circ}\text{C}$)
- » **Fan Voltage:** 12 VDC
- » **Noise:** 82.5 dB
- » **Total Current:** 13.6 A
- » **Material:** Aluminum Duct, Aluminum Heat Sink
- » **Filter Material:** Aluminum Frame with Polyurethane Foam
- » **Overall Dims.:** 205 x 200 x 105 mm (8.1 x 7.9 x 4.1")
- » **Base Dimensions:** 136.2 x 162 mm (5.4 x 6.4")
- » **Weight:** 2516g (5.6 lbs)
- » **Lead Wire Gauge & Pin Out:** 10 AWG Wire

Positive (+)	Negative (-)	Control
Red	Black	Brown



» User can mount the PCB that powers and houses the PWM fan controller on the side of the unit by removing the plugs highlighted in red.

ATS-3013 Impedance and Performance Without Filter



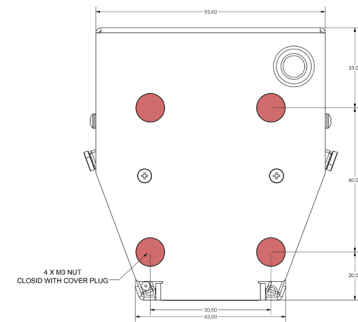
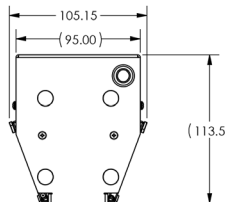
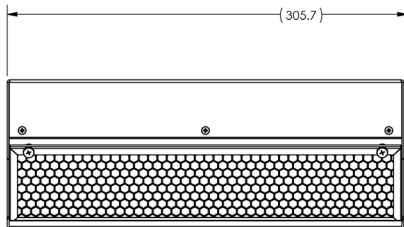


ATS-3014



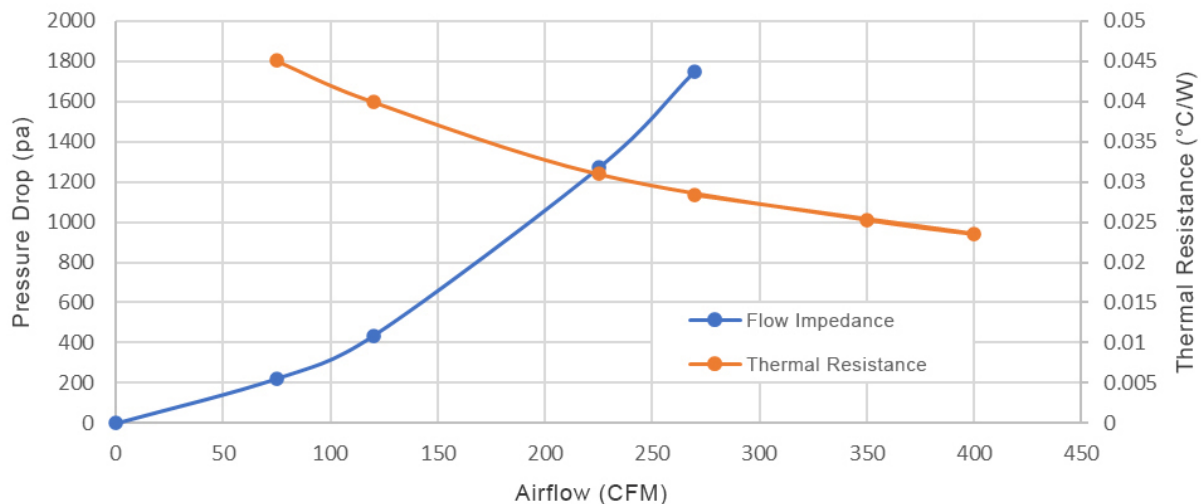
- » **Part Number:** ATS-3014
- » **Thermal Resistance:** 0.05 °C/W
- » **Max TDP:** 3.0 kW ($T_{\text{ambient}} = 20^{\circ}\text{C}$, $T_{\text{case}} = 175^{\circ}\text{C}$)
2.0 kW ($T_{\text{ambient}} = 20^{\circ}\text{C}$, $T_{\text{case}} = 120^{\circ}\text{C}$)
- » **Fan Voltage:** 12 VDC
- » **Noise:** 82.5 dB
- » **Total Current:** 10.2 A
- » **Material:** Aluminum Duct, Aluminum Heat Sink
- » **Filter Material:** Aluminum Frame with Polyurethane Foam
- » **Overall Dims.:** 306 x 105 x 113.5 mm (12.1 x 4.1 x 4.5")
- » **Base Dimensions:** 300 x 40 mm (11.8 x 1.6")
- » **Weight:** 1850g (4.1 lbs)
- » **Lead Wire Gauge & Pin Out:** 11 AWG Wire

