TTS
TARK THERMAL SOLUTIONS

SuperCool X Series SLA-400-24-02
MFG Part Number: 387004253

SuperCool X Series Thermoelectric Cooler Assembly

The SLA-400-24-02 Liquid-to-Air thermoelectric cooler assembly is a high performance thermoelectric based liquid cooler. It is designed to temperature control small chambers used in medical diagnostics, lasers, imaging systems 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 keep the noise down. 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 407 Watts when ΔT = 0 and a maximum ΔT of 39 °C at Qc = 0.

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

Granted Patents:

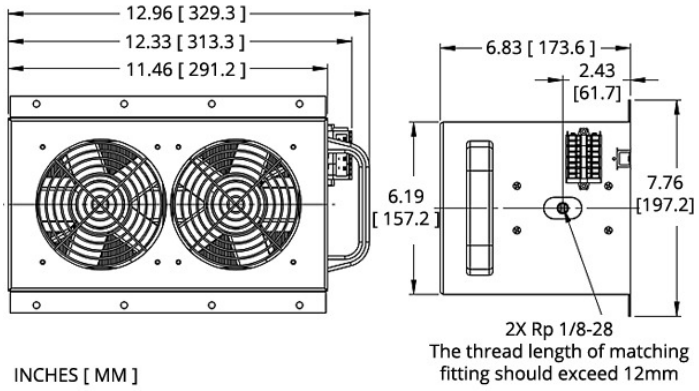
China: ZL2016800175855
Japan: 6549721
Switzerland: 3262909
Germany: 6020160449986
United Kingdom: 3262909

Features

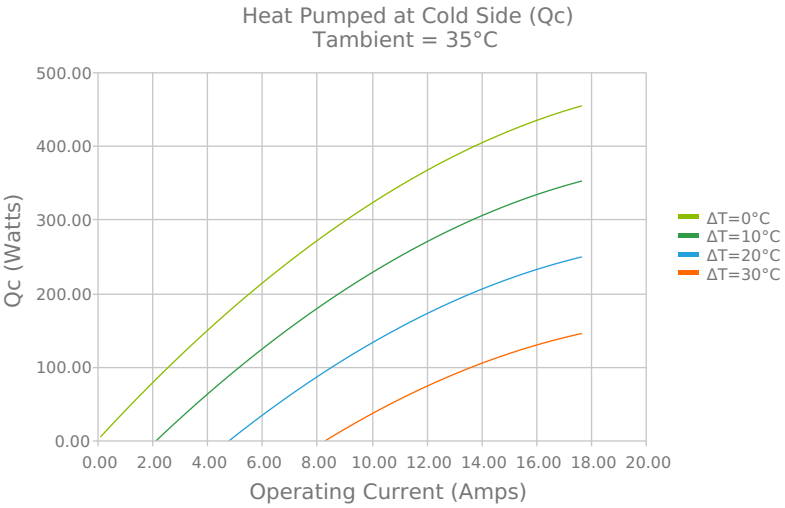
- High performance
- Compact form factor
- Reliable solid-state operation
- RoHS-compliant

