



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**

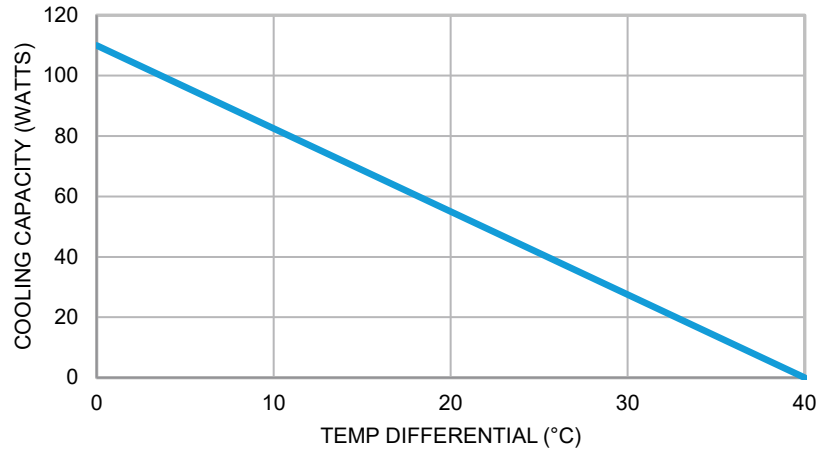
- High Performance
- Compact Form Factor
- Reliable solid-state operation
- RoHS compliant

**APPLICATIONS**

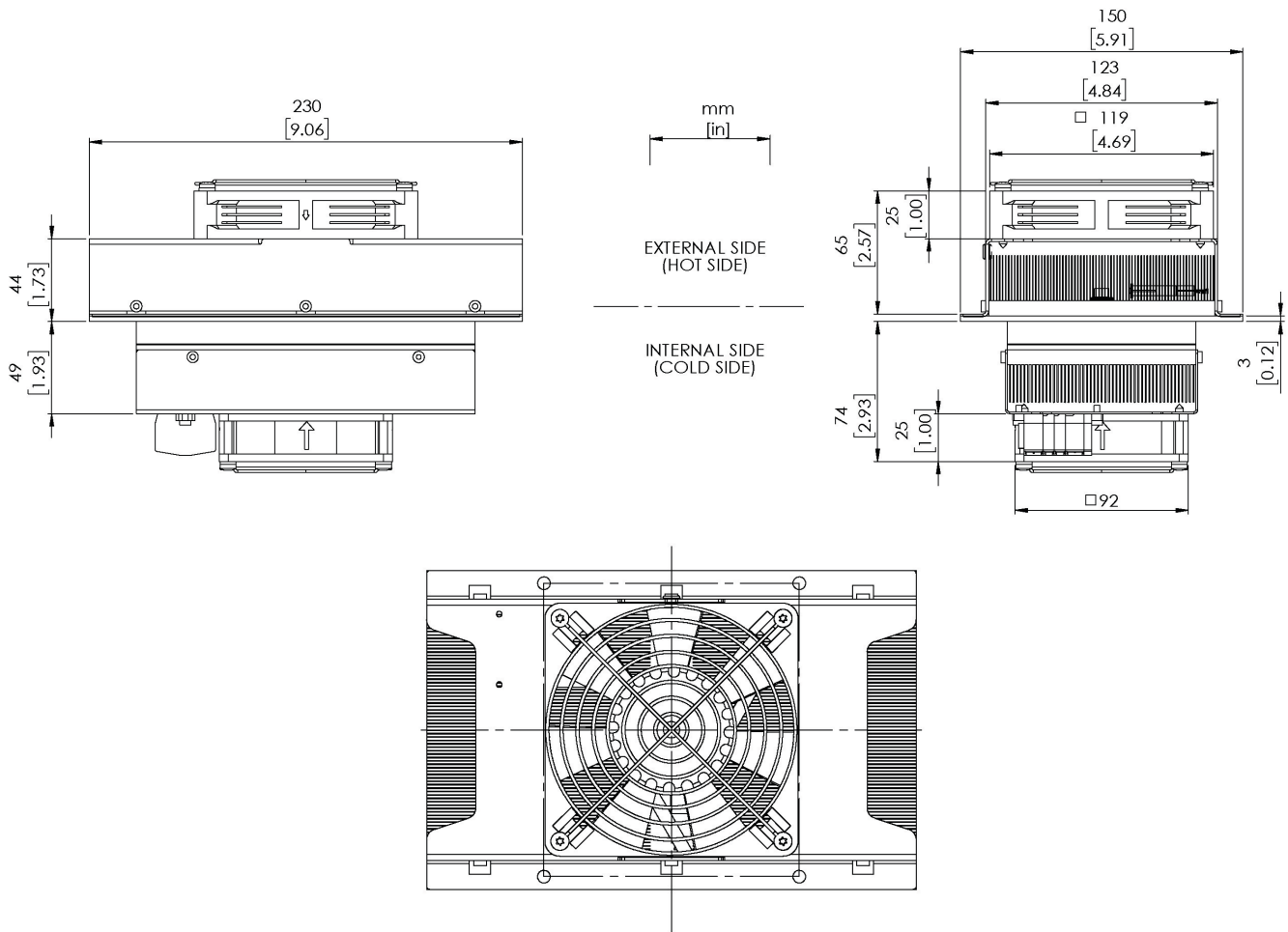
- Analytical Storage Compartment Temperature Control
- Medical diagnostic chamber refrigeration

