Outdoor Cooler Series Thermoelectric Cooler Assembly

The AA-480-24-44 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 through 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 model 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

- Wide operating temperature range from -40°C to +55°C
- Meets Telcordia requirements
- Environmentally friendly solid-state operation
- No compressor or CFC refrigerants
- Optional bi-polar thermostatic control

Applications

- Enclosure Cooling
- Cooling for Mobile Base Stations and Cell Towers
- Thermoelectric Cooling for Outdoor Kiosks
- Thermal Management Solutions for Beverage Cooling
- Energy Storage Systems

Outdoor Cooler Series AA-480-24-44
MFG Part Number: 43700000200000

ELECTRICAL AND THERMAL PERFORMANCE

Heat Pumped at Cold Side (Qc)
Tambient = 35°C | Tcontrol = 20°C

Heat Pumped at Cold Side (Qc)
Tambient = 35°C | Tcontrol = 20°C

0.00 5.00 10.00 15.00 20.00 25.00 30.00 35.00
0.00 100.00 200.00 300.00 400.00 500.00 600.00 700.00 800.00
Qc (Watts)
Operating Current (Amps)

0.00 100.00 200.00 300.00 400.00 500.00
0.00 100.00 200.00 300.00 400.00
Qc (Watts)
Operating Voltage (Volts)

ΔT=0°C  ΔT=10°C  ΔT=20°C  ΔT=30°C

ΔT=0°C  ΔT=10°C  ΔT=20°C  ΔT=30°C
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Coefficient of Performance (COP = Qc/Pin)
Tambient = 35°C | Tcontrol = 20°C

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

Heat Pumped at Cold Side (Qc)
Voperating = 24.1 Volts | Ioperating = 17.7 Amps

Coefficient of Performance (COP = Qc/Pin)
Voperating = 24.1 Volts | Ioperating = 17.7 Amps
SPECIFICATIONS

Temperature Range (External Ambient)\(^1\)

-40 °C to 55°C

Temperature Range (Internal Enclosure)

-20 °C to 55°C

Supply Voltage

24.0 VDC nominal / 28.0 VDC maximum

Current Draw

19.3 A running / 26.1 A startup

Power Supply

463.0 Watts

Performance Tolerance

10%

Fan MTBF

57,500 hours

Sound Level (1 m distance)

65 hours

Weight

13.20 kg

MOUNTING HOLE LOCATION

WIRING SCHEMATIC

NOTES

\(^1\)Controller function shall not operate the external fan during heating mode.

\(^2\)Rating for unit without protective shroud. A higher degree of protection can be obtained with external shroud.

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