SuperCool Series SLA-140-24-02
MFG Part Number: 387003326

SuperCool Series Thermoelectric Cooler Assembly

The SLA-140-24-02 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 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 140 Watts when ΔT = 0 and a maximum ΔT of 28 °C at Qc = 0.

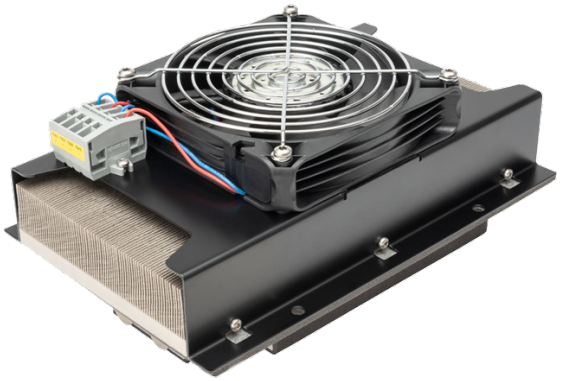
US Patent US2016/0255746 A1

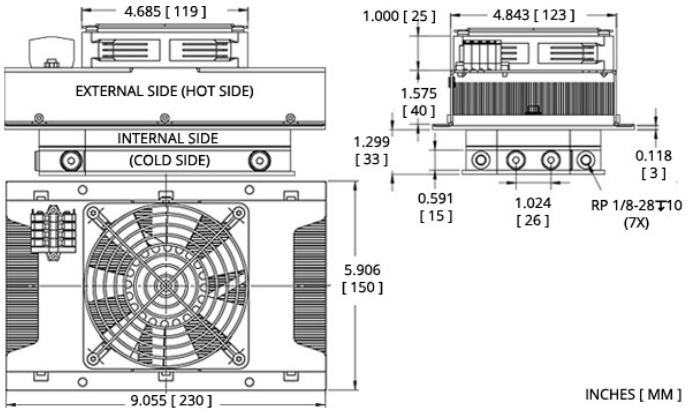
Features

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

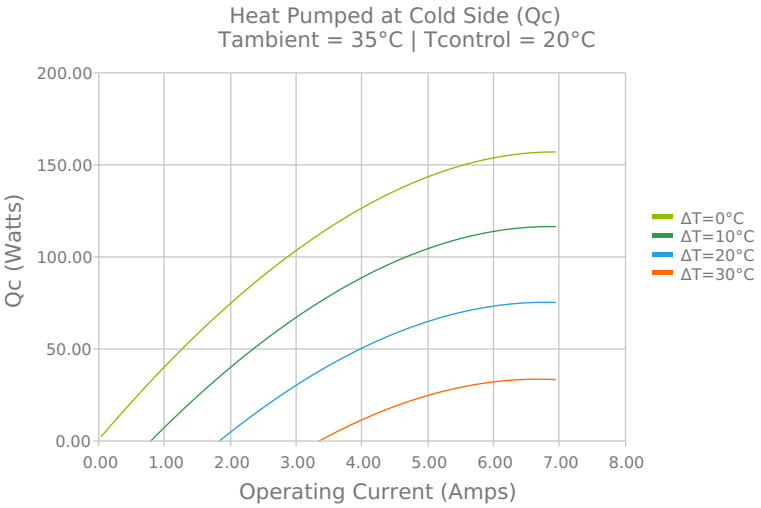
