# 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, $H_2S$, $CO_2$, $CH_4$, $PM_1$, $PM_{2.5}$, $PM_4$, $PM_{10}$, TSP, 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 $H_2S$ | 0-5,000 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), Airmar 200WX (weather station) |
| 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 $PM_{10}$
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