aeroqual™

DUST SENTRY

Continuous outdoor dust and particle monitor

Accurate real-time air quality information, made affordable

Designed for those who need to monitor and manage outdoor dust and particle emissions continuously and in real-time, the Dust Sentry is a nephelometer-based instrument that delivers affordable and accurate measurement of PM_{10}, $PM_{2.5}$, PM_1, or TSP.

Compared to reference-equivalent monitors like TEOMs and BAMs the Dust Sentry reports accurately at 1 minute intervals and has a lower total cost of ownership (up to 5 times less). In addition, the Dust Sentry weighs less than 13 kg, is mobile and able to run off remote power systems.

Unlike other continuous real-time dust monitors the Dust Sentry is built tough for long-term outdoor monitoring. It has: a robust enclosure with integrated solar shielding, 20 years of on-board data storage, a wide range of outputs for flexible integration, and a suite of optional environmental sensors e.g. wind, noise, weather, solar to choose from.

Now the Dust Sentry comes with two powerful software systems with no additional charge . Aeroqual Connect and Aeroqual Cloud. Connect is the instrument operating software. It opens in your browser so there is no software to install or update. With Aeroqual Cloud you can remotely access data on any device even when your instrument is offline.

Now with FREE web-based data & diagnostics software.

Key Features

- Physical measurement of TSP, PM_{10}, $PM_{2.5}$ or PM_1 mass fractions (not particle counting)
- Measures and reports data in 1 minute intervals with user selectable averaging
- MCERTS certified accuracy and repeatability
- On board storage for over 20 years of data
- Rugged weatherproof enclosure with solar shielding for very hot climates
- Quick set up and relocation in under 10 minutes
- Email / SMS alerts and FTP data export (optional)
- Optional plug and play environmental sensors

Applications

- Urban and national air monitoring networks
- Industrial perimeter monitoring: construction and waste sites, quarries and mines, ports and bulk handling terminals, transport hubs
- Near road: motorways, street canyons, traffic information systems
- Mobile vehicle mounted monitoring
- Short term monitoring of ±hot spotsq
- Community exposure: epidemiological studies, microenvironment, residential, schools, hospitals
- Environmental Impact Assessments

Dust Sentry Specifications

Technology	Sizes	Range	Accuracy	Flow Rate	Lower Detectable Limit (2)
Nephelometer	PM_1, $PM_{2.5}$, PM_{10} or TSP	0 to 2000 g/m^3	<±(2 g/m^3 + 5% of reading)	2.0 LPM	<1 g/m^3

System Specifications	
Control System	Embedded fanless PC, Intel Atom N2600, 1.6GHz, 2GB RAM, 32GB SSD, Ubuntu Linux
Communications	Standard: WIFI, Ethernet (LAN) Optional: Cellular IP GPRS modem
Software	Connect: Runs on embedded PC, accessed via web browser (IE, Firefox, Chrome, Safari) Cloud: Runs on secure ±loudqservers, accessed via web browser Connect / Cloud Features: configuration, diagnostics, journal, calibration and data acquisition, plus SMS and email alerts (optional), and auto data export via FTP and email (optional)
Data logging	32GB Hard Drive (>20 years data storage)
Averaging period	1 min, 5 min, 10 min, 15 min, 30 min, 1 hr, 2hr, 4 hr, 8 hr, 12 hr, 24 hr
Outputs	RS232 (legacy mode) 2 x Relay (optional) 4 x 4-20mA (optional)
Power requirements	100-260VAC (standard): 15W / 24W* Regulated 12VDC (if required): 15W / 24W*
Enclosure	Lockable IP65 GRP cabinet with integrated aluminium solar shield armour Inlet: 36cm heated inlet
Dimensions	483H x 330W x 187D mm (including solar shield armour & mounting brackets)
Weight	<13 kg*
Environmental operating range	-10°C to +50°C
Mounting	Pole, tripod and wall mounting brackets included
47mm Sample Filter (Optional)	47mm filter for particle loading analysis
Factory Integrated & Tested Sensors (Optional)	Gill WindSonic (ultrasonic wind sensor) Vaisala WXT520 (weather transmitter) Met One MSO (weather transmitter) Cirrus MK427 Class 1 (noise sensor) Novalynx Pyranometer (solar radiation)

*Configuration used for power and weight calculations: base unit, PM10 sharp cut, modem, heater off / heater on.