

Specification Sheet

Part #
ATA-015-12

Q_{max} (Watts)
15

Volts
12



Specification	
Part #	ATA-015-12
Description	Air to Air Assembly
Cooling Capacity	15 Watts
Input Voltage	12 Volts DC
Working Range	-10 to 70°C
TEC Current (running)	3.2 amps
TEC Current (start)	3.8 amps
Fan Current (external)	0.18 amps
Fan Current (internal)	0.13 amps
Weight	.74 Kg (1.63 lbs)
Rating	NEMA 12

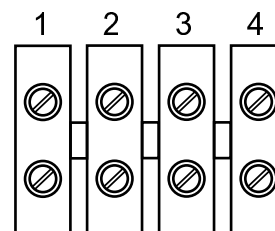
The ATA-015-12 is a thermoelectric air conditioner. Also referred to as an air to air heat exchanger or cabinet cooler. It is designed for temperature regulation of small electronic cabinets or enclosures. They are often used where it is better to circulate cooled air rather than use a direct contact cold plate.

Features:

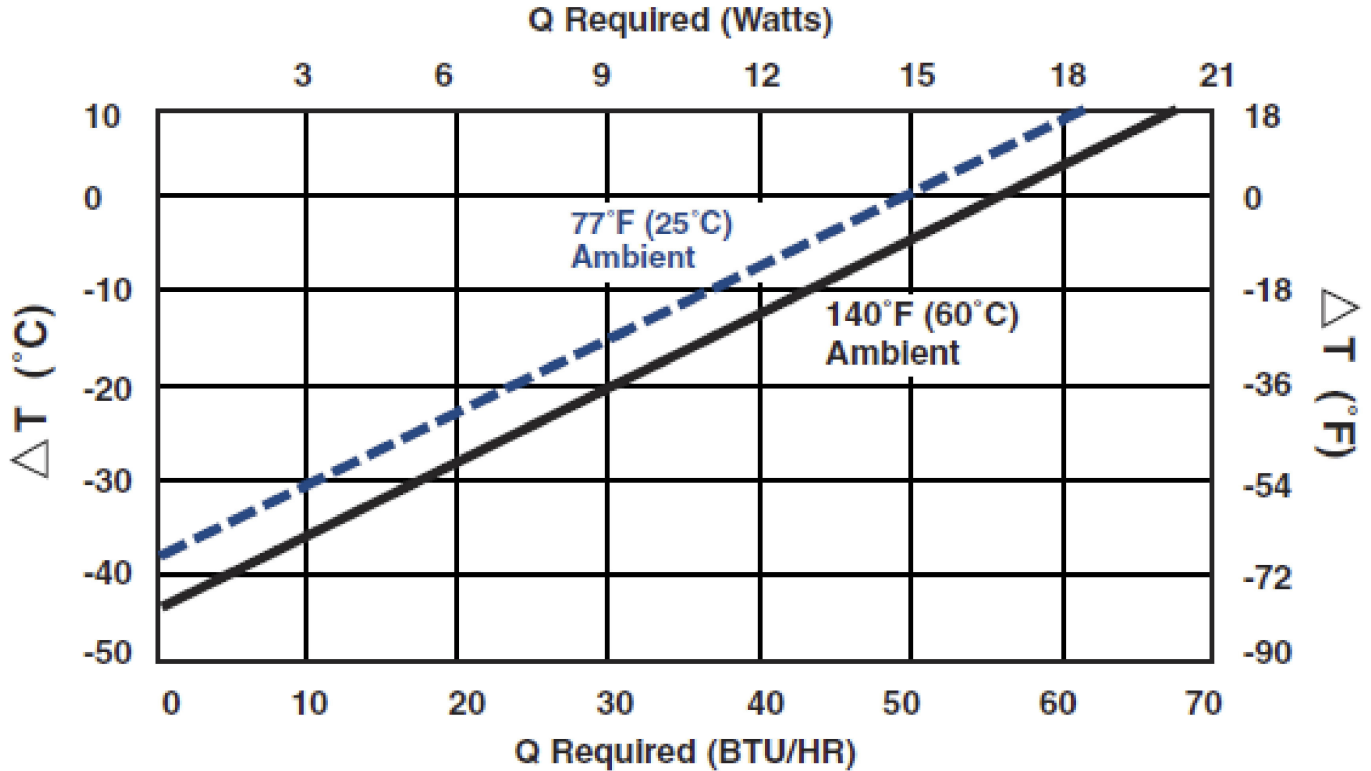
- Compact and lightweight.
- Can be mounted in any orientation.
- No fluorocarbons or compressor.
- Virtually maintenance free.
- Simple quick installation.
- Includes mounting gasket.

WIRING DIAGRAM

Position	Description
1	TEC +
2	TEC -
3	Fan +
4	Fan -



Thermal Performance Graph



$$\Delta T = T_{\text{max Cabinet}} - T_{\text{max Ambient}}$$

How to use the graph:

On the vertical axis is the desired delta T in Celsius (or F). This is the difference in temperature between the desired inside temperature and the ambient outside temperature, $\Delta T = T_{\text{in}} - T_{\text{out}}$.

