

SuperCool Series Thermoelectric Cooler Assembly

The SAA-110-24-22 Air-to-Air thermoelectric 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 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 TEM cavity. This unit operates at 24 VDC and is designed for indoor lab use environment. It has a maximum Qc of 101 Watts when $\Delta T = 0$ and a maximum ΔT of 39 °C at Qc = 0.

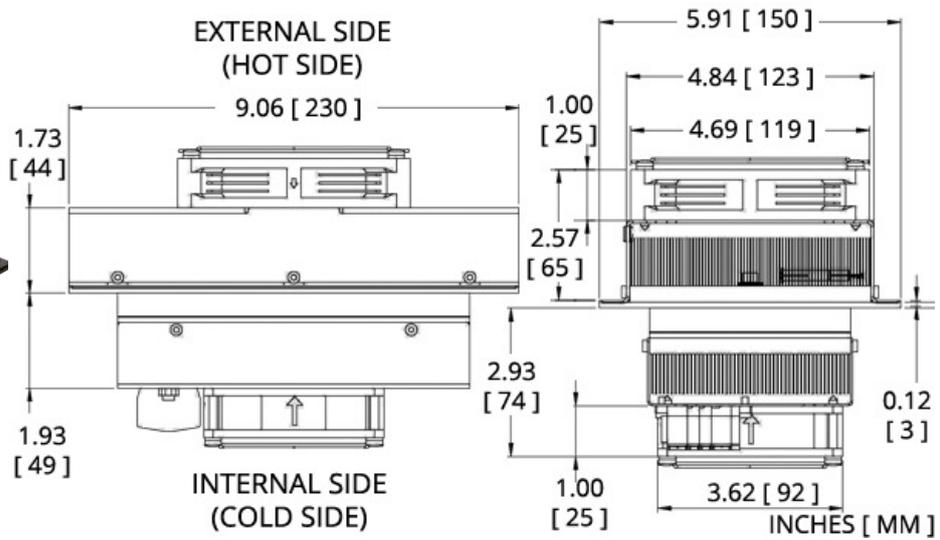
US Patent US2016/0255746 A1

Features

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

Applications

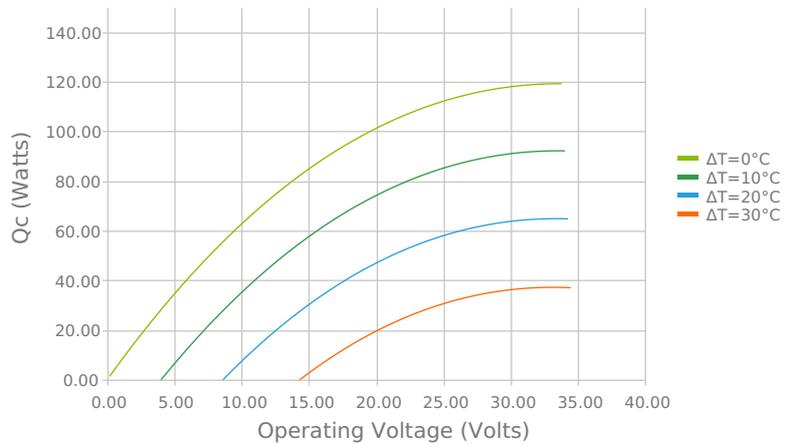
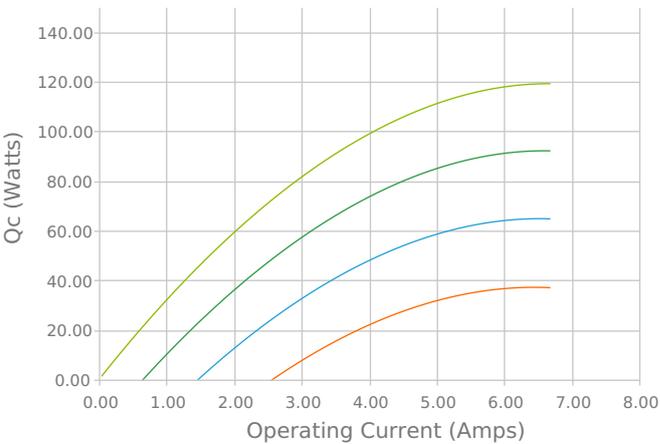
- Liquid Cooling Options for PET and SPECT Scanners
- Peltier Cooling for Refrigerated Centrifuges
- Heating and Cooling of Incubator Chambers
- Thermal Management Solutions for Beverage Cooling



