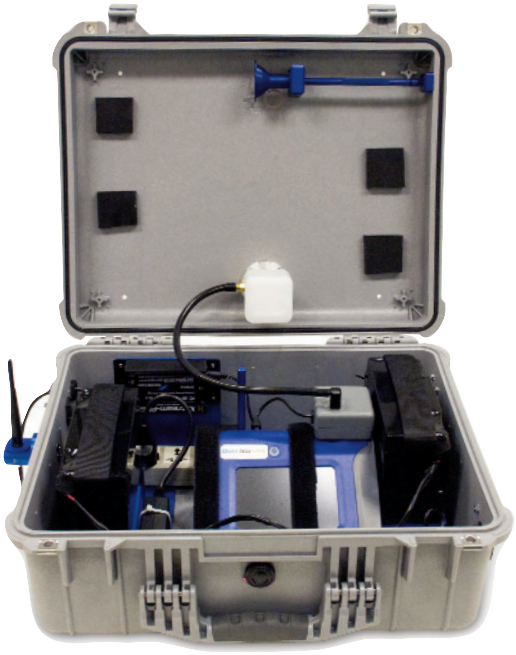
HEALTH AND SAFETY

Exposure Monitoring



DustTrak™ Aerosol Monitor Environmental Enclosure

Model 8535

The new DustTrak™ II and DRX Aerosol Monitor Models 8530 and 8533 are portable, battery-operated, laser-photometers that measure and record airborne dust concentrations. The new DustTrak aerosol monitors have a new custom designed weatherproof Environmental Enclosure for making the same accurate and precise measurements outdoors.

Features and Benefits

- New optional accessories
  - Internal Battery System
  - Heat Shield
  - Solar Power System
  - Wireless Radio Modems
- 360° omni-directional sampling inlet specifically designed to sample efficiently in a broad range of wind conditions
- Mount enclosure to a standard survey tripod equipped with a ⅝"–11 threaded stud
- Water trap that prevents precipitation from entering the instrument
- The rugged enclosure provides a secure method of deploying the DustTrak aerosol monitor and its accessories

Applications

- Outdoor environmental monitoring
  - Fugitive emissions monitoring
  - Site perimeter monitoring
  - Fence-line monitoring
  - Dust control operations
  - Environmental research studies
- Construction sites
- Harsh industrial environments
- Urban pollution studies

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Any Environment, Any Application

The new DustTrak Environmental Enclosure Model 8535 can be used in conjunction with the DustTrak aerosol monitor for many different applications. While its primary use is in outdoor applications it may also be advantageous in indoor industrial applications to provide additional security and protection for the instrument. The enclosure should be set up in a location where it can easily sample the aerosols of interest. It should be placed away from obstructions which may affect wind currents. The sampling inlet on the Environmental Enclosure samples most efficiently from 0 to 22 mph/0 to 36 kph.

New Optional Accessories for the DustTrak™ Environmental Enclosure

Internal Battery System—this internal power system will provide continuous power to the DustTrak aerosol monitor and the wireless radio modems when dedicated AC power is not available, allowing autonomous, 24-hour operation of the DustTrak Environmental Enclosure. This optional accessory is supplied with two sets of batteries, allowing one set of batteries to be charged while the other is in operation. It includes; two sets of 36 Ah lead acid batteries, and battery charger with universal line cord.

Heat Shield—it is mounted directly to the top of the Environmental Enclosure and is for use in applications where the enclosure needs to be shielded from direct sunlight.

Solar Power System—this external power system will provide continuous power to the DustTrak aerosol monitor and wireless radio modem when dedicated AC power is not available for remote, long-term unattended sampling applications. It will power all equipment and charge the external battery during the daytime, and then automatically switches to battery power during the night or in low-light conditions. It includes; two solar panels with stand, weatherproof battery and charge regulator enclosure, charge regulator, extended-life lead acid battery, and DC power cables.

Wireless Radio Modems—the wireless radio modem provides for two-way communications between the DustTrak II or DRX aerosol monitor using TrakPro™ Data Analysis Software. You can set up and program your DustTrak II or DRX aerosol monitor for remote sampling and retrieve data remotely using this new system. It includes; wireless radio (922 MHz or 2.4 GHz) modems for computer and instrument (sold separately), USB cable, dipole antenna, modem configuration software CD, and manual.

