

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

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NanoAir 10 Aerosol Particle Counter

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|--|---|
| 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 #/ft ³ @10% coincidence loss |
| Zero Count | < 1.5#/m ³ , 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 | <ul style="list-style-type: none">• 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) | <ul style="list-style-type: none">• 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:<ul style="list-style-type: none">• 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 | <ul style="list-style-type: none">• 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

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|--|---|
| 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 $\geq 10\text{nm}$ | $\leq 0.01\%$ |
| Sample tubing | Static Control Polyurethane Tubing 6mm OD, 4mm ID (PMS P/N: 1000026711) |
| Sample tubing length | $\leq 6\text{m}$ (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 | $\geq 12\text{ inHg VAC}$, 3.0 CFM |
| Data storage | $\geq 10,000$ 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

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|-------------------------------|--|---|----------------------------------|---|
| 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 | $\geq 0.10\text{ nm}$ | | | |
| 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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