PowerCool Series Thermoelectric Cooler Assembly

The DA-044-24-02 is a Direct-to-Air Thermoelectric Assembly (TEA) that uses impingement flow to transfer heat. It offers dependable, compact performance by cooling objects via conduction. Heat is absorbed through a cold plate and dissipated thru a high density heat exchanger equipped with an air ducted shroud and brand name fan. It has a maximum Qc of 38.5 Watts when ΔT = 0 and a maximum ΔT of 33 °C at Qc = 0.

Features
- Compact design
- Precise temperature control
- Reliable solid-state operation
- Low noise
- RoHS-compliant

Applications
- Medical Diagnostic and Analytical Instrumentation
- Thermoelectric Coolers and Assemblies for Medical Applications
- Liquid Cooling Options for PET and SPECT Scanners
- Cooling for Centrifuges
- High-Performance Liquid Chromatography (HPLC)

ELECTRICAL AND THERMAL PERFORMANCE

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

Operating Current (Amps)

Operating Voltage (Volts)

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

ΔT=0°C
ΔT=10°C
ΔT=20°C
ΔT=30°C

ΔT=0°C
ΔT=10°C
ΔT=20°C
ΔT=30°C
PowerCool Series DA-044-24-02
MFG Part Number: DA-044-24-02-00-00

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

Operating Current (Amps)
0.00 0.50 1.00 1.50 2.00 2.50 3.00

Operating Voltage (Volts)
0.00 5.00 10.00 15.00 20.00 25.00 30.00 35.00

COP
0.00 0.50 1.00 1.50 2.00 2.50 3.00

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

Operating Current (Amps)
0.00 20.00 40.00 60.00 80.00 100.00 120.00 140.00

Operating Voltage (Volts)
0.00 20.00 40.00 60.00 80.00 100.00 120.00 140.00

Qh (Watts)
0.00 5.00 10.00 15.00 20.00 25.00 30.00 35.00

Heat Pumped at Cold Side (Qc)
Voperating = 24 Volts | Ioperating = 2.3 Amps

Coefficient of Performance (COP = Qc/Pin)
Voperating = 24 Volts | Ioperating = 2.3 Amps

ΔT (°C)
0.00 0.50 1.00 1.50 2.00 2.50 3.00 35.00

Qc (Watts)
0.00 5.00 10.00 15.00 20.00 25.00 30.00 35.00

COP
0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90

ΔT (°C)
SPECIFICATIONS

Operating Temperature Range
-10 °C to 44°C

Supply Voltage
24.0 VDC nominal / 30.0 VDC maximum

Current Draw
2.2 A running / 2.8 A startup

Power Supply
46.0 Watts

Performance Tolerance
10%

Fan MTBF
50,000 hours

Weight
0.60 kg

MOUNTING HOLE LOCATION

WIRING SCHEMATIC

ELECTRICAL CONNECTIONS:

TEM+ : Orange
TEM- : White
FAN+ : Purple
FAN- : Blue

Warning: Single supply not applicable in heating mode or with PWM-regulation.

NOTES

1For indoor use only

2Units are generally maintenance free, however occasionally it is recommended to clean the heat sinks and fans of debris. This is best done with compressed air.

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Date: 04/24/2020