aeroqual

DUST SENTRY

Near reference real-time particle monitor for specific dust fractions

Designed for environmental professionals 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_{10}, $PM_{2.5}$, PM_1, or TSP.

MCERTS certified for PM_{10}, and SCAQMD 1466 pre-approved.

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

PM_{10} $PM_{2.5}$ PM_1 TSP

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 to collect accurate, scientifically robust data without the cost of a reference PM monitor

Specifications | Dust Sentry

Particle Module	Sizes	Range	Accuracy	Resolution	Lower Detectable Limit (2σ)
Nephelometer	PM_1, $PM_{2.5}$, PM_{10} or TSP	0 to 60,000 µg/m³	<±(2 µg/m³ + 5 % of reading)	0.1 ug/m³	<1 µg/m³
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; Optional sharp cut cyclones for PM_{10}, $PM_{2.5}$ or PM_1 size selection Pump: 12 V brushless DC diaphragm Optics: 670 nm laser, near-forward scattering nephelometer with sheath air protection				
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 +50 °C (14 °F to 122 °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, PM_{10} 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

Sira MC130235/02