



® Knowledge Beyond Measure.

# AeroTrak<sup>®</sup> Portable Particle Counter

Model 9110



The TSI<sup>®</sup> AeroTrak 9110 Portable Particle Counter offers an accurate measurement of particles down to 0.100µm

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<sup>®</sup> 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
- Utilized 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

## Specifications

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<b>Size Range</b>	0.3 to 25 µm	<b>Printer Output</b>	Prints in all available languages
<b>Particle Channel Sizes</b>	9110-01: 0.10, 0.15, 0.2, 0.25, 0.3, 0.5, 1.0, 5.0 µm	<b>Environmental Sensor Interface</b>	Supports TSI Probe Models; 960, 962, 964, 966 (air velocity/temp/RH) and Temp/RH probe
<b>Size Resolution</b>	<15% @ 0.2 µm (per ISO 21501-4)	<b>Unit ID</b>	Configurable IP address
<b>Counting Efficiency</b>	50% at 0.100 µm; 100% for particles >0.15 µm (per ISO 21501-4 and JIS)	<b>Security</b>	2-level password protection to lock out usage and configuration
<b>Concentration Limit</b>	100,000 particles/ft <sup>3</sup> (3,500,000/m <sup>3</sup> ) @ 10% coincidence loss	<b>Data Storage</b>	250 Zones 999 Locations 10,000 sample records including; date, time, six total particle size channels, flow, status, and instrument status
<b>Light Source</b>	Enhanced active cavity HeNe laser (4 year warranty)	<b>Data Transfer</b>	Via USB storage device, connection to the TrakPro™ Lite Secure Software through Ethernet or USB cable, or optional TSI <sup>®</sup> FMS Software
<b>Zero Count</b>	<1 count per 5 minutes (per ISO 21501-4 and JIS)	<b>Dimension (H x W x D)</b>	9.3 in. x 8.1 in. x 20.5 in. (23.6 cm x 20.6 cm x 52.2 cm)
<b>Flow Rate</b>	1 CFM (28.3 L/min) ±5% accuracy (meets ISO 21501-4 and JIS B9921)	<b>Weight</b>	24.5 lb (11.14 kg) without battery; 28 lbs (12.70 kg) with battery
<b>Flow Rate Control</b>	Electronic, automatic closed loop (patented* flow control technology)	<b>Power</b>	110 to 240 VAC, 50 to 60 Hz universal power supply
<b>Calibration</b>	NIST traceable using TSI <sup>®</sup> calibration system	<b>Battery</b>	Removeable/rechargeable Li-Ion battery, up to four batteries
<b>Calibration Frequency</b>	Recommended minimum of once per year	<b>Battery Life</b>	Up to 4 hours continuous use
<b>Sampling Modes</b>	Manual, automatic, beep; cumulative/differential; count or concentration	<b>Recharge Time</b>	3.5 hours (when idle)
<b>Sampling Time</b>	1 second to 99 hours	<b>Standards</b>	ISO 21501-4, CE, JIS B9921
<b>Sampling Frequency</b>	1 to 9999 cycles or continuous	<b>Warranty</b>	Two year product workmanship and material warranty Four year 0.1 µm laser assembly warranty Extended warranties available
<b>Exhaust</b>	Internally HEPA filtered	<b>Operating Range</b>	50° to 95° F (10° to 35° C), 20% to 95% RH non-condensing
<b>Communication Mode</b>	Modbus TCP over Ethernet or USB	<b>Storage Range</b>	32° to 122° F (0° to 50° C), up to 98% RH non-condensing
<b>Audible Alarm</b>	Built-in; >85 dB at 1 meter (adjustable)	<b>Included Accessories</b>	Online operating manual power supply, battery, barbed inlet, isokinetic probe, purge filter, tubing, printer paper, USB cable and TrakPro™ Lite Secure Software
<b>Status Indicator</b>	Low battery, flow, laser	<b>Optional Accessories</b>	Electronic filter scanning probe, filter scanning probe, TSI <sup>®</sup> velocity probes, Temp/RH probe, additional battery, dual port external battery charger, isokinetic probes, sample tubing
<b>Alarm Output</b>	Dry contacts, closed when alarm is engaged		
<b>Alarm Limits</b>	Programmable for all particle channels		
<b>Display</b>	VGA 5.7-inch (14.5-cm) touch screen display		
<b>Languages</b>	English, German, French, Spanish, Japanese, Chinese (simplified), Italian		
<b>Software</b>	Compatible with TrakPro™ Lite Secure and FMS 5 Software		
<b>Printer</b>	Built-in thermal printer (also available without printer)		