

# Tunnel Series AAT-055-24-22-00-00

## Air-to-Air Thermoelectric Assembly



The Tunnel Series Air-to-Air thermoelectric assembly 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 air flow 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 units operate on DC and are designed for an indoor lab use environment.

Laird Part Number: 387000176

Americas: +1.919.597.7300  
Europe: +46.31.420530  
Asia: +86.755.2714.1166  
ets.sales@lairdtech.com  
[www.lairdtech.com](http://www.lairdtech.com)

### FEATURES

- Compact form factor
- Improved sealing for moisture protection
- Reliable solid-state operation
- RoHS compliant

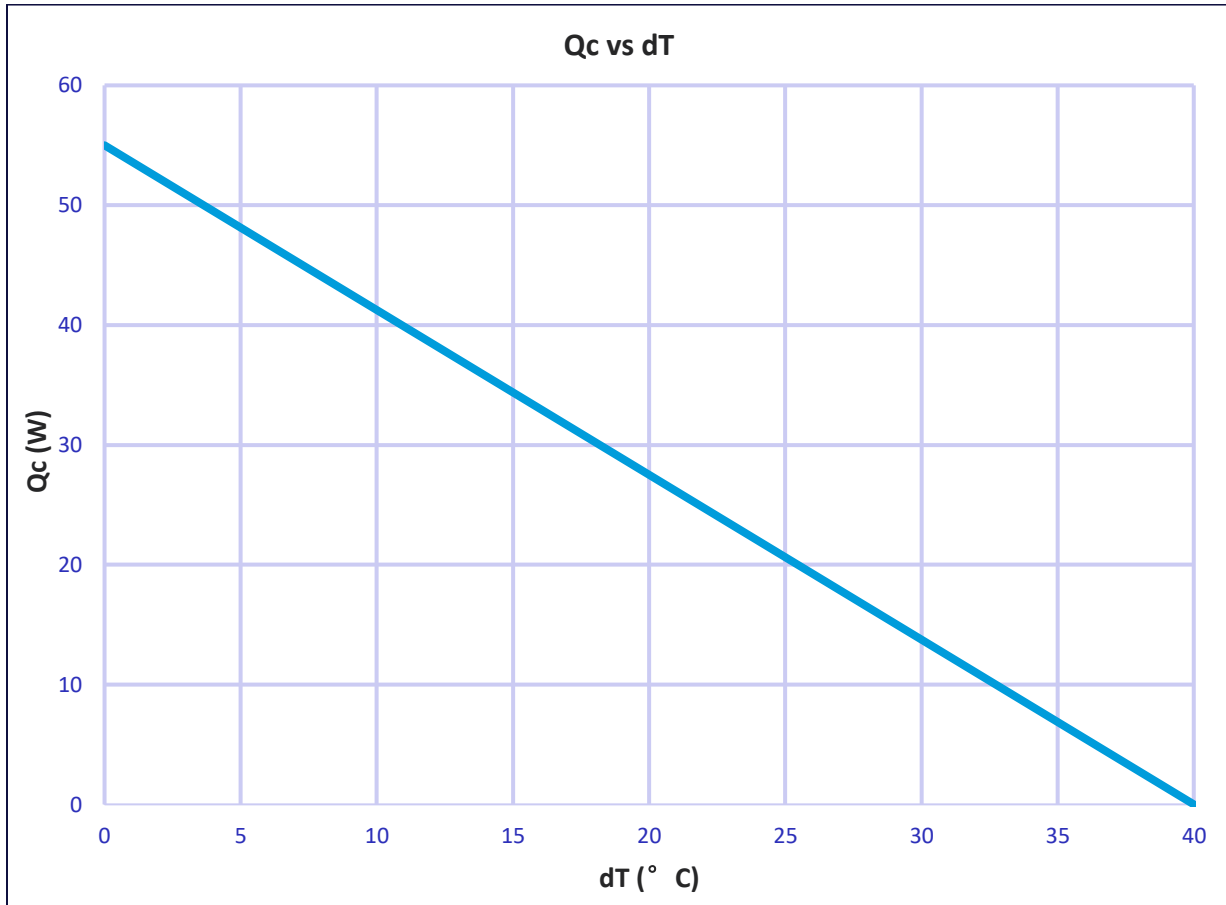
### APPLICATIONS

- Analytical storage compartment temperature control
- Medical diagnostic chamber refrigeration

