



# Advanced Test Equipment Corp.

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Knowledge Beyond Measure.

## AeroTrak® Portable Particle Counter

Models 9310 & 9510



**The TSI® AeroTrak® 9310 and 9510 Portable Particle Counters offer best-in-class features and versatility.**

TSI® AeroTrak 9310 and 9510 Portable Particle Counters provide a 1.0 CFM (28.3 L/min) flow with 0.3 or 0.5  $\mu\text{m}$  sensitivity. Compatible with TSI® accurate ventilation probes that measure air velocity/temperature/RH, these products provide you with a complete solution for your certification needs. Particle count data can be conveniently viewed on screen, downloaded using TrakPro™ Lite Secure Software, or printed directly to the integrated printer.

The AeroTrak® Portable Particle Counter generates pass/fail reports for ISO 14644-1, EU GMP Annex 1, and FS209E, via the onboard printer and the supplied TrakPro™ Lite Secure Download Software. Multiple particle counter configurations can be conveniently stored and uploaded as needed. These products can be used as a stand-alone particle counter or integrated into a facility monitoring system like TSI® FMS 5.

Both Models 9310 and 9510 comply with all the stringent requirements set forth in ISO 21501-4. These particle counters are calibrated with NIST traceable PSL spheres using TSI's world-class Classifier and Condensation Particle Counters, the recognized standard for particle measurements. Backed with a standard two-year warranty and TSI's long-standing reputation for high quality, there are no other particle counters like it on the market today.

### Features and Benefits

- AeroTrak 9310 Particle Counter: 0.3 to 25  $\mu\text{m}$
- AeroTrak 9510 Particle Counter: 0.5 to 25  $\mu\text{m}$
- Up to six channels of simultaneous data
- 1.0 CFM (28.3 L/min) flow rate
- Complies with all requirements of ISO 21501-4
- Data storage: 250 zones, 999 locations, and 10,000 samples
- USB, USB Storage Device and Ethernet data transfer
- Industry's loudest audible alarm
- Easy icon-driven touch screen operation
- Onboard reports for ISO-14644-1, EU GMP Annex 1, and FS209E
- External certification reports via TrakPro™ Lite Secure Software
- Barcode scanner supports recall of specific Recipe and Zone configurations
- Displays up to three environmental parameters
- Stainless steel enclosure
- Lightweight
- Stand-alone or integrate into a facility monitoring system
- Battery life provides up to 10 hours of continuous operation



## Specifications

# AeroTrak® Portable Particle Counter

Models 9310 & 9510

### Size Range

9310-02: 9310: 0.3 to 25 µm  
9510-02: 9510: 0.5 to 25 µm

### Particle Channel Sizes

9310-02: 0.3, 0.5, 1.0, 3.0, 5.0, 10 µm  
9510-02: 0.5, 0.7, 1.0, 3.0, 5.0, 10 µm

### Size Resolution

<15% @ 0.5 µm (per ISO 21501-4)

### Counting Efficiency

9310-02: 50% at 0.3 µm;  
100% for particles >0.45 µm  
(per ISO 21501-4 and JIS)

9510-02: 50% at 0.5 µm;  
100% for particles 0.75 µm  
(per ISO 21501-4 and JIS)

### Concentration Limit

820,000 particles/ft<sup>3</sup> (29,000,000/m<sup>3</sup>)  
@ 10% coincidence loss

### Light Source

Long life laser diode

### Zero Count

<1 count per 5 minutes  
(per ISO 21501-4 and JIS B9921)

### Flow Rate

1.0 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)

### Sample Tube Extension

Up to 39.4 ft (12 m)

### 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

### Vacuum Source

Internal pump

### Communication Mode

Modbus® TCP over Ethernet or USB

### Audible Alarm

Built-in; >85 dB at 1 meter (adjustable)

### Status Indicators

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

### 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.

### Reports

Provides Pass/Fail on ISO 14644-1,  
EU GMP, and FS209E reports

### Calibration

NIST traceable using TSI® calibration system

### Calibration Frequency

Recommended minimum of once per year

### Dimension (H x W x D)

9.5 in. x 9.0 in. x 9.2 in.  
(24.1 cm x 23.0 cm x 23.2 cm)  
(without isokinetic inlet)

### Weight

14.2 lbs (6.44 kg) with two batteries

### Power

110 to 240 VAC universal power supply

### Battery

Removable/rechargeable Li-Ion batteries  
(2 battery slots)

### Battery Life\*\*

Up to 10 hours of continuous operation

### Battery Recharge

5 hours (when idle)

### External Surface

Stainless steel

### Operating Range

36° to 95° F (2° 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

### Standards

ISO 21501-4, CE, JIS B9921

### Warranty

Two years

### Included Accessories

Online operating manual, power supply, battery,  
isokinetic inlet, purge filter, stylus, 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, carrying case

\* Patent Number 6,167,107

\*\* Battery life will vary based on setup and application.

Specifications are subject to change without notice.

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