

DUST SENTRY PRO

Real-time multi-channel particle monitor for aerosol profiling

Designed for those who need to monitor and manage multiple outdoor dust and particle size fractions simultaneously and in real-time.

The Dust Sentry Pro delivers simultaneous measurement of PM₁₀, PM_{2.5}, PM₁, TSP, and particulate counts for 8 channels; 0.3, 0.5, 0.7, 1.0, 2.0, 3.0, 5.0, 10 microns.



What is it?

- A robust weather-proof monitor with integrated solar shielding for outdoor monitoring of dust and particulates
- A modular and configurable monitoring platform for measurement and compliance of multiple dust and particulate designations, and the option to integrate environmental sensors e.g. wind, noise, weather, and solar
- A flexible communications platform that transfers real-time data wirelessly, and gives you access through an API
- A web interface accessed via browser on any device, see all your data in one place and set email / SMS alerts on parameters of concern

What can it measure?

- Multiple PM fractions, wind and noise



Who is it for?

- **Industrial operators** who need a cost-effective and robust solution to manage and control dust and particulates from site activities within regulatory or permitted limits:
 - Construction and remediation
 - Quarry and mine operators
 - Port and bulk handling terminals
 - Waste management sites
- **Environmental consultants** who need to measure multi-channel PM size fractions
- **Regulatory authorities** who require deployable, quick set up incident monitoring
- **EHS managers** who need to demonstrate that they are providing a safe environment for the people in their care
- **Researchers** who are on a limited budget and want to collect accurate, scientifically robust data for aerosol profiling

Specifications | Dust Sentry Pro

| Particle Module | Sizes | Range | Accuracy | Flow Rate | Lower Detectable Limit (2σ) |
|--|--|--|--|-----------|-----------------------------|
| Profiler (Optical Particle Counter) | PM ₁ , PM _{2.5} , PM ₁₀ AND TSP | PM ₁ 200 µg/m ³ PM _{2.5} 2000 µg/m ³ PM ₁₀ 5000 µg/m ³ TSP 5000 µg/m ³ | <±(5 µg/m ³ + 15% of reading) | 1.0 LPM | <1 µg/m ³ |
| Optional Particulate Counts | 0.3, 0.5, 0.7, 1.0, 2.0, 3.0, 5.0, 10 microns | 0-1000000 particles/L | | | |
| System Specifications | | | | | |
| Control System | Embedded fanless PC, Intel Atom N2600, 1.6 GHz, 2 GB RAM, 32 GB SSD, Ubuntu Linux Operating System | | | | |
| Communications | Standard: WIFI, Ethernet (LAN) Optional: Cellular IP HSPA 4G modem | | | | |
| Software | Connect: Runs on embedded PC, access via browser (IE, Firefox, Chrome, Safari) Cloud: Runs on secure 'cloud' servers, accessed via web browser Connect / Cloud Features: configuration, diagnostics, journal, calibration and data acquisition, plus SMS and email alerts (optional), auto data export via FTP and email (optional), and data export API (optional) | | | | |
| Data logging | 32 GB Hard Drive (> 5 years data storage) | | | | |
| Outputs | 2 x Relay (optional) 4 x 4-20mA (optional) | | | | |
| Averaging period | 1 min, 5 min, 10 min, 15 min, 20 min, 30 min, 1 hr, 2 hr, 4 hr, 8 hr, 12 hr, 24 hr | | | | |
| Power requirements | 100-260 VAC (standard): 21 W / 30 W * Regulated 12 VDC (if required): 21W / 30W * | | | | |
| Enclosure | Lockable IP65 GRP cabinet with integrated aluminium solar shield armour | | | | |
| PM Sampling System | Inlet: Omni-directional 36 cm (14.1 inches) heated inlet Pump: 12 V brushless DC diaphragm | | | | |
| Dimensions | 483 H x 330 W x 187 D mm (19 H x 13 W x 7.4 D inches) Includes solar shield armour & mounting brackets | | | | |
| Weight* | < 13 kg (28.6 lbs) | | | | |
| Environmental operating range | -10 °C to +45 °C (14 °F to 122 °F) | | | | |
| Mounting | Pole, tripod and wall mounting brackets included | | | | |
| 47mm Sample Filter (Optional) | 47mm filter for particle loading analysis | | | | |
| Factory Integrated & Tested Sensors (Optional) | Gill WindSonic (ultrasonic wind sensor), Vaisala WXT536 (weather transmitter), Met One MSO (weather transmitter), Cirrus MK427 Class 1 (noise sensor), Novalynx Pyranometer (solar radiation) | | | | |

* Configuration used for power and weight calculations: base unit, nephelometer, PM₁₀ sharp cut, O₃ module, modem, heater off / heater on

