

Dual Cold Side Outdoor Thermoelectric Cooler



Thermoelectric Cooling Units for outdoor enclosures and kiosks

The Outdoor Cooler Series is an Air-to-Air thermoelectric assembly (TEA) that uses impingement flow to transfer heat. It offers dependable, compact performance by cooling objects via convection. The AA-230 is designed for horizontal mount orientation to accommodate shelf space in a cabinet. Heat is absorbed and dissipated thru custom designed heat exchangers with high aspect ratio, air ducted shrouds and high performance fans. The heat pumping action occurs from custom designed thermoelectric modules that achieve a high coefficient of performance (COP) to minimize power consumption.

This product series has been designed to pass rigorous Telcordia test requirements conducted by our customers, such as earthquake resistance, salt fog, wind-driven rain, high temperature exposure and dust contaminants. This is due to the selection of world class components such as brand fans with the highest degree of environmental protection and lifetime guaranteed waterproof connectors, heavy duty anodization on the high-density heat sinks, overheat protection, and double environmental seals for the thermoelectric modules.

FEATURES AND BENEFITS

- Horizontal mount configuration
- 230W capacity rated at $\Delta T = 0^{\circ}\text{C}$, $T_{\text{ambient}} = 35^{\circ}\text{C}$
- Wide operating temperature range of -40°C to $+55^{\circ}\text{C}$
- Gaskets, connectors, and fans provide a NEMA 4 seal for the enclosure
- Environmentally friendly solid state operation – no compressor or CFC refrigerants
- Cooling and heating in the same unit; optional temperature controller reverses the polarity of current to generate heating

APPLICATIONS

- Outdoor telecom enclosures
- Outdoor kiosks and displays
- Harsh condition electronic cabinets
- Battery cabinets

Americas: +1.919.597.7300

Europe: +46.31.420530

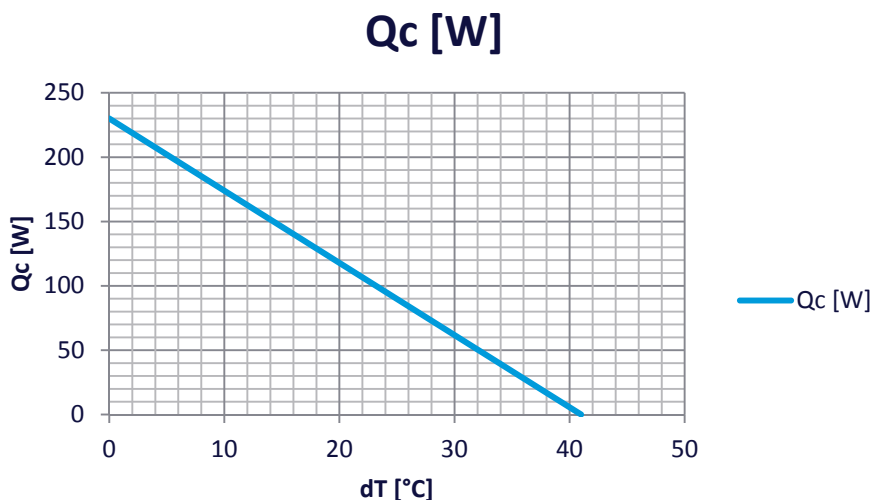
Asia: +86.755.2714.1166

ets.sales@lairdtech.com

www.lairdtech.com

AA-230-24-44-00-XX

Dual Cold Side Outdoor Thermoelectric Cooler



SPECIFICATIONS

TECHNICAL

Technology	Thermoelectric modules, forced air, closed loop (non-mixing), filterless, non-refrigerant
Cooling at $\Delta T = 0^{\circ}\text{C}$, and nominal / float voltage ¹	230/246W (785/840 Btu/h)
Heating (calculated) ²	250W (853 Btu/h)
Voltage (nominal / maximum) ⁶	24/28 VDC
COP (Coefficient of Performance)	80%
Grounding (all voltages)	Positive or negative
Current draw, $\pm 10\%$ (nominal / startup)	12.1/15.1 A
Weight	6.5 kg (14.3 lbs)
Panel mounting	Through (from external side)
Fan life (L_{10} at $+40^{\circ}\text{C}$)	$\geq 70,000$ hours
Connector type (on unit / mating side)	Terminal block with cage clamps (AWG 28-12)
Hi-pot testing	707 VDC

ENVIRONMENTAL

Temperature range ³ (external ambient)	-40°C to $+55^{\circ}\text{C}$ (-40°F to $+131^{\circ}\text{F}$)
Temperature range (internal enclosure)	-20°C to $+55^{\circ}\text{C}$ (-4°F to $+131^{\circ}\text{F}$)
Degree of protection, enclosure ⁴	NEMA 4 (IP55)
Degree of protection, unit int. side	IP54
Degree of protection, unit ext. side ⁵	IP54
Sound level (1m distance)	65 dB(A)
Over temp Thermostat	(optional)

1) Cooling capacities at nominal / float voltage are rated at external temperatures of $+35^{\circ}\text{C}$ and $+50^{\circ}\text{C}$ respectively. Float voltage is defined at 28VDC.