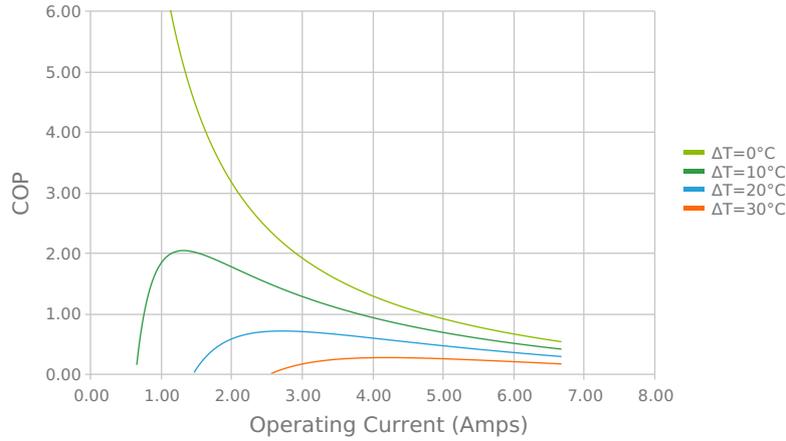
ELECTRICAL AND THERMAL PERFORMANCE

Heat Pumped at Cold Side (Qc)
Tambient = 35°C | Tcontrol = 20°C

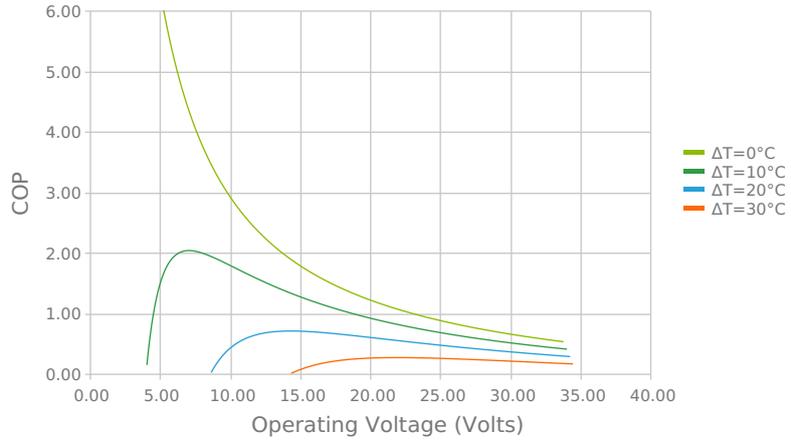
Heat Pumped at Cold Side (Qc)
Tambient = 35°C | Tcontrol = 20°C



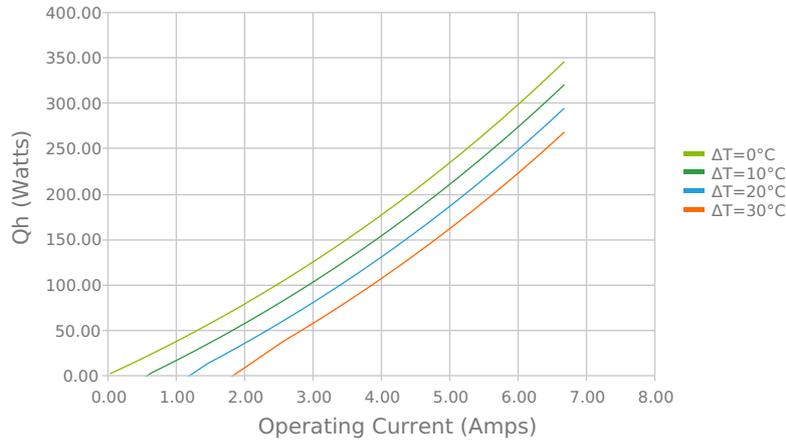
Coefficient of Performance (COP = Qc/Pin)
 Tambient = 35°C | Tcontrol = 20°C



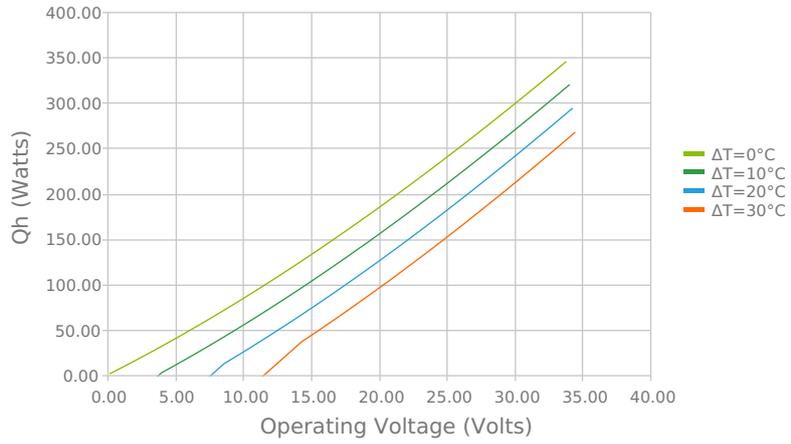
Coefficient of Performance (COP = Qc/Pin)
 Tambient = 35°C | Tcontrol = 20°C