Applications

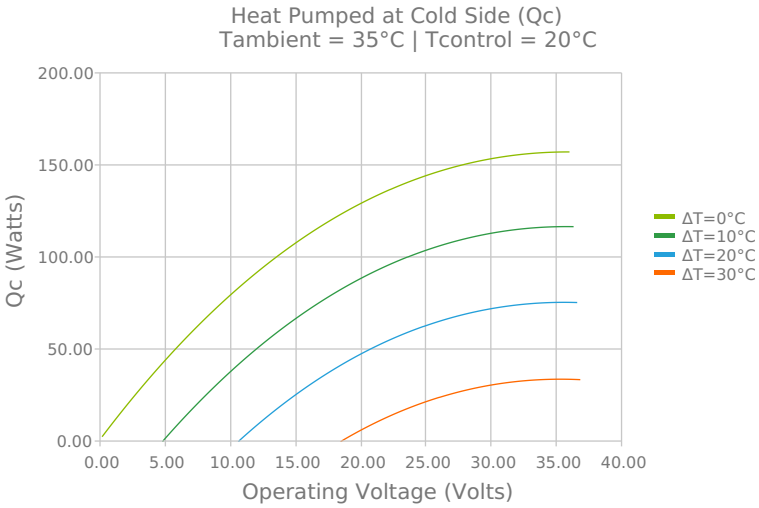
- Liquid Cooling Options for PET and SPECT Scanners
- Peltier Cooling for Refrigerated Centrifuges
- Heating and Cooling of Incubator Chambers
- Thermal Management Solutions for Beverage Cooling



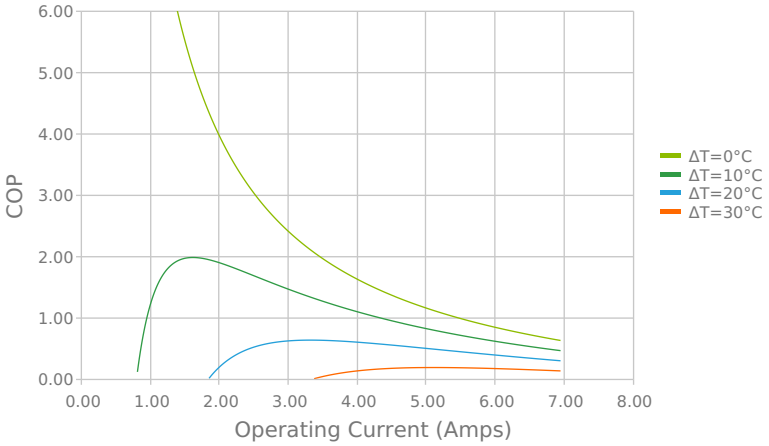


ELECTRICAL AND THERMAL PERFORMANCE

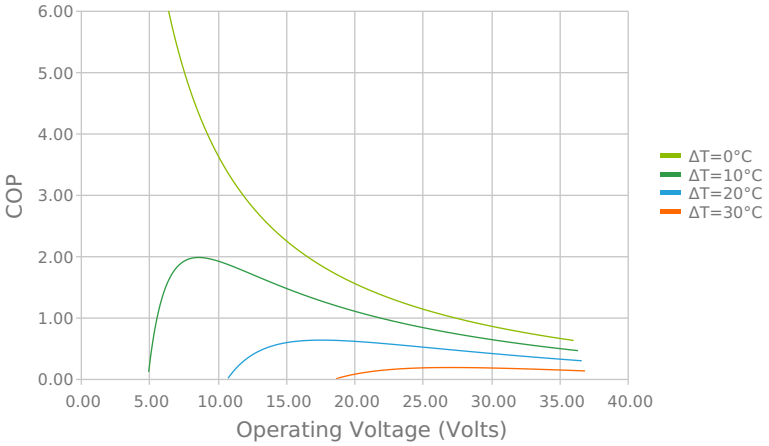




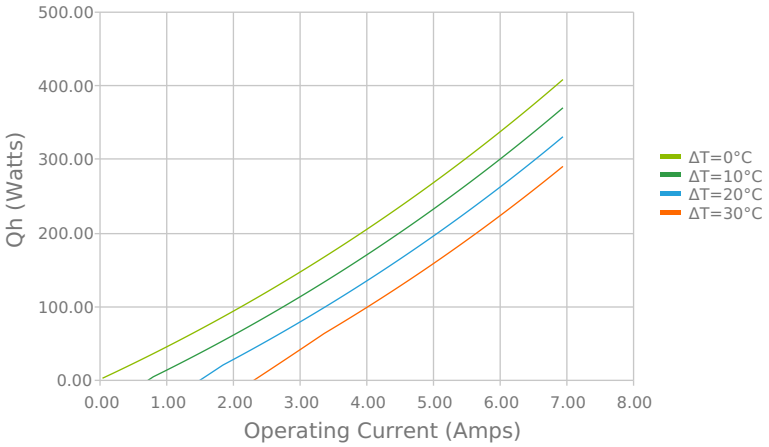
Coefficient of Performance (COP = Qc/Pin)
Tambient = 35°C | Tcontrol = 20°C



