

Liquid Series Thermoelectric Cooler Assembly

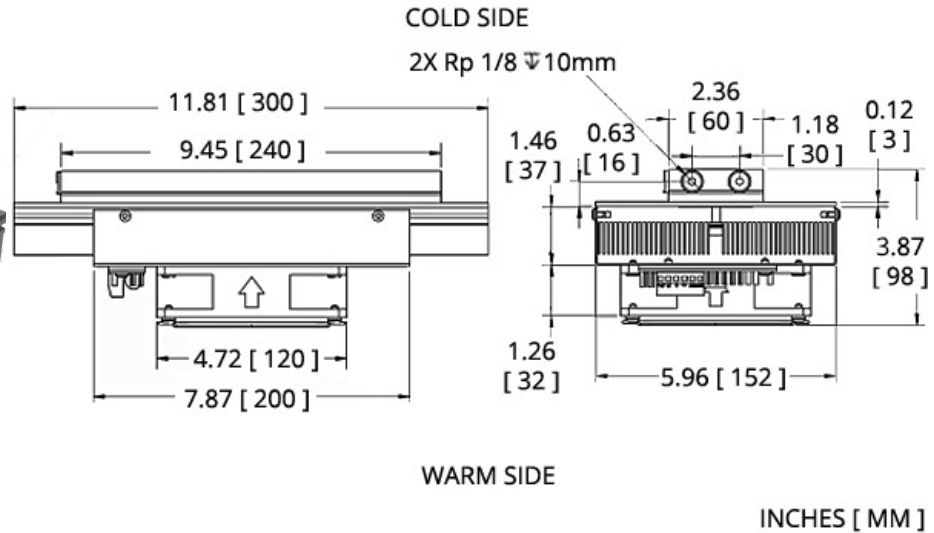
The LA-115-24-02 thermoelectric cooler assembly offers dependable, compact performance by cooling objects via liquid to transfer heat. Heat is absorbed through a liquid heat exchanger and dissipated thru a high density heat sink equipped with an air ducted shroud and brand name fan. The thermoelectric modules are custom designed to achieve a high coefficient of performance (COP) to minimize power consumption. It has a maximum Q_c of 113 Watts when $\Delta T = 0$ and a maximum ΔT of 42 °C at $Q_c = 0$. The liquid heat exchanger is designed to accommodate distilled water with glycol. Corrosion resistant turbulators are enclosed inside channels to increase heat transfer. Mating port adaptors are sold separately.

Features

- Compact design
- Precise temperature control
- Reliable solid-state operation
- DC operation
- RoHS-compliant

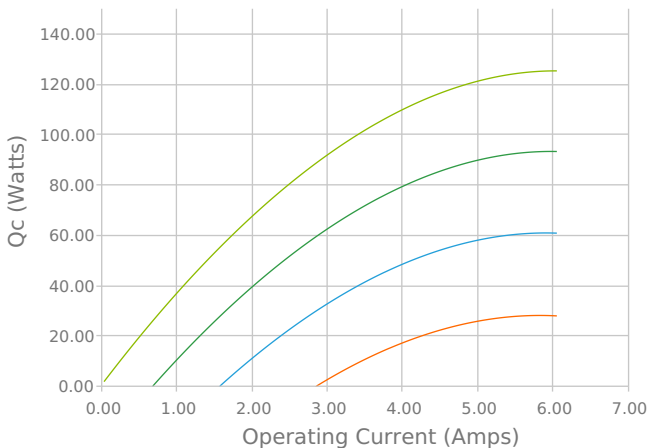
Applications

- Medical Diagnostics
- Industrial Lasers
- Medical Lasers
- Analytical Instrumentation