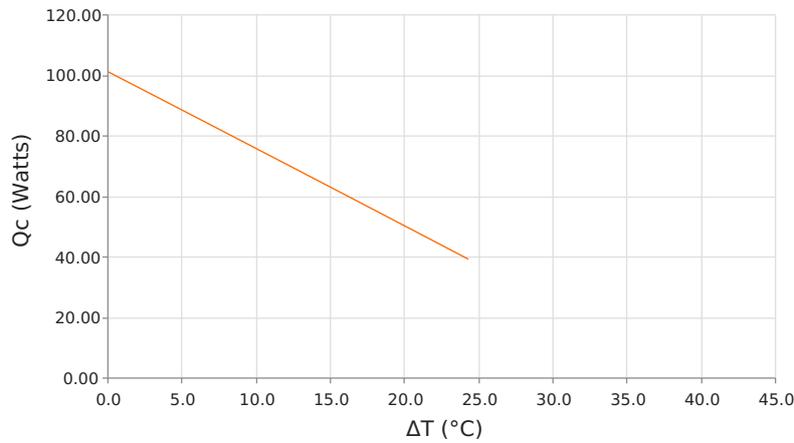
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Tambient = 35°C | Tcontrol = 20°C



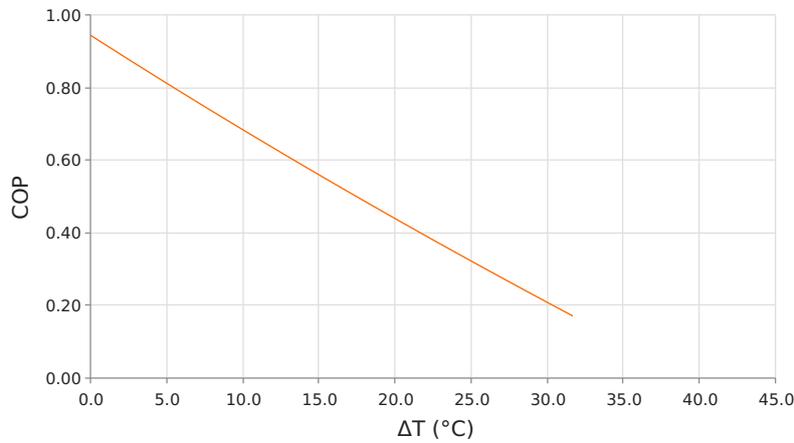
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Tambient = 35°C | Tcontrol = 20°C



Heat Pumped at Cold Side (Qc)
 Voperating = 24 Volts | Ioperating = 4.9 Amps



Coefficient of Performance (COP = Qc/Pin)
 Voperating = 24 Volts | Ioperating = 4.9 Amps



SPECIFICATIONS

Operating Temperature Range

Supply Voltage

Current Draw

Power Supply

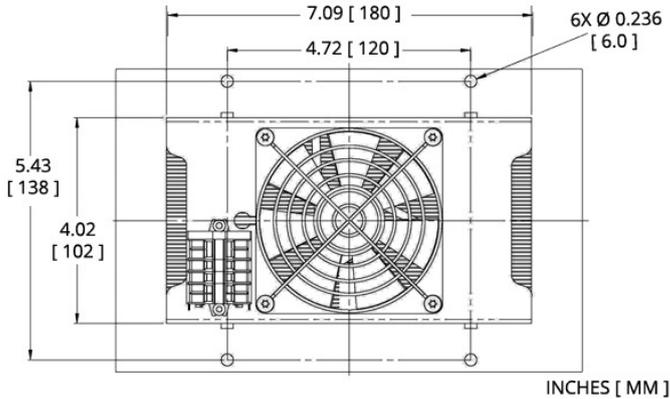
Performance Tolerance

Fan MTBF

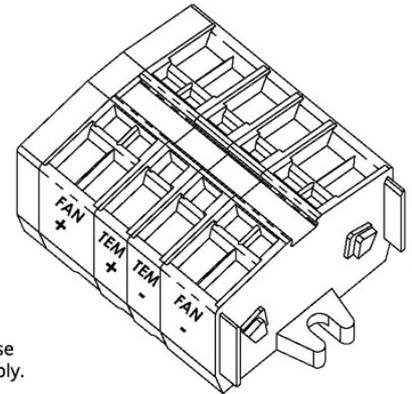
Weight

-20 °C to 60°C
24.0 VDC nominal / 30.0 VDC maximum
4.9 A running / 6.4 A startup
118.0 Watts
10%
40,000 hours
2.70 kg

MOUNTING HOLE LOCATION



WIRING SCHEMATIC



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 2020 Laird Thermal Systems GmbH. All Rights Reserved. Laird, Laird Technologies, Laird Thermal Systems, the Laird Logo, and other word marks and logos are trademarks or registered trademarks of Laird Limited or an affiliate company thereof. Other product or service names may be the property of third parties. Nothing herein provides a license under any Laird or any third party intellectual property rights.

Date: 04/24/2020