

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, 2, 3, 5, and 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 measuring multiple dust and particulate designations with the option to integrate wind, noise, and weather, and solar sensors.
- A flexible communication platform that transfers real-time data wirelessly.
- A web interface accessed via browser that lets you view all your data 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 activities at:

- Construction and remediation sites
- Quarry and mine sites
- Port and bulk-handling terminals
- Waste management sites

Environmental consultants who need to measure multi-channel PM size fractions.

Regulatory authorities who require deployable, rapid response incident monitoring

Environmental health & safety managers who must demonstrate that they are providing a safe work environment.

Researchers who need an affordable means to collect accurate, scientifically robust data for aerosol profiling.

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 ug/m ³ PM _{2.5} 2000 ug/m ³ PM ₁₀ 5000 ug/m ³ TSP 5000 ug/m ³	<±(5 µg/m ³ + 15% of reading)	1 LPM	< 1 µg/m ³
Optional Particulate Counts	0.4, 0.5, 0.7, 1, 2, 3, 5, 10 microns	0-1,000,000 particles/L			

System Specifications	
Control System	Embedded fanless PC, Intel Atom N2600 @ 1.6 Gz, 2 GB RAM, 32 GB SSD, Ubuntu Linux OS
Communications	WiFi, Ethernet (LAN) standard. Cellular IP HSPA 4G modem optional.
Software	Connect: Runs on embedded PC and accessed via web browser. Cloud: Runs on secure cloud servers, access via web browser. Features: Remote configuration, diagnostics, journal, calibration and data acquisition. Optional features: SMS and email alerts, auto data export via email or FTP.
Datalogging	32 GB solid state hard drive with capacity for > 5 years data storage.
Outputs	Optional 2 x relays or 4 x 4-20mA.
Averaging Period	1, 5, 10, 15, 20, 30 minutes, 1, 2, 4, 8, 12, 24 hours.
Power Requirements (heater on/off)	100-260 VAC @ 21 W / 30W. Regulated 12 VDC @ 21W / 30W.
Enclosure	Lockable IP65 GRP cabinet with integrated aluminum solar shield.
PM Sampling System	Inlet: Omni-directional 14.1 inch heated inlet. Pump: 12V brushless DC diaphragm pump.
Dimensions H, W, D	19 x 13 x 7.4 inch, including solar shield and mounting bracket.
Weight	28.6 lb.
Environmental Operating Range	14 to 122 °F (-10 to +50 °C).
Mounting method	Pole, tripod, wall mounting brackets included.

Aeroqual products are designed, manufactured, and patented by Aeroqual Limited, 460 Rosebank Road, Avondale, Auckland 1026, New Zealand