

Liquid Series Thermoelectric Cooler Assembly

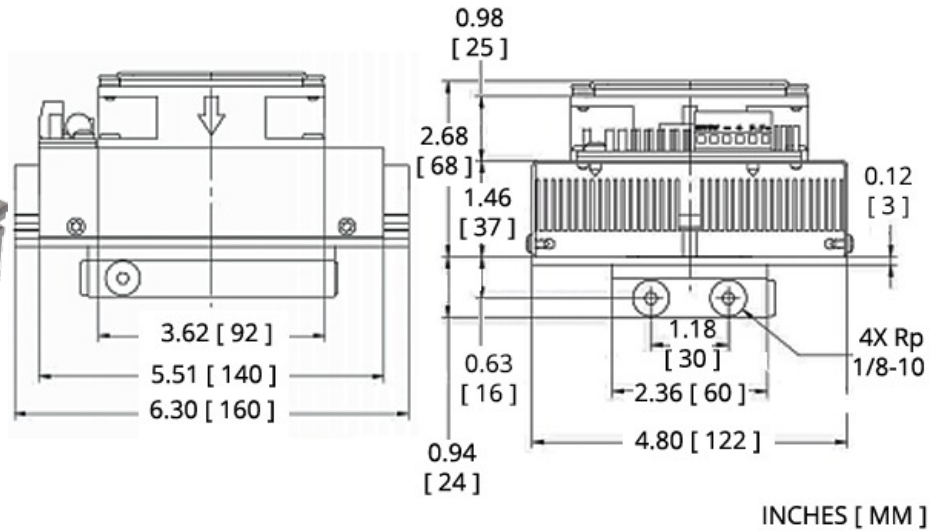
The LA-045-24-02 thermoelectric assembly (TEA) offers dependable, compact performance by cooling objects via liquid to transfer heat. Heat is absorbed through a liquid heat exchanger and dissipated thru a high density heat sink equipped with an air ducted shroud and brand name fan. The thermoelectric modules are custom designed to achieve a high coefficient of performance (COP) to minimize power consumption. It has a maximum Q_c of 42 Watts when $\Delta T = 0$ and a maximum ΔT of 36 °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

