

SuperCool X Series Thermoelectric Cooler Assembly

The SAAX-175-24-22 Air-to-Air thermoelectric cooler assembly is a high performance thermoelectric based air conditioner. It is designed to temperature control small chambers used in medical diagnostics or sample storage compartments in analytical instrumentation. This unique, **patented** design offers a high performance hot side heat dissipation mechanism that convects heat more efficiently than conventional heat exchanger technologies. The design utilizes custom next-generation high-performance thermoelectric modules to maximize cooling capacity and premium grade fans to reduce noise. Moisture resistant insulation is used to keep condensation from penetrating into the thermoelectric module cavity. This unit operates at 24 VDC and is designed for indoor lab use environment. It has a maximum Qc of 176 Watts when $\Delta T = 0$ and a maximum ΔT of 42 °C at Qc = 0.

Pending U.S. Patent Publication No. US2020/0240717

Granted Patents:

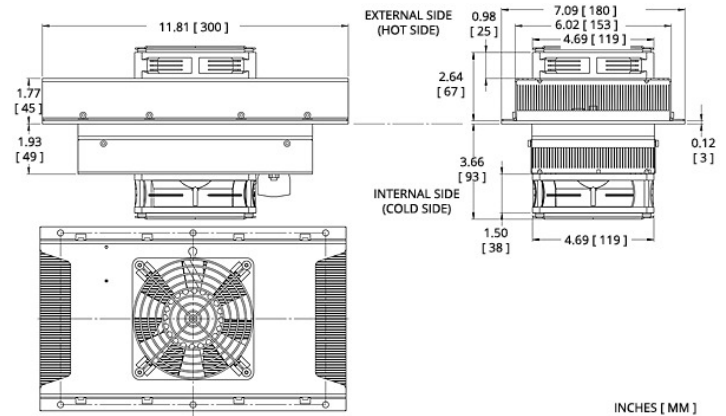
- China: ZL2016800175855
- Japan: 6549721
- Switzerland: 3262909
- Germany: 6020160449986
- United Kingdom: 3262909

Features

- High performance
- Compact form factor
- Reliable solid-state operation
- RoHS-compliant

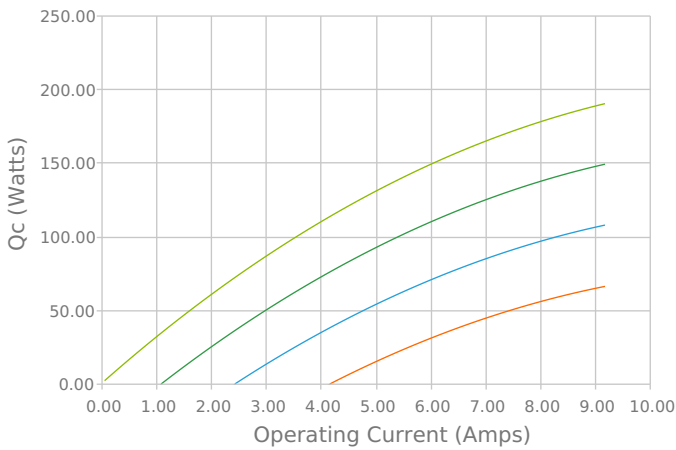
Applications

- Liquid Cooling Options for PET and SPECT Scanners
- Peltier Cooling for Refrigerated Centrifuges
- Heating and Cooling of Incubator Chambers
- Thermal Management Solutions for Beverage Cooling

