

Liquid-to-Air Thermoelectric Assembly

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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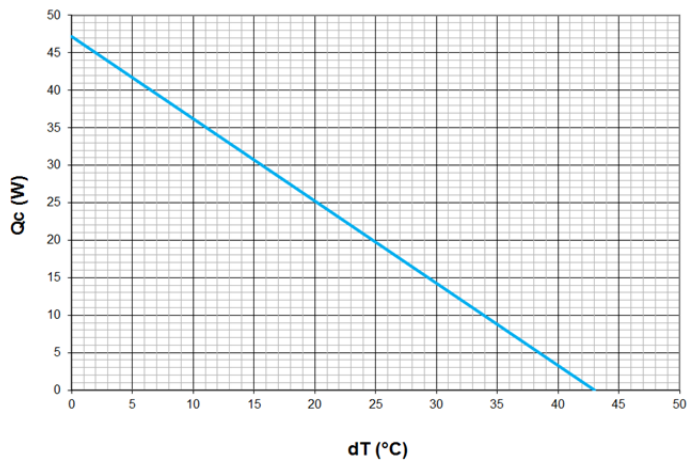
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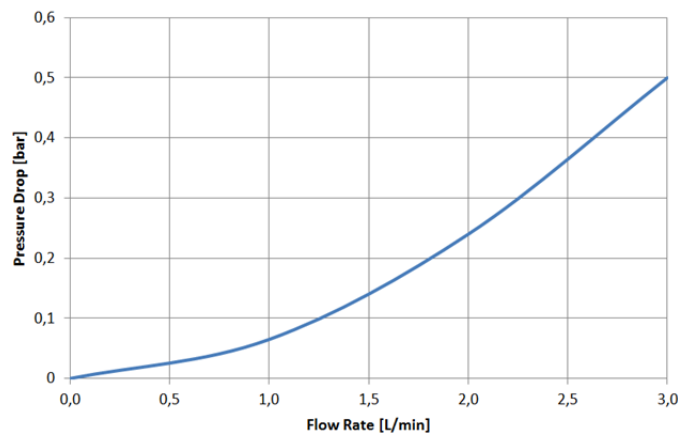
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Q_c vs dT



Pressure Drop vs Flow Rate



SPECIFICATIONS

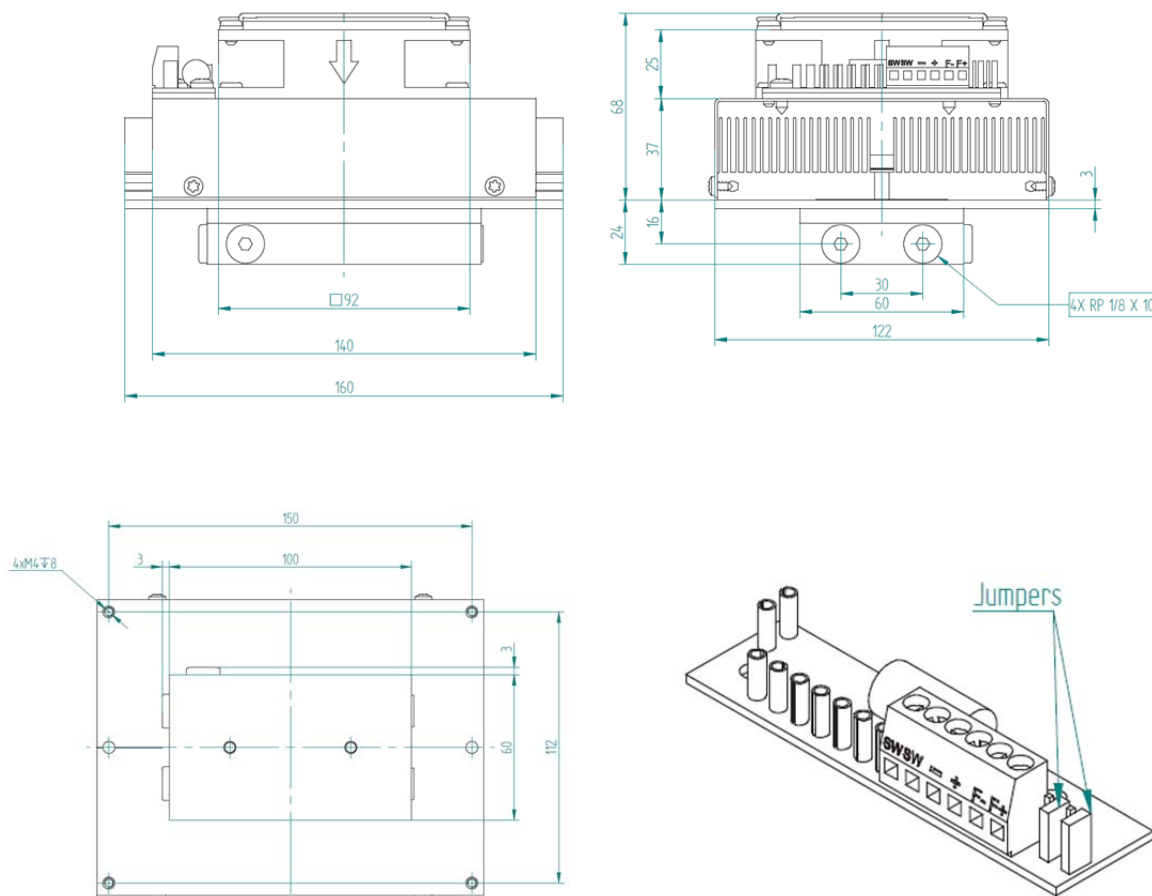
TECHNICAL

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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