AQM 65

Specification Sheet

Near reference real-time monitor for ambient air pollutants

The AQM 65 is a fully integrated, temperature-controlled air quality monitoring station that delivers 'near reference' levels of performance in real-time for multiple gases, particulate matter and environmental parameters.

Continuously measure air pollutants including O_3, NO_2, NO_X, CO, SO_2, VOC, H_2S, CO_2, CH_4, TSP, PM_{10}, PM_4, $PM_{2.5}$, PM_1, noise and meteorological parameters.

What is it?

- A near-reference air quality station with proven long-term performance in extreme climates with advanced temperature control
- Suitable for mobile monitoring applications
- Compatible with a wide range of sensors including noise, black carbon and met sensors all viewed in one data platform
- Includes two-way communications for remote troubleshooting, software upgrades, and remote calibration
- Enables automatic scheduling of calibrations with optional integrated calibration system
- Provides real-time alerts of exceedances via configurable email / SMS alerts

What can it measure?

- Multiple gaseous and particulate fractions, wind, weather and noise

Who is it for?

- Regulatory authorities who need to extend their ambient air monitoring networks while managing capital and operating expenditure. Particularly suited for:
  - Urban networks
  - Rural/background sites
  - Roadside air monitoring
  - Mobile monitoring
- Environmental consultants and researchers who need to monitor multiple environmental parameters with high data quality, especially in extreme climates
- Industrial operators who need a cost-effective and robust solution to monitor fugitive air emissions for compliance or ESG reporting
  - Industrial perimeter monitoring
  - Oil and gas facilities
  - Quarry and mine operators
  - Port and bulk handling authorities
  - Waste management sites

Specifications | AQM 65

Particle module	Sizes	Range	Accuracy	Display Resolution	Lower Detectable Limit (2σ)
Nephelometer	PM_1, $PM_{2.5}$, PM_{10} OR TSP	0 to 60,000 µg/m³	±(2 µg/m³ + 5% of reading)	0.1 µg/m³	<1 µg/m³
PCX[1]	PM_1, $PM_{2.5}$, PM_4, PM_{10} and TSP	0 - 30,000 µg/m³	< 5% of reading	0.1 µg/m³	0.1 µg/m³

Gas module	Range	Display Resolution	Noise Zero; Span % of reading	Lower Detection Limit (2σ)	Precision	Linearity (% of FS)	Drift 24 hour Zero; Span % of FS
Ozone O_3	0-500 ppb	0.1 ppb	<1 ppb; 1%	<1 ppb	2% of reading or 2 ppb	1%	1 ppb; 0.2%
Nitrogen dioxide NO_2	0-500 ppb	0.1 ppb	<1 ppb; 1%	<1 ppb	2% of reading or 2 ppb	1.5%	1 ppb; 0.2%
Carbon Monoxide CO	0-25 ppm	0.001 ppm	0.02 ppm; 1%	0.04 ppm	3% of reading or 0.05 ppm	1%	0.14 ppm; 2%
Sulfur Dioxide SO_2	0-10,000 ppb	0.1 ppb	1 ppb; 0.02%	2 ppb	0.14% of reading	0.6%	1 ppb; 0.3%
Nitrogen Oxides NO_X	0-500 ppb	0.1 ppb	<1 ppb; 1%	1 ppb	3% of reading or 3 ppb	1%	1 ppb; 0.2%
Hydrogen Sulfide H_2S	0-10,000 ppb	0.1 ppb	1 ppb; 0.1%	2 ppb	1% of reading or 3 ppb	0.5%	<1 ppb; <0.5%
Carbon Dioxide CO_2	0-2000 ppm	1 ppm	5 ppm; 1%	10 ppm	3% of reading or 10 ppm	2%	1 ppm; 0.6%
VOC (Low range)	0-500 ppb	0.1 ppb	<1 ppb 1%	<1 ppb	2% of reading or 1 ppb	1%	1 ppb; 1%
VOC (High range)	0-30 ppm	0.01 ppm	<0.1 ppm; 1%	<0.1 ppm	2% of reading or 0.05 ppm	2%	0.1 ppm; 1%
Methane CH_4	0-500 ppm	0.01 ppm	0.02 ppm; 0.3%	0.04 ppm	0.4% of reading	<1%	0.04ppm; 1%

System Specifications	
Control system	Embedded fanless PC (Intel Celeron® N3350, 1.1 GHz, dual core, 4 GB RAM, 32 GB SSD hard drive), Debian Linux Operating System
Communications[2]	Standard: WIFI, Ethernet (LAN) Optional modem: Cellular 3G or 4G LTE
Software	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[3]	90 - 264 Vac, 47 - 63 Hz Typical draw: 100 W (depends on configuration and ambient temperature)
Enclosure	Outer: IP65 rated aluminum skin with solar reflective coating Inner: 40 - 50 mm (1.6 - 2") layer of cross-linked PE foam insulation. External temperature and relative humidity sensor.
Gas sampling system	Inlet: Teflon, glass-coated stainless-steel Pump: 12 V brushless DC diaphragm
PM sampling system	Inlet: Omni-directional 36 cm (14.1 inches) heated inlet; Optional sharp cut cyclones for PM_{10}, $PM_{2.5}$ or PM_1 size selection Pump: 12 V brushless DC diaphragm
Dimensions[4]	Standard: 1310 H x 510 W x 280 D mm (51⅝" H x 20" W x 11" D)
Weight[5]	< 30 kg
Operating range	-35 °C to +50 °C (-31 °F to 122 °F)
Mounting	Mounting brackets included
47mm sample filter[5]	47 mm filter for particle loading analysis
Factory integrated sensors[5]	Gill WindSonic (ultrasonic wind sensor), Vaisala WXT536 (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), microAeth MA350 (black carbon), Svantek SV971A (sound level meter)

Compliance
In conformity with EC Directives 2014/30/EU and 2014/35/EU; FCC 47 CFR Part 15; RoHS 3 (EU2015/863), REACH

Certified Modules	MCERTS
AQM65 PM_{10} Nephelometer	Yes - Sira MC160289/02

[1] Representative values for $PM_{2.5}$; for individual channel performance please see the Aeroqual Technical Performance Guide
[2] 4G LTE not available in all markets
[3, 5] Configuration used for power and weight calculations: base unit, nephelometer, PM_{10} sharp cut, modem, heater on
[4] Dimensions are for enclosure. Nephelometer sampling inlet with cyclone adds 360 mm (14.17") to total height. PCX adds 200mm (7.87").
[5] Optional

AQM65 PM_{10}
MCERTS
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