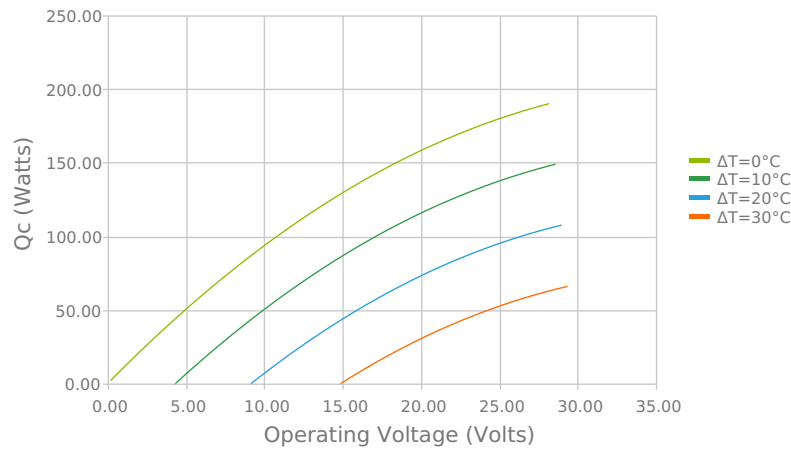


ELECTRICAL AND THERMAL PERFORMANCE

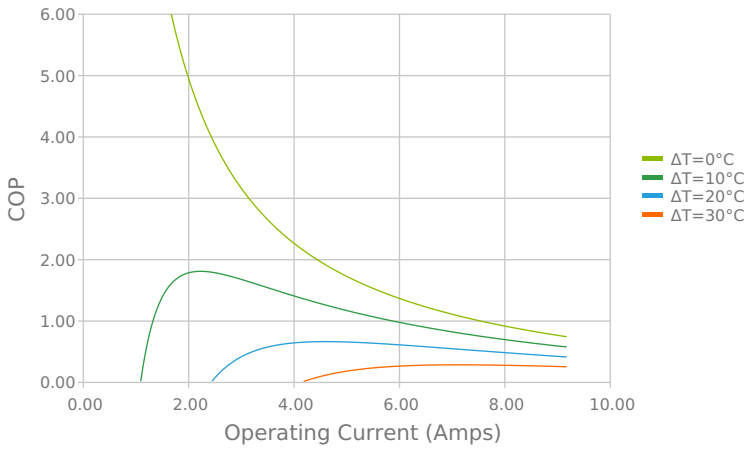
Heat Pumped at Cold Side (Qc)
Tambient = 35°C



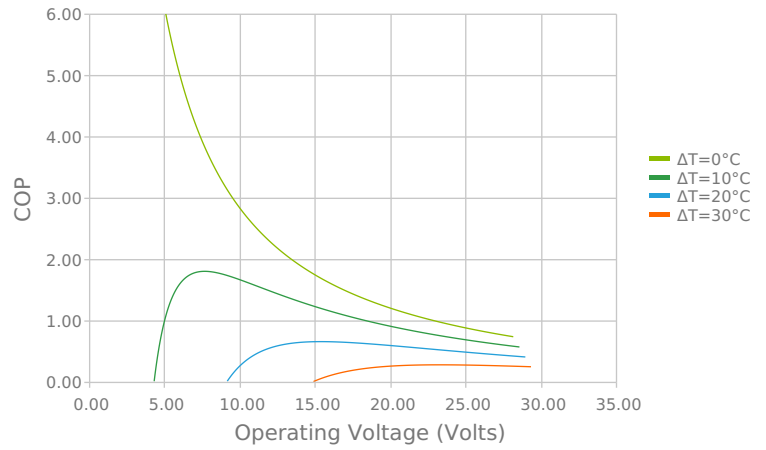
Heat Pumped at Cold Side (Qc)
Tambient = 35°C



