

# FC™-Series Humidifiers

## Consistent Humidification for High-Flow Applications

- Humidifies continuously
- Transfers only water vapor
- Self-regulating
- High level of humidification
- Maintenance-free operation
- No moving parts
- Excellent corrosion resistance
- Humidifies high flow rates

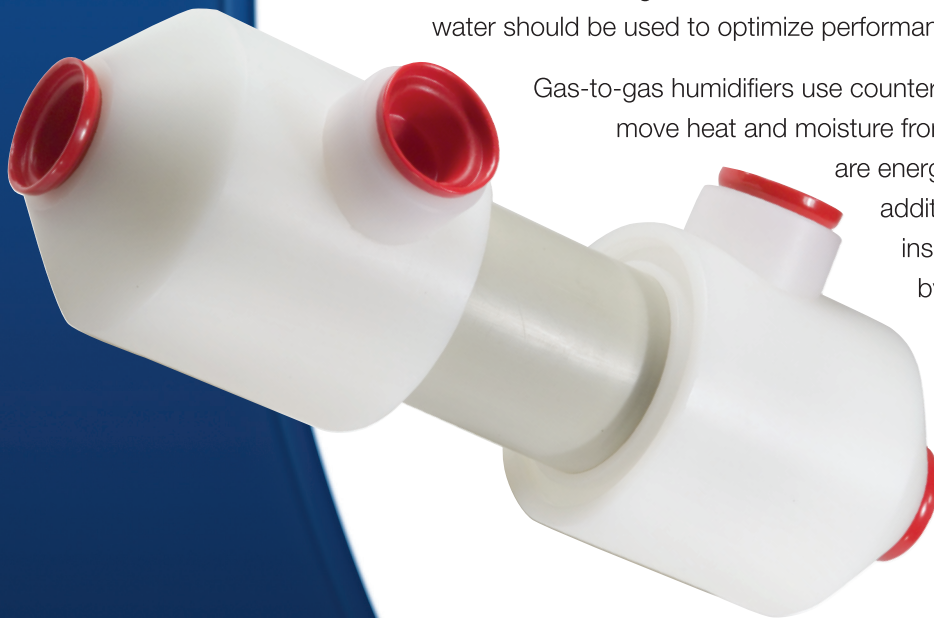
Perma Pure FC™-Series humidifiers use an exclusive Nafion® membrane tubing to continuously humidify gas streams. These humidifiers operate over a wide range of flow rates and can use either liquid water or a humid gas stream as a source of humidity.

### Principle of Operation

Perma Pure's FC-Series gas humidifiers are tube-in-shell moisture exchangers that transfer heat and water vapor between two gas streams. They may operate as either water-to-gas or gas-to-gas moisture exchangers.

