

13000 Ambient Air Monitor

Condensation Particle Counter (CPC)



The Particles Plus 13000 is the first real-time ambient monitor to feature a water-based condensation particle counter in a small form factor. The 13000 condensation particle counter is designed to detect and count aerosol particles by first enlarging the particulates using a supersaturated vapor. This robust monitor provides reliable, accurate measurement of airborne particles across a very wide size range allowing for the detection of environmental and public health concerns involving airborne particulates.

Real-Time Data

The condensation particle counter (CPC) measures ultrafine particulates as small as 5 nm (0.005 μm) and provides a total particle count above this threshold, this data is also stored in each of the above samples to provide a more complete view of air quality.

Internet-Enabled

Particles Plus systems are configured to allow users to push real-time data to the cloud where sensor outputs can be visualized by authorized stakeholders.

Fully Integrated Environmental Sensor System

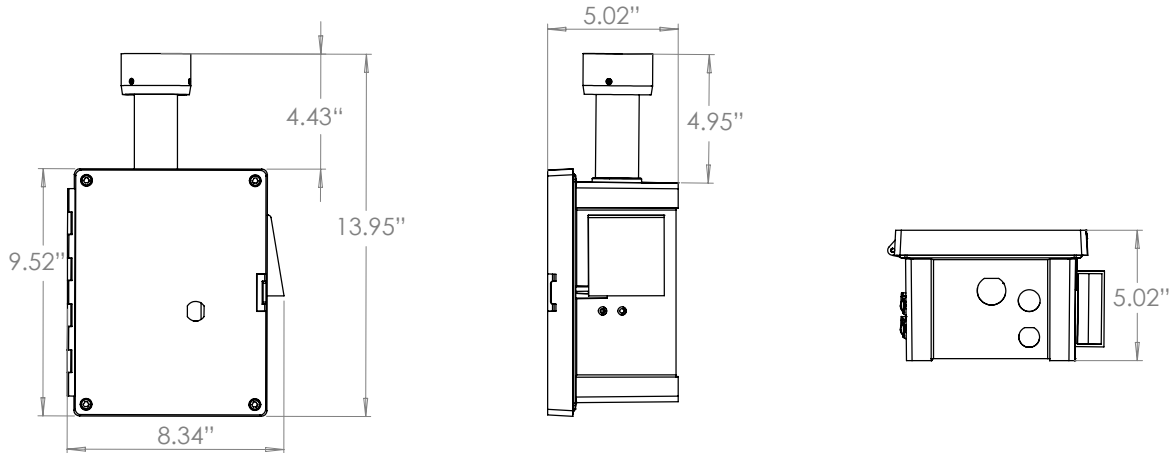
Integration of additional sensors for measurement of environmental and meteorological parameters including relative humidity, temperature, barometric pressure.

Applications

- Airborne Pollution and Environmental Research
- Perimeter or Fence-line Monitoring for Construction, Remediation or Waste Sites
- Mine and Quarry Fence-line Monitoring for dust control operations
- City Wide or Community Air Pollution Monitoring
- Roadside Emissions Monitoring
- Medical Facilities Property Monitoring
- Power Line Wild-Fire Monitoring
- Environmental Disasters

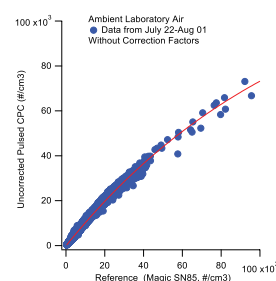
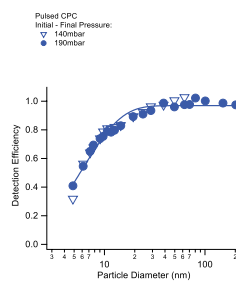
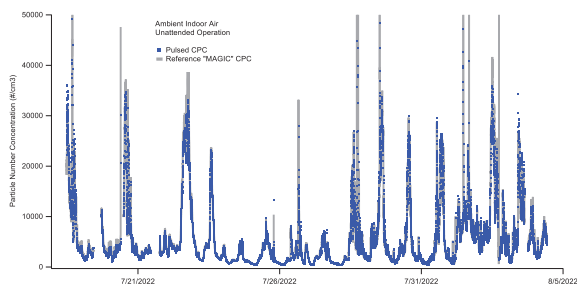
Features and Benefits

- Total particulate counts above the ultrafine threshold
- CPC Aerosol Concentration Range of 0 to 100,000 particles per cubic centimeter
- ULTRAGUARD® Fiberglass reinforced polyester NEMA 4 rated outdoor tamper-proof enclosure with internal thermal control
- Optional pole or tripod mount options
- Optional Cloud based data management software subscription available for remote monitoring
- Monitor for 24 hours a day, 7 days a week, 365 days a year



Specifications

Model 13000	Condensation Particle Counter
Measured Parameter	Ultrafine particle concentration
Operating Principle	Optical light scattering after water vapor growth
Condensation Approach	Near-adiabatic expansion with single particle counting
Concentration Range	0 to 100,000 particles/cm ³
Particle Size Range	0.005 to 3.0 μm
Size Channels	0.005 μm threshold (one size bin)
Efficiency	±10% below 30,000/cm ³ , ±20% at higher concentrations
Sample Rate	6s cycle time
Number of Channels	1
Liquid Requirement	Distilled water
Flow Rate	Variable
Internal Vacuum Pump	Internal pump with local control
Operating Conditions	45° to 100°F (5 to 38°C)
Communication Modes	Ethernet, USB. (Optional) Wireless 802.11 b/g, RS485, RS232 or LoRaWAN
Environmental Sensor	Temperature -4° to 122°F (-20° to 50°C) ±1°F (0.5°C) Relative Humidity 0 -100% ± 2%RH
Alarm	Alarms for all particle values, environmental sensors, flow and sensor failure
Instrument 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
Dimensions (L x W x H)	5.5 x 8.4 x 21 inch (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
Power	110 to 240 VAC 50/60 Hz universal in-line power supply
Warranty	1 year limited warranty. Extended warranties available.



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