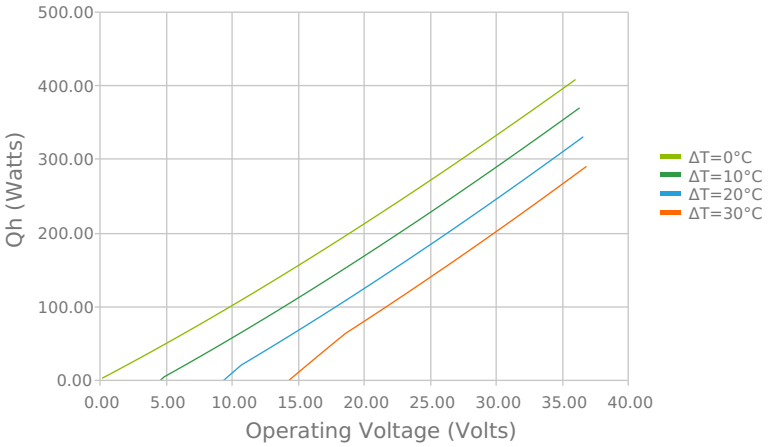
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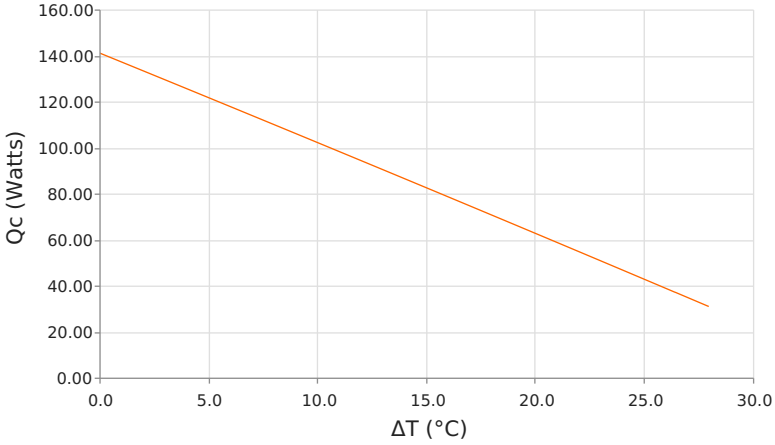
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Tambient = 35°C | Tcontrol = 20°C



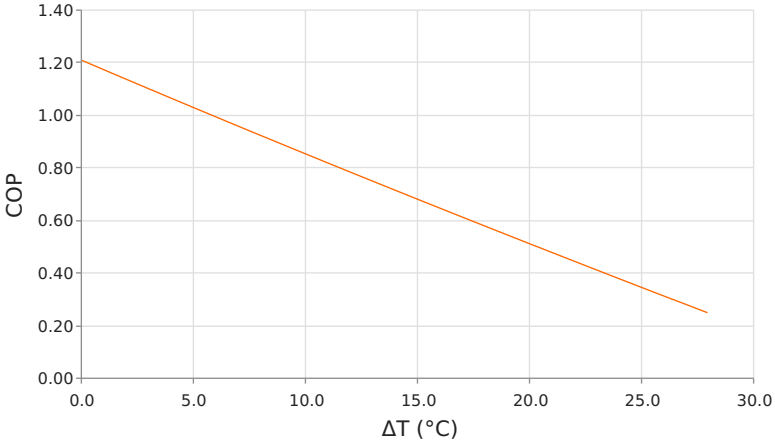
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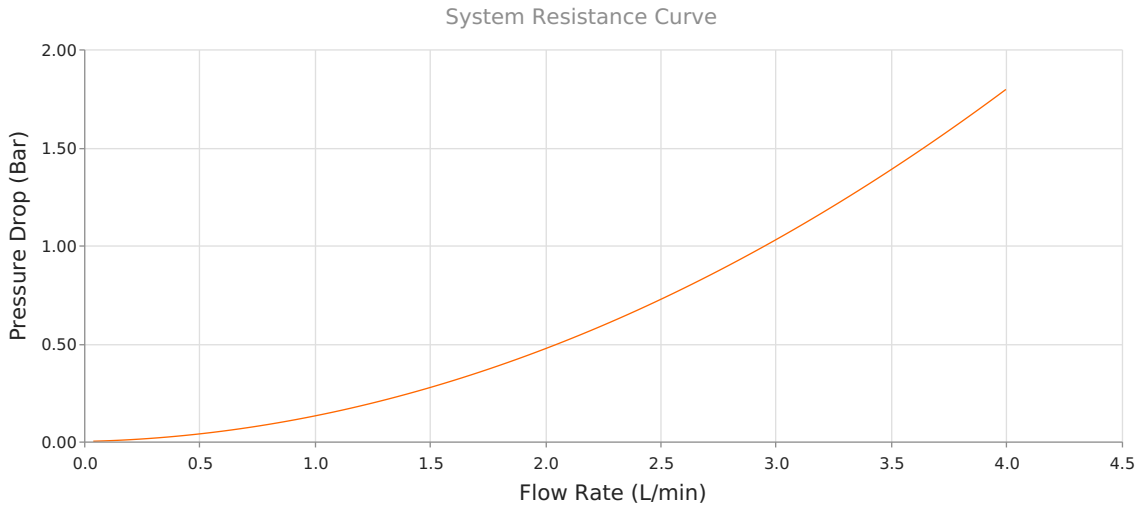


