

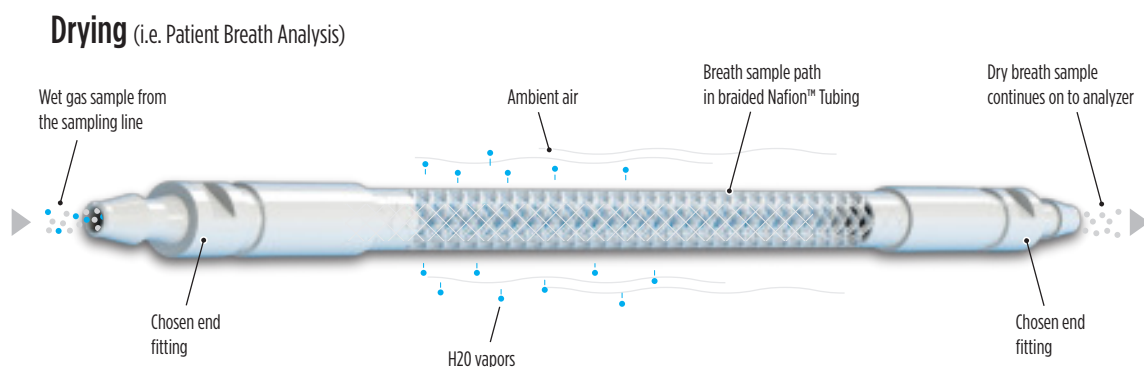
# Drying Solutions from Perma Pure Powered by our **Nafion™ Tube Dryer**

Moisture Control Customized for Your Unique Needs

Do you need to take control of moisture? Perma Pure's drying solutions, made from Nafion™ Tubing, are key. Our highly selective dryers will seamlessly integrate with your gas sampling line, while protecting your analyzers from moisture build-up. With reduced condensation in your lines, the accuracy of your readings increases as your clinicians deliver care.

## HOW IT WORKS

Our dryers are built from a copolymer called Nafion™. Water molecules are transferred via a first order kinetic reaction. The technology is designed to achieve equilibrium in partial pressure of water vapor on either side of the membrane without the need for external energy or human intervention. All you need to do is work with us to determine the optimal specifications and customizations to find the right dryer design for you.



▲ The target is equilibrium. As ambient air that is drier than the breath sample surrounds the Nafion™ Tubing membrane, the water vapor will continue to flow out until equilibrium is achieved.

- › 100% leak and flow tested
- › ISO9001 and ISO13485 certified
- › FDA Registered
- › Retains analytes
- › Biocompatible

## DESIGNED WITH YOUR CLINICIANS IN MIND

When using Nafion™ Tubing, you achieve consistent moisture control. By managing water vapor with every exhaled breath, you can limit costly risks that come from sensor damage and inaccurate breath analysis.

Protecting your analyzers and improving drying performance can reduce the burden on respiratory therapists, pulmonologists, and other clinicians using your device. We will work closely with you to design the right moisture control solution for your clinicians.

# Experienced Application Support

With over 40 years of experience providing custom moisture control solutions in the medical space, we are uniquely equipped to support your engineering, quality, and manufacturing needs.



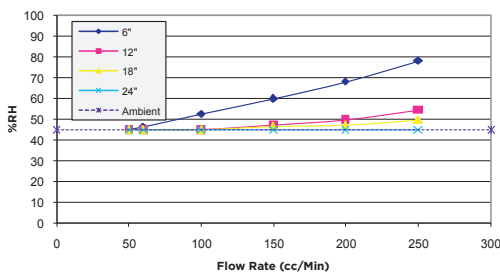
## CUSTOM MANUFACTURED ASSEMBLIES

Achieving humidity control in complex areas can be challenging. You can work with our teams to build custom assemblies ranging from full gas sampling lines to intricate configurations.

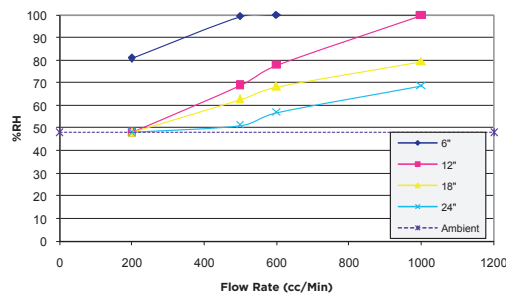
### You gain:

- ▶ Assemblies that meet your target flow rates and fit within your device parameters.
- ▶ Cost and time savings using our custom engineering expertise.
- ▶ Risk mitigation throughout sourcing, production, and delivery.
- ▶ Simplified scalability using our manufacturing capabilities.