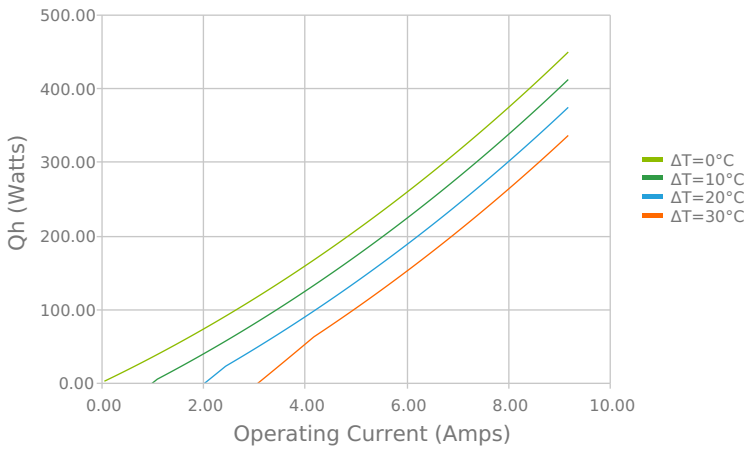
Coefficient of Performance (COP = Qc/Pin)
 Tambient = 35°C



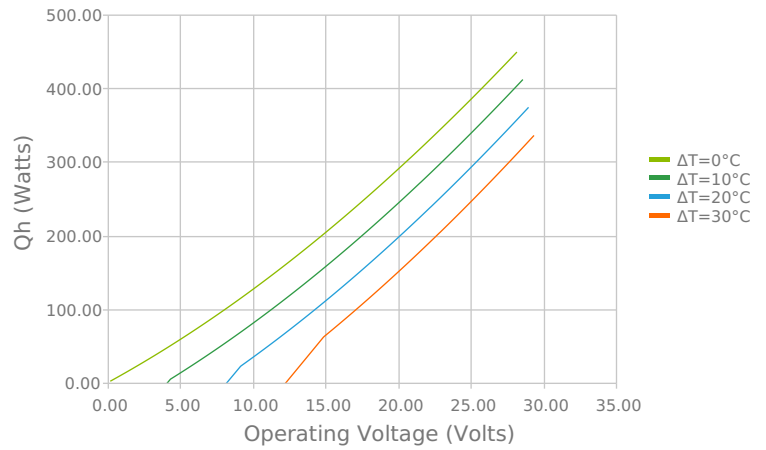
Coefficient of Performance (COP = Qc/Pin)
 Tambient = 35°C



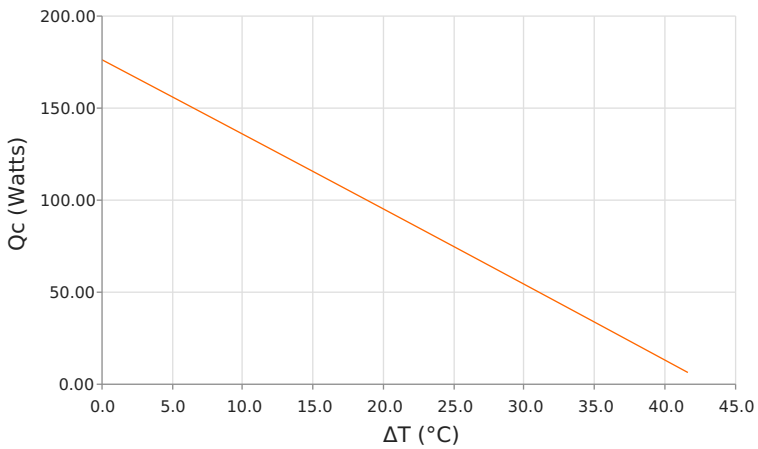
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Tambient = 35°C



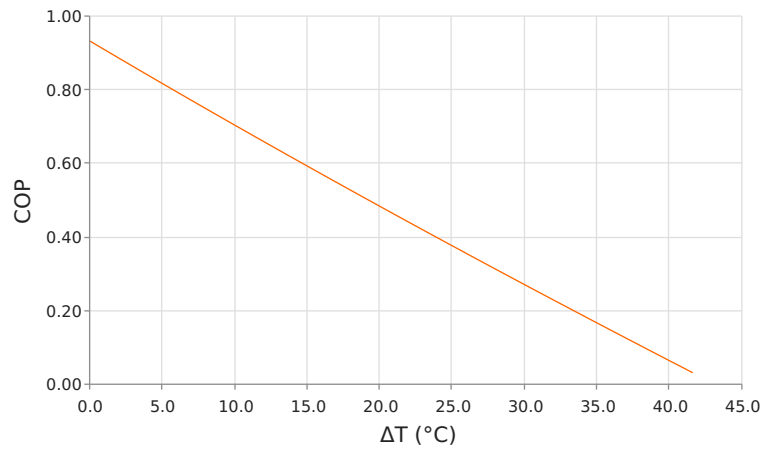
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Tambient = 35°C



