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 PM_{10}, PM_{2.5}, PM_{1}, 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

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| Profiler (Optical Particle Counter) | PM₁₀, PM₂.₅, PM₁₀ AND TSP | PM₁₀, 2000 µg/m³  
PM₂.₅, 2000 µg/m³  
PM₁₀, 5000 µg/m³  
TSP 5000 µg/m³ | ±(5 µg/m³ + 15% of reading) | 1.0 LPM | <1 µg/m³ |
| 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): 21W / 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, Qₙ module, modem, heater off / heater on