Specifications

Model 8535
DustTrak™ Environmental Enclosure

Sampling Conditions

Wind Speed	0 to 22 mph (0 to 36 kph)
Operating Temperature	32 to 120°F (0 to 50°C)
Storage Temperature	-4 to 140°F (-20 to 60°C)

Physical

External Dimensions (HWD)	8.1 x 16.9 x 20.6 in. (21 x 43 x 52 cm)
Weight (with Internal Battery System and DustTrak)	38 lb (17 kg)

Clean Inlet

Weekly, under normal conditions, or daily if concentrations are over 30 mg/m³

Re-grease O-rings

As needed

Internal Battery System

Power Requirements

Internal Battery Pack	12 VDC, 36 Ah
Battery Run-time	24 to 40 hours (typical)
Battery Charge Time	8 hours at 72°F (22°C) (New battery, deep discharge to 95% charge)

Solar Power System

Power Requirements

Solar System Run-time	Continuous (with adequate sunlight)
Rated Power	80 x 2 watts
Power Tolerance	±5%
Nominal Voltage	12 volts
External Battery Pack	12 VDC, 100 Ah
Battery Run-time	90 to 120 hours (typical)
Battery Charge Time	<10 hours at 72°F (22°C) (New battery, deep discharge to 95% charge, with adequate sunlight)
Operating Temperature	32 to 120°F (0 to 50°C)
Storage Temperature	-4 to 140°F (-20 to 60°C)

Physical (Solar Panels)

Dimensions (HWD)	2 x 43 x 48 in. (5 x 109 x 122 cm)
Weight	34 lb (15.3 kg)

Physical (Battery and Case)

Dimensions (HWD)	8.5 x 15.3 x 17 in. (22 x 39 x 43 cm)
Weight	85 lb (38.3 kg)

Wireless Radio Modem

Power Requirements

Power Supply Voltage	5–12 V
Receive Current	–90 mA @ 922 MHz –115 mA @ 2.4 GHz
Transmit Current	–185 mA @ 922 MHz –200 mA @ 2.4 GHz
Power Down Current	50 mA

Operating Temperature

32°F to 158°F (0°C to 70°C)

Storage Temperature

–4°F to 158°F (–20°C to 70°C)

Physical

Dimensions (HWD)	1.12 x 5.50 x 2.75 in. (3 x 14 x 7 cm)
Weight	7.1 oz (200 g)

Country specific wireless transmission information

US, Canada, Australia, New Zealand	922 MHz
Europe, Asia	2.4 GHz

Transmission Ranges (typical—line-of-sight)

Indoor/Urban Range (with 2.1 dB dipole antenna)	Up to 1500 feet (450 m) @ 922 MHz Up to 600 feet (180 m) @ 2.4 GHz
Outdoor RF line-of-sight range (with 2.1 dB dipole antenna)	Up to 7 mi (11 km) @ 922 MHz Up to 3 mi (5 km) @ 2.4 GHz
Outdoor RF line-of-sight range (with high gain antenna)	Up to 20 mi (32 km) @ 922 MHz Up to 10 mi (16 km) @ 2.4 GHz
Transmit Power Output	100 mW (20 dBm) @ 922 MHz 50 mW (17 dBm) @ 2.4 GHz

Data Rate

9,600 bps

To Order

Model 8535 DustTrak Environmental Enclosure

Specify	*Description*
8535	Weatherproof Case with Survey Tripod Mount 360° Omni-directional Sampling Inlet, Water Trap Bottle, internal equipment bracket with VELCRO® Straps, Dust Caps, Tubing, Plug, O-rings, and external weatherproof AC/DC Power Supply.

Optional Accessories

Specify	*Description*
801801	Internal Battery System
801810	Heat Shield
801811	Solar Power System
801820	922 MHz Modem with Antenna Mount for Enclosure
801821	922 MHz Computer Modem
801825	2.4 GHz Modem with Antenna Mount for Enclosure
801826	2.4 GHz Computer Modem

Specifications are subject to change without notice. TSI, the TSI logo, DustTrak, and TrakPro are trademarks of TSI Incorporated. Microsoft and Windows are trademarks of Microsoft Corporation. VELCRO is a registered trademark of Velcro Industries B.V.

Exposure Monitoring

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