

DEMISTER

PRODUCT DATA SHEET—103

Inline cooling and suspended liquids removal
For solvent-based or powder processing systems

Introduction

The Neutronics Demister is a preconditioning component designed for installation upstream of a Neutronics Sample Conditioning Package. Many applications require temperature reduction and the removal of suspended liquid droplets from the gas sample stream. With a cooling jacket designed for water or air, the demister works like a heat exchanger to lower the temperature of the sample gas stream. The internal Stainless Steel mesh packing serves two purposes. It provides additional surface area required for cooling, and it helps trap, collect and remove mists and suspended liquid droplets from the gas sample stream.

Operation

The sample gas enters the demister through a fitting on the bottom and exits out the top. As the vapor stream passes through the Stainless Steel mesh packing material, the inertia of the liquid droplets causes them to collect on the large surface area of the mesh and run together. The larger droplets drain out through the bottom of the demister, aiding in the self-cleaning of the packing material.

The cooling jacket is designed to continuously transfer heat from the packing material, reduce the temperature, and promote vapor condensation. For water cooled applications, water enters the jacket at the top (minimum flow of 0.25 gpm / 0.95 l/min) and exits at the bottom, providing effective counter-current cooling of the packing. Since no contact is made with the sample stream, no special handling or disposal of the water is required. For air cooled applications, a compressed air supply is connected to a vortex tube at the top of the jacket (required minimum flow rate is 11 scfm).

Installation

The Demister must be vertically mounted in the sample line between the sampling point and the Neutronics Sample Conditioning Package, directly above the process vessel or at least 12" (305 mm) above the sample line.

Maintenance

The Stainless Steel packing material requires periodic replacement, either as part of the routine preventative maintenance schedule or when a low flow condition is indicated by the flow switch or flow meter. The maintenance kit includes Stainless Steel mesh packing and two (2) Teflon baffle plates.



Features

- Robust design – shell and tube heat exchanger continuously removes solvent droplets, mists, and vapors from the sample stream and returns them to the process vessel
- Counter-flow cooling jacket configuration lowers the temperature of the sample gas to promote condensation – improves sampling system performance
- Internal Stainless steel mesh packing provides additional surface area for cooling – increases system reliability
- Low maintenance – with no moving parts, the demister minimizes maintenance costs and unplanned downtime
- Corrosion resistant materials of construction – Stainless steel tube with copper jacket

DEMISTER — SPECIFICATIONS

Materials of construction

Stainless steel with copper cooling jacket

Packing material

Stainless steel mesh and screen, Teflon baffle plates

Cooling water

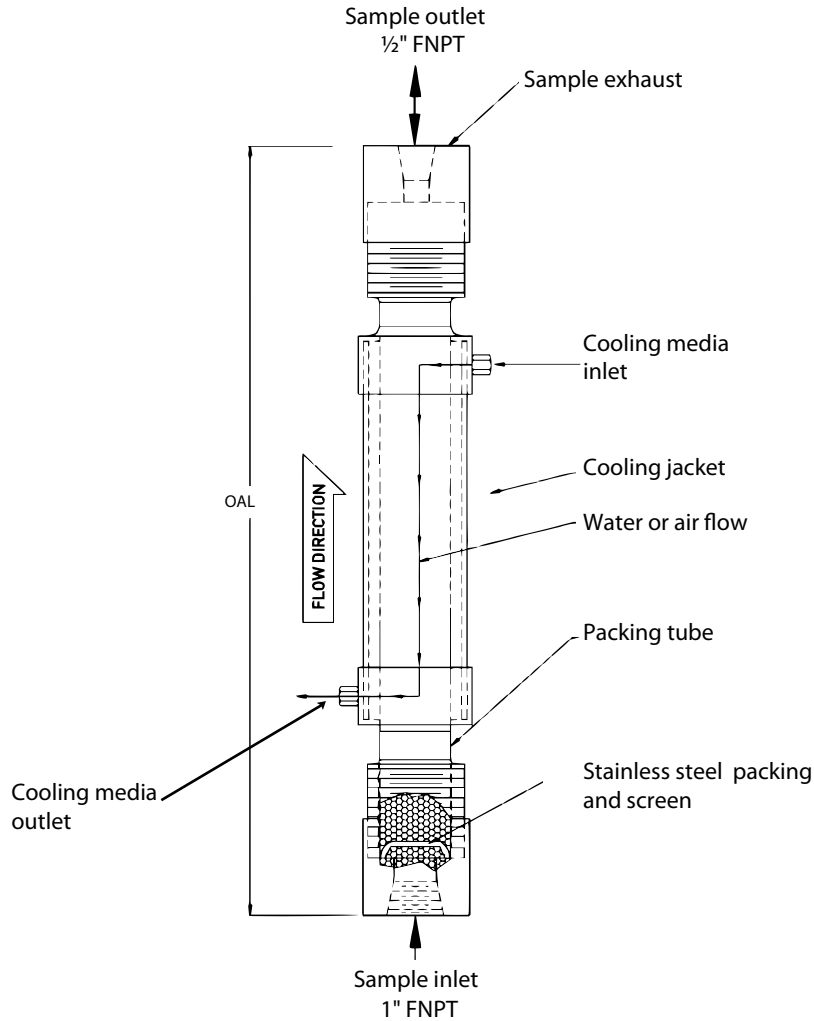
0.25 gpm minimum to 1.0 gpm maximum; temperature $\leq 55^\circ\text{F}$

Compressed air

11 scfm minimum @ 100 psig

Size/sample temperature

24" size for temperature $\leq 106^\circ\text{F}$
36" size for temperature $\leq 200^\circ\text{F}$



Spare Parts

Part No. 6-02-4000-19-4

Maintenance kit (SS packing, Teflon baffle plates)

Order information

Part No. 6-02-4000-19-8

Demister

Water cooled 15" size

Part No. 6-02-4000-19-1

Demister

Water cooled 24" size

Part No. 6-02-4000-19-7

Demister

Water cooled 36" size

Part No. 6-02-4000-19-6

Demister

Air cooled 24" size

Part No. 6-02-4000-19-9

Demister

Air cooled 36" size



**Neutronics
Gas Analysis Solutions**
456 Creamery Way
Exton, PA 19341

Tel: 610.524.8800
Fax: 610.524.8807
Email: info@neutronicsinc.com

www.analyzegas.com

