Aeroqual AQY 1

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Air quality measurement that's smart and accurate

A 'low cost' air quality monitoring solution, the AQY 1 gives you air quality information that's scientifically credible, and relevant to where you live, work and play. Set up as a single device or deployed in a network of monitors, the AQY 1 reports key urban pollutants in real-time. Accurate air quality data passes through a flexible communications platform and is available to view through our software or yours. Throughout you will be supported by a team of air quality experts who are leading innovators in the field.

What is it?

- A small weather-proofed monitor that measures and reports key urban air pollutants and environmental parameters in real-time
- A flexible communications platform that transfers real-time data wirelessly, and gives you access through an API
- A web interface accessed via browser on your phone, tablet or PC, where you can see all your data in one place and set alerts on parameters of concern
- A remote technical support service that maximises the useful life of the sensors while keeping high quality data flowing

What does it measure?

- O_3 — Ozone
- PM — Particulate Matter ($PM_{2.5}$)
- NO_2 — Nitrogen Dioxide
- Temperature Relative Humidity & Dew point

Who is it for?

- **Smart cities** who want air quality and environmental data to show that their city is an attractive place to live, work and invest in
- **Air quality professionals** who need a real-time alternative to diffusion tubes and samplers, or a more affordable alternative to analyzers
- **Community groups** who need a cost-effective way to gather scientifically credible air quality data that will be treated with respect by their stakeholders
- **Educators** who want students to learn about air pollution in a way that supports STEM subjects and promotes environmental awareness
- **Health and safety managers** who need to demonstrate that they are providing a safe environment for the people in their care
- **Researchers** who want to collect as much scientifically robust data as possible on a limited budget

AQY 1 specifications

PARTICLE SENSING	SIZES	RANGE	ACCURACY	LOWER DETECTABLE LIMIT (2σ)
Laser scattering	$PM_{2.5}$	0 to 1000 µg/m³	<±(10 µg/m³ + 5% of reading)	<1 µg/m³

GAS SENSING	RANGE (ppb)	RESOLUTION / ppb	NOISE ZERO / ppb; SPAN % OF READING	LOWER DETECTION LIMIT / ppb	PRECISION	LINEARITY (% OF FS)	DRIFT 24 HOUR ZERO / ppb; SPAN % OF FS
Ozone (O_3)	0-200	0.1	<1 <2%	1	<4% of reading or 4 ppb	<3%	<2; 1%
Nitrogen Dioxide (NO_2)	0-500	0.1	<2 <4%	2	<8% of reading or 8 ppb	<6%	<4; 1%

SYSTEM SPECIFICATIONS	
Control System	Single board computer, 1.2GHz quad-core, 1GB SDRAM, 16GB SDHC Storage, Linux Operating System
Communications	Standard: WIFI, 3/3.5/4G cellular modem
Software	Connect: for setup and field service. Installed on device and accessed via web browser Cloud: for instrument and data management. Runs on secure 'cloud' servers, accessed via web browser. Features: configuration, diagnostics, journal, calibration and data acquisition, plus SMS and email alerts, auto data export via FTP and email, and data export API
Data logging	32GB USB Stick (>2 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 system	12VDC plug pack (90 to 260VAC input) 24W (rated for -10°C to 40°C) Cable: 5m
Enclosure	Weather proof IP23 with solar shield
PM Sampling System	Inlet: 4cm anti-static inlet Sampling: 5V DC fan
Gas Sampling System	Inlet: PTFE, stainless steel Sampling: 5V DC fan
Dimensions	215H x 170W x 125D mm (including solar shield armour & mounting brackets)
Weight	<1.3 kg
Environmental operating range	-10°C to +40°C
Mounting	Mounting bracket included for pole, tripod or wall
Life expectancy	System: 5 years Sensors: ~12months based on 0-50 µg/m³ annual average PM_{10}
Other measurements	Temperature: -40°C to 125°C; Relative Humidity: 0 to 100%; Dewpoint: -30°C to 50°C