



# Advanced Test Equipment Corp.

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Knowledge Beyond Measure.

## Aerotrak® Portable Particle Counter

MODEL 9500



**The TSI® AeroTrak® 9500 Portable Particle Counter offers best-in-class features and versatility.**

Perform ISO 14644-1 classifications and complete certifications of EU GMP facilities by sampling 1 m<sup>3</sup> of air in just 10 minutes! Particle count data can be conveniently viewed on screen, downloaded using TrakPro™ Lite Secure Software, or printed directly to the integrated printer. Compatible with TSI® accurate ventilation probes that measure air velocity/temperature/RH, the Model 9500 is a complete solution for your certification needs. The combination of an optional electronic filter scanner with up to 26 ft of tubing, makes this the best instrument for in-place filter testing.

This particle counter can generate 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. It can be used as a stand-alone particle counter or integrated into a facility monitoring system like TSI® FMS 5.

The Model 9500 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 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

- 0.5 to 25 µm size range
- Up to six channels of simultaneous data
- 3.53 CFM (100 L/min) flow rate
- Complies with all requirements of ISO 21501-4
- Best choice for filter testing in cleanrooms
- 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 3 hours of continuous operation



## Specifications

# Aerotrak® Portable Particle Counter

Model 9500

### Size Range

0.5 to 25 µm

### Particle Channel Sizes

0.5, 0.7, 1.0, 3.0, 5.0, 10.0 µm

### Size Resolution

<15% @ 0.5 µm (per ISO 21501-4)

### Counting Efficiency

50% at 0.5 µm, 100% for particles > 0.75 µm (per ISO 21501-4 and JIS)

### Concentration Limit

425,000 particles/ft<sup>3</sup> (15,000,000/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

3.53 CFM (100 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 26.2 ft (8 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

### External Chemical Resistance

Isopropyl alcohol, chlorinated solution, hydrogen peroxide

### 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 3 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 noncondensing

### Storage Range

32° to 122° F (0° to 50° C),  
up to 98% RH noncondensing

### Standards

ISO 21501-4, CE, JIS B9921

### Warranty

Two years

### Included Accessories

Printed QuickStart guide, operating manual on CD, power supply, battery, barbed inlet, isokinetic probe, tubing, purge filter, 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, 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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