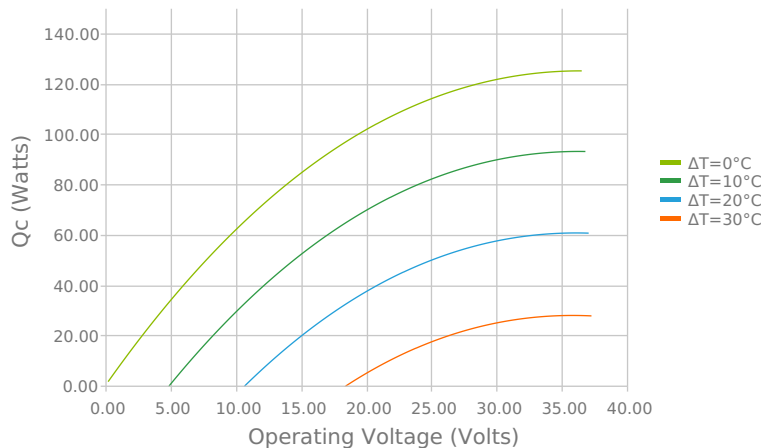


ELECTRICAL AND THERMAL PERFORMANCE

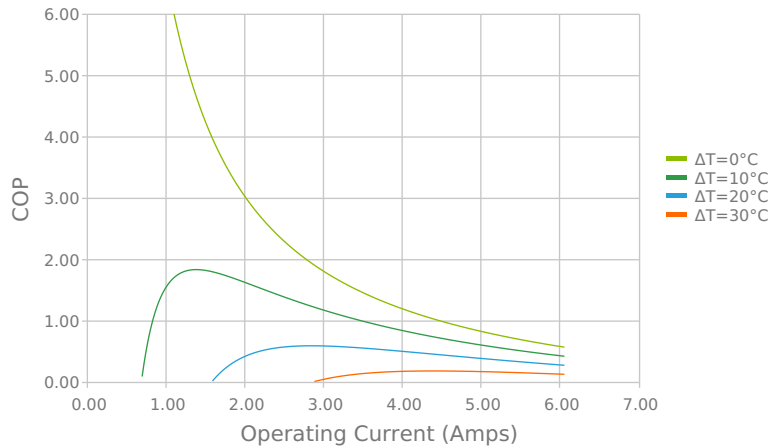
Heat Pumped at Cold Side (Q_c)
Tambient = 35°C | Tcontrol = 20°C



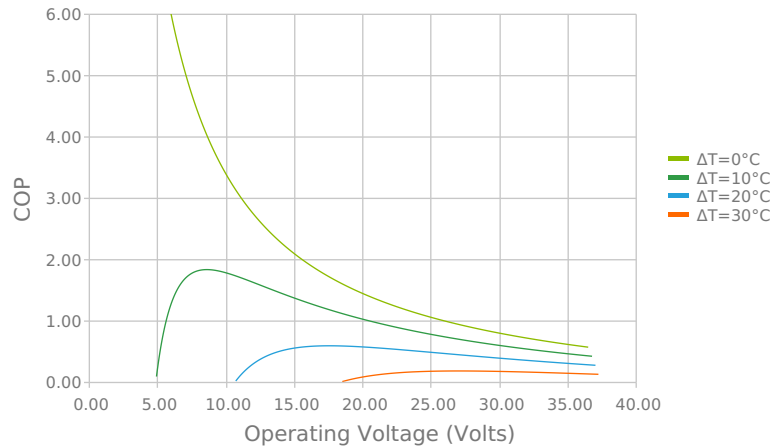
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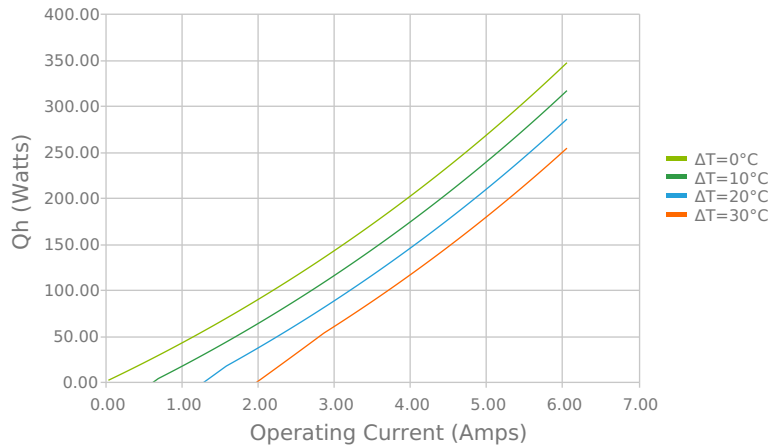
Coefficient of Performance (COP = Q_c/P_{in})
 $T_{ambient} = 35^{\circ}\text{C}$ | $T_{control} = 20^{\circ}\text{C}$



