

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.



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.

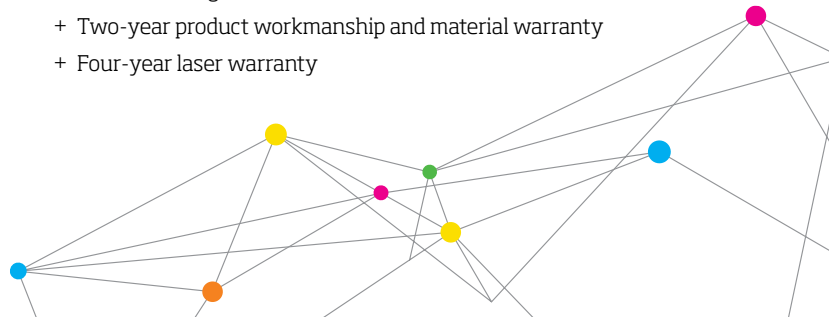
The Model 9110 complies with all the stringent requirements set forth in ISO 21501-4. It is calibrated with NIST traceable PSL spheres using TSI's world-class Classifier and Condensation Particle Counters, the recognized standard for particle measurements. Backed by a two-year product workmanship and 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
- + 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



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/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, 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 |

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|--------------------------------|---|
| 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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Modbus is a registered trademark of Modicon, Inc.



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