Positive (+)	Negative (-)	Control
Red	Black	Brown



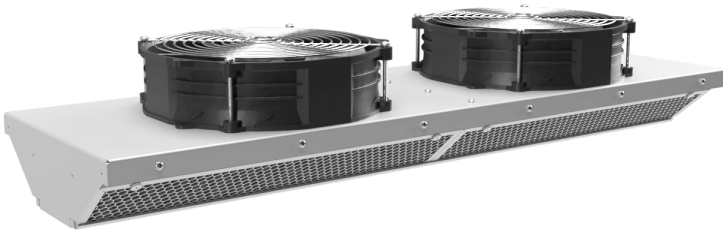
» User can mount the PCB that powers and houses the PWM fan controller on the side of the unit by removing the plugs highlighted in red.

ATS-3014 Impedance and Performance Without Filter

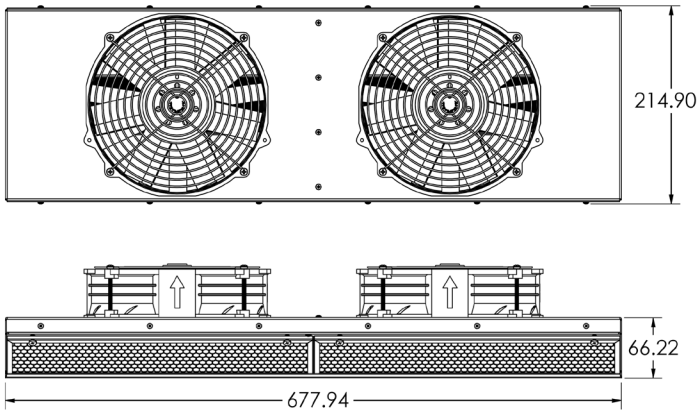




ATS-3015

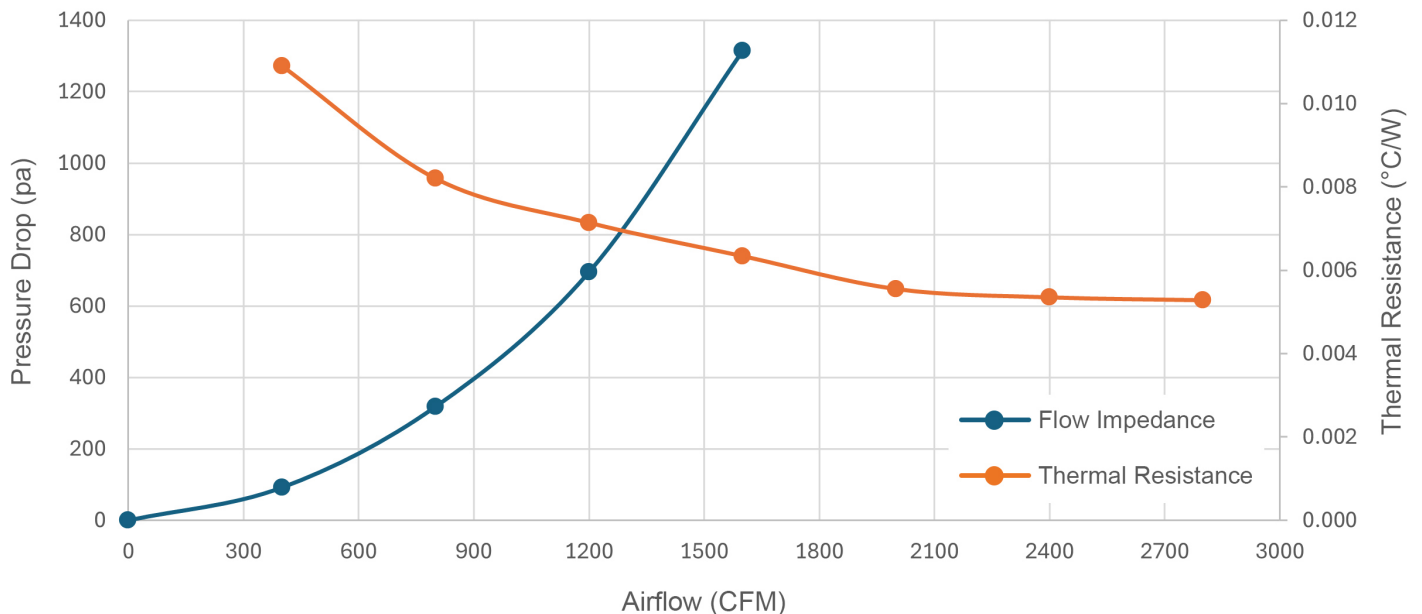


- » **Part Number:** ATS-3015
- » **Thermal Resistance:** 0.01 °C/W
- » **Max TDP:** 13.0 kW ($T_{\text{ambient}} = 20^{\circ}\text{C}$, $T_{\text{case}} = 150^{\circ}\text{C}$)
