

SuperCool 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 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 Q_c of 407 Watts when $\Delta T = 0$ and a maximum ΔT of 39 °C at $Q_c = 0$.

US Patent US2016/0255746 A1

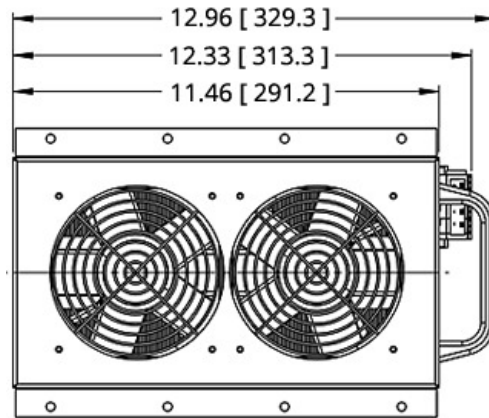


Features

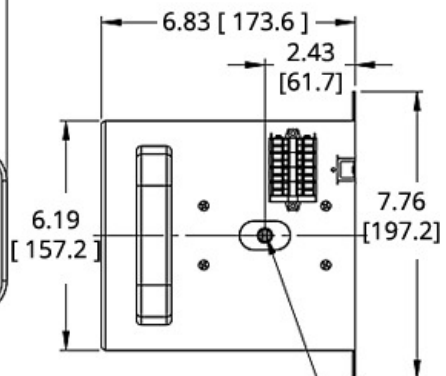
- High performance
- Compact form factor
- Reliable solid-state operation
- RoHS-compliant

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



INCHES [MM]

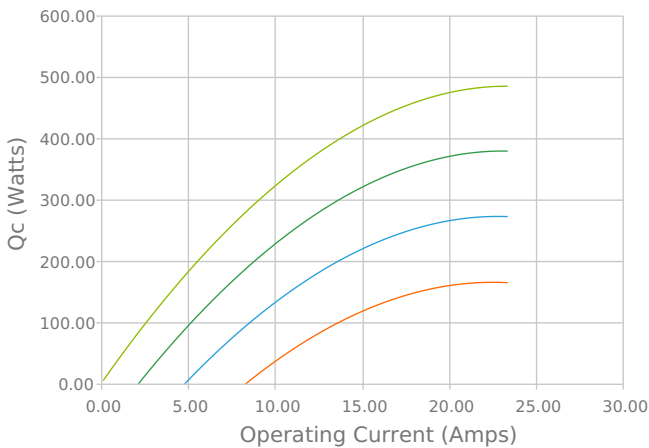


2X Rp 1/8-28

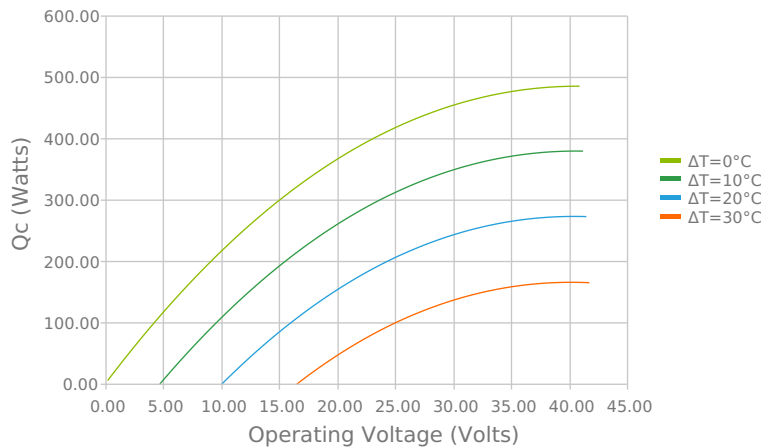
The thread length of matching fitting should exceed 12mm

ELECTRICAL AND THERMAL PERFORMANCE

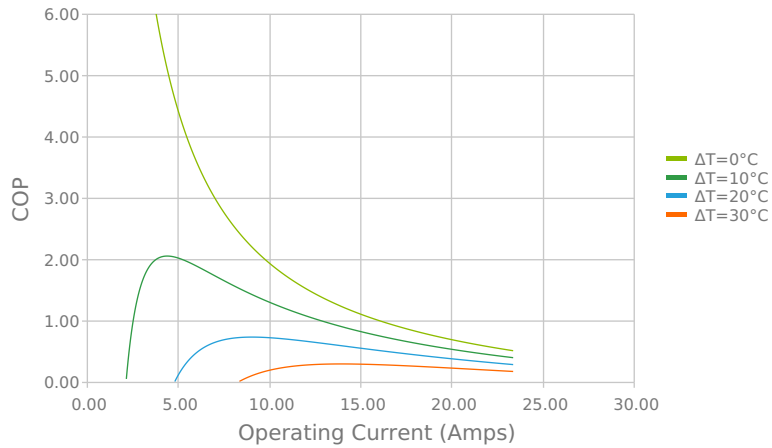
Heat Pumped at Cold Side (Q_c)
Tambient = 35°C | Tcontrol = 20°C



