

HPD II (High Pressure Diffuser)

Aerosol Monitoring Accessory

Reduces the pressure of gases for particle counters operating at atmospheric pressure

Without measurement there is no control

The HPD II reduces the pressure of high purity, high pressure gas to near atmospheric pressures to allow for accurate sampling of aerosol particle size channels of $\geq 0.1 \mu\text{m}$ by PMS particle counters with a volumetric sample flow rate of 1.0 CFM. The HPD works by diffusing some of the gas out of the system, allowing the particle counter's flow-metering system to function as designed. The PMS particle counters that the HPD II is compatible with includes AirNet, IsoAir, Lasair Pro, and Lasair III.

The HPD II will effectively reduce the pressure of a gas line from 150 psi to atmospheric pressure and is compatible with non-toxic, non-flammable gases such as Clean Dry Air (CDA), nitrogen (N_2), argon (Ar), and carbon dioxide (CO_2). See the table below for a visualization of what particle counters are compatible with which gases.

HPD II is available in two configurations:

- HPD II-100 for gas lines between 40 and 100 psi
- HPD II-150 for gas lines between 75 and 150 psi

See the full table on the next page of gas pressure capabilities.

Particle Counter	CDA	N_2	Ar	CO_2	$\text{O}_2/\text{He}/\text{Ne}/\text{H}_2$
Airnet	Y	Y	N	N	N
Lasair III 110	Y	Y	N	N	N
Lasair III 310	Y	Y	Y	N	N
IsoAir 310P	Y	Y	Y	N	N
IsoAir Pro-E/Plus	Y	Y	Y	Y	N
Lasair Pro	Y	Y	Y	Y	N
HPGP 101-C	Y	Y	Y	Y	Y

BENEFITS

- Two models to reduce high-pressure gas between 40 – 100 psi or 75 - 150 psi to about atmospheric pressure
- Use in conjunction with a Lasair II-110 or Lasair III-110 particle counter to measure particles as small as $0.1 \mu\text{m}$ in CDA, nitrogen, carbon dioxide, or argon
- Can be used with Clean Dry Air (CDA), argon (Ar), nitrogen (N_2), carbon dioxide (CO_2), or other non-toxic inert gases (see table for compatible gases)
- No external flow meters needed
- Economical monitoring of pressurized gases with atmospheric pressure particle counters

FEATURES

- Specifically designed for use with the 1.0 CFM aerosol particle counters
- No moving parts to wear
- Exhaust filter prevents possible room contamination
- Particle counter can remain on, even when gas supply is off
- Stainless steel construction

APPLICATIONS

- AirNet: 310, 510
- IsoAir: 310P, Pro-E, Pro-Plus
- Lasair Pro 310
- Lasair III: 110, 310, 310P



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Specifications

Pressure	See additional table below
Applicable Sample Flow Rate	1.0 CFM
Particle size range	0.1 – 1.0 µm
Environment	Temperature: 50 – 90 °F (10 – 32 °C). Humidity: Non-condensing.
Material	Enclosure: 316L stainless steel body, exhaust filter Gaskets: 316 stainless steel, Buna-N O-rings
Inlet fitting	Male 4-VCR fitting, #4 size, class 316L stainless steel with Ruby orifice
Exhaust fitting	3/8" ID with O-ring seal
Tubing length	1 m (39.4 in) maximum
Dimensions (h, w, d)	5.1 x 9.8 x 5.5 in (13 x 25 x 14 cm)
Weight	5.8 lb (2.6 kg)
Compatible instruments	See the Applications section on the previous page

	Flow Rate	CDA	Nitrogen	Argon	CO2
HPD II 100	1.0 CFM	40-100 psi	40-100 psi	40-100 psi	40-100 psi
HPD II 150	1.0 CFM	75 - 150 psi			

System components included: mounting brackets and exhaust tubing to particle counter

Not included: particle counter, ISPs sample tubing, communications cables, PC, FacilityNet or Pharmaceutical Net software

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