Heat Pumped at Cold Side (Qc)
Voperating = 24.06 Volts | Ioperating = 4.88 Amps



Coefficient of Performance (COP = Qc/Pin)
Voperating = 24.06 Volts | Ioperating = 4.88 Amps

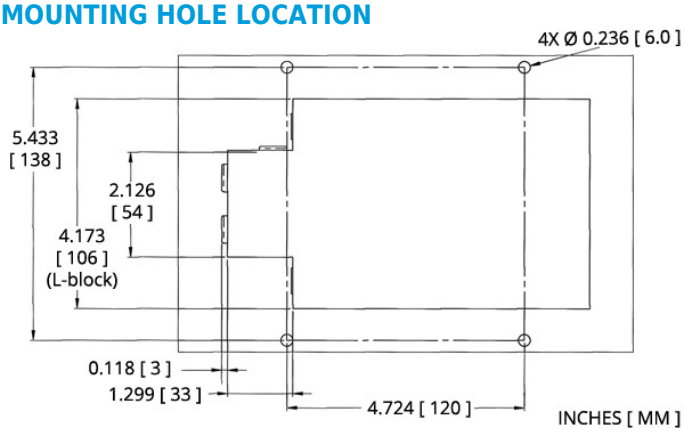




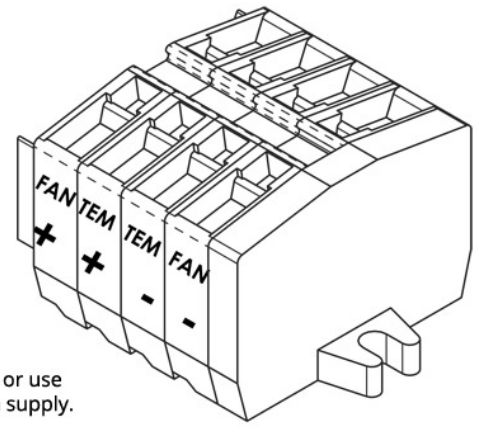
SPECIFICATIONS

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	5.0 A running / 6.4 A startup
Power Supply	120.0 Watts
Performance Tolerance	10%
Hi-Pot Testing	750 VDC
Fan MTBF	50,000 hours
Over-Temp Thermostat (Hot and Cold Side Heat Sink)	without thermostat
Sound Level (1 m distance)	61 dBA
Weight	2.33 kg
Panel Mounting	Through

MOUNTING HOLE LOCATION



WIRING SCHEMATIC



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

NOTES

[1]For indoor use only
[2]Turbulators are mounted inside liquid channels to create turbulent flow
[3]Cold block requires insulation to minimize moisture buildup under dew point conditions.

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