

# DUST SENTRY

## Near reference real-time particle monitor for specific dust fractions

Designed for those who need to monitor and manage specific outdoor dust and particulate emissions continuously and in real-time.

The Dust Sentry is a nephelometer-based instrument that delivers defensible and accurate mass measurement for PM<sub>10</sub>, PM<sub>2.5</sub>, PM<sub>1</sub>, or TSP.

MCERTS certified and SCAQMD Rule 1466 pre-approved.



### What is it?

- A weather-proof nephelometer-based monitor with integrated solar shielding for outdoor monitoring of dust and particulates.
- A modular and configurable monitoring platform for measuring specific dust and particulate sizes, with the option to integrate wind, noise, and weather 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?

Specific dust fraction, 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 defensible measurements for their clients.

**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.

Particle Module	Sizes	Range	Accuracy	Resolution	Lower Detectable Limit (2 $\sigma$ )
Nephelometer	PM <sub>1</sub> PM <sub>2.5</sub> PM <sub>10</sub> or TSP	0 to 60,000 ug/m <sup>3</sup>	<±(2 µg/m <sup>3</sup> + 5% of reading)	0.1 µg/m <sup>3</sup>	< 1 µg/m <sup>3</sup>

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 with sharp cut cyclone for selected particle size. Pump: 12V brushless DC diaphragm pump. Optics: 670 nm laser, near-forward scattering nephelometer with sheath air protection.
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.
47mm Sample Filter (Optional)	47 mm 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), Novalynk Pyranometer (solar radiation).

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