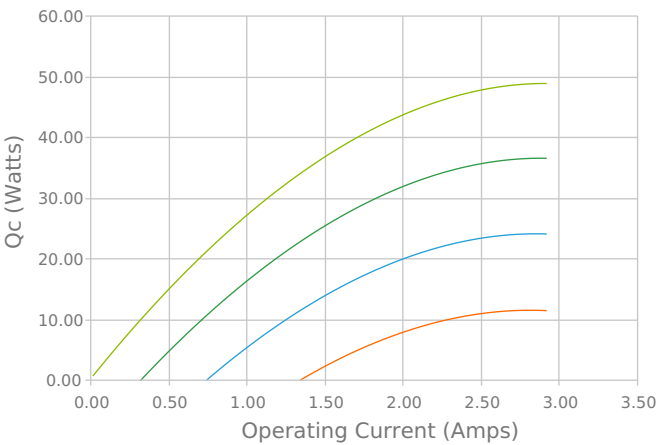
Applications

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

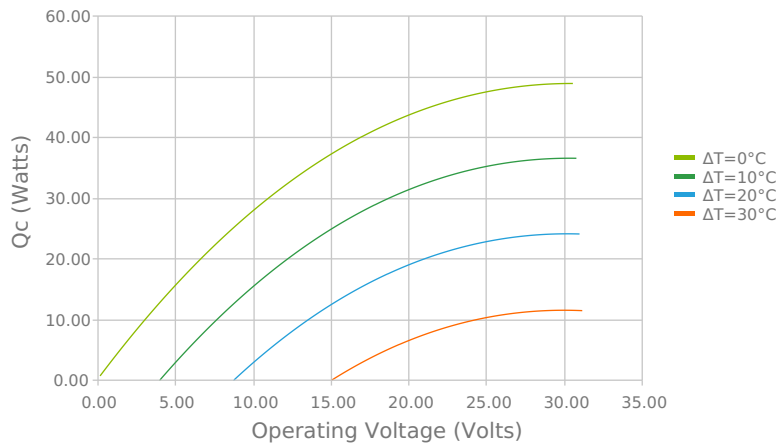


ELECTRICAL AND THERMAL PERFORMANCE

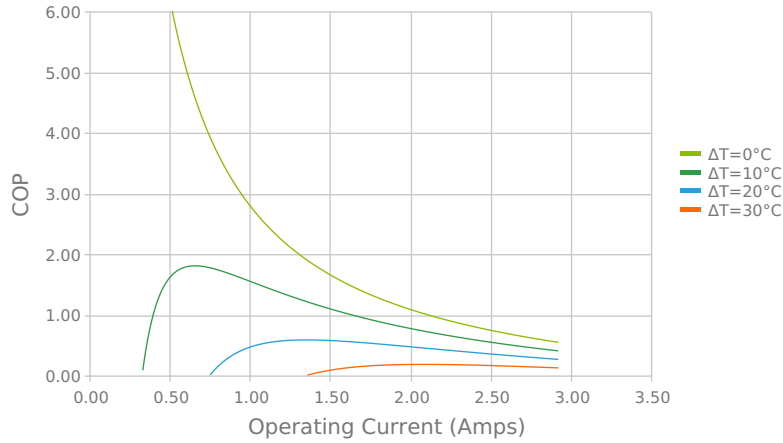
Heat Pumped at Cold Side (Q_c)
 Tambient = 35°C | Tcontrol = 20°C



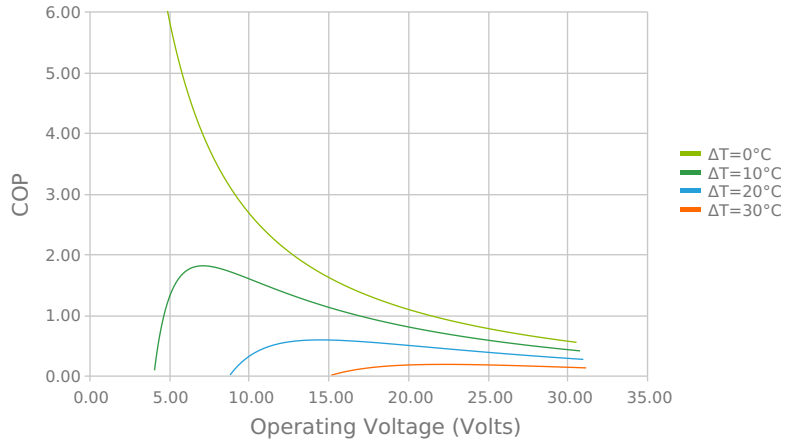
Heat Pumped at Cold Side (Q_c)
 Tambient = 35°C | Tcontrol = 20°C



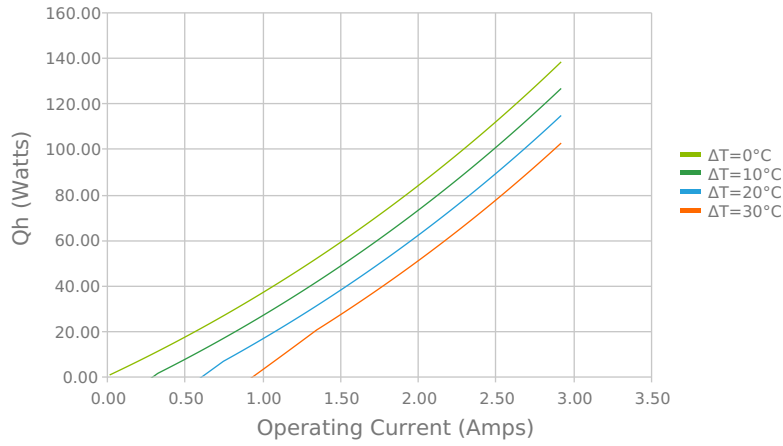
Coefficient of Performance (COP = Qc/Pin)
 Tambient = 35°C | Tcontrol = 20°C