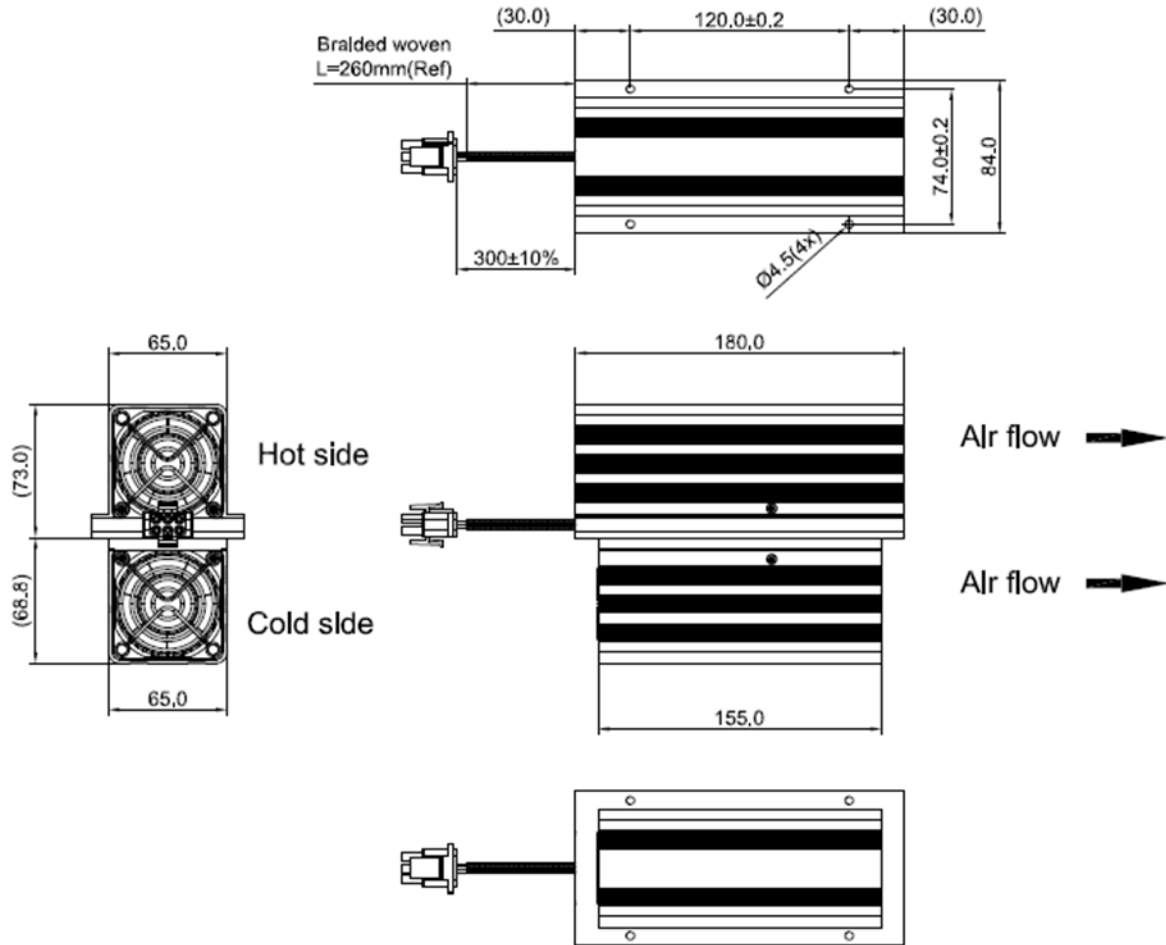
SPECIFICATIONS	
TEA Model	AAT,055,24,22,00,00
Heat Transfer, Cold Side	Air
Heat Transfer, Hot Side	Air
Cooling Power	55 W @ $\Delta T=0^{\circ}\text{C}$ and $T_a=35^{\circ}\text{C}$ , Tolerance $\pm 10\%$
TEM Input Power	
Voltage, Nominal	24 VDC
Current, Nominal	2.6 Amps @ $\Delta T=0^{\circ}\text{C}$
Fan Input Power	
Hot side Fan Voltage, Nominal	24 VDC
Hot side Fan Current, Nominal	0.26 Amps
Cold side Fan Voltage, Nominal	24VDC
Cold side Fan Current, Nominal	0.26 Amps
Dimension (L x W x H)	180 x 84 x 142 mm
Weight	1.65 Kg
Operating Temperature	$-10^{\circ}\text{C}$ to $50^{\circ}\text{C}$
Packaging	Individual cardboard box

