AQ Sensors for AQ network

1 Airly in School

2 Libelium near reference sensor

3 Aeroqual School Kit Handheld

4 Indoor AQ sensor

1 Airly PM+GAS type 2

Small, easy to install Plug&Play devices are gathering data about suspended dust and gases. Air quality is measured every 5 minutes and data are remotely send to the cloud for calibration and interpretation Sensors: PM1, PM2.5, PM10, SO2, CO, Temperature, Humidity and Pressure

2 Libelium Air Quality Station node

Hardware description

The Air Quality Station node is composed of several parts:

Air Quality Station Core (CO, O3, SO2, NO and NO2)

Air Quality Station Sensor Cartridge

Air Quality Station Temperature and Humidity SHT35 sensor probe

Optional sensors:

Particulate Matter

Weather station

Noise Level Sensor Class 2 (Indoors and Outdoors versions)

Figure: General view of the Air Quality Station node

https://development.libelium.com/air-quality-station-technical-guide/introduction

The next table shows the device features:

Feature	Description
Dimensions	271 x 170 x 120 mm
Power supply	110-240 VAC, 50/60 Hz 60 W

Backup battery
2200 mAh, Li-SOCl2 battery
Loop time
1, 2, 3, ... 60 min (5 min default)
Radio protocol
LTE / LoRaWAN
LTE provisