



® Knowledge Beyond Measure.

DustTrak™ Environmental Monitors



Real-time dust monitoring for any outdoor environment

Designed for continuous outdoor environmental monitoring across construction, remediation, industrial, and wildfire-related applications, the **DustTrak™** Environmental Monitor provides robust performance and long-term reliability. The system integrates with optional sensors to measure volatile organic compounds (VOCs), gases, and meteorological parameters including wind speed and direction, enabling comprehensive air quality assessment across a wide range of environmental conditions.

The **DustTrak™** Environmental monitor measures PM_{1.0}, PM_{2.5}, PM₄, PM₁₀ and Total PM, either individually or simultaneously depending on model selection. Cloud-based connectivity enables secure, real-time access to instrument data for remote monitoring, system management and reporting.

The rugged, weather-resistant enclosure integrates the **DustTrak™** Environmental photometer, a long-life pump, and built-in auto-zero module. Optional accessories include a heated inlet for improved measurement accuracy in high-humidity environments and an enclosure heater for enhanced reliability in low-temperature conditions.

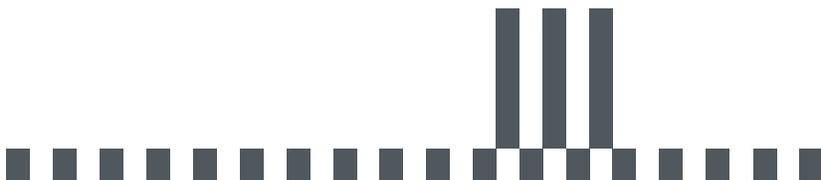
Features and Benefits

- Configurable measurement options for PM_{1.0}, PM_{2.5}, PM₄, PM₁₀ and Total PM, available as single or simultaneous measurements depending on model
- Rugged design supports continuous operation in ambient temperatures from -4 to 122 °F*
- Field-replaceable, long-life pump (>10,000 hours) reduces maintenance and downtime
- Optional heated inlet improves measurement stability in high-humidity environments (>50 % RH)
- Optional enclosure heater enhances performance in low-temperature conditions
- Real-time remote data access and alert capability through compatible cloud platforms
- **Approved by the South Coast Air Quality Management District (SCAQMD) for Rule 1466 compliance monitoring**

* Extended temperature range requires enclosure heater option

Applications

- Fugitive dust and emissions monitoring
- Perimeter and fence-line monitoring for regulatory compliance (e.g. SCAQMD Rule 1466)
- Environmental remediation and clean-up activities
- Construction, demolition, and excavation sites
- Hazardous waste and landfill sites
- Wildfire-related air quality monitoring
- Community air quality and dust control programs



Specifications

DustTrak™ Environmental Monitors

Parameter	Specification
Measured Mass Fraction*	PM ₁ , PM _{2.5} , PM ₄ , PM ₁₀ , and Total PM (measured individually or simultaneously depending on model)
Concentration Range	8540 (single channel): 0 to 400 mg/m ³ 8543 (DRX): 0 to 150 mg/m ³ (based on model configuration)
Flow Rate	Factory set to 3 L/min. 8540 model adjustable 1-4 L/min; 8543 model fixed at 3 L/min (not user-adjustable)
Zero Stability	±0.002 mg/m ³ per 24 hours
Particle Size Range	0.1 to 15 µm (aerodynamic diameter)
Response Time	1 second (log interval user selectable)
Temperature Range	32 to 122 °F (0 to 50 °C); operation extended to -4 °F (-20 °C) with enclosure heater
Humidity Range	0 to 95% RH (non condensing)
Data Interface	USB, Ethernet, and wireless connectivity via Thiamis modem
Enclosure Rating	NEMA 3S (IP54) environmental enclosure
Dimensions (H x W x D)	16.5 x 14 x 10 in (420 x 356 x 254 mm) approx.
Power Requirements	100-240 VAC, 50-60 Hz external supply; 24 VDC operation from battery or solar system
Weight	Approx. 16 lb (7.3 kg) excluding battery
Certifications	MCERTS Certified and SCAQMD Rule 1466 Pre-Approved models available

*Measured mass fractions vary by model. 8540 (single-channel) supports PM₁₀, PM₄, PM_{2.5}, and PM₁ via size-selective inlets; 8543 (DRX) measures simultaneously across all fractions.

Accessory	Description	Part Number
Omni-Directional Inlet	Standard 360° inlet for general outdoor monitoring, required for non-certified models; order separately	854040
Omni-Directional Inlet with Heated Sample Conditioner	Provides sample conditioning to reduce humidity effects and improve measurement stability in >50% RH. Supplied as standard with certified models (SCAQMD Rule 1466 / MCERTS); order separately for non-certified models	854041
PM ₁₀ Impactor Kit	Size-selective inlet for PM ₁₀ sampling with 8540 (single-channel) models (other impactor kits available for PM ₄ , PM _{2.5} , PM ₁).	854020
Rechargeable Battery System	40+ hours continuous operation; includes two 22 Ah batteries and charger	854036
Solar Power System	Dual 90W solar panels, charge regulator, and 120 Ah weatherproof battery enclosure.	854060
Pole Mounting Kit	Bracket and straps for mounting to fixed poles (2-6 in diameter)	854049
Tripod Mounting Kit	Quick-deploy field setup for short-term monitoring Tripod 854057 sold separately	854053
Metrology Sensor (WS200)*	Measures wind speed and direction; includes cable and mounting hardware	854050
Metrology Sensor (WS500)*	Measures temperature, humidity, pressure, wind speed/direction, and rainfall; includes cable and mounting hardware	854051
Thiamis Modem	Wireless telemetry modem enabling cloud connectivity and remote data access. Required for operation with WS200 / WS500 metrology sensors.	801905
12-Months Environmental Data Plan	Annual subscription for secure cloud data hosting, device management, and remote system access. Required for operation with Thiamis modem.	802915

8540 Single-Channel Models	
SKU	Description
854001-1	Base Kit - DustTrak Environmental (single-channel photometer) pre-installed in enclosure with 24 V power supply, cabling, and accessories (<i>inlet not included; order separately</i>).
854002-2	Cold-Weather Kit - as 854001 plus factory-installed enclosure heater and 300 W power supply (<i>inlet not included; order separately</i>)
854001-1466	SCAQMD Rule 1466 Pre-Approved Model - telemetry and cold-weather kit ordered and installed separately. Heated inlet supplied as standard.

8543 DRX Models	
SKU	Description
854301-1	Base Kit - DustTrak Environmental DRX pre-installed in enclosure with 24 V power supply, cabling, and accessories (<i>inlet not included; order separately</i>).
854302-2	Cold-Weather Kit - as 854301 plus factory-installed enclosure heater and 300 W power supply (<i>inlet not included; order separately</i>)
854301-1466	SCAQMD Rule 1466 Pre-Approved Model - telemetry and cold-weather kit ordered and installed separately. Heated inlet supplied as standard

Notes:

- Certified models include the omni-directional heated inlet (854041) as standard.
- If cold-weather operation is required, it is recommended to order a model with the enclosure heater factory-installed (SKU suffix "-2"). The heater can be installed by experienced users, but installation is complex and requires appropriate technical skill.
- Thiamis modem (801905) and Environmental Data Plan (802915) are required for telemetry operation.

*WS200 and WS500 metrology sensors require the Thiamis modem and Environmental Data Plan for operation.

Specifications are subject to change without notice.

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