Liquid Series LL-060-12-00
MFG Part Number: LL-060-12-00-00-00

Liquid Series Thermoelectric Cooler Assembly

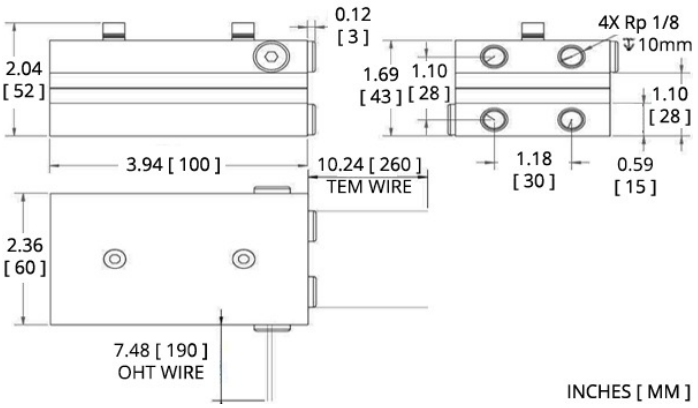
The LL-060-12-00 thermoelectric cooler assembly offers dependable, compact performance by cooling objects via liquid to transfer heat. Heat is absorbed through one liquid heat exchanger and dissipated thru a second liquid heat exchanger. The thermoelectric modules are custom designed to achieve a high coefficient of performance (COP) to minimize power consumption. It has a maximum Qc of 61 Watts when ΔT = 0 and a maximum ΔT of 42 °C at Qc = 0. Heat exchangers are 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

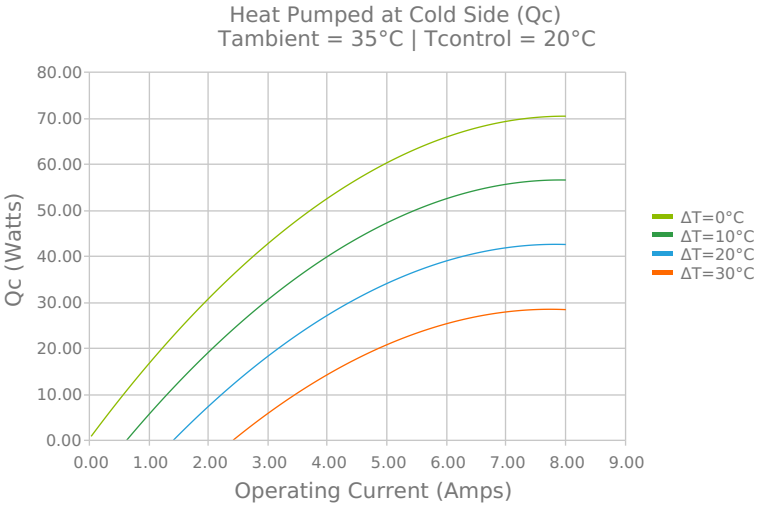
- Compact design
- Precise temperature control
- Reliable solid-state operation
- DC operation
- RoHS-compliant