Heat Pumped at Cold Side (Qc)
 Voperating = 24 Volts | Ioperating = 7.87 Amps



Coefficient of Performance (COP = Qc/Pin)
 Voperating = 24 Volts | Ioperating = 7.87 Amps

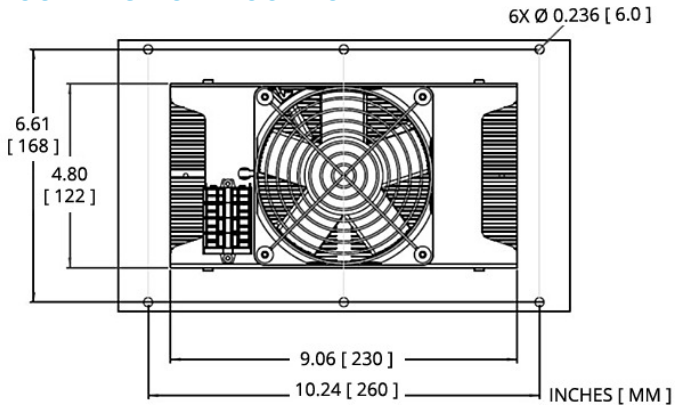


SPECIFICATIONS

Heat Transfer Mechanism, Cold Side
Heat Transfer Mechanism, Hot Side
Operating Temperature Range
Supply Voltage
Current Draw
Power Supply
Performance Tolerance
Hi-Pot Testing
Hot Side Fan MTBF
Cold Side Fan MTBF
Sound Level (1 m distance)
Weight
Panel Mounting

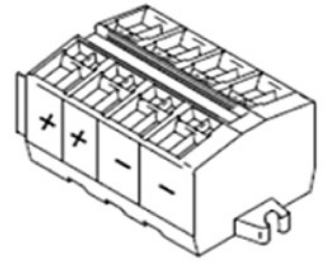
Air - Forced Convection
Air - Forced Convection
-20°C to 60°C
24.0 VDC nominal / 28.0 VDC maximum
7.6 A running / 10.4 A startup
201.0 Watts
10%
750 VDC
60000 hours
65000 hours
63 dBA
4.50 kg
Through

MOUNTING HOLE LOCATION



WIRING SCHEMATIC

OBJECT	POLE
Fan +	1,2
TEM +	3,4
TEM -	5,6
Fan -	7,8



Warning: Do not reverse current or use PWM regulation on fan supply.

NOTES

¹For indoor use only

²Units are generally maintenance free, however occasionally it is recommended to clean the heat sinks and fans of debris. This is best done with compressed air.

Any information furnished by Laird and its agents, whether in specifications, data sheets, product catalogues or otherwise, is believed to be (but is not warranted as being) accurate and reliable, is provided for information only and does not form part of any contract with Laird. All specifications are subject to change without notice. Laird assumes no responsibility and disclaims all liability for losses or damages resulting from use of or reliance on this information. All Laird products are sold subject to the Laird Terms and Conditions of sale (including Laird's limited warranty) in effect from time to time, a copy of which will be furnished upon request.

© Copyright 2019-2024 Laird Thermal Systems, Inc. All rights reserved. Laird™, the Laird Ring Logo, and Laird Thermal Systems™ are trademarks or registered trademarks of Laird Limited or its subsidiaries.

Revision: 01 Date: 08-28-2024

Print Date: 08-29-2024