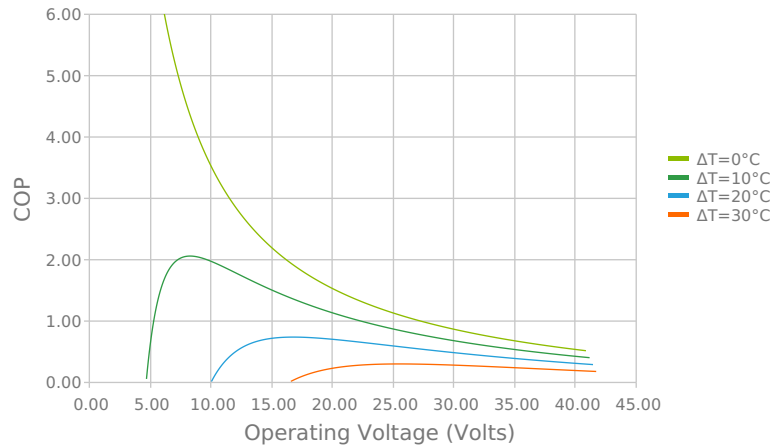
Heat Pumped at Cold Side (Q_c)
Tambient = 35°C | Tcontrol = 20°C



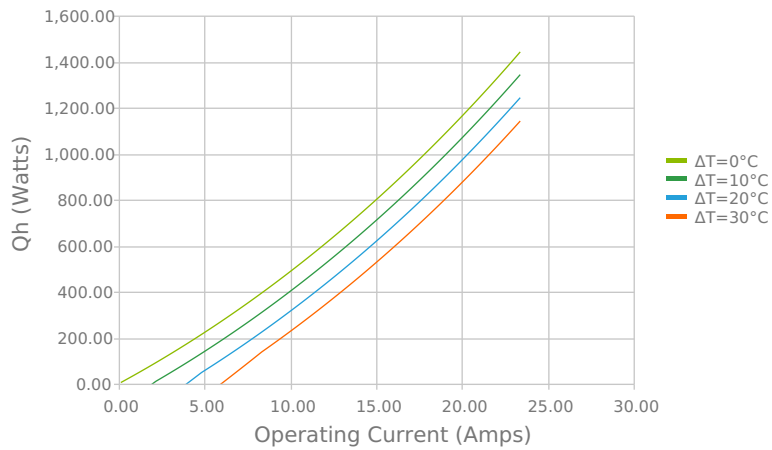
Coefficient of Performance (COP = Q_c/P_{in})
T_{ambient} = 35°C | T_{control} = 20°C



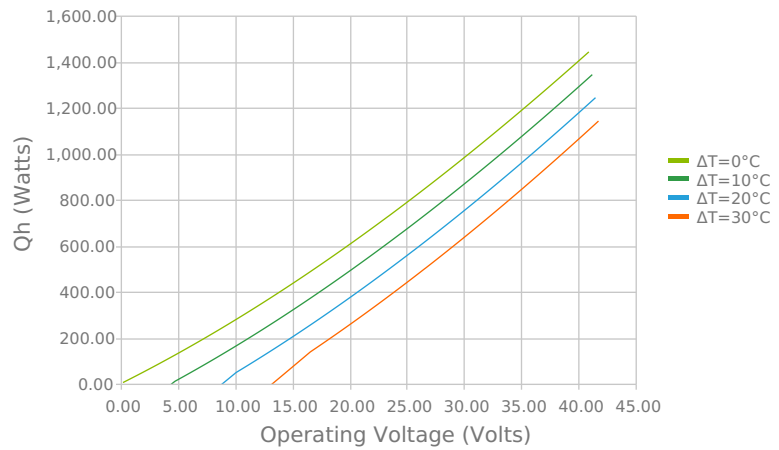
Coefficient of Performance (COP = Q_c/P_{in})
T_{ambient} = 35°C | T_{control} = 20°C