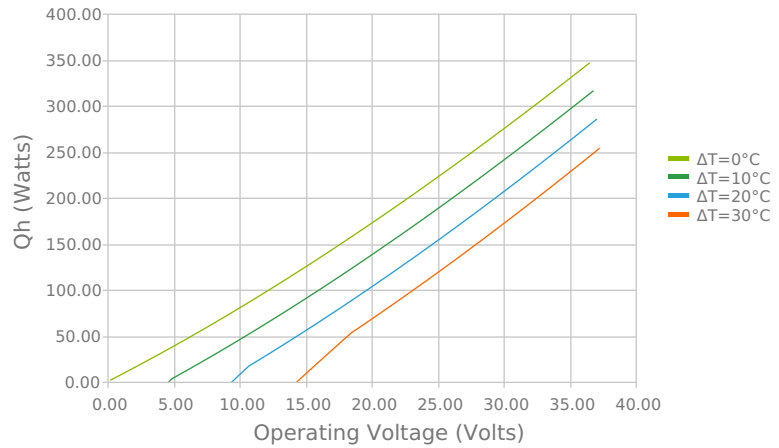
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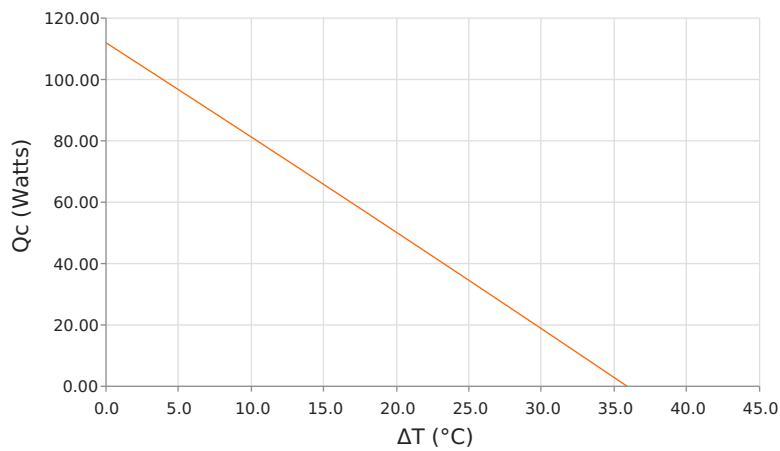
Total Heat Dissipated at Hot Side ($Q_h = Q_c + P_{in}$)
 $T_{ambient} = 35^{\circ}\text{C}$ | $T_{control} = 20^{\circ}\text{C}$