8.0 kW ($T_{\text{ambient}} = 20^{\circ}\text{C}$, $T_{\text{case}} = 100^{\circ}\text{C}$)
- » **Fan Voltage:** 48 VDC
- » **Noise:** 78 dB
- » **Total Current:** 8.4 A
- » **Material:** Aluminum 5052 Duct, Aluminum 6063 Heat Sink
- » **Filter Material:** Aluminum Frame with Polyurethane Foam
- » **Overall Dims.:** 678 x 215 x 124 mm (26.7 x 8.5 x 4.9")
- » **Base Dimensions:** 675 x 60 mm (26.6 x 2.4")
- » **Weight:** 5906g (13.0 lbs)
- » **Lead Wire Gauge & Pin Out:** 12 AWG Wire



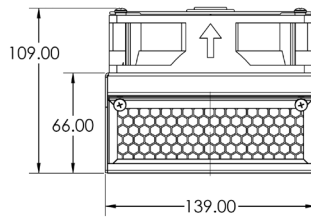
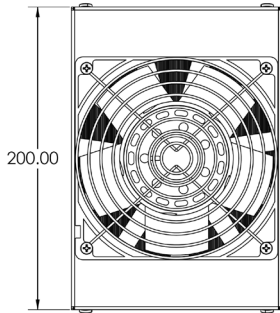
Positive (+)	Negative (-)	Sensor	Control
Red	Black	Blue	Yellow