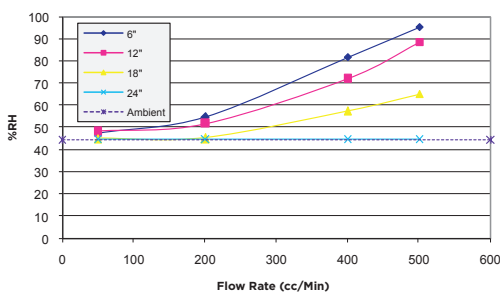
**Model ME-050 Performance**



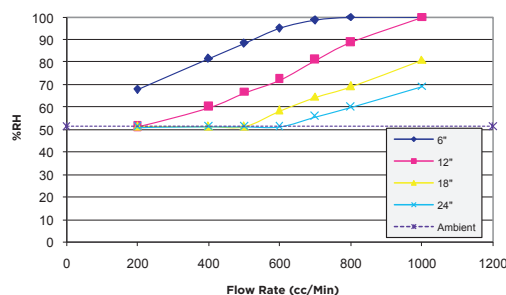
**Model ME-070 Performance**



**Model ME-060 Performance**



**Model ME-110 Performance**



Performance Parameters: Flow Rate vs Output %RH • Inlet Sample: 100%RH @ 97 deg. F (Saturated Breath)

# Innovating with You

We support you by focusing on the value drivers in your device and understanding the required investment for efficient delivery of those value drivers. If your humidity control solution requires acquiring new capital equipment or new automated testing, we will make the investment. Your requirements will feed our investments as you innovate in your application. Whether you are using Nafion™ Tubing properties for humidification instead of drying, building a unique assembly requiring new tools, or looking to control moisture in a new application, our team is ready to take your concept and build your solution.



## MATERIAL OPTIONS

### MATERIALS FOR END FITTINGS

TT	DEHP-free medical tubing attached to each end of ME Series
BT	Thermoplastic tube with nylon barb coupling
BB	Nylon barbed fitting (ME-070 and ME-110 only)
MB	1/16" molded polypropylene barb fitting (ME-050, ME-060 only)
ST	Stainless steel tube in molded polypropylene header
ML	Molded male locking luer fitting (not available on ME-110)
BML	Male locking luer with push-in barb attached with heat shrink
FL	Molded female luer fitting (not available on ME-110)
BFL	Female locking luer with push-in barb attached with heat shrink
MS	Molded male slip luer fitting (not available on ME-110)
COMP2	With 1/8" stainless steel compression fittings (ME-060 only)
COMP4	Molded headers for 1/4" compression fittings (ME-110 only)

### NAFION™ TUBING SIZE AND TYPICAL SAMPLE FLOW RATES

50	1.07mm ID x 1.35mm OD - samples up to 200cc/min
60	1.32 ID x 1.60mm OD - samples up to 400cc/min
70	1.52mm ID x 1.83mm OD - samples up to 600cc/min
110	2.18mm ID x 2.74mm OD - samples up to 1L/min

# How We Work With You from Design to Delivery

**Breathe Easier. Be Healthier.** The purpose behind what we do for your device and how we innovate across respiratory care. Whether you are a leading device manufacturer or just beginning development in the space, we will provide high customization and personal attention to you.



## DEVELOP

- › Collaborate with our expert engineers to design optimal configuration for your device and application
- › Private label and customize Nafion™ Tubing solution based on your needs
- › Finalize design and testing requirements



## DELIVER

- › Work with our regulatory experts to ensure compliance in target markets
- › Use our manufacturing and quality expertise to set control measures  
NOTE: All products are 100% tested.
- › Manufacture products under controlled cGMP conditions



## PARTNER (Upon final approval of production parts)

- › Scale up production based on your demand
- › Assess continuous improvement opportunities for your device
- › Maintain communication on changes in your market and potential to capture value

As you design and develop new iterations of your respiratory device, our teams are ready to support you.



## ◀ LEARN MORE ABOUT CUSTOM ASSEMBLIES

Visit our [website](http://www.permapure.com/medical/custom) to learn more about our Custom Manufactured Assemblies Solutions.  
[www.permapure.com/medical/custom](http://www.permapure.com/medical/custom).



ISO 13485

**FDA**  
REGISTERED

FDA Registered as a  
Manufacturer and a  
Contract Manufacturer



ISO 9001