

Thermoelectric cooling unit for medical and industrial applications



The Liquid-to-Air Series 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. This product series is available in a wide range of cooling capacities and voltages. Custom configurations are available, however, MOQ applies.

FEATURES

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

APPLICATIONS

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

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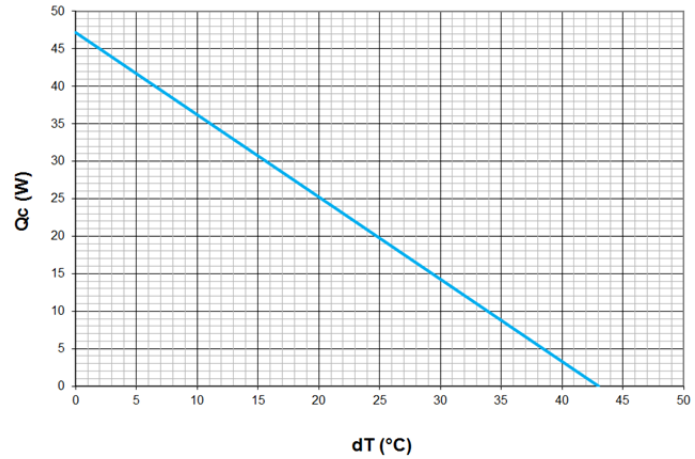
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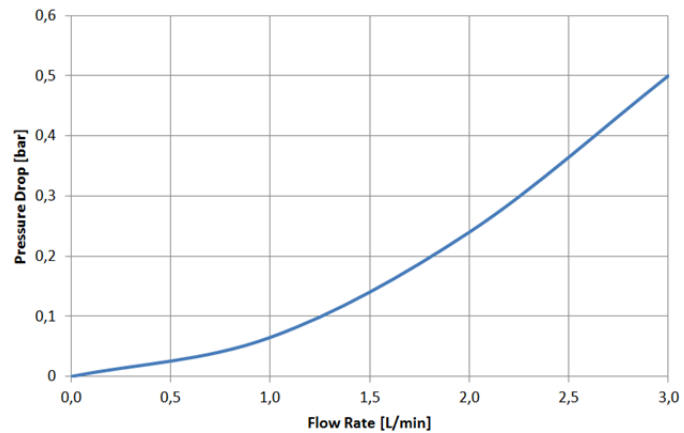
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Qc vs dT



Pressure Drop vs Flow Rate



SPECIFICATIONS

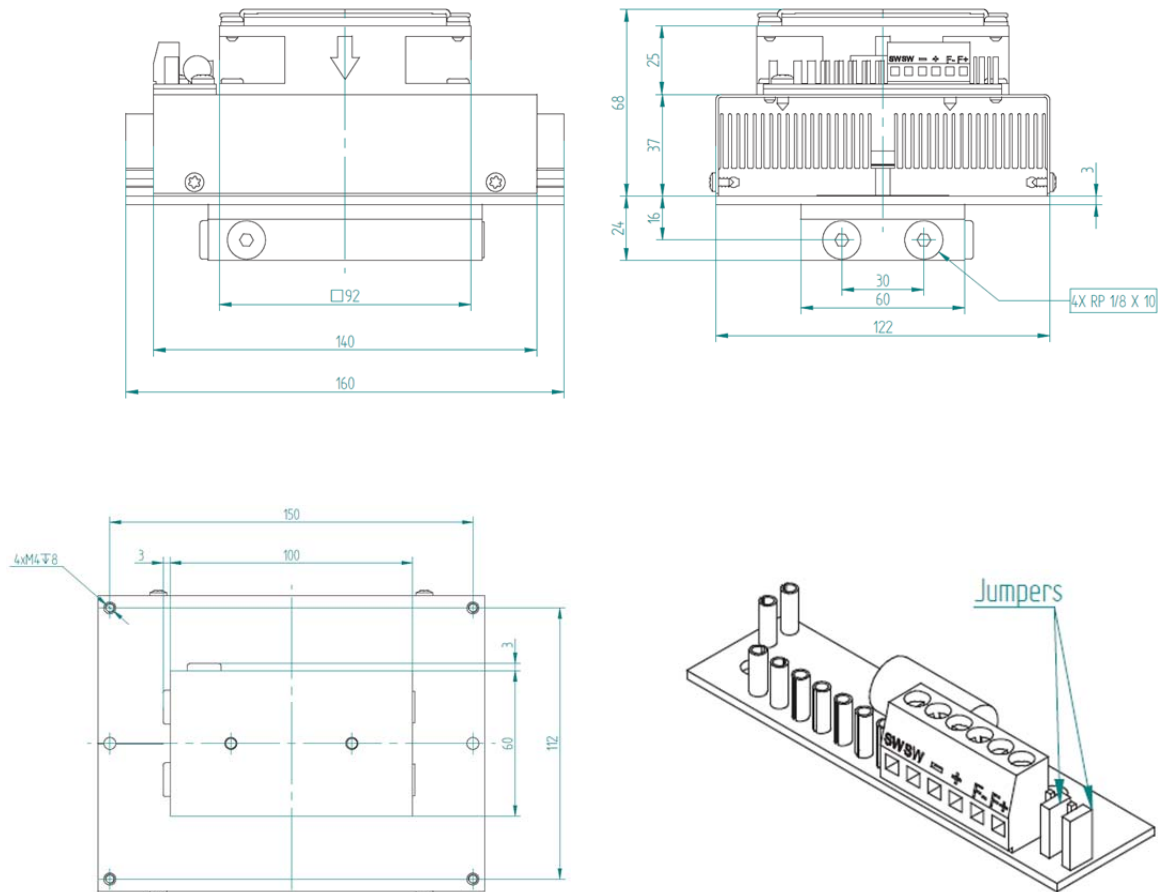
TECHNICAL

| | |
|--|----------------------|
| Technology | Thermoelectric based |
| Cooling at $\Delta T = 0^\circ\text{C}$ | 47.2 W |
| Voltage (nominal / maximum) | 24/30 VDC |
| Current draw, $\pm 10\%$ (nominal / startup) | 2.8/3.2 A |
| Weight | 1.3 kg |
| MTBF (fans) | 50,000 hours |

ENVIRONMENTAL

| | |
|----------------------|--|
| Temperature range | -10°C to $+48^\circ\text{C}$ |
| Over temp Thermostat | $75^\circ\text{C} \pm 5^\circ\text{C}$ on hot side heat sink surface |

MECHANICAL DRAWING



Note:

- For overheating protection, the cooler is equipped with a bimetal thermostat. The maximum rating for the thermostat is 8 A dc. For systems with 8 A or less, the thermostat can be connected directly in series with the 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.
- Turbulators are mounted inside liquid channels to turbulate flow
- Cold block requires insulation to minimize moisture buildup under dew point conditions.

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