AEROTRAK® PORTABLE
PARTICLE COUNTER
MODEL 9110

The TSI AeroTrak® 9110 Portable Particle Counter offers an accurate measurement of particles down to 0.100 µm! This is made possible utilizing a patented* HeNe laser technology that is low maintenance with an enhanced signal-to-noise ratio. The Model 9110 is ideal for performing ISO-14644-1 classifications for Class 1 and Class 2 cleanrooms. This instrument is designed for cleanroom monitoring, process tool monitoring, and filter test applications.

4 YEAR LASER WARRANTY

The Model 9110 can generate pass/fail reports for ISO14644-1 via the onboard printer and the supplied TrakPro™ Lite Secure download software. Multiple particle counter configurations can be conveniently stored and uploaded as needed. This product can be used as a stand-alone particle counter or integrated into a facility monitoring system like TSI's FMS 5.

The Model 9110 complies with all the stringent requirements set forth in ISO 21501-4. It is calibrated with NIST traceable PSL spheres using TSI's world-class Classifier and Condensation Particle Counters, the recognized standard for particle measurements. Backed by a two-year product workmanship and material warranty and four-year laser warranty as well as the TSI commitment for superior service and support, there are no other portable 0.100 µm particle counters like it on the market today.

Features and Benefits

+ Accurately measures particles at 0.100 µm
+ 0.100 to 10.0 µm size range
+ Up to eight channels of simultaneous data
+ 1.0 CFM (28.3 L/min) flow rate
+ Complies with all requirements of ISO 21501-4
+ Best choice for testing Class 1 and 2 Cleanrooms
+ Onboard reports for ISO-14644-1, EU GMP Annex 1, and FS209E
+ External certification reports via TrakPro Lite Secure
+ Utilizes enhanced HeNe laser
+ Highly repeatable and reliable measurements/data
+ Data storage: 250 zones, 999 locations, and 10,000 samples
+ USB, USB storage device, ethernet data transfer and pulse outputs
+ Industry's loudest audible alarm
+ Allows storage and recall of specific Recipes and Zone configurations
+ Displays up to three environmental parameters
+ Stainless steel enclosure
+ Seamless integration with M32-01 manifold
+ Two-year product workmanship and material warranty
+ Four-year laser warranty

UNDERSTANDING, ACCELERATED

tsi.com

SPECIFICATIONS

AEROTRAK PORTABLE PARTICLE COUNTER
MODEL 9110

Particle Counting

Size Range	0.100 to 10.0 µm
Particle Channel Sizes	9110-01: 0.10, 0.15, 0.2, 0.25, 0.3, 0.5, 1.0, 5.0 µm
Size Resolution	<15% @ 0.2 µm (per ISO 21501-4)
Counting Efficiency	50% at 0.100 µm; 100% for particles >0.15 µm (per ISO 21501-4 and JIS)
Concentration Limit	100,000 particles/ft³ (3,500,000/m³) @ 10% coincidence loss
Light Source	Enhanced active cavity HeNe laser (4 year warranty)
Zero Count	<1 count per 5 minutes (per ISO 21501-4 and JIS)
Flow Rate	1 CFM (28.3 L/min) ±5% accuracy (meets ISO 21501-4 and JIS B9921)
Flow Rate Control	Electronic, automatic closed loop (patented* flow control technology)
Calibration	NIST traceable using TSI calibration system
Calibration Frequency	Recommended minimum of once per year
Sampling Modes	Manual, automatic, beep; cumulative/differential; count or concentration
Sampling Time	1 second to 99 hours
Sampling Frequency	1 to 9999 cycles or continuous
Exhaust	Internally HEPA filtered
Communication Mode	Modbus® TCP over Ethernet or USB
Audible Alarm	Built-in; >85 dB at 1 meter (adjustable)
Status Indicator	Low battery, flow, laser
Alarm Output	Dry contacts, normally closed when alarm is engaged
Alarm Limits	Programmable for all particle channels
Display	VGA 5.7-inch (14.5-cm) touch screen display
Languages	English, German, French, Spanish, Japanese, Chinese (simplified), Italian
Software	Compatible with TrakPro Lite Secure and FMS 5 software
Printer	Built-in thermal printer (also available without printer)
Printer Output	Prints in all available languages

Environmental Sensor Interface	Supports TSI Probe Models: 960, 962, 964, 966 (air velocity/temp/RH) and Temp/RH probe
Unit ID	Configurable IP address
Security	2-level password protection to lock out usage and configuration
Data Storage	250 Zones
	999 Locations
	10,000 sample records including: date, time, six total particle size channels, flow, status, and instrument status
Data Transfer	Via USB storage device, connection to TrakPro Lite Secure software through Ethernet or USB cable, or optional TSI FMS software
Dimension (H x W x D)	9.3 in. x 8.1 in. x 20.5 in. (23.6 cm x 20.6 cm x 52.2 cm)
Weight	24.5 lb (11.14 kg) without battery; 28 lbs (12.70 kg) with battery
Power	110 to 240 VAC, 50 to 60 Hz universal power supply
Battery	Removeable/rechargeable Li-Ion battery, up to four batteries
Battery Life	Up to 4 hours continuous use
Recharge Time	3.5 hours (when idle)
Standards	ISO 21501-4, CE, JIS B9921
Warranty	Two-year product workmanship and material warranty Four-year 0.1 µm laser assembly warranty Extended warranties available
Operating Range	50° to 95°F (10° to 35°C), 20% to 95% RH noncondensing
Storage Range	32° to 122°F (0° to 50°C), up to 98% RH noncondensing
Included Accessories	Printed QuickStart guide, operating manual on CD, power supply, battery, barbed inlet, isokinetic probe, purge filter, tubing, printer paper, USB cable and TrakPro Lite Secure software
Optional Accessories	Electronic filter scanning probe, basic filter scanning probe, TSI velocity probes, Temp/RH probe, additional battery, dual port external battery charger, isokinetic probes, sample tubing

*Patent Number 6,167,107

Specifications are subject to change without notice.

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