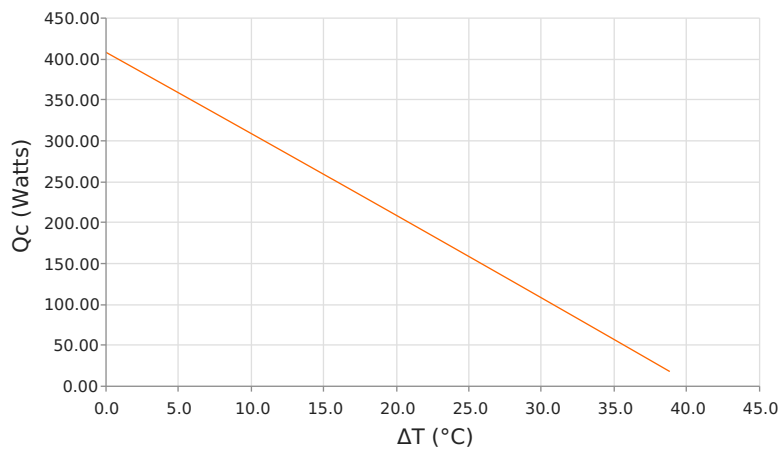
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
T_{ambient} = 35°C | T_{control} = 20°C



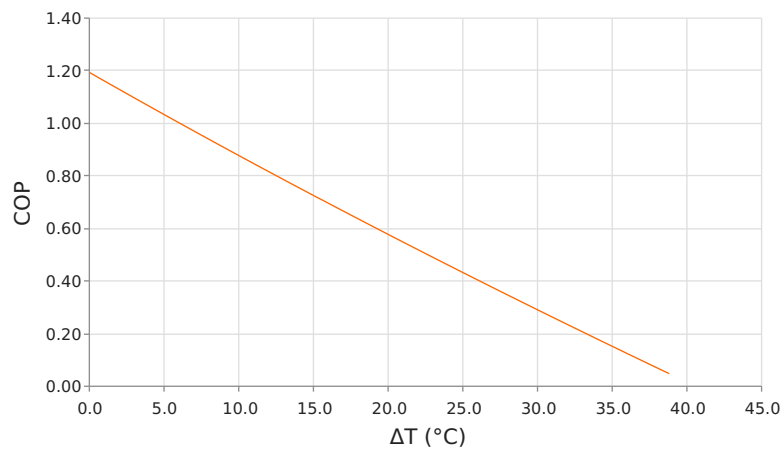
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
T_{ambient} = 35°C | T_{control} = 20°C



Heat Pumped at Cold Side (Q_c)
V_{operating} = 24.07 Volts | I_{operating} = 14.3 Amps



Coefficient of Performance (COP = Q_c/P_{in})
V_{operating} = 24.07 Volts | I_{operating} = 14.3 Amps



SPECIFICATIONS

Operating Temperature Range

Supply Voltage

Current Draw

Power Supply

Performance Tolerance

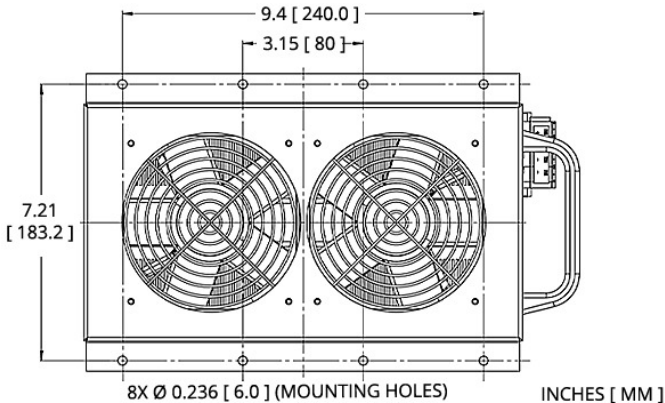
Fan MTBF

Sound Level (1 m distance)

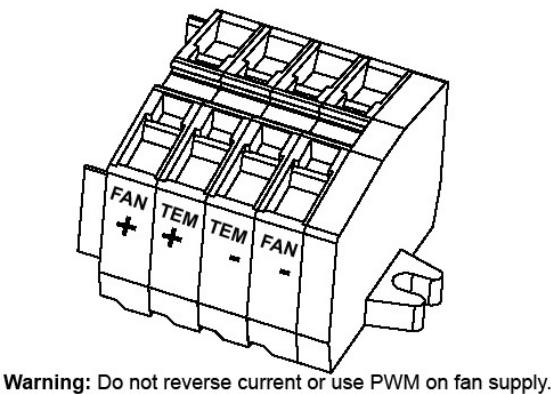
Weight

-20 °C to 60°C
24.0 VDC nominal / 30.0 VDC maximum
13.3 A running / 16.5 A startup
319.0 Watts
10%
60,000 hours
49 dBA
9.15 kg

MOUNTING HOLE LOCATION



WIRING SCHEMATIC



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.

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