

Outdoor Thermoelectric Cooler Assembly



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The AA 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. Heat is absorbed and dissipated thru high density heat exchangers equipped with air ducted shrouds and brand name 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.

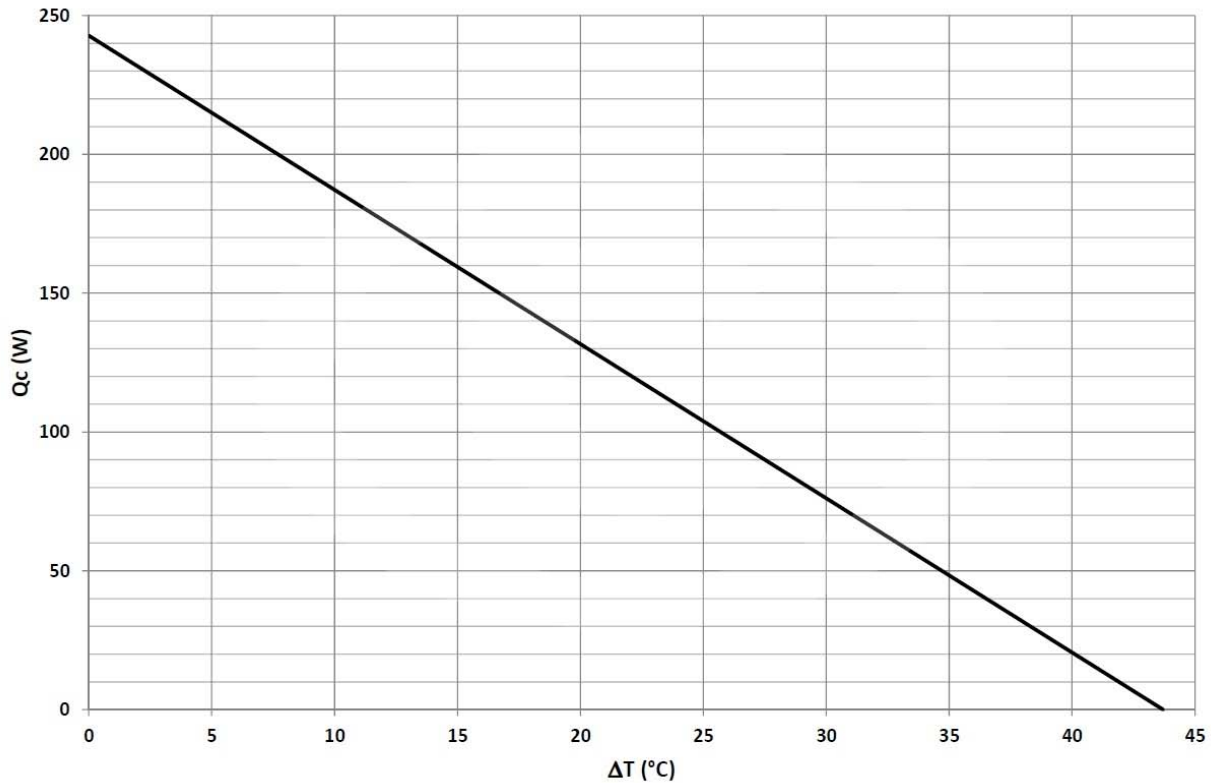
FEATURES

- 244W capacity rated at $\Delta T = 0^{\circ}\text{C}$, $T_{\text{ambient}} = 35^{\circ}\text{C}$
- Wide operating temperature range of -40°C to $+55^{\circ}\text{C}$
- Telcordia GR-487 Core tested and verified by customers when integrated in telecom outdoor enclosures
- Gaskets, connectors, and fans provide a NEMA 4 seal for the enclosure
- UL60950 and UL50 approval obtained by customers when integrated in telecom outdoor 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

