aeroqual

DUST PROFILER

Continuous outdoor dust and particle counter

Accurate real-time air quality information, made affordable

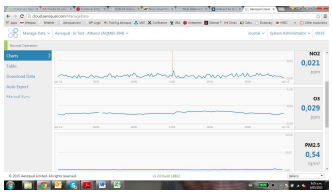
Designed for those who want maximum data from a single monitor, the Dust Profiler provides continuous and simultaneous measurement of PM_{10}, $PM_{2.5}$, PM_1, and TSP. It uses an optical particle counter to calculate the particle size distribution which is then converted into a mass measurement.

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

Unlike other continuous real-time dust monitors the Dust Profiler 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 Profiler 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

- Simultaneous reporting of TSP, PM_{10}, $PM_{2.5}$ and PM_1 mass fractions
- Optional reporting in counts / L (8 channels)
- Measures and reports data in 1 minute intervals with user selectable averaging
- 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

- Air quality research & consultancy
- 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 spots’
- Community exposure: epidemiological studies, microenvironment, residential, schools, hospitals
- Environmental Impact Assessments

Aeroqual Limited, 109 Valley Road, Mount Eden, Auckland, New Zealand
t +64 9 623 3013 f +64 9 623 3012 e sales@aeroqual.com aeroqual.com

Dust Profiler Specifications

Technology	Sizes	Range	Accuracy	Flow Rate	Lower Detectable Limit (2σ)
Optical Particle Counter (OPC)	PM_1, $PM_{2.5}$, PM_{10} and TSP	PM_1 200 µg/m^3 $PM_{2.5}$ 2000 µg/m^3 PM_{10} 5000 µg/m^3 TSP 5000 µg/m^3	<±(5 µg/m^3 + 15% of reading)	1.0 LPM	<1 µg/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 'cloud' servers, 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, modem, heater off / heater on.