TECHNICAL SPECIFICATIONS	
Thermoelectric Assembly Model	SAA-110-24-22-00-00
Heat Transfer, Cold Side	Air
Heat Transfer, Hot Side	Air
Cooling Power at dT 0°C and Ta=35°C ±10% – W	110
Thermoelectric Module Input Power	
Voltage, nominal / maximum - VDC	24/30
Current, nominal / initial ±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

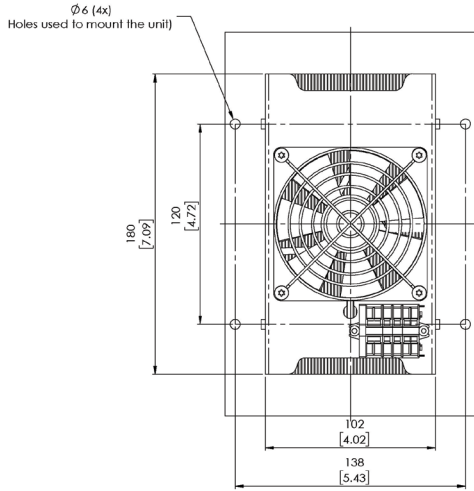
PERFORMANCE QC VS ΔT



ISOMETRIC DRAWINGS



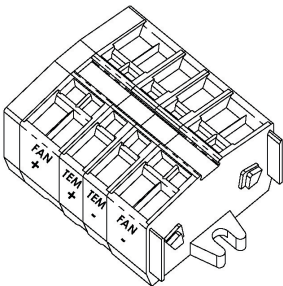
## INSTALLATION INSTRUCTIONS



### 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



Laird warrants to the original end user customer of its products that its products are free from defects in material and workmanship. Subject to conditions and limitations Laird will, at its option, either repair or replace any part of its products that prove defective because of improper workmanship or materials. This limited warranty is in force for the useful lifetime of the original end product into which the Laird product is installed. Useful lifetime of the original end product may vary but is not to exceed five (5) years from the original date of the end product purchase.

Any information furnished by Laird Inc. and its agents is believed to be accurate and reliable. All specifications are subject to change without notice. Responsibility for the use and application of Laird materials rests with the end user, since Laird and its agents cannot be aware of all potential uses. Laird makes no warranties as to the fitness, merchantability or suitability of any Laird materials or products for any specific or general uses. Laird shall not be liable for incidental or consequential damages of any kind. All Laird products are sold pursuant to the Laird Terms and Conditions of sale in effect from time to time, a copy of which will be furnished upon request.

© Copyright 2019 Laird Inc. All Rights Reserved. Laird, Laird Technologies, the Laird Logo, and other marks are trademarks or registered trademarks of Laird Inc. or an affiliate company thereof. Other product or service names may be the property of third parties. Nothing herein provides a license under any Laird or any third party intellectual property rights.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.