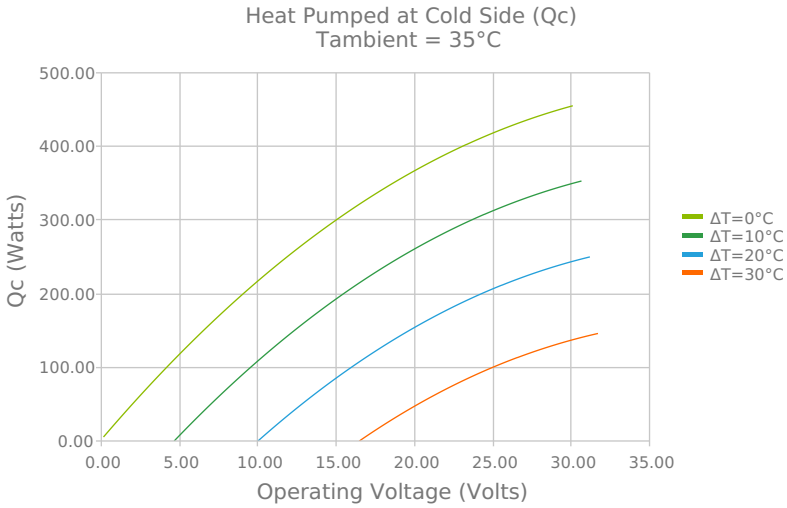
Applications

- 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

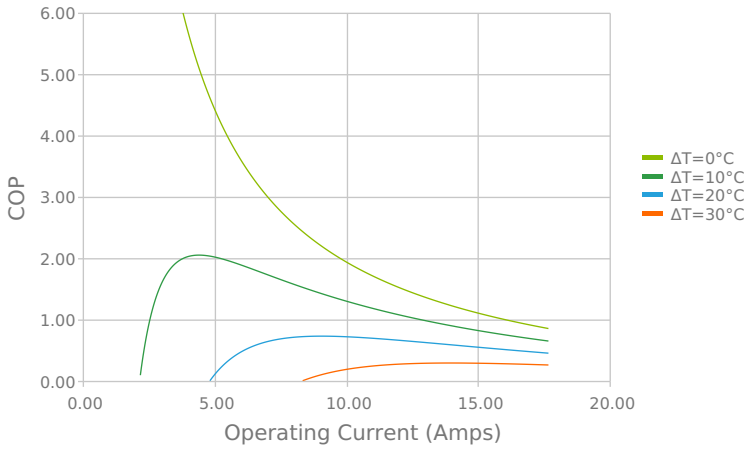


Electrical and Thermal Performance





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



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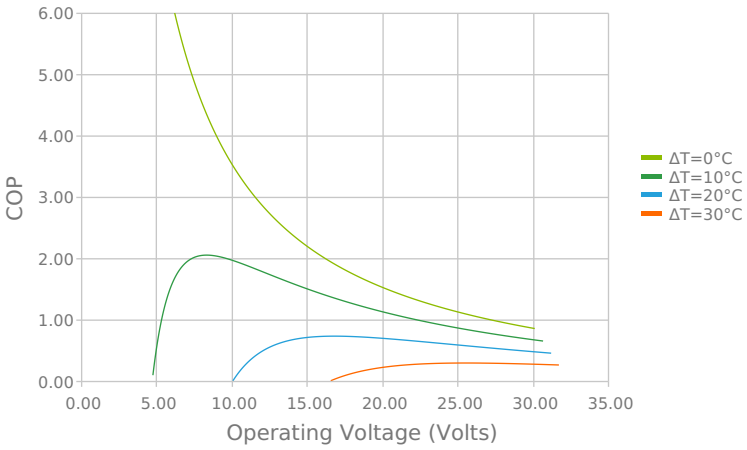
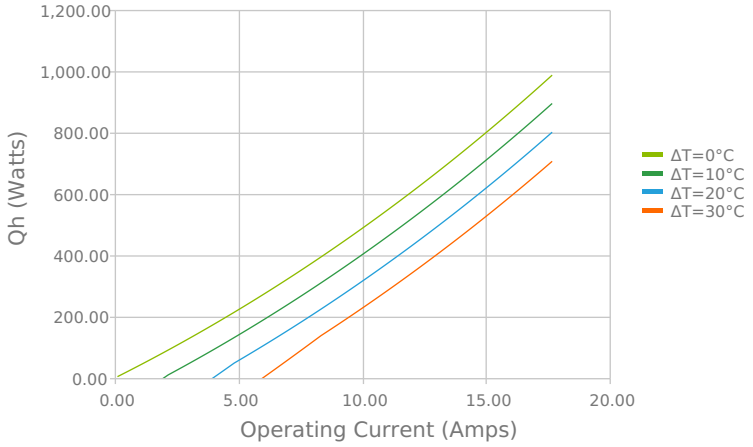


Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Tambient = 35°C



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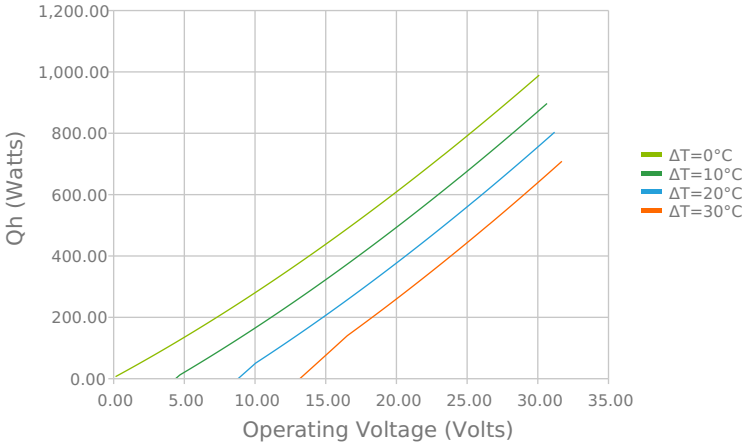
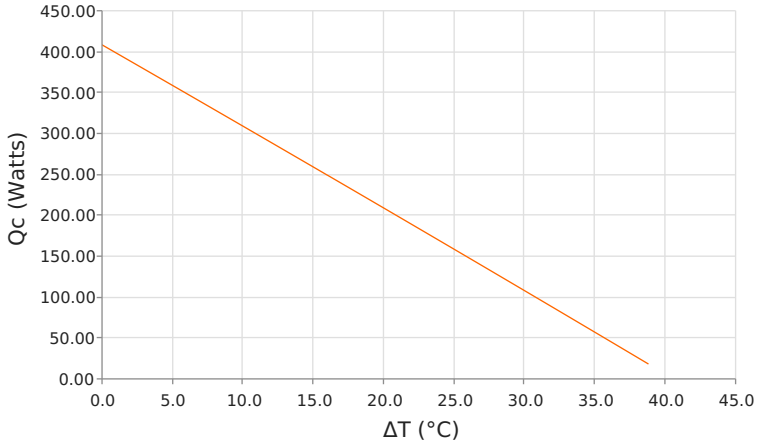


