5300-AQM1 and 5300-AQM2 Air Quality Monitors

PM, CO_2, Temperature, RH, and TVOC

The Particles Plus® 5300-AQM1 and 5300-AQM2 Remote Particle Counters measure particles from 0.3 to 25.0 µm. These user-friendly instruments display up to six particle size channels, temperature, relative humidity, and CO_2 (AQM1) or CO_2 + TVOC (AQM2). Featuring a 1.2 LPM flow rate, the 5300 is optimized for high-concentration environments providing improved accuracy, reduced coincidence loss, and extended instrument lifespan in comparison to higher-flow models.

Designed for research, industrial hygiene, indoor air quality, and cleanroom applications, the 5000 Series offers exceptional versatility. From the cleanest labs to the dirtiest worksites, confidently monitor any environment thanks to the industry's highest particle concentration limits.

One of the key advantages of the 5000 Series as a remote particle counter is its built-in touchscreen display. It provides real-time visual feedback for technicians working in critical areas, enabling immediate identification of elevated particle counts. Adjustable audible alarms offer an additional layer of awareness in critical environments.

Data can be managed directly on the device, through a facility monitoring system or through the free Particles Plus® software. Export raw data in .CSV format or generate compliant reports (ISO 14644-1, EU GMP Annex 1, or FS 209E). Remote diagnostics are also available from anywhere with an internet connection. The 5000 Series can be easily integrated into building automation and cleanroom management systems with multiple communication options.

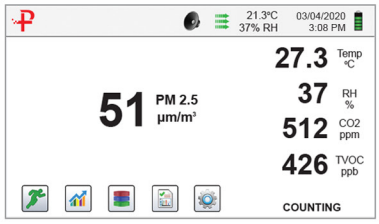
Features and Benefits

- Stores up to 45,000 sample records, 1,000 sample locations and 50 recipes
- Long life laser diode technology for reliable performance
- Approximates mass concentration in µg/m³ with density and refractive index corrections
- User selectable PM sizes from 0.3 to 10 µm including TPM of up to 25.0 µm
- Large, intuitive color touch screen display with an easy-to-use icon-driven interface
- Temperature and relative humidity probe included
- Resolve issues quickly from any location with internet-enabled remote diagnostics
- Annotation function allows user to save 32 character notations to a live sample record
- Common interface ensures ease of use across all products
- Connect using MODBUS™ TCP over Wired. Optional MODBUS™ TCP over WiFi and optional MODBUS™ RTU or MODBUS™ ASCII over RS-485 or RS-232
- Displays user-definable reports for ISO 14644-1, EU GMP Annex 1 and FS 209E
- Built-in visual and audible alarms with comprehensive alarm management
- Complies with ISO 21501-4 and JIS B9921 standards
- Easy to clean, lightweight stainless steel enclosure with minimal particle traps
- Versatile mounting options
- 2 year Limited Warranty (Extended and Lifetime warranties available)