On the horizontal axis is the required heat pumping in watts (or BTU/hr).

There are two diagonal lines that represent two different outside ambient air temperatures. 25C (77F) and 60C(140F). If you have a different ambient temperature, draw a line parallel to the existing lines proportional to your temperature versus the existing temperature lines. For example, if your ambient temperature was 42C (108F) then you would draw a line halfway between the existing lines since 42C is about halfway between 25 and 60 C.

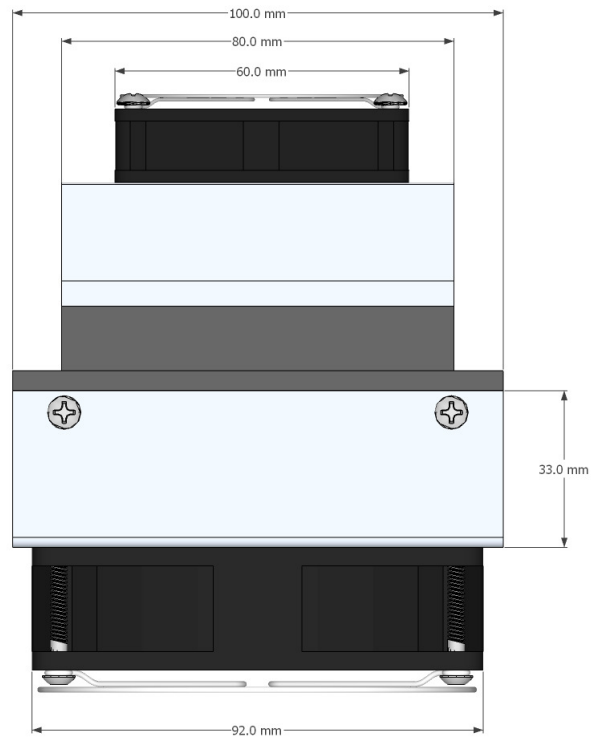
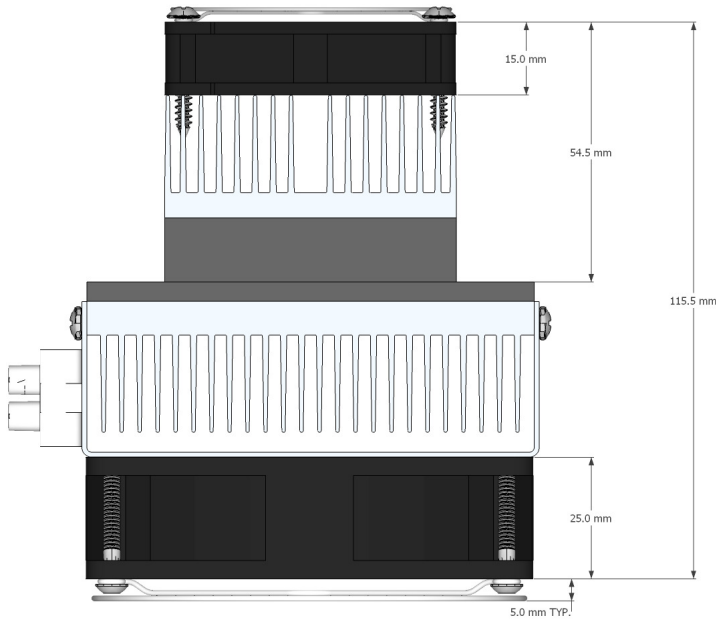
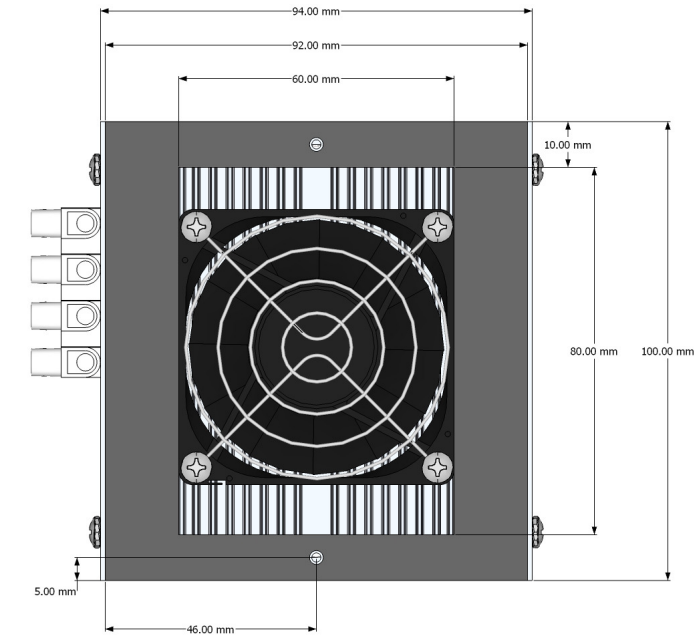
Example:

You have an enclosure that contains electronics that generate 5 watts of heat. The ambient temperature is 40C. You would like to keep the internal temperature at 25C or below. Does this device have the capacity to do this? Draw a line parallel to the existing diagonal lines to approximate a 40C ambient. It should be drawn about halfway between the existing lines. This is your outside ambient air temperature. The desired delta T is 25C - 40C = -15C. Note the delta T is negative since we are cooling. Look at the left hand vertical axis and locate -15C halfway between -10C and -20C. Draw a horizontal line at this point so that it intersects with your just drawn ambient diagonal line. At the intersection point, draw a vertical line. If you read the top horizontal axis where this line intersects, you should find a value around 10 watts. This means that there is 10 watts of heat pumping available. Your electronics only generate 5 watts, so this device has the capacity to to get the job done.

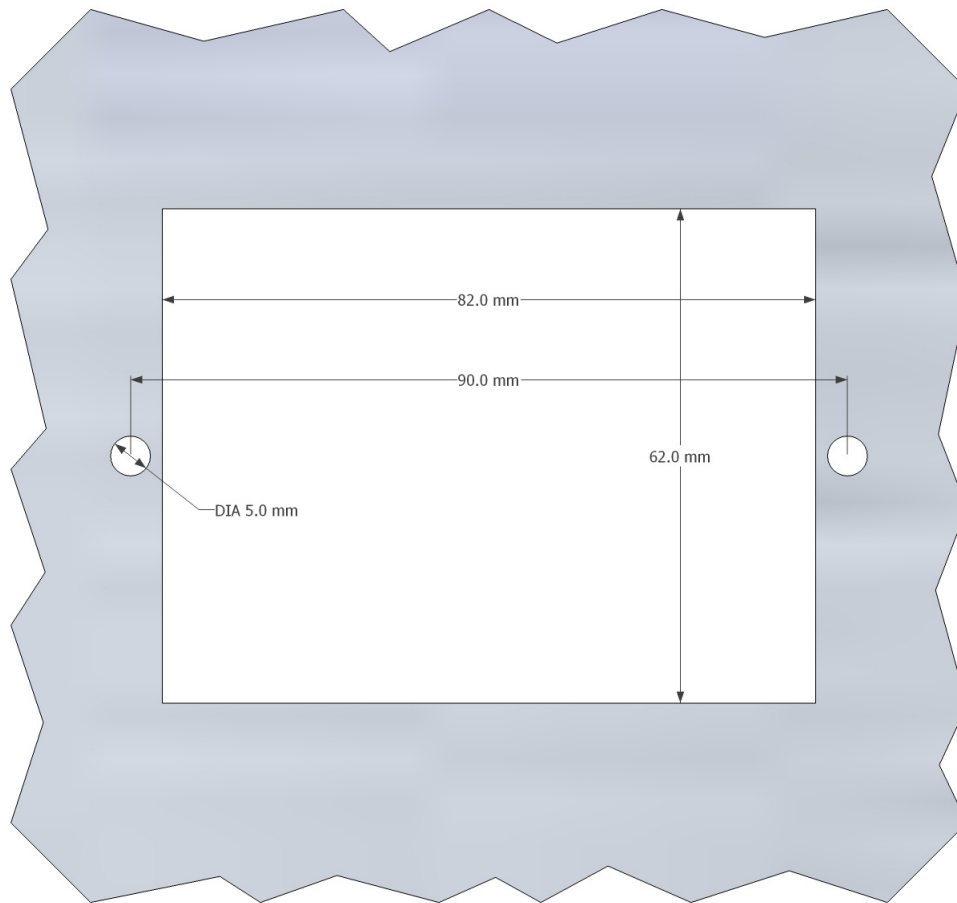
The maximum delta T achievable would be about -28 degrees. Draw a vertical line at the 5 watt point on the top horizontal axis. Extend it down until it intersects with the just drawn ambient diagonal line. Now draw a horizontal line that intersects with the vertical axis on the left. It should read a delta T of around -28C.

Specification Sheet

Dimensioned Drawings



Mounting Cut-out Drawing



Mounting Notes:

- When selecting a mounting location for your unit, keep air flows of both the interior and exterior heatsinks and fans in mind. Proper clearance between the fans and heatsinks and nearby objects is required for unrestricted air flows which will ensure the best performance and long, trouble free life. Allow a minimum of 2 inches between the fans or heat-sinks and any surface.
- Mount assembly from the outside by inserting the cold side heat sink and fan into the cut out. Secure with stainless steel screws.
- Vertical mounting is preferred, with the fins oriented vertically.
- Avoid mounting directly over electronics due to possible condensation drips.
- Make allowance for condensation if temperatures will go below dew point or humidity is high. A drip pan and drain may be necessary.
- keep area around ends of heat sinks clear to allow unrestricted airflow.
- In an overly dusty or dirty environment, routine checks of the external fan and heat sink may be necessary. Remove dust with an air nozzle or light brush. Do not direct any high pressure air at the fan. Keeping the fan and heat sinks dirt and dust free ensures a long and trouble free life.