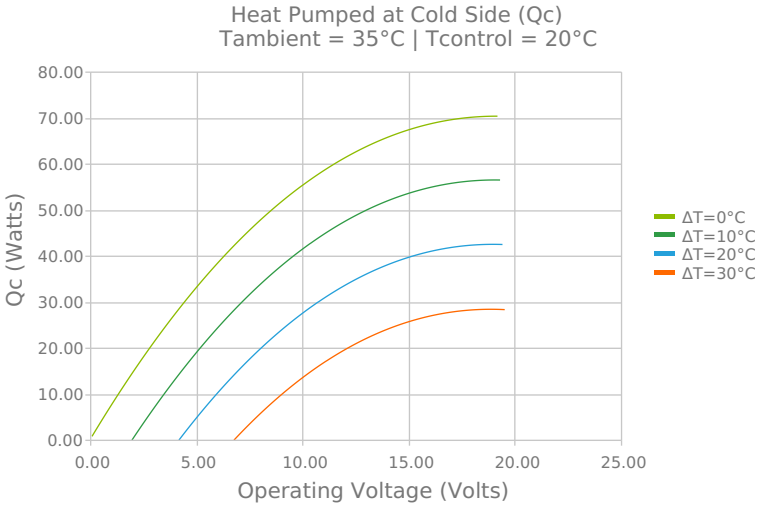
Applications

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

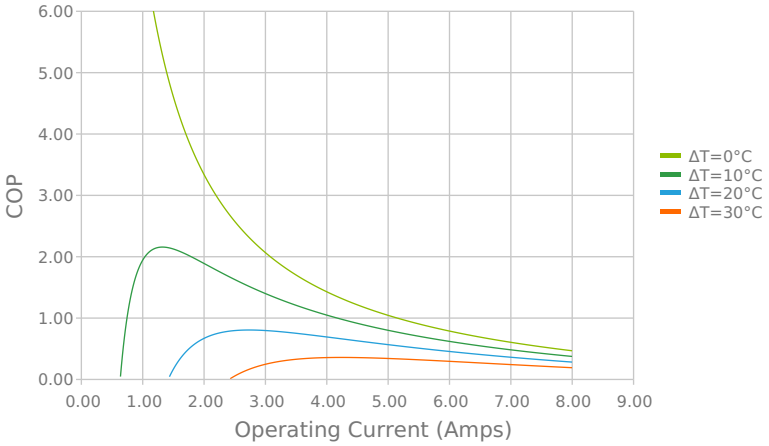


ELECTRICAL AND THERMAL PERFORMANCE





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



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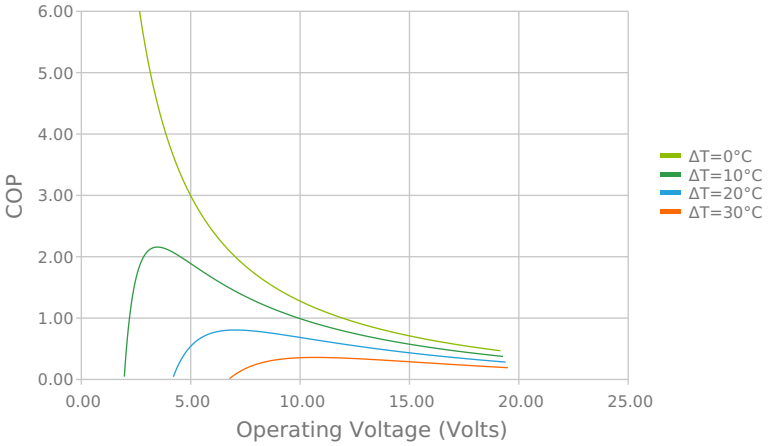
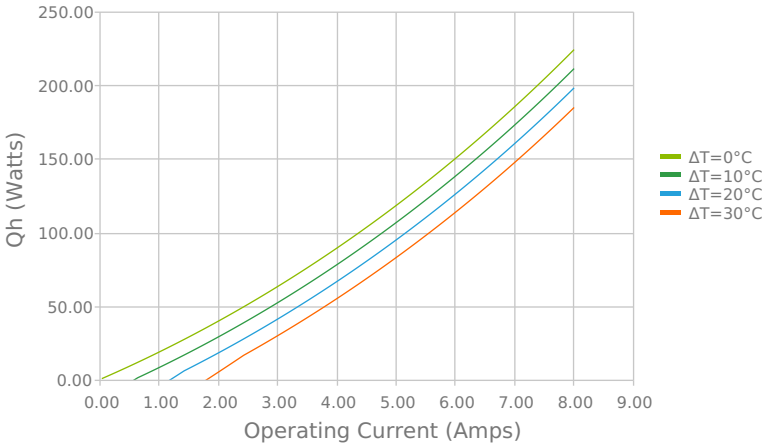


Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Tambient = 35°C | Tcontrol = 20°C



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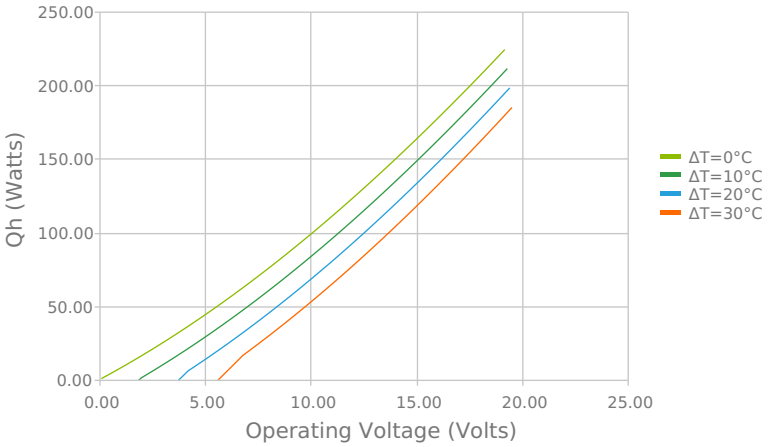
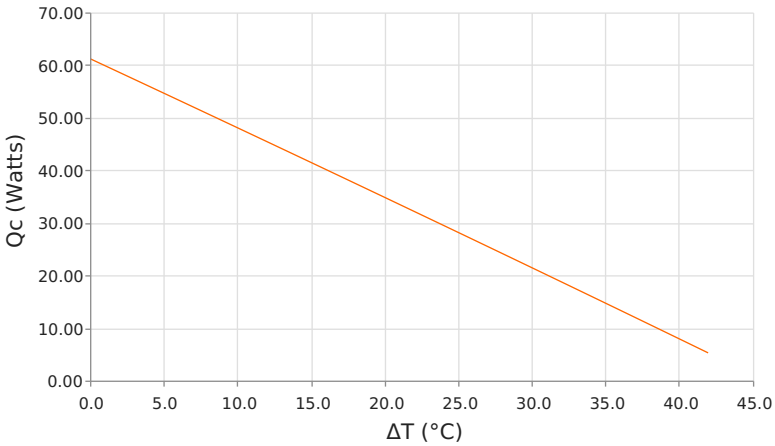


