Dust Sentry
Specification Sheet

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 $\text{PM}_{10}$, $\text{PM}_{2.5}$, $\text{PM}_1$, or TSP. MCERTS certified for $\text{PM}_{10}$ 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

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

What can it measure?
- Specific dust fractions, wind, weather and noise

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Particle module

<table>
<thead>
<tr>
<th>Sizes</th>
<th>Range</th>
<th>Accuracy</th>
<th>Resolution</th>
<th>Lower Detectable Limit (2σ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM, PM₁₀, PM₂.₅ OR TSP</td>
<td>0 to 60,000 μg/m³</td>
<td>±(2 μg/m³ + 5% of reading)</td>
<td>0.1 μg/m³</td>
<td>1 μg/m³</td>
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</tbody>
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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
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
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 PM10, PM2.5 or PM1 size selection
Pump: 12 V brushless DC diaphragm
Optics: 670 nm laser, near-forward scattering nephelometer with sheath air protection

Dimensions
483 H x 330 W x 187 D mm (19 H x 13 W x 7.4 D inches)

Weight
< 13 kg (28.6 lbs)

Operating range
-10 °C to +50 °C (-14 °F to 122 °F)

Mounting
Pole, tripod and wall mounting brackets included

Factory integrated sensors
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 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
4 Optional