

# DUSTTRAK™ Aerosol Monitor

The DUSTTRAK™ Aerosol Monitor measures aerosols in a wide variety of environments, from offices and industrial workplaces to outdoor environmental and construction sites. TSI's DUSTTRAK provides reliable exposure assessment by measuring particle concentrations corresponding to PM10, PM2.5, PM1.0 or respirable size fractions.

The DUSTTRAK is a portable, battery-operated laser photometer which gives you a real-time digital readout with the added benefits of a built-in data logger. Suitable for clean office settings as well as harsh industrial workplaces and outdoor applications, the DUSTTRAK detects potential problems with airborne contaminants such as dust, smokes, fumes and mists.

The DUSTTRAK is easy to use, too. You can perform quick spot checks or you can program the advanced logging modes for long-term sampling. You can program the start/stop times, recording intervals and other parameters. You can even set up the instrument for continuous unattended operation.

The DUSTTRAK's new continuous analog output and adjustable alarm output allow remote access to real-time particle concentration data. Applications include site perimeter monitoring, ambient monitoring, process area monitoring and other remote uses. The alarm output with user-defined setpoint alerts you when upset or changing conditions occur. This feature allows you to program a switch closure at a concentration value of your choosing.

*Now With  
Analog and  
Alarm  
Outputs*



The DUSTTRAK provides a real-time measurement based on 90° light scattering. A pump draws the sample aerosol through an optics chamber where it is measured. A sheath air system isolates the aerosol in the chamber to keep the optics clean for improved reliability and low maintenance.

## Specifications

### Model 8520 DUSTRAK Aerosol Monitor

Sensor Type	90° light scattering
Range	0.001 to 100 mg/m <sup>3</sup> (Calibrated to ISO 12103-1, A1 test dust)
Resolution	±0.1% of reading or ±0.001 mg/m <sup>3</sup> , whichever is greater
Zero Stability	±0.001 mg/m <sup>3</sup> over 24 hours using 10-second time-constant
Particle Size Range	0.1 to approximately 10 micrometers
Flow Rate	Adjustable 1.4 to 2.4 l/min (1.7 nominally)
Temperature Coefficient	+0.001 mg/m <sup>3</sup> per °C (for variations from temperature at which the DUSTRAK was zeroed)

Operating Temperature	32° F to 120° F (0°C to 50°C)
Storage Temperature	-4° F to 140° F (-20°C to 60°C)
Operating Humidity	0 to 95% rh (non-condensing)
Time Constant	Adjustable from 1 to 60 seconds
Data Logging	31,000 data points (21 days of logging once/minute)
Logging Interval	Adjustable from 1 second to 1 hour

Physical External Dimensions	8.7 in. × 5.9 in. × 3.4 in. (221 mm × 150 mm × 87 mm)
Instrument Weight	3.3 pounds with batteries (1.5 kg)

Serial Interface	RS-232 1200 baud
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Power AC	AC adapter (included)
Battery	Four C-size alkaline batteries (included)
Battery Run-time	Alkaline 16 hours

Analog Output Specifications	
Analog Output Voltage	0 to 5 VDC
Analog Output Scaling <sup>1</sup>	0 to 100 mg/m <sup>3</sup> 0 to 10.0 mg/m <sup>3</sup> 0 to 1.00 mg/m <sup>3</sup> 0 to 0.100 mg/m <sup>3</sup>
Output Impedance	0.01 ohm
Maximum Output Current	15 mA



The DUSTRAK comes complete with TSI's TRAKPRO™ Data Analysis Software to allow you to perform a more comprehensive analysis of your measurement results. This exclusive Windows®-based program helps you generate the detailed graphs and reports needed to effectively communicate your findings.

### Alarm Output Specifications

Type	Non-latching, MOSFET solid state (polarized) <sup>2</sup> analog switch
Setpoint Range <sup>1</sup>	0.010 to 100 mg/m <sup>3</sup>
Maximum Voltage	15 VDC
Maximum Current	1 Amp
Deadband	-5% of alarm setpoint
Connector	4-Pin, Mini-DIN connector

<sup>1</sup> User selectable through TRAKPRO™ Data Analysis Software.

<sup>2</sup> See TSI Application Note ITI - 074 for important wiring information.

## Ordering Information

Model	Description
8520	The DUSTRAK Aerosol Monitor and accessories includes: Auxiliary Analog and Alarm Outputs, Carrying Case, Alkaline Batteries, TRAKPRO™ Data Analysis Software, Filter, Computer Cable, 25-pin to 9-pin Adapter, Operation Service Manual, Calibration Certificate, 10 mm Nylon Dorr-Oliver Cyclone, Inlet Conditioning Kit 1.0 and 2.5 µm, Sampling Extension Tube, Miscellaneous Service Tools and Two-Year Warranty.

## Optional Accessories

Model	Description
8520-1	Environmental Enclosure



Specifications are subject to change without notice.  
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### TSI Incorporated

500 Cardigan Road, Shoreview, MN 55126 USA

Tel: 651 490 2811 Toll Free: 1 800 874 2811 Fax: 651 490 3824 E-mail: answers@tsi.com

TSI Germany—Tel: +49-241-523030 Fax: +49-241-5230349 E-mail: tsigmbh@tsi.com

TSI Sweden—Tel: +46-18-52-70-00 Fax: +46-18-52-70-70 E-mail: tsi@tsi.se

For current information  
[www.tsi.com](http://www.tsi.com)

