

## Compact Air Quality Monitoring Station

Accurate real-time air quality information, made affordable

Now you can measure outdoor air pollutants in real-time with high data quality, at a price you can afford. The AQM 65 enables Near Reference performance for 3-5 times less cost than traditional reference stations built on analyzers. Compared to cheap alternatives the AQM 65 offers much higher levels of data quality and can be calibrated in the field against certified reference standards for maximum traceability.

The AQM 65 is customized to measure the parameters your application demands. Choose from: criteria pollutants ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), particulate matter (TSP, PM<sub>10</sub>, PM<sub>2.5</sub>, PM<sub>1</sub>); other special interest pollutants: volatile organic compounds (VOC), hydrogen sulfide (H<sub>2</sub>S), carbon dioxide (CO<sub>2</sub>); plus sensors for noise and meteorological parameters such as temperature, humidity, wind speed and direction, barometric pressure, precipitation and solar radiation.



Now with FREE  
web-based data  
& diagnostics  
software



### Key Features

- Real-time measurement of common pollutants to WHO air quality standards
- Can be installed by one person in less than 30 min.
- Compact size creates new possible monitoring locations
- Remote data acquisition system with fail safe on board storage
- Network mode for urban and national air monitoring
- Modularity allows addition of sensors as needs change
- Temperature control permits long-term operation in extreme climates
- Can be calibrated onsite to traceable reference standards
- Optional integrated and automatic calibration
- Optional plug and play environmental sensors

### Applications

- Urban and national air monitoring networks
- Industrial perimeter monitoring: petrochemical, power plants, waste sites, mining, heavy industry, airports, ports, railways, construction sites
- 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

# AQM 65 Specifications

| Gas Modules                       | Range (ppm) | Resolution | Noise<br>Zero / ppm;<br>Span % of reading | Lower detectable<br>limit / ppm | Precision                   | Linearity<br>(% of FS) | Drift 24 hour<br>Zero / ppm;<br>Span % of FS |
|-----------------------------------|-------------|------------|-------------------------------------------|---------------------------------|-----------------------------|------------------------|----------------------------------------------|
| Ozone O <sub>3</sub>              | 0-0.5       | 0.001      | <0.001<br><1%                             | 0.001                           | <2% of reading or 0.002 ppm | <1%                    | 0.001;<br>0.2%                               |
| Nitrogen Dioxide NO <sub>2</sub>  | 0-0.2       | 0.001      | <0.001;<br><1%                            | 0.001                           | <3% of reading or 0.003 ppm | 1%                     | 0.001;<br>0.2%                               |
| Carbon Monoxide CO                | 0-25        | 0.001      | 0.020;<br><1%                             | 0.040                           | <3% of reading or 0.050 ppm | <1%                    | 0.02;<br>0.2%                                |
| Sulfur Dioxide SO <sub>2</sub>    | 0-10        | 0.001      | 0.004;<br><2%                             | 0.009                           | <3% of reading or 0.009 ppm | 1%                     | 0.001;<br>0.2%                               |
| Nitrogen Oxides NO <sub>x</sub>   | 0-0.5       | 0.001      | <0.001;<br><1%                            | 0.001                           | <3% of reading or 0.003 ppm | 1%                     | 0.001;<br>0.2%                               |
| Hydrogen Sulfide H <sub>2</sub> S | 0-10        | 0.001      | 0.006;<br><2%                             | 0.012                           | <3% of reading or 0.012 ppm | 1%                     | 0.001;<br>0.6%                               |
| Carbon Dioxide CO <sub>2</sub>    | 0-2000      | 1          | <5;<br><1%                                | 10                              | <3% of reading or 10 ppm    | 2%                     | 1;<br>0.6%                                   |
| Volatile Organic Compounds VOC    | 0-20        | 0.001      | 0.005;<br><1%                             | 0.010                           | <2% of reading or 0.010 ppm | <1%                    | 0.005;<br>0.2%                               |