ATS-3015 Impedance and Performance Without Filter





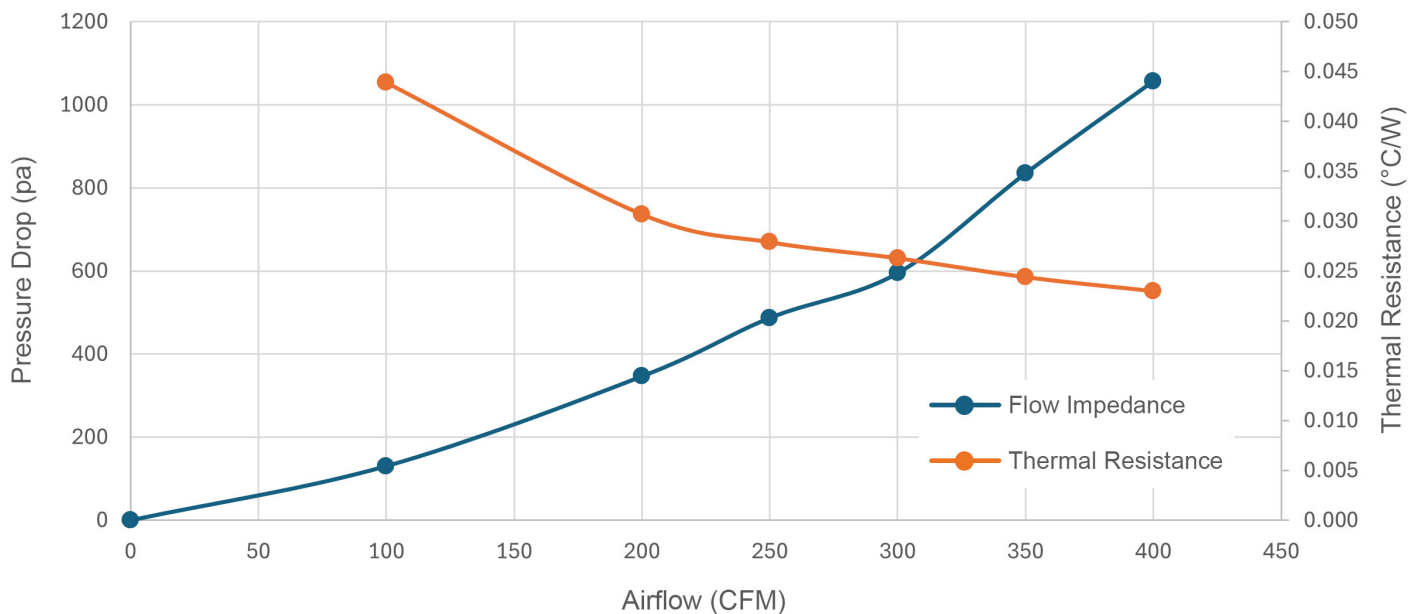
ATS-3016



- » **Part Number:** ATS-3016
- » **Thermal Resistance:** 0.021 °C/W
- » **Max TDP:** 5.0 kW ($T_{\text{ambient}} = 20^{\circ}\text{C}$, $T_{\text{case}} = 125^{\circ}\text{C}$)
4.0 kW ($T_{\text{ambient}} = 20^{\circ}\text{C}$, $T_{\text{case}} = 104^{\circ}\text{C}$)
- » **Fan Voltage:** 48 VDC
- » **Noise:** 82 dB
- » **Total Current:** 6 A
- » **Material:** Aluminum 5052 Duct, Aluminum 6063 Heat Sink
- » **Filter Material:** Aluminum Frame with Polyurethane Foam
- » **Overall Dims.:** 139 x 200 x 109 mm (5.5 x 7.9 x 4.3")
- » **Base Dimensions:** 139 x 165 mm (5.5 x 6.5")
- » **Weight:** 2056g (4.5 lbs)
- » **Lead Wire Gauge & Pin Out:** 14 AWG Wire

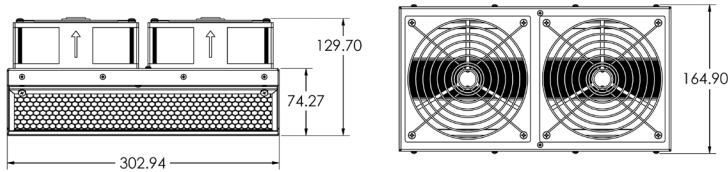
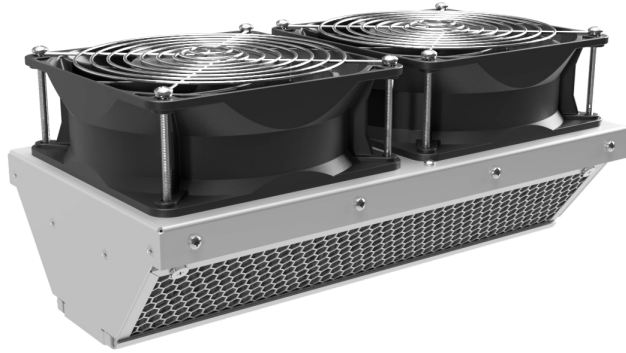
Positive (+)	Negative (-)	Sensor	Control
Red	Black	Blue	Yellow

