

Dust Sentry Pro

Specification Sheet

Real-time multi-channel particle monitor for aerosol profiling

Designed for environmental professionals 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 different channels; 0.3, 0.5, 0.7, 1.0, 2.0, 3.0, 5.0, 10 microns.



What is it?

- Reduce failure and downtime thanks to this robust purpose-built outdoor dust monitor
- Set up and deploy in under 10 minutes – get live data flowing to your PC or mobile
- Reduce site visits using two-way communications – remotely troubleshoot, upgrade software, change settings, and calibrate
- Plug in all your devices – noise, weather, reference monitors – to the Dust Sentry power and data interface and view data in one software dashboard
- Power up with quick and easy interface to solar and battery systems
- Respond in real-time via configurable email / SMS alerts

What can it measure?

- Specific dust fractions, wind, weather and noise



Who is it for?

- Industrial operators who need to manage dust and particulates from site activities, within regulatory or permitted limits:
 - Construction and remediation projects
 - Quarry and mine operators
 - Port and bulk handling terminals
 - Waste management sites
- Environmental consultants who want defensible data without the usual time and hassle of air monitoring projects
- Regulatory authorities who need to fill the gaps in the regulatory PM monitoring network
- EHS managers who need to demonstrate that they are providing a safe environment for the people in their care
- Researchers who want simultaneous and accurate data across a range of particulate profiles

Specifications | Dust Sentry Pro

Particle module	Sizes	Range	Accuracy	Flow Rate	Lower Detectable Limit (2 σ)
Profiler (Optical Particle Counter)	PM ₁ , PM _{2.5} , PM ₁₀ AND TSP	PM ₁ 200 $\mu\text{g}/\text{m}^3$ PM _{2.5} 200 $\mu\text{g}/\text{m}^3$ PM ₁₀ 200 $\mu\text{g}/\text{m}^3$ TSP 5000 $\mu\text{g}/\text{m}^3$	< \pm (5 $\mu\text{g}/\text{m}^3$ + 15% of reading)	1.0 LPM	1 $\mu\text{g}/\text{m}^3$
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 Celeron® N3350, 1.1GHz, dual core, 4GB RAM, 32GB SSD hard drive), Ubuntu Linux Operating System				
Communications ¹	Standard: WIFI, Ethernet (LAN) Optional modem: Cellular IP 3G HSPA or 4G LTE				
Software	Aeroqual Cloud – Choose a plan that is right for you Optimize: Reduce site visits and improve data quality by managing your monitors and optimizing network performance remotely. Plus: Stay one step ahead with enhanced features for viewing and sharing data, real-time alerts, and analysis. Talk to our sales team to learn more about Aeroqual Cloud plans.				
Data logging	32 GB Hard Drive (> 5 years data storage)				
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 ²	100-260 VAC (standard): 24.7 W, Regulated 12 VDC (if required): 27.2 W				
Enclosure	Lockable IP65 GRP cabinet with integrated aluminum solar shield armor				
PM sampling system	Inlet: Omni-directional 36 cm (14.1 inches) heated inlet Pump: 12 V brushless DC diaphragm				
Dimensions ³	483 H x 330 W x 187 D mm (19 H x 13 W x 7.4 D inches) Includes solar shield armor & mounting brackets				
Weight ⁴	< 13 kg (28.6 lbs)				
Environmental operating range	-10 °C to +45 °C (14 °F to 113 °F)				
Mounting	Pole, tripod and wall mounting brackets included				
Factory integrated sensors ⁵	Gill WindSonic (ultrasonic wind sensor), Vaisala WXT536 (weather transmitter), Met One MSO (weather transmitter), Cirrus MK427 Class 1 (noise sensor), Novalynx Pyranometer (solar radiation)				
Compatible tested sensors	BSWA 308 (sound level meter), Met-One BC-1060 (black carbon monitor), Met-One E-BAM PLUS (Beta-Attenuation Mass Monitor)				

¹ 4G LTE not available in all markets.

^{2,4} Configuration used for power and weight calculations: base unit, nephelometer, PM₁₀ sharp cut, modem, heater on.

³ Dimensions are for enclosure. PM sampling inlet with cyclone adds 360 mm (14.17") to total height.

⁵ Optional