PERFORMANCE Q_c VS ΔT



SPECIFICATIONS

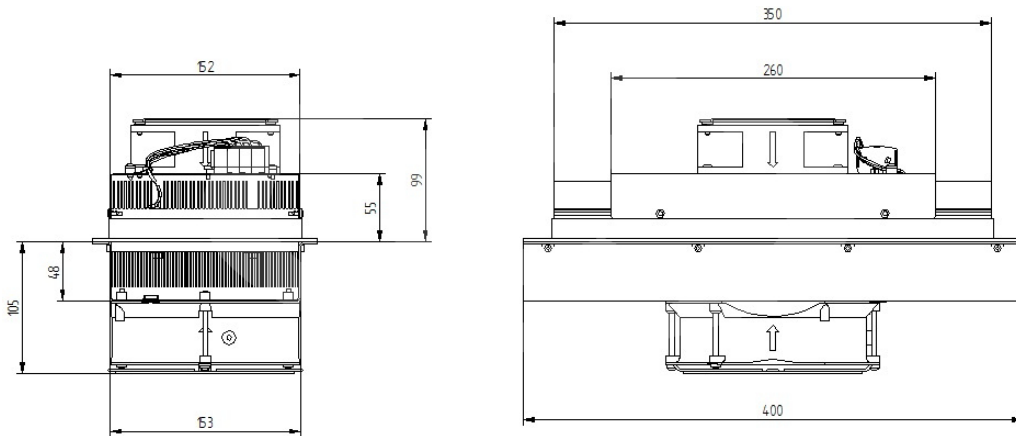
TECHNICAL	
Technology	Thermoelectric (TE) modules, forced air, closed loop (non-mixing), filter-less, non-refrigerant
Cooling at $dT = 0^\circ\text{C}$, and nominal / float voltage ¹	244/262 W (832/894 BTU/hr)
Heating ²	250W (853 BTU/hr)
Voltage (nominal / maximum) ⁶	48/60 VDC
COP (Coefficient of Performance)	85%
Grounding (all voltages)	Positive or negative
Current draw, $\pm 10\%$ (nominal / startup)	6.1/7.8 A
Weight	6.3 kg (16.9 lbs)
Panel mounting	Through (from external side)
Fan life (L10 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

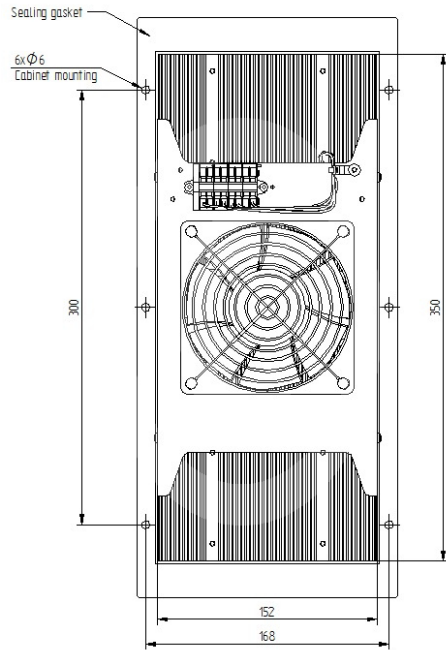
Temperature range ³ (external ambient)	-40°C to +55°C (-40°F to +131°F)
Temperature range (internal enclosure)	-20°C to +55°C (-4°F to +131°F)
Degree of protection, enclosure ⁴	NEMA 4 (IP55)
Degree of protection, unit internal side ⁵	IP54
Degree of protection, unit external side ⁵	IP54
Sound level (1m distance)	63 dB(A)
Over-Temp Thermostat	75°C ± 6°C (accessory)

Notes:

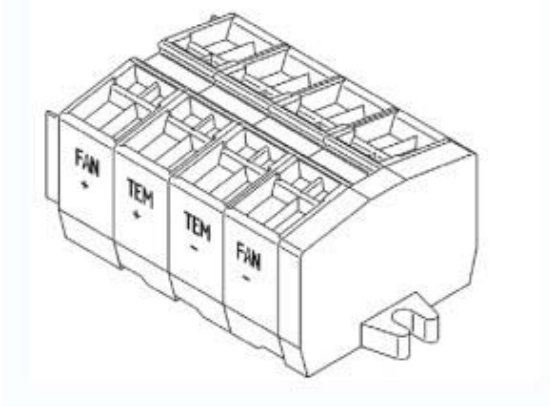
1. Cooling capacities at nominal / float voltage are rated at external temperatures of +35°C and +50°C respectively. Float voltage is defined at 27 VDC
2. Calculated heating capacity is rated at external temperature of -40°C, nominal voltage, and $\Delta T = -45^\circ\text{C}$
3. Controller function 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%

ISOMETRIC DRAWINGS


MOUNTING HOLE LOCATION & HARDWARE



ELECTRIC CONNECTIONS 24VDC (CAGE CLAMP)



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