



The SuperCool Series Air-to-Air thermoelectric assembly is a high performance thermoelectric based heat pump. It is designed to temperature control small chambers used in medical diagnostics or sample storage compartments in analytical instrumentation. This unique design offers a high performance hot side heat dissipation mechanism that convects heat more efficiently than conventional heat exchanger technologies. The design utilizes custom thermoelectric modules to maximize cooling capacity and premium grade fans to reduce noise. Moisture resistant insulation is used to keep condensation from penetrating into the thermoelectric module cavity. This unit operates on 24 VDC and is designed for indoor lab use environment. Custom configurations available upon request.

Manufacturer Part Number: 387003324

### Patent Pending

### FEATURES

- High Performance
- Compact Form Factor
- Reliable solid-state operation
- RoHS compliant

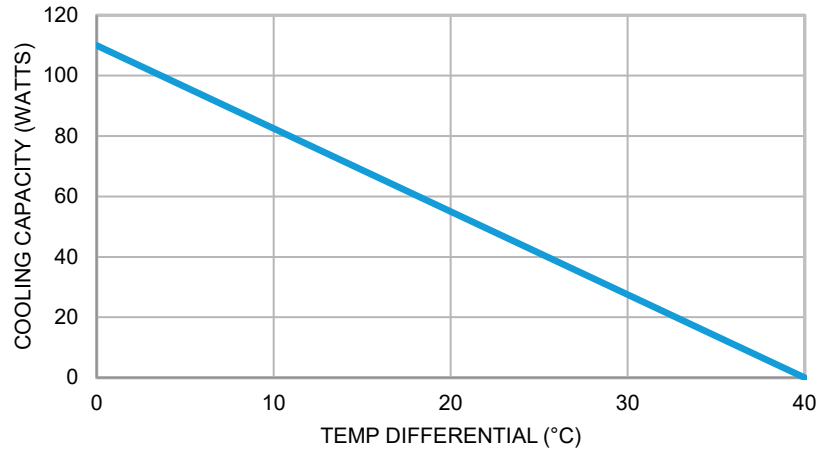
### APPLICATIONS

- Analytical Storage Compartment Temperature Control
- Medical diagnostic chamber refrigeration

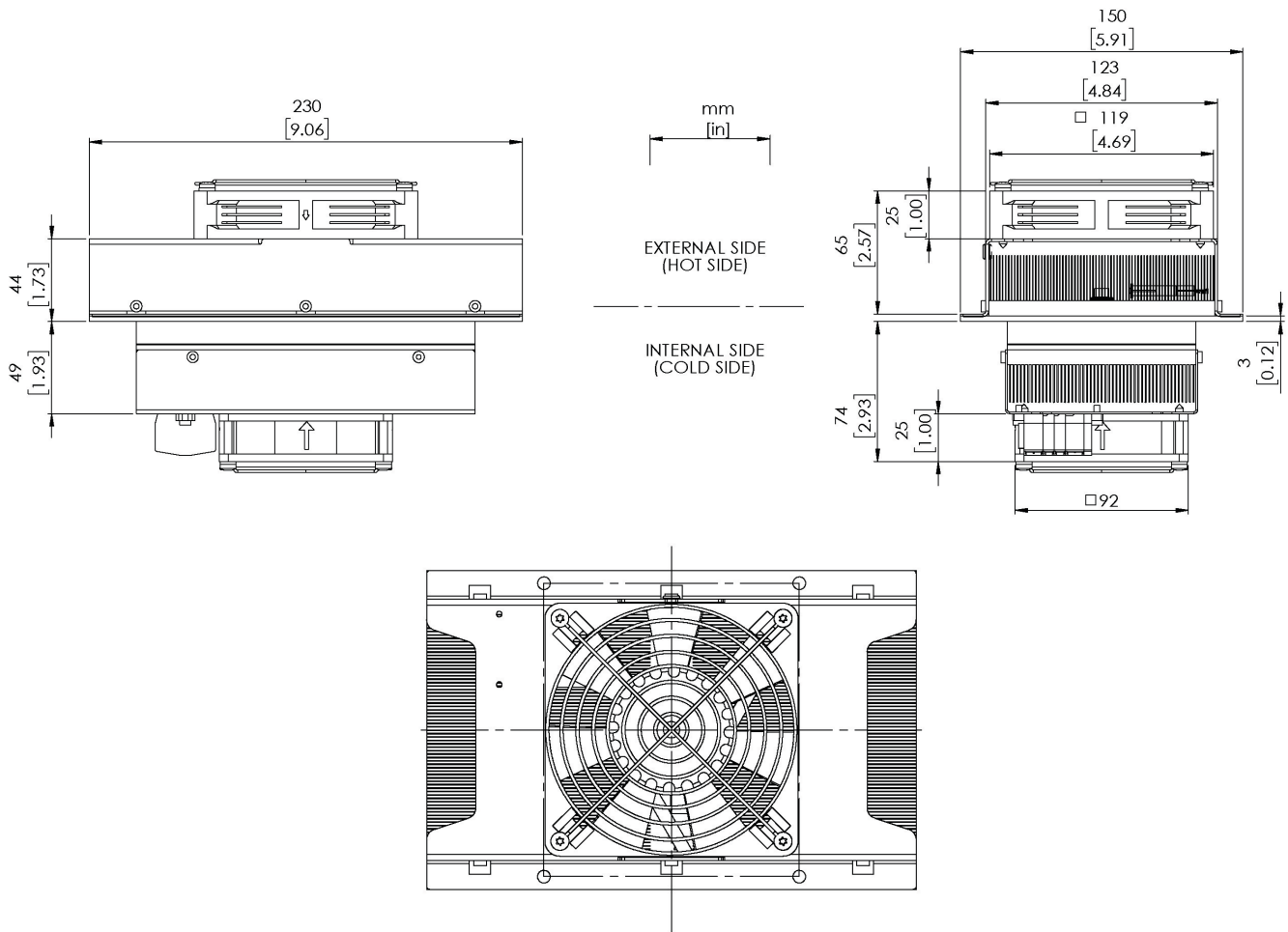
### TECHNICAL SPECIFICATIONS

Thermoelectric Assembly Model	SAA-110-24-22-00-00
Heat Transfer, Cold Side	Air
Heat Transfer, Hot Side	Air
Cooling Power at $\Delta T$ 0°C and $T_a=35^\circ\text{C} \pm 10\%$ - W	110
Thermoelectric Module Input Power	
Voltage, nominal / maximum - VDC	24/30
Current, nominal / initial $\pm 5\%$ - A	4.9/6.4
Fan Input Power	
Voltage, nominal	24
Current, nominal (Cold Side)	0.13
Current, nominal (Hot Side)	0.5
Fan Noise - dBA	61.2
Dimensions (L x W x H) - mm	230 x 150 x 156
Weight - kg	2.7
Operating Temperature - °C	-20 to +60
Packaging	Individual cardboard box

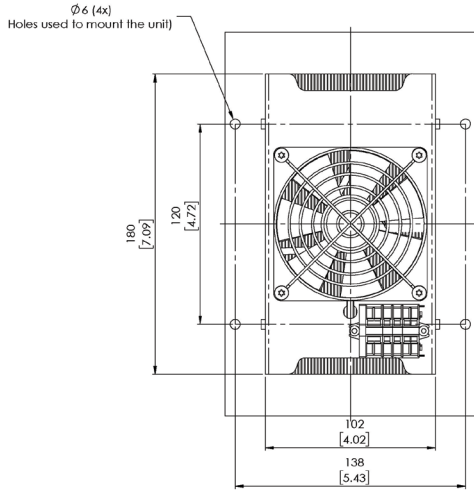
PERFORMANCE QC VS ΔT



ISOMETRIC DRAWINGS



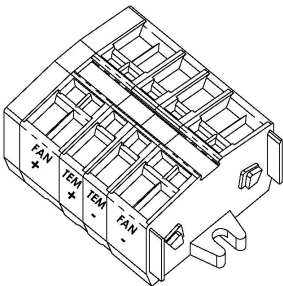
## INSTALLATION INSTRUCTIONS



### Installation

1. The thermoelectric assembly shall be mounted in a cabinet with "Hot side" mounted externally.
2. Suitable cabinet cutout is **104x182 mm**.
3. Recommended for general purposes the thermoelectric assembly should be fastened according to picture below so that the gasket material will seal off around the flange of the assembly.
4. The thermoelectric assembly can be positioned in any direction. Mounting in vertical direction is preferred to simplify the collection of condensed water and minimize standing water in heat sink.
5. Note that condensation may occur. Standing water on the heat sink should be avoided and drip tray may be required.
6. The thermoelectric assembly must be protected from external force or violence.
7. The power line to the assembly needs to be protected by a fuse. The fuse rating should be of at least the nominal current of the assembly. It must withstand 150% of rated current for at least 60 seconds. This is valid at  $T_a=35^\circ\text{C}$ . Fuse ratings for other ambient temperatures ( $x^\circ\text{C}$ ) can be calculated with the formula  $I[x^\circ\text{C}] = I[35^\circ\text{C}] / (1 + 0.005(x - 35))$ . This is valid when regulating with an ON/OFF regulation. At rapid temperature cycling where this is applicable, there can be need for even higher fuse ratings.
8. Max ripple on supplied power =5%.
9. Switching power to thermoelectric modules at frequencies between 0.01 Hz to 5 kHz will render premature failure of modules and must be avoided.

## WIRING SCHEMATIC



### Electrical connections

- Connect:
- "+": + TEM
  - "-": - TEM
  - "F+": + Fan(s)
  - "F-": - Fan(s)

Connect the unit to "+" & "-".

### Warning:

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

### Note

- For indoor use only



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