| Particle Modules                | Sizes                                                          | Range                                                                                                                                                      | Accuracy                                 | Flow Rate | Lower Detectable Limit (2σ) |
|---------------------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-----------|-----------------------------|
| Particle Monitor (nephelometer) | PM <sub>1</sub> , PM <sub>2.5</sub> , PM <sub>10</sub> or TSP  | 0 to 2000 µg/m <sup>3</sup>                                                                                                                                | <±(2 µg/m <sup>3</sup> + 5% of reading)  | 2.0 LPM   | <1 µg/m <sup>3</sup>        |
| Particle Profiler (OPC)         | PM <sub>1</sub> , PM <sub>2.5</sub> , PM <sub>10</sub> and TSP | PM <sub>1</sub> 200 µg/m <sup>3</sup><br>PM <sub>2.5</sub> 2000 µg/m <sup>3</sup><br>PM <sub>10</sub> 5000 µg/m <sup>3</sup><br>TSP 5000 µg/m <sup>3</sup> | <±(5 µg/m <sup>3</sup> + 15% of reading) | 1.0 LPM   | <1 µg/m <sup>3</sup>        |

| System Specifications                          |                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Control System                                 | Embedded fanless PC, Intel Atom N2600, 1.6GHz, 2GB RAM, 32GB SSD, Ubuntu Linux                                                                                                                                                                                                                                                                                                     |
| Communications                                 | Standard: WIFI, Ethernet (LAN)<br>Optional: Cellular IP GPRS modem                                                                                                                                                                                                                                                                                                                 |
| Gas Sampling System                            | Inlet: Teflon, glass-coated stainless steel<br>Pump: 12V brushless DC diaphragm                                                                                                                                                                                                                                                                                                    |
| Thermal Management System                      | Direct current compressor, R134a refrigerant, 12-24V<br>60W resistance heater                                                                                                                                                                                                                                                                                                      |
| Software                                       | Connect: runs on embedded PC, accessed via web browser (IE, Firefox, Chrome, Safari)<br>Cloud: runs on secure 'cloud' servers, accessed via web browser<br>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)                                |
| Power Requirements                             | 90*-264VAC, 47-63Hz<br>Typical draw: 100W** (depends on configuration and ambient temperature)                                                                                                                                                                                                                                                                                     |
| Enclosure                                      | Outer: IP65 rated aluminium skin with solar reflective coating<br>Inner: 40-50 mm layer of cross-linked PE foam insulation                                                                                                                                                                                                                                                         |
| Dimensions                                     | Standard: 1310Hx510Wx280D mm (includes inlet)<br>With AirCal 8000: 1310Hx655WX280D mm<br>Weight (installed): 30 Kg**                                                                                                                                                                                                                                                               |
| Environmental Operating Range                  | Temperature: -35°C to +50°C                                                                                                                                                                                                                                                                                                                                                        |
| Gas Calibration (optional)                     | Portable: AIRCAL 1000 with gas dilution module and zero air source<br>Integrated: AIRCAL 8000 integrated system with gas dilution module, zero air source, 2 x regulators and span gas storage (excl. gas cylinders)                                                                                                                                                               |
| Factory Integrated & Tested Sensors (optional) | Gill WindSonic (ultrasonic wind sensor)<br>Vaisala WXT520 (weather transmitter)<br>Met One MSO (weather transmitter)<br>Cirrus MK427 Class 1 (noise monitor)<br>Novalynx Pyranometer (solar radiation)                                                                                                                                                                             |
| Conformity                                     | Power Supply : EN55015, EN55022 Class B, EN61000-3-2,3, EN61000-4-2,3,4,5,6,8,11, ENV50204, EN61547, EN61347-1, EN61347-2-13; UL1012, UL60950-1; TUV EN60950-1<br>Gas Modules : Part 15 FCC Rules, 2004/108/EC; EN 61000-6-1: 2001, EN 61000-6-3: 2001<br>Particle Monitor & Profiler : Class 1 laser; IEC 60825-1:1998; 72/23/EEC; EN 61010-1; EN 60825-1:1996; US 21 CFR 1040.10 |

\*Power supply efficiency derates at high ambient T (>50°C). Need 110VAC minimum at above 50°C.

\*\*Configuration used for power consumption and weight: Embedded PC, Sample Pump, System Manager, NOx, NO2, O3, CO, PM10 + inlet heater, SO2, H2S (43W internal load); Internal temperature set point = 30°C, Ambient temperature used is 30°C.