8506-30 Handheld Airborne Particle Counter

0.1 CFM (2.83 LPM)



The Particles Plus® 8506-30 Handheld Particle Counter is designed for cleanroom monitoring, indoor air quality, industrial hygiene, research, and health & safety applications. Its patented, feature-rich design enables dynamic environmental monitoring and versatile data reporting across multiple industries.

The 8506-30 measures particles from 0.5 to 75 µm in six user-selectable channels at a flow rate of 0.1 CFM (2.83 LPM). It offers data reporting in standard cleanroom formats or by mass concentration in µg/m³, with density and refractive index corrections. Included temperature and relative humidity probes, along with optional CO2 and TVOC sensors, provide comprehensive environmental monitoring.

With unique features like Particles/Second and the Real-Time Meter, the 8506-30 enables efficient, on-the-go particle investigations across nearly any environment. The instrument can also operate as a remote particle counter, leveraging its intelligent battery and power conservation modes to achieve up to 100 hours of battery life.

The Particles Plus® standardized hardware and firmware simplify maintenance and reduce the total cost of ownership. Combined with extensive remote diagnostics and a lifetime warranty, the 8506-30 ensures industry-leading performance and long-term value.

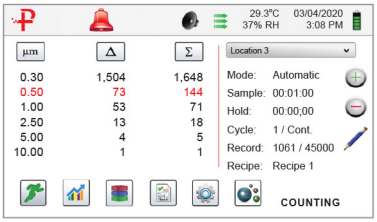
Features and Benefits

- 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 0.5 µm to 10 µm including TPM of up to 75 µm
- Large, intuitive color touch screen display with an easy-to-use icon-driven interface
- 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
- Over 10 hours continuous sampling on a single charge
- Integrated handle for one-handed operation
- 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 and wipe down with minimal particle traps
- Equipped with a standard 1/4”-20 female mount for tripod mounting
- Lightweight high-impact injection molded plastic enclosure
- 2 year Limited Warranty (Extended and Lifetime warranties available)

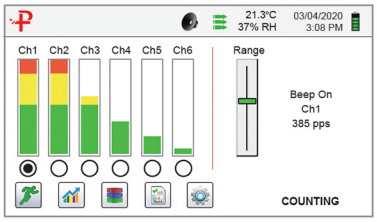
Specifications

Model	8506-30
Size Range	0.5 to 75.0 µm
Size Channels	Factory calibrated at 0.5, 1.0, 2.5, 5.0, 10.0, 30.0 µm variable binning
Flow rates	0.1 CFM (2.83 LPM)
Concentration Limits	15,000,000 particles/ft³ @ 10% coincidence (per ISO 21501-4), 30,000,000 particles/ft³ @ 10% coincidence (as tested and validated[1])
Aerosol Concentration Range	0.01 to 20,000 µg/m³
Battery Run Time	>10 hours continuous operation
Light Source	Long life laser diode
Counting Efficiency	50% @ 0.5 µm; 100% for particles >0.75 µm per JIS
Zero Count	<1 count / 60 minutes (<1 particles / 6 ft³). No fault count subtraction.
Count Modes	Particles/second, Real-Time Meter, cumulative/differential (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
Battery	Removable Li-ion (Recharge time: 4 hours within instrument, <2 hours with external battery charger)
Reports	ISO 14644-1, EU GMP Annex 1, FS 209E
Recipes	50 user-configurable recipes
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 Sensor	Includes temperature (32-122°F, ±1°F / 0-50°C, ±0.5°C) and relative humidity probe (15–90% RH, ±2%)
Alarm	Integrated alarms for particle counts (any size channel), sensor failure, environmental sensors, and flow rate
Standards	ISO 21501-4 and JIS B9921
Calibration	Recommended minimum once per year
External Surface	High impact injection molded plastic
Dimensions (L x W x H)	5.12 × 4.25 × 12.26 in (13.0 × 10.8 × 31.1 cm), including handle but excluding probes
Weight	2.2 lb (1.0 kg)
Accessories	User manual + Instrument Management Software (IMS) on USB flash drive, isokinetic probe, temperature relative humidity sensor, zero-count filter, battery, USB cable, and power supply
Optional Accessories	Printed manual, carrying case, spare battery, external battery charger, external printer, barbed fittings, and tubing
Buffer Memory	Securely stores up to 45,000 sample records with particle counts, environmental data, locations, and timestamps
Sample Locations	Up to 1,000 locations 20 characters long
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_paper



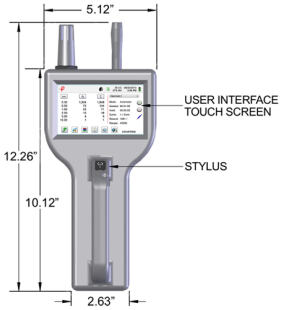
Audible and Visual Alarm Management

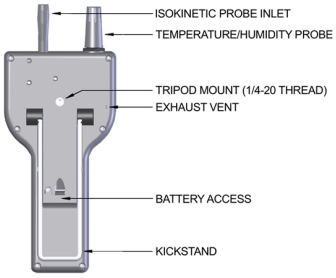


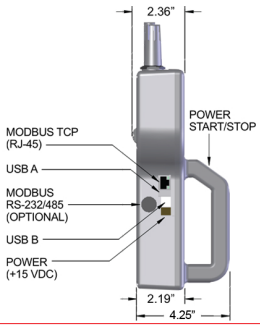
Real-Time Meter Pinpoints Particles Sources



Icon Driven Menus for Ease-of-Use







PAT. https://particlepatents.com/ Additional Patents Pending.
Particles Plus, Inc. reserves the right to change specifications without notice.
Contact hello@particlesplus.com or your local distributor for more details.
Particles Plus and the Particles Plus logo are trademarks of Particles Plus, Inc.
©2025 Particles Plus, Inc. All rights reserved.

REV 20260220-8506-30

Made in USA

PARTICLES PLUS®

1490 Central Street
Stoughton, MA 02072 U.S.A.
+1-781-341-6898
www.particlesplus.com