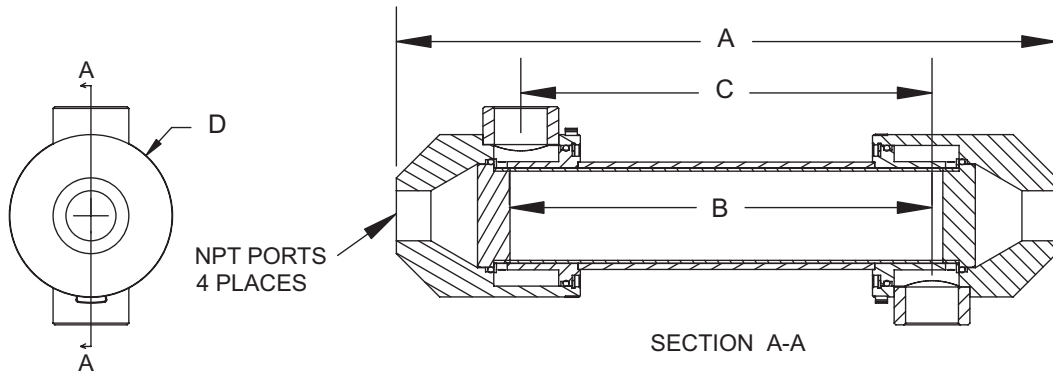
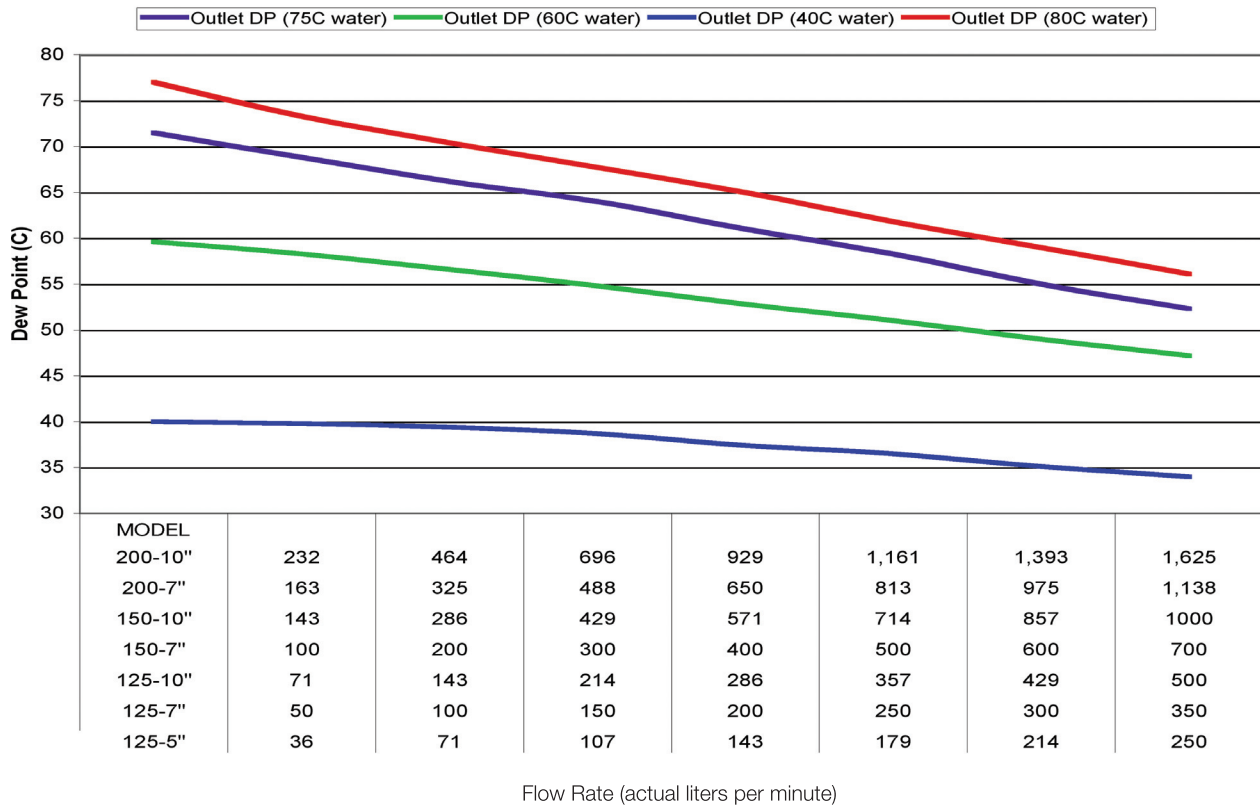
Water-to-gas humidifiers have liquid water on one side of the tube wall and a dry gas on the other. This arrangement offers the greatest amount of humidification; however, the reaction of the water molecules moving through the tubing wall absorbs heat. To counter this cooling effect, the inlet water must be heated. Hot, circulated deionized water should be used to optimize performance.

Gas-to-gas humidifiers use counter-flowing wet and dry gas streams to move heat and moisture from one stream to the other. These units are energy efficient, as they do not require any additional power or heat. When gas passes inside the Nafion tubing, water is absorbed by and moves through the walls of the tubing. The movement of water is driven by the humidity gradient between the inside and outside of the tubing. Since only water molecules move through the tubing walls, liquid water is prevented from becoming entrained in the gas stream.



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### Water to Gas Humidification using FC-Style Humidifiers



Model Number	A	B	C	D	Ports
FC-125-240-5PP	8.25"	5"	4.75"	2.50"	1/2"
FC-125-240-7PP	10.25"	7"	6.75"	2.50"	1/2"
FC-125-240-10PP	13.25"	10"	9.75"	2.50"	1/2"

FC-150-480-7PP	11.50"	7"	6.75"	3.25"	3/4"
FC-150-480-10PP	14.50"	10"	9.75"	3.25"	3/4"

FC-200-780-7PP	11.25"	7"	6.50"	3.75"	1"
FC-200-780-10PP	14.25"	10"	9.75"	3.75"	1"

FC™ is a Trademark of Perma Pure LLC, Nafion® is a Registered Trademark of E.I. DuPont.



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