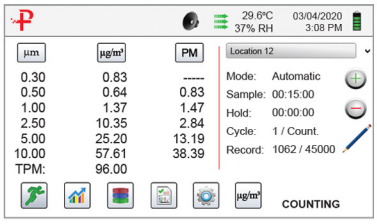
Specifications

Model	**5300-AQM1 and 5300-AQM2**
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 variable binning
Flow rates / Accuracy	1.2 LPM ± 3%
Concentration Limits	27,000,000 particles/ft³ @ 10% coincidence (per ISO 21501-4), 50,000,000 particles/ft³ @ 10% coincidence (as tested and validated[1])
Aerosol Concentration Range	0.01 to 20,000 µg/m³
Light Source	Long life laser diode
Resolution	0.00003 µg/m³
Counting Efficiency	50% @ 0.3 µm; 100% for particles >0.45 µm per JIS
Zero Count	<1 count / 60 minutes (<1 particles / 6 ft³). No fault count subtraction. No appreciable drift.
Count Modes	Particles/second, Real-Time Meter, cumulative/diff. (count/m³ and count/ft³) and mass concentration (PM)
Count Alarms	1 to 9,999,999 counts
Calibration	NIST traceable
Display	4.3″ (10.9 cm) WQVGA (480×272) color touch screen
Optional Printer	External thermal printer available
Vacuum Source	Internal pump with automatic flow control
Filtered Exhaust	Internal HEPA filter
Number of Channels	6
Custom Size Channels	Calibration for custom size channels available
Audible Alarm	Adjustable built-in alarm
Communication Modes	MODBUS™ TCP over Wired. Optional MODBUS™ TCP over WiFi and optional MODBUS™ RTU or MODBUS™ ASCII over RS-485 or RS-232
Environmental Sensors (AQM1)	Includes NDIR-CO_2 sensor (0-5000 ppm ±1%, resolution 1 ppm, response rate 20 seconds), temperature (32-122°F, ±1°F / 0-50°C, ±0.5°C) and relative humidity probe (15–90% RH, ±2%)
Environmental Sensors (AQM2)	Includes all sensors in the 300-AQM1 and PID-TVOC sensor (5 ppb - 50 ppm ±1.5%, response rate <3 seconds)
Alarm	Alarms on counts for all particle sizes, low battery, sensor failure, environmental sensors and flow rate
Standards	ISO 21501-4 and JIS B9921
Instrument Calibration	Recommended minimum once per year. Gases, temperature and humidity sensors field calibratable.
External Surface	Stainless steel
Dimensions (L x W x H)	5.22 x 2.25 x 9.13 in (13.3 x 5.7 x 23.2 cm)
Weight	4 lb (1.8 kg)
Accessories	User manual + Instrument Management Software (IMS) on USB flash drive, isokinetic probe, temperature relative humidity sensor, purge filter, USB cable, and power supply
Optional Accessories	Printed manual, carrying case, external printer, barbed fittings, and sample tubing
Data Storage	45,000 sample records (rotating buffer) including particle count data, environmental data, locations, annotations, and times. Scrollable on screen or printout.times. Scrollable on screen or printout
Sample Time	1 second to 99 hours
Power	110 to 240 VAC 50/60 Hz universal in-line power supply
Operating Conditions	41-104ºF (5-40ºC) / 20% to 95% non-condensing
Storage Conditions	32-122ºF (0-50ºC) / Up to 98% non-condensing
Warranty	2 Year Limited Warranty (Extended and Lifetime Warranties available)

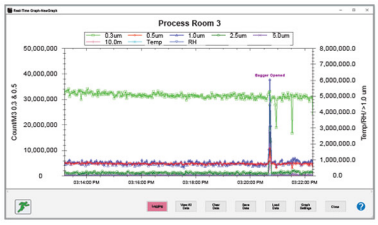
1- Validated by independent analysis see paper available at www.particlesplus.com/aac2022_pape



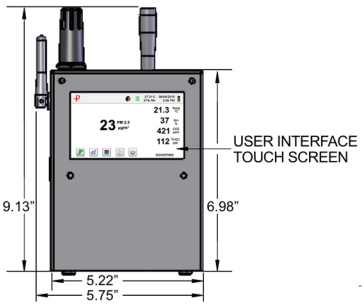
Configurable Environmental Sensor Display

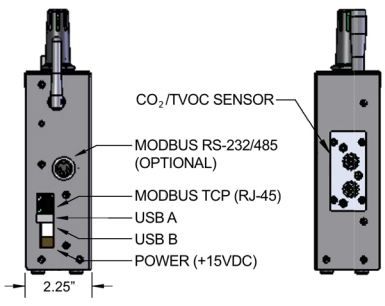


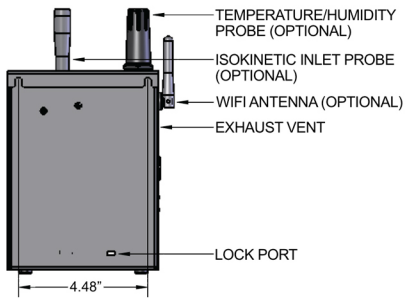
Simultaneous Display of Multiple PM Sizes



Control and Manage Remotely with IMS







PAT. https://particlepatents.com/ Additional Patents Pending.
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REV 20260901-5300-AQM1/5300-AQM2

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