ATS-3016 Impedance and Performance





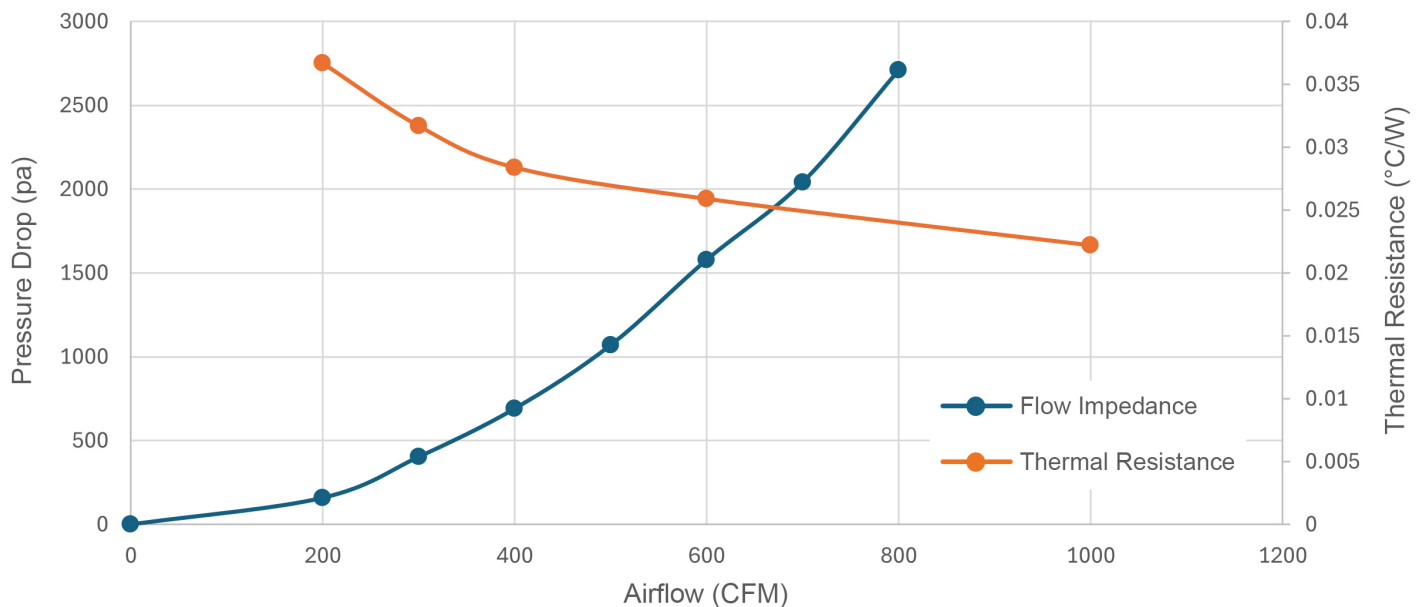
ATS-3017



- » **Part Number:** ATS-3017
- » **Thermal Resistance:** 0.032 °C/W
- » **Max TDP:** 4.0 kW ($T_{\text{ambient}} = 20^{\circ}\text{C}$, $T_{\text{case}} = 148^{\circ}\text{C}$)
3.0 kW ($T_{\text{ambient}} = 20^{\circ}\text{C}$, $T_{\text{case}} = 116^{\circ}\text{C}$)
- » **Fan Voltage:** 48 VDC
- » **Noise:** 79 dB
- » **Total Current:** 6.4 A
- » **Material:** Aluminum 5052 Duct, Aluminum 6063 Heat Sink
- » **Filter Material:** Aluminum Frame with Polyurethane Foam
- » **Overall Dims.:** 303 x 165 x 129 mm (11.9 x 6.5 x 5.1")
- » **Base Dimensions:** 300 x 40 mm (11.8 x 1.6")
- » **Weight:** 2993g (6.6 lbs)
- » **Lead Wire Gauge & Pin Out:** 14 AWG Wire

Positive (+)	Negative (-)	Sensor	Control
Red	Black	Blue	Yellow

ATS-3017 Impedance and Performance Without Filter





WHY CHOOSE POLARVrTX™ AIR COOLING OVER LIQUID COOLING?



POLARVrTX™



LIQUID LOOP

Single unit design using air can be easily implemented



IMPLEMENTATION SIMPLICITY

Requires plumbing, electrical, fittings, fans & larger footprint

Single unit solution with fan
Less than \$500



COST TO DEPLOY

Multi-part solution including heat exchanger, cold plate, & pumps - \$1500+

Very low maintenance: Must ensure fin spacing stays clean



COST OF MAINTENANCE

Higher maintenance due to possible leaks or fungus growth

Mechanical fans create noise due to high speeds



ACOUSTIC NOISE



Liquid cooling is generally low noise

A uniform base temperature helps LED's keep their consistent color



TEMPERATURE UNIFORMITY