Heat Pumped at Cold Side (Qc)
Voperating = 12.02 Volts | Ioperating = 5.19 Amps



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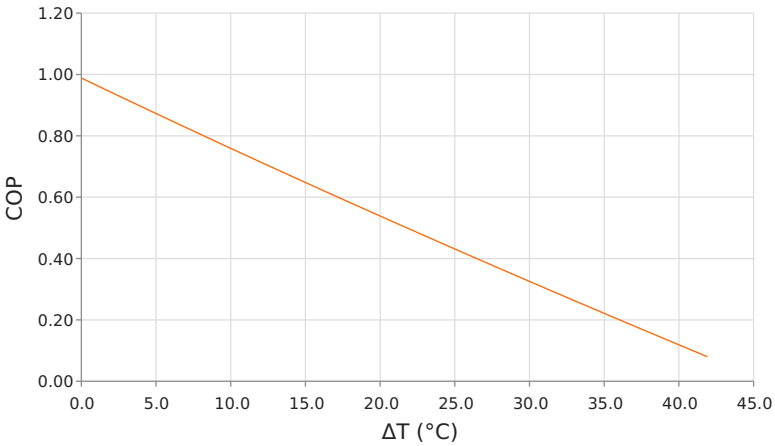
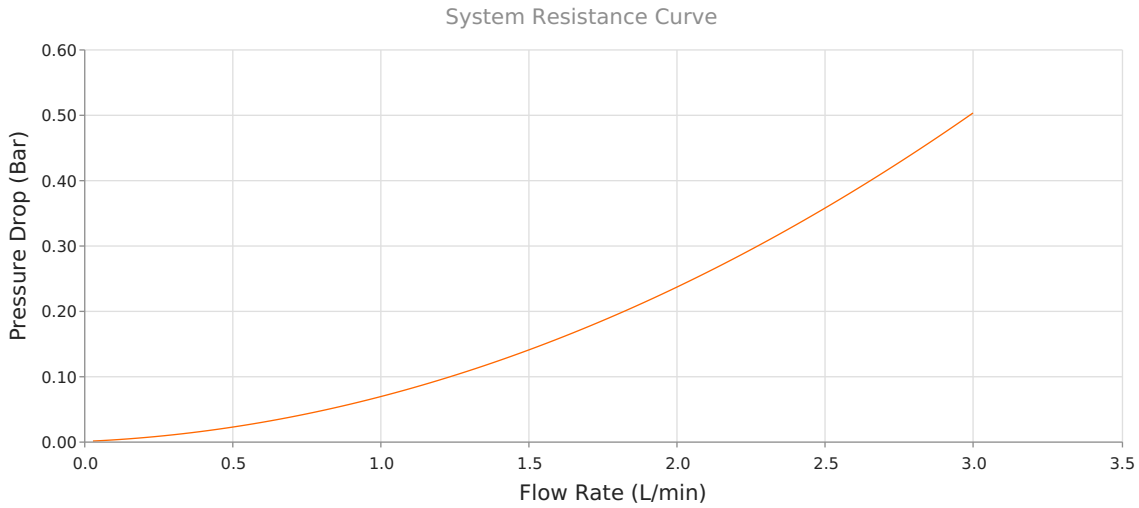
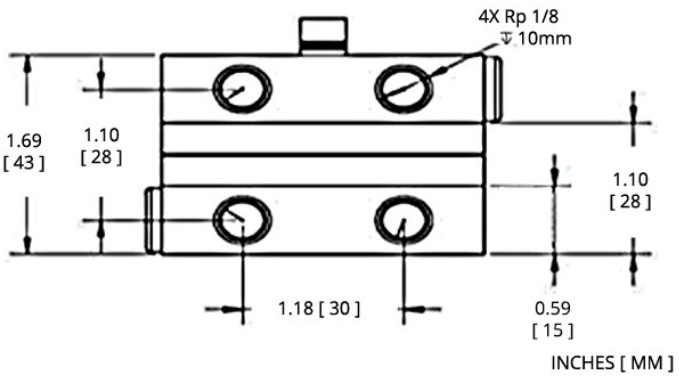




SPECIFICATIONS

Heat Transfer Mechanism, Cold Side	Liquid - Forced Convection
Heat Transfer Mechanism, Hot Side	Liquid - Forced Convection
Operating Temperature Range	-40°C to 62°C
Supply Voltage	12.0 VDC nominal / 15.0 VDC maximum
Current Draw	3.9 A running / 4.3 A startup
Power Supply	56.0 Watts
Performance Tolerance	10%
Hi-Pot Testing	750 VDC
Over-Temp Thermostat (Hot and Cold Side Heat Sink)	75°C ±5°C (hot side heat sink)
Weight	0.50 kg

MOUNTING HOLE LOCATION



ELECTRICAL CONNECTIONS

TEM+ : Red
TEM - : Black

Wire Size: 20 AWG

The overheat protection (OHT) bimetal thermostat has a maximum current of 8 Amps. For systems 8 Amps or less, the thermostat can be connected directly in series with thermoelectric modules (TEMs). Otherwise connect the TEMs to the power source through a relay of suitable rating which state is controlled with the bimetal thermostat.

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.

Revision: 00 Date: 06-01-2022

Print Date: 06-15-2022