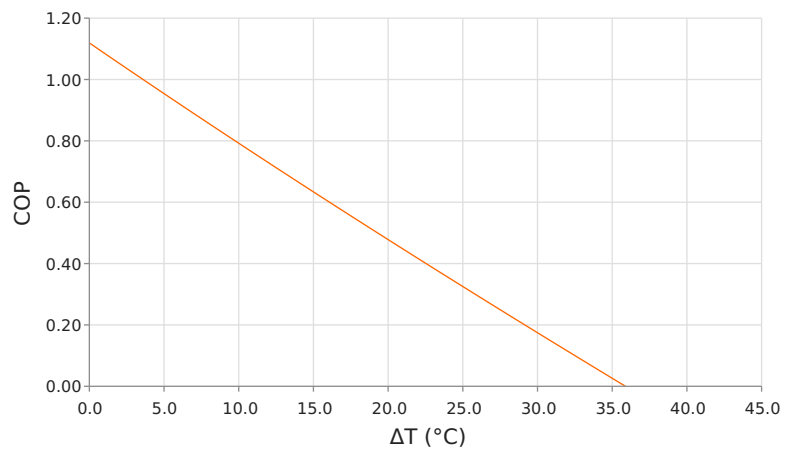
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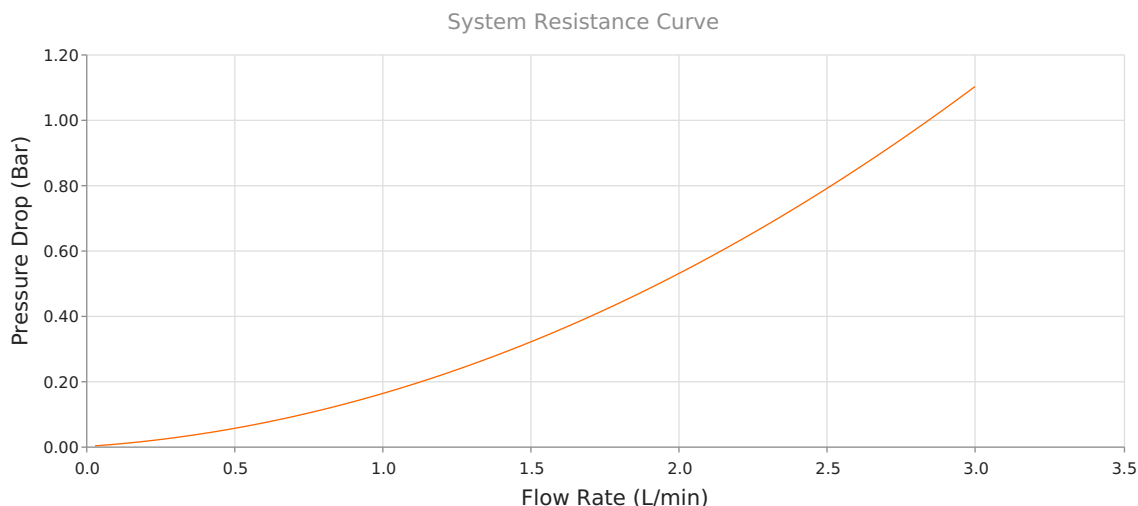


Heat Pumped at Cold Side (Q_c)
 $V_{operating} = 24.08$ Volts | $I_{operating} = 4.18$ Amps



Coefficient of Performance (COP = Q_c/P_{in})
 $V_{operating} = 24.08$ Volts | $I_{operating} = 4.18$ Amps





SPECIFICATIONS

Operating Temperature Range

Supply Voltage

Current Draw

Power Supply

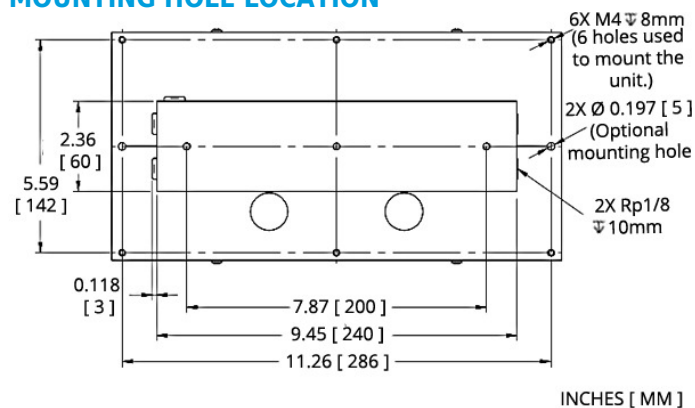
Performance Tolerance

Fan MTBF

Weight

-10°C to 47°C
24.0 VDC nominal / 30.0 VDC maximum
5.3 A running / 6.6 A startup
139.0 Watts
10%
50,000 hours
3.20 kg

MOUNTING HOLE LOCATION

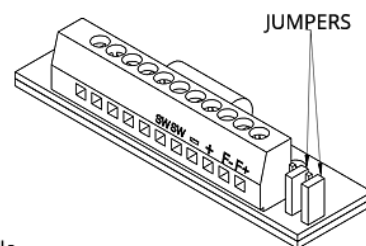


ELECTRICAL CONNECTIONS

" + " : + TEM
 " - " : - TEM
 " F+ " : + FAN(S)
 " F- " : - FAN(S)

To use single supply:
 Lift the jumpers and rotate 90° to short-out the pin pairs.
 Connect the unit to " + " & " - ".

Warning: Single supply not applicable in heating mode or with PWM-regulation.



NOTES

¹For indoor use only

²Turbulators are mounted inside liquid channels to create turbulent flow

³Cold block requires insulation to minimize moisture buildup under dew point conditions.

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Date: 06/07/2021