Heat Pumped at Cold Side (Qc)
Voperating = 24 Volts | Ioperating = 14.26 Amps



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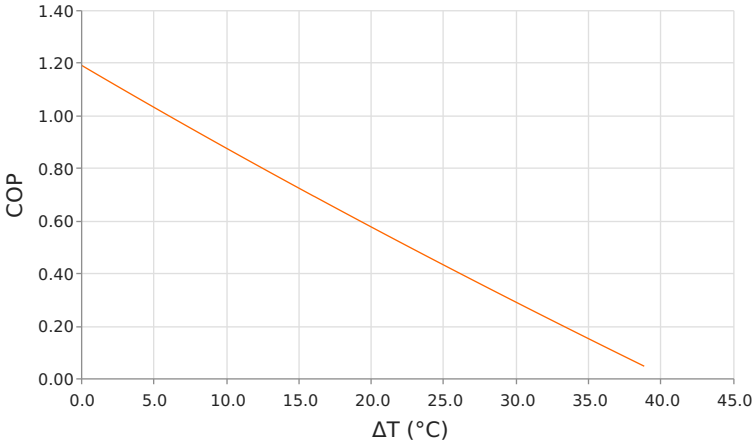
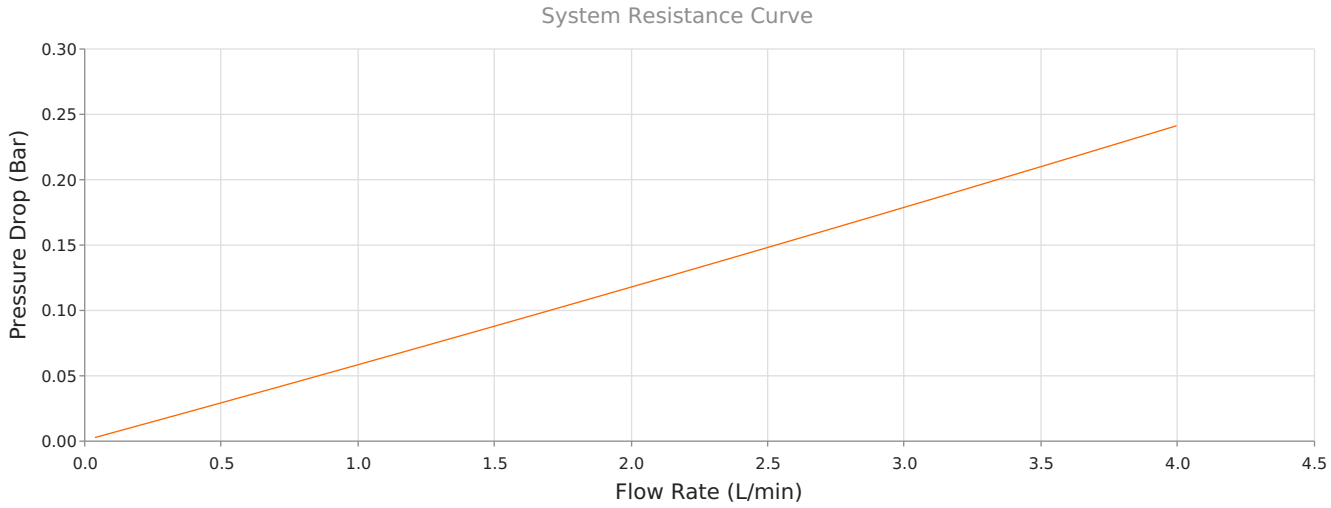
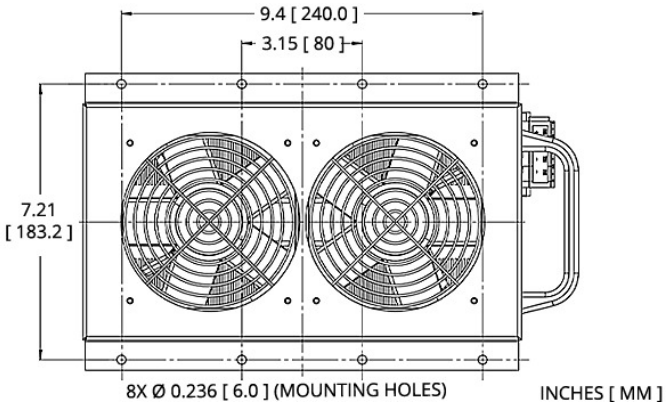




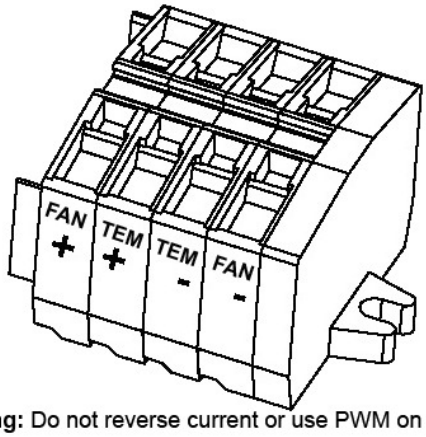
Specifications

Heat Transfer Mechanism, Cold Side	Liquid - Forced Convection
Heat Transfer Mechanism, Hot Side	Air - Forced Convection
Operating Temperature Range	-20°C to 60°C
Supply Voltage	24.0 VDC nominal / 30.0 VDC maximum
Current Draw	13.3 A running / 16.5 A startup
Power Supply	319.0 Watts
Performance Tolerance	10%
Hi-Pot Testing	750 VDC
Fan MTBF	60000 hours
Over-Temp Thermostat (Hot and Cold Side Heat Sink)	without thermostat
Sound Level (1 m distance)	63 dBA
Weight	9.15 kg
Panel Mounting	Through

Mounting Hole Location



Wiring Schematic



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

Notes

[1]For indoor use only
[2]Units 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.
[3]Cooled liquid block needs to be isolated from humidity in the air to minimize condensation and thermally insulated for best performance.

Revision: 02 Date: 03-28-2025

Print Date: 05-28-2025