

# Vortex Coolers



NEMA 4/4X

NEMA 12



## Applications

- Compressed air cooling is used where conventional enclosure cooling by air conditioners or heat exchangers is not possible (Example: Small to medium size enclosures, nonmetallic enclosures, and areas where the size of cooling devices is restricted)

## Features

- Suitable for harsh environments
- Small physical size
- Creates cool air without refrigerants (no CFCs, HCFCs)
- Exceptionally reliable - no moving parts and virtually no maintenance

## Requirements

- Uses clean, dry, oil-free compressed air (100 PSIG / 70 degrees F or below) required to achieve published BTU/hr ratings. Lower pressures and higher temperatures will reduce BTU/hr ratings.
- A 5-micron water and particulate removal filter must be installed prior to operating any vortex cooler (included in kits).
- An oil removal filter can be installed between the 5 micron filter and the Vortex Cooler if oil is present in the compressed air line.

## Mounting holes

- NEMA 12 kits: (1) 1-3/32" (28mm) or 3/4" knockout hole for cooling tube and (1) 11/16" hole for thermostat
- NEMA 4 and 4X kits: (1) 1-15/16" (49mm) or 1-1/2" knockout hole for cooling tube and (2) #8 holes for thermostat

## Kit includes the following:

- Vortex cooling tube
- Solenoid valve 120V / 60Hz - 110V / 50Hz
- Filter: 5-micron water and particulate removal
- Ducting kit
- Thermostat

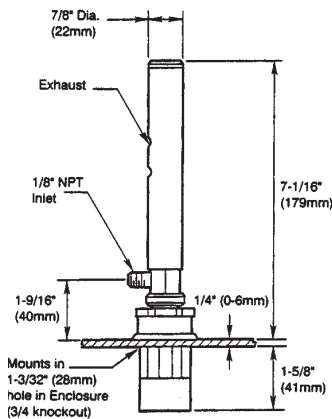
## Standards

- UL Listed
- NEMA 12, NEMA 4 or NEMA 4X

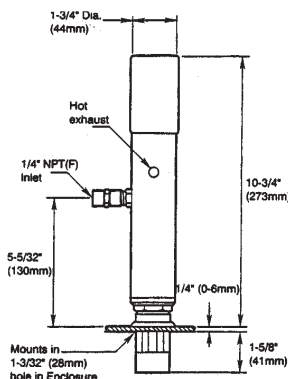
## How vortex coolers create cold air

Vortex coolers are powered by a vortex tube - a unique device that creates a vortex from compressed air and separates it into hot and cold airstreams. Here's how it works: The vortex tube's cylindrical generator causes the input compressed air to rotate, reaching speeds up to 1,000,000 rpm as it is forced down the inner walls of the hot longer end of the vortex tube. At the end of the hot tube, a small portion of this air exits through a needle valve as hot air exhaust. The remaining air is forced back through the center of the incoming air stream at a slower speed. The heat in the slower moving air is transferred to the faster moving incoming air. This super-cooled air flows through the center of the generator and exits through the cold air exhaust port.

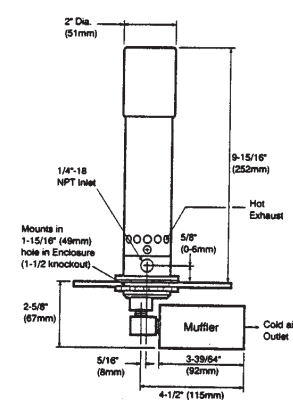
Part Number	Price	Capacity BTU/H	Capacity KCAL/H	Air Consumption SCFM	Air Consumption SLPM	Air Consumption Thermostat (Factory Set)	Tube Surface Temp at BTU	Thermostat Mounting	NEMA Type	UL Type	Cooling Tube Material
W750400	<--->	400	101	8	227	90°F ± 2°	150°F	External	12	12	Aluminum
W740900	<--->	900	225	15	425	90°F ± 2°	150°F	External	12	12	Aluminum
W7901500	<--->	1500	378	25	708	90°F ± 2°	150°F	External	12	12	Aluminum
W7971700	<--->	1700	425	25	708	90°F ± 2°	150°F	Internal	4	4	Aluminum
W797SS1700	<--->	1700	425	25	708	90°F ± 2°	150°F	Internal	4X	4X	Stainless St.



W750400



W740900, W7901500



W7971700, W797SS1700