NanoAir™ and ParticleSeeker™

Condensation Particle Counter and Smart Manifold

A revolutionary new 10 nm sensitivity aerosol nanoparticle counter

Without measurement there is no control

The NanoAir™ Condensation Particle Counter (CPC) brings lab-grade size sensitivity, a robust design, and easy operation.

Compact yet powerful, the NanoAir measures aerosol contaminants down to 10 nm in size while using only a small footprint in your production area. Working fluid is securely contained and efficiently consumed at a minimal rate.

With the smart manifold ParticleSeeker™, you can measure up to 10 locations with ease. Sampling is programmable to match your unique process flow.

BENEFITS

- Small footprint
- Lightweight
- Innovative working fluid design
- Savings on maintenance and fewer failure points
- Does not generate particles
- Low risk of unwanted fluid migration
- Designed for internal tool use
- Robust fluidics design for transport and orientation

FEATURES

- Combines with ParticleSeeker, the only nanoparticle manifold on the market
- Runs on an external vacuum with no internal pumps or fans
- Automatic shutoff with drop in flowrate
- Communication protocols: TCP/IP PMS protocol (Facility Net), Modbus, 4-20mA, Bluetooth
- USB-C data download and serial configuration for custom dwell and tare time
- Visible Indicators (LEDs): Fluid, Status, Power
- Minimal time between sample points
- Swappable Base Station minimizes downtime from preventative maintenance and calibration
- HPD III compatibility for compressed gas monitoring

APPLICATIONS

- Semiconductor process areas
- Equipment Front End Modules (EFEM)
- Compressed gas monitoring
- Trend analysis

PARTICLE MEASURING SYSTEMS®
a spectris company

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NanoAir 10 Aerosol Particle Counter

Size range	10nm (minimal detectable size @ D50)
Aerosol flow rate	2.8 LPM (0.1CFM) ±5%
Sampling period	0.2 to 3600 seconds, user-selectable
Max. particle concentration	200,000 #/ft³ @10% coincidence loss
Zero Count	< 1.5#/m³, Does not have to use false count subtraction
Volumetric Sample %	100% - no sheath flow
Counting Efficiency	10 nm = 50% ± 20% 15 nm = 100% ± 10%
Calibration	yearly
Instrument warm-up time	20 minutes, nominal
Working fluid	Organic, non-toxic, non-flammable 240 ml total working fluid volume
Working fluid consumption and instrument volume	12months between refills 240 ml total working fluid volume
Sample tubing	Static Control Polyurethane Tubing 6mm OD, 4mm ID (PMS P/N: 1000026711)
Sample tubing length	≤ 10 m (33 feet)
Laser classification	Class 1, complies with US 21 CFR 1040.10 and EN60825-1. Internally an enclosed Class 3B laser is used per EN60825-1.
Data storage	>10,000 samples
Dimensions (l,w,h)	8.0 x 6.0 x 6.5 in (20.3x 15.2 x 16.5 cm)
Weight	6.1 lb (2.8 kg)
LED Indication	Power, flow error, laser error, activity, working fluid level
Power	External AC to DC Power Supply:Input: 100 – 240 VAC, 50/60 Hz, 1.5 AOutput: 24 VDC 5.0 AAC input voltage fluctuation shall not exceed ± 10%
Communications	• Ethernet connectivity (PMS Proprietary, Modbus TCP/IP) • serial USB • 4-20mA 4 IN, 2 OUT • Dry contact relays (4)
Analog Input/ Output	4x 4-20mA analog input ports2x 4-20mA analog output ports
Operating Temperature range	50 – 90 °F (10 – 32 °C)
Humidity range	0 – 60% RH, non-condensing
Operating pressure	1 Atmosphere (ambient)
Vacuum Source	External, ≥ 12 inHg required
Power	24 VDC, 5 Amp

Installation requirements (with external AC to DC power supply)	• Indoor use only
	• Pollution degree 2
	• Over voltage category I
	• Ordinary protection (not protected against harmful ingress of moisture)
	• External AC to DC Power Supply:
	  • Over voltage category II
	  • Class I Equipment (Electrical earth ground from the mains power source to the product input is required for safety.)

Status Indicators	• Power button LED Ring (4-color, operational states) • Front Edge and corner LED (4-color, operational states) • Working Fluid Level indicator (8 level real-time level detection)

Particle Seeker

Sample Ports	10 ports supporting a single particle counting instrument
Sample Flowrate	0.1 CFM
Bulk Flowrate	0.2 to 0.3 CFM per port (nominal)
Purge time between ports	0-30 seconds, user configurable (recommended min 1 sec)
Sample Interval Time	Minimum 1 second, Maximum 3600 seconds
Sample Modes	Sequential, Scanning, Ensemble Mode, Patterned
Crosstalk ≥ 10nm	≤ 0.01%
Sample tubing	Static Control Polyurethane Tubing 6mm OD, 4mm ID (PMS P/N: 1000026711)
Sample tubing length	≤ 6m (20 feet) per port, sample tubing must be of equal length for all ports
Fittings provided	10 self-locking, 6mm OD, push-fit fittings
Vacuum required	≥12 inHg VAC, 3.0 CFM
Data storage	≥10,000 samples
Power	External AC to DC Power Supply: Input: 100 – 240 VAC, 50/60 Hz, 1.5 A Output: 24 VDC 5.0 A Current Draw: 1A @24VDC
Dimensions (l, w, h)	8.2 x 5.4 x 4.7 in (21x14x12 cm)
Weight	2.2 lb (1.0 kg)
Operating Temperature range	50 – 95 °F (10 – 35 °C)
Humidity range	0 – 60% RH, non-condensing

HPD III High Pressure Diffuser with NanoAir 0.1CFM CPC

Sample Ports	High Pressure (CDA) 25 – 100 psi	High Pressure (Nitrogen) 22.5 - 98 psi	High Pressure (Argon) 119 psi	High Pressure (CO_2) 126 psi
Particle size range	≥ 0.10 nm			
Temperature range	Typical: 39 – 86 °F (4 – 30 °C)			
Humidity	0 – 85% RH non-condensing			
Material	Enclosure: 316L stainless steel body, exhaust filterGaskets: 316 stainless steel, Buna-N O-rings			
Sample gas	Dry, inert, non-toxic, non-flammable gases (CDA, nitrogen, argon, carbon dioxide)			
Inlet fitting	Male 4-VCR fitting, #4 size, class 316L stainless steel with Ruby orifice			
Exhaust fitting	Barb fitting for 4mm ID			
Tubing length	1 m (39.4 in) maximum			
Dimensions (h, w, d)	15 x 2.75 x 5.5 in (38 x 7 x 14 cm)			
Weight	2.7 lb (1.25 kg)			
Compatible instruments	NanoAir			

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Specifications

Four-color LEDs offer a quick snapshot of current instrument status

- Problem! Check the laser/flow/temp/fluid.
- Something isn't quite right!
- Connecting or warming up!
- No problems!

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