PERFORMANCE CURVES

TEA performance at  $T_h = 35^\circ\text{C}$



ISOMETRIC DRAWINGS

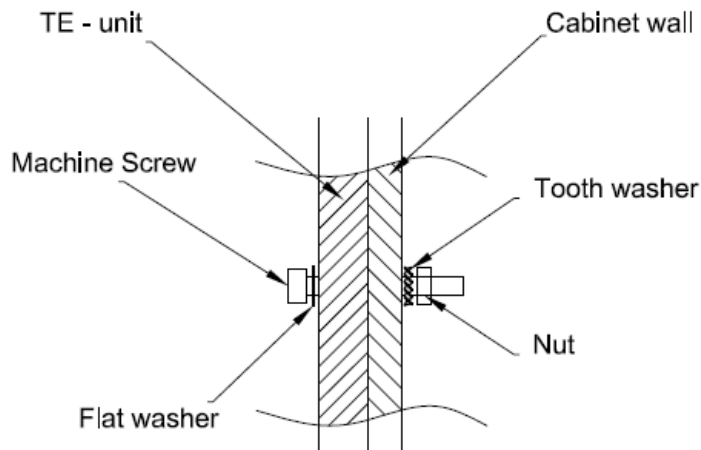


ELECTRICAL CONNECTIONS

OBJECT	WIRE TYPE	COLOR	TERMINAL	RECEPTICLE HOUSING	POLE	PLUG HOUSING
TEM +	AWG #18	Red	TE Connectivity 350547-1	TE Connectivity 1-480704-0	1	TE Connectivity 1-480705-0
TEM -		Black			2	
FAN COLD SIDE +	AWG#20	Purple			3	
FAN COLD SIDE -		Blue			4	
FAN HOT SIDE +		White			5	
FAN HOT SIDE -		Green			6	

## INSTALLATION INSTRUCTIONS

1. Mount with “hot side” external to chamber wall.
2. Cutout should be approximately 157 x 67 mm.
3. Unit should be fastened as shown in diagram with gasket material sealing around cutout.
4. For operation below dew point, recommend to position unit in vertical direction with wires facing down to allow for condensation to run off of unit. Drip tray may be required to collect moisture from surfaces at temperatures below dew point.
5. TE should not be used as part of the structure and is recommended to be protected from external forces.
6. The input power to TEA should be protected with fuse. Fuse rating should withstand 150% of nominal current rating for 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 a need for even higher fuse ratings.
7. Max ripple current on supply power should be  $\leq 5\%$ .
8. Switching power to TEMs at frequencies between 0.01Hz to 5KHz may degrade reliability and shorten life.



## SERVICE

- 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.

LAIRD-TS-AAT-055-24-22-00-00-DATA-SHEET-102517

Any information furnished by Laird Technologies, 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 Technologies materials rests with the end user. Laird Technologies makes no warranties as to the fitness, merchantability, suitability or non-infringement of any Laird Technologies materials or products for any specific or general uses. Laird Technologies shall not be liable for incidental or consequential damages of any kind. All Laird Technologies products are sold pursuant to the Laird Technologies' Terms and Conditions of sale in effect from time to time, a copy of which will be furnished upon request. © Copyright 2017 Laird Technologies, Inc. All Rights Reserved. Laird, Laird Technologies, the Laird Technologies Logo, and other marks are trademarks or registered trademarks of Laird Technologies, 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 Technologies or any third party intellectual property rights.

## Данный компонент на территории Российской Федерации

### Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9