**Tunnel Series Thermoelectric Cooler Assembly**

The DAT-105-24-02 is a thermoelectric based air conditioner designed to temperature control small chambers used in analytical and medical diagnostic instruments. The unique design offers premium fans pushing air across high-density heat sinks to minimize the number of airflow paths required to operate. The design utilizes custom thermoelectric modules to maximize cooling capacity with a high coefficient of performance. Moisture resistant insulation is used to keep condensation from penetrating the TEM cavity. The unit operates on DC and is designed for an indoor lab use environment. It has a maximum Qc of 96.9 Watts when ΔT = 0 and a maximum ΔT of 30 °C at Qc = 0.

**Features**
- Compact design
- Precise temperature control
- Reliable solid-state operation
- DC operation
- RoHS-compliant

**Applications**
- Thermoelectric Coolers and Assemblies for Medical Applications
- Liquid Cooling Options for PET and SPECT Scanners
- Peltier Cooling for Refrigerated Centrifuges
- High-Performance Liquid Chromatography (HPLC)
- Thermal Management Solutions for Beverage Cooling

**Electrical and Thermal Performance**

[Graphs showing Qc (Watts) vs. Operating Current (Amps) and Operating Voltage (Volts) for different ΔT values.]
Coefficient of Performance (COP = Qc/Pin)
Tambient = 35°C | Tcontrol = 20°C

Operating Current (Amps)

Operating Voltage (Volts)

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 = 4.2 Amps

Coefficient of Performance (COP = Qc/Pin)
Voperating = 24.1 Volts | Ioperating = 4.2 Amps
SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td>Operating Temperature Range</td>
<td>-10 °C to 50°C</td>
</tr>
<tr>
<td>Supply Voltage</td>
<td>24.0 VDC nominal / 28.0 VDC maximum</td>
</tr>
<tr>
<td>Current Draw</td>
<td>4.9 A running / 5.7 A startup</td>
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<tr>
<td>Power Supply</td>
<td>114.0 Watts</td>
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<tr>
<td>Performance Tolerance</td>
<td>10%</td>
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<tr>
<td>Fan MTBF</td>
<td>50,000 hours</td>
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<tr>
<td>Weight</td>
<td>1.70 kg</td>
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</tbody>
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MOUNTING HOLE LOCATION

WIRING SCHEMATIC

NOTES

For indoor use only

Units 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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