



® 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.

DustTrak™ 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 -20 °C to 50 °C*
- 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
- MCERTS Certified for PM₁₀ and PM_{2.5} indicative ambient monitoring

* Extended temperature range requires enclosure heater option

Applications

- Fugitive dust and emissions monitoring
- Perimeter and fence-line monitoring for regulatory compliance 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



CSA MC160316/05
CSA MC160317/05
CSA MC160318/05



Specifications

DustTrak™ Environmental Monitors

| Parameter | Specification |
|-------------------------|---|
| Measured Mass Fraction* | PM ₁₀ , 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 | 0 to 50 °C; operation extended to -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) | 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. 7.3 kg excluding battery |
| Certifications | MCERTS Certified for PM10 and PM2.5 indicative ambient monitoring |

*Measured mass fractions vary by model. 8540 (single-channel) supports PM10, PM4, PM2.5, 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 MCERTS Certified models; 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. | 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>) |
| 854201-M1 | PM10 MCERTS Certified 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 - M1 | DRX MCERTS Certified 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" or "-4"). 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. These items are ordered separately.

*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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