2) Calculated heating capacity is rated at external temperature of -40°C , nominal voltage, and $\Delta T = -45^{\circ}\text{C}$.

3) Controller function shall not operate the external fan during heating mode.

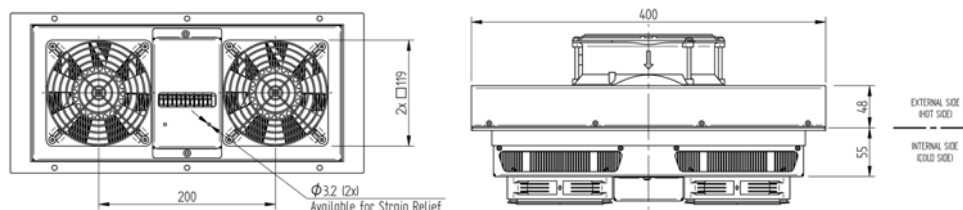
4) The highest environmental protection level requires an external shroud and is defined as the protection level for the enclosure.

5) Rating for unit without protective shroud.

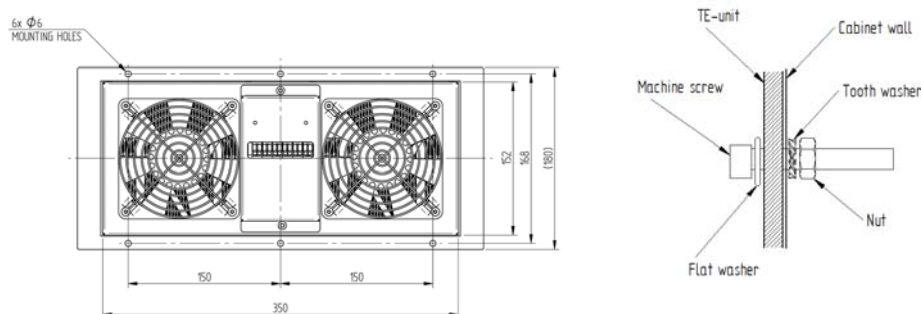
6) Max ripple 5%

Dual Cold Side Outdoor Thermoelectric Cooler

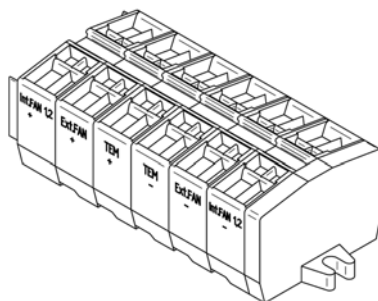
MECHANICAL DRAWING



MOUNTING HOLE LOCATION & HARDWARE



ELECTRICAL CONNECTIONS 48VDC (cage clamp)



Electrical connections cold side:

Ext. FAN +
Int. FAN +
TEM +
TEM -
Int. FAN -
Ext. Fan -

Warning:

Do not reverse current or use PWM- regulation on fan supply.

THR-DS-230-24-44-00-XX_060415

Any information furnished by Laird and its agents is believed to be accurate and reliable. All specifications are subject to change without notice. Responsibility for the use and application of Laird materials rests with the end user, since Laird and its agents cannot be aware of all potential uses. Laird makes no warranties as to the fitness, merchantability or suitability of any Laird materials or products for any specific or general uses. Laird, Laird Technologies, Inc or any of its affiliates or agents shall not be liable for incidental or consequential damages of any kind. All Laird products are sold pursuant to the Laird Technologies' Terms and Conditions of sale in effect from time to time, a copy of which will be furnished upon request. © Copyright 2014 Laird Technologies, Inc. All Rights Reserved. Laird, Laird Technologies, the Laird Logo, and other marks are trademarks or registered trademarks of Laird Technologies, Inc. or an affiliate company thereof. Other product or service names may be the property of third parties. Nothing herein provides a license under any Laird or any third party intellectual property rights.