



Air quality measurement that's smart and accurate

The AQY has been designed by Aeroqual to address the need for lower cost, higher density measurement of common pollutants in urban air. The initial release AQY is available for purchase in limited volumes by researchers, smart cities and air quality agencies, specifically for pilot scale evaluation.

What is it?

- The Aeroqual AQY is a low-cost, low-power air quality monitoring instrument designed to provide real time air quality data.
- Using a secure internet connection, the AQY pushes data to the Aeroqual Cloud Server. Authorized users can access data via a web browser on any internet-connected device.
- All the device needs is a standard power connection, and to be placed where there is good access to the surrounding air.
- This allows the instruments to be deployed in denser networks that help to build up a more complete picture of urban air quality.

What does it measure?



Ozone



Nitrogen
Dioxide



Particulate
Matter



Temperature
& Humidity

System components

- Tough weatherproof enclosure
- Air quality sensors
- Wireless communications (WIFI, cellular)
- Integrated data processing and storage
- Cloud data storage and processing
- Web-based user interface

AQY specifications

PARTICLE MODULE	SIZES	RANGE	ACCURACY	FLOW RATE	LOWER DETECTABLE LIMIT (2 σ)
Particle Counter	PM _{2.5}	0 to 1000 $\mu\text{g}/\text{m}^3$	$\leq \pm(10 \mu\text{g}/\text{m} + 5\% \text{ of reading})$	0.5 LPM	$<1 \mu\text{g}/\text{m}^3$

GAS MODULE	RANGE (ppb)	RESOLUTION / ppb	NOISE	LOWER DETECTION LIMIT / ppb	PRECISION	LINEARITY (% OF FS)	DRIFT 24 HOUR
			ZERO / ppb; SPAN % OF READING				ZERO / ppb; SPAN % OF FS
Ozone (O ₃)	0-200	1	<1 $<2\%$	1	$<4\%$ of reading or 4 ppb	$<3\%$	<2 ; 1%
Nitrogen Dioxide (NO ₂)	0-500	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, Ubuntu Linux Operating System
Communications	Standard: WIFI Optional: Cellular HSPA/4G-LTE modem Optional: Silver Springs Network Edge Router (mesh network)
Software	Connect: Runs on single board computer, 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, auto data export via FTP and email, and data export API
Data logging	16GB Hard Drive (>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 requirements	12VDC plug pack (US plug): 24W
Enclosure	IP33 enclosure with integrated aluminium solar shield armour
PM Sampling System	Inlet: 4cm aluminium inlet Sampling: 5V DC fan
Gas Sampling System	Inlet: Teflon, stainless steel Sampling: 5V DC fan
Dimensions	215H x 170W x 125D mm (including solar shield armour & mounting brackets)
Weight	$<1 \text{ kg}$
Environmental operating range	0°C to +40°C
Mounting	Pole, tripod and wall mounting bracket included