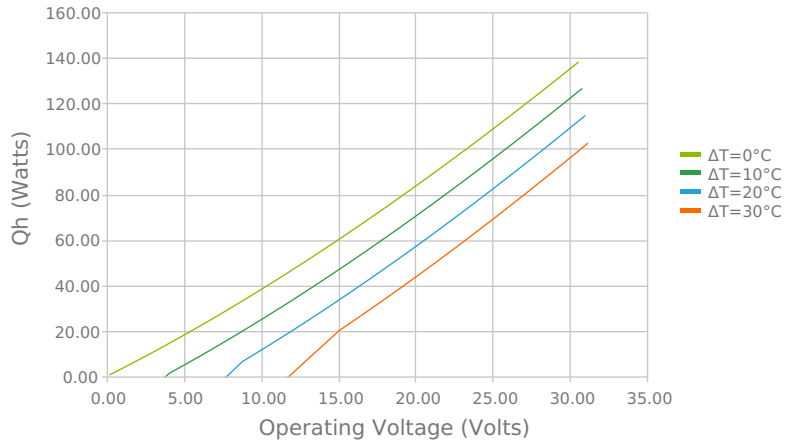
Coefficient of Performance (COP = Qc/Pin)
 Tambient = 35°C | Tcontrol = 20°C



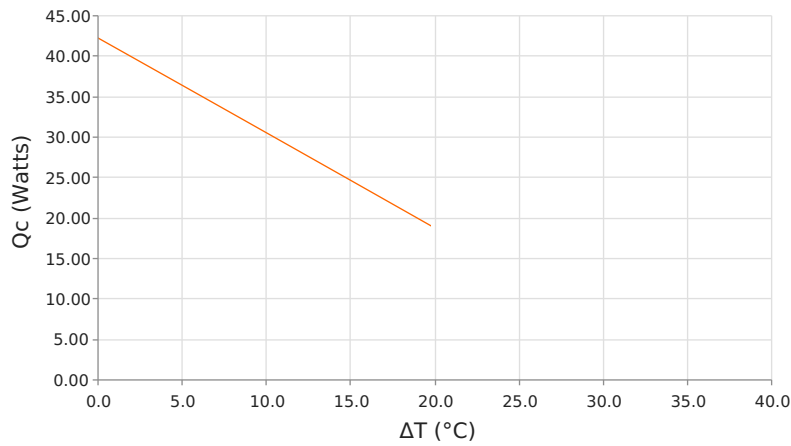
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Tambient = 35°C | Tcontrol = 20°C



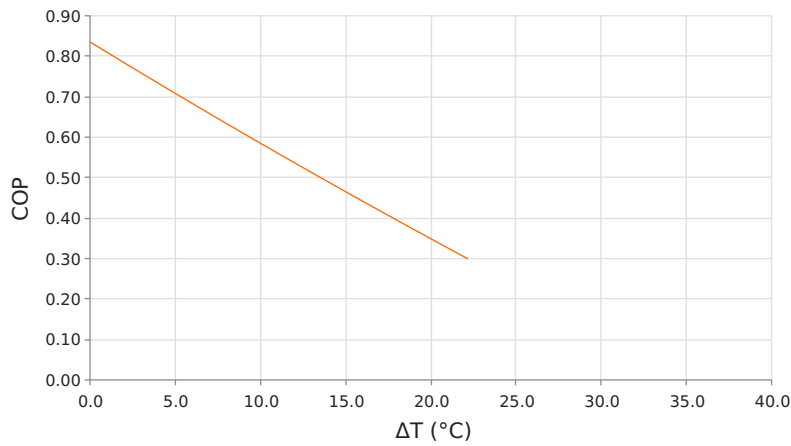
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Tambient = 35°C | Tcontrol = 20°C



Heat Pumped at Cold Side (Qc)
 Voperating = 24.1 Volts | Ioperating = 2.4 Amps



Coefficient of Performance (COP = Qc/Pin)
 Voperating = 24.1 Volts | Ioperating = 2.4 Amps



SPECIFICATIONS

Operating Temperature Range	-10 °C to 48°C
Supply Voltage	24.0 VDC nominal / 30.0 VDC maximum
Current Draw	2.8 A running / 3.2 A startup
Power Supply	60.0 Watts
Performance Tolerance	10%
Fan MTBF	50,000 hours
Weight	1.30 kg

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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