TSI
® **Knowledge Beyond Measure.**

AeroTrak® Portable Particle Counter

Model 9110

4 Year Laser Warranty

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.

The Model 9110 can generate pass/fail reports for ISO 14644-1 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 Software
- 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

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/ft^3 (3,500,000/m^3) @ 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, 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

*Patent Numbers 6,167,107

Specifications are subject to change without notice.

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Modbus is a registered trademark of Modicon, Inc.

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 the 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 non-condensing
Storage Range	32˚ to 122˚F (0˚ to 50˚C), up to 98% RH non-condensing
Included Accessories	Online operating manual, 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

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