

11000 Ambient Air Monitor

1.2 LPM



The Particles Plus® 11000 Ambient Air Quality Monitor is engineered for high-resolution, real-time measurement of ambient particulate matter in outdoor environments. Housed in a NEMA 4 weatherproof enclosure, the 11000 series measures particle sizes from 0.3 to 25.0 μm across 30 discrete size channels at a flow rate of 1.2 LPM. Designed for demanding outdoor applications such as roadside monitoring, urban air studies, industrial fence-line monitoring, and environmental research, the 11000 combines rugged durability with industry-leading sensitivity and resolution.

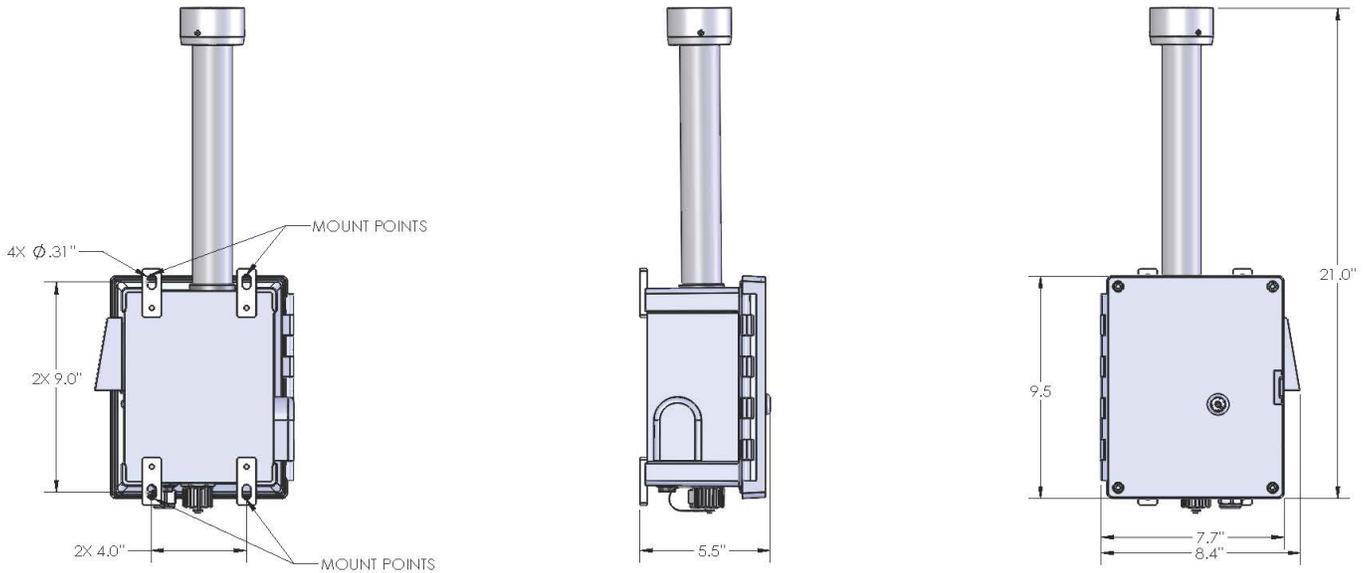
As the first real-time optical particle counter to offer 30 accurate size channels at higher concentrations, the 11000 records size-specific particle data into a 65,000-record non-volatile memory that is critical for applications requiring research-grade particle sizing.

The 11000 is also ready to support the new data requirements for Particle Number (PN) and Particle Size Distribution (PSD) outlined in the EU Ambient Air Quality Directive, providing agencies and researchers with the metrics necessary to address evolving regulatory and health-based standards.

Data can be simultaneously communicated to a remote monitoring system, logged locally, exported as .CSV, and analyzed via the free Particles Plus® software. The system includes remote diagnostics and multiple communication

Features and Benefits

- Measures up to 30 particle size channels simultaneously
- Approximates mass concentration in $\mu\text{g}/\text{m}^3$ with density and refractive index corrections
- User selectable PM sizes from 0.3 μm to 10 μm including TPM of up to 25.0 μm
- Long-life laser diode technology for reliable performance
- Inlet sample humidity and enclosure temperature regulation for precise particle sizing
- Stores up to 65,000 sample records, 1,000 locations, and 50 sampling recipes
- Resolve issues quickly from any location with internet-enabled remote diagnostics
- ULTRAGUARD® Fiberglass reinforced polyester NEMA 4 tamper-proof enclosure
- Optional pole or tripod mount options
- 2 Year Limited Warranty (Extended and Lifetime Warranties available)



Specifications

| | |
|------------------------------|---|
| Model | 11000 |
| Size Range | 0.3 to 25 μm |
| Size Channels | Factory calibrated at 0.3, 0.5, 1.0, 2.5, 5.0, 10.0 μm |
| Flow rates / Accuracy | 1.2 LPM $\pm 3\%$ |
| Concentration Limits | 27,000,000 particles/ft ³ @ 10% coincidence (per ISO 21501-4), 50,000,000 particles/ft ³ @ 10% coincidence (as tested and validated ¹) |
| Aerosol Concentration Range | 0.01 to 20,000 $\mu\text{g}/\text{m}^3$ |
| Light Source | Long life laser diode |
| Resolution | 0.00003 $\mu\text{g}/\text{m}^3$ |
| Zero Stability | No appreciable drift |
| Count Modes | Particles/second, Real-Time Meter, cumulative/diff. (count/m ³ and count/ft ³) and mass concentration (PM) |
| Log Interval | Minimum 1 second with no hold time, maximum 99 hours |
| Calibration | NIST traceable |
| Vacuum Source | Internal pump with automatic flow control |
| Number of Channels | Up to 30 channels |
| Custom Size Channels | Calibration for custom size channels available |
| Communication Modes | ModBus over RS485 or USB direct (USB to IMS-9K software utility) |
| Optional Communication Modes | Wi-Fi, LoRaWAN and Ethernet |
| Environmental Sensor | Temperature and relative humidity probe: -4° to 122°F (-20° to 50°C) $\pm 1^\circ\text{F}$ (0.5°C), 0 -100% $\pm 2\%$ RH |
| Alarm | Alarms for all particle values, environmental sensors, flow and sensor failure |
| Calibration | Particle sensor recommended once per year |
| User Calibration | Field Calibration of Temperature and Humidity possible with included utility software |
| External Surface | ULTRAGUARD® Fiberglass reinforced polyester - compression molded SMC box and Cover |
| Enclosure | Temperature controlled ventilation blower and heated backplate for environmental extremes |
| Dimensions (L x W x H) | 5.5 x 8.4 x 21 in (13.9 x 21.3 x 53.3 cm) includes barb fittings |
| Weight | 6.7 lbs. (3.0 kg) |
| Accessories | Quick start guide, operating manual on USB flash drive, mounting feet |
| Optional Accessories | Printed manual, data cable, pole mounting hardware kit |
| Data Storage | Internal 65,000 sample records (rotating buffer) including particle count data and environmental data |
| Sample Time | 1 second to 99 hours |
| Power | 110 to 240 VAC 50/60 Hz universal in-line power supply |
| Operating Conditions | -4° to 122°F (-20° to 50°C) / 20% to 95% non-condensing |
| Warranty | 2 year Limited Warranty (Extended and Lifetime warranties available) |

PAT. <https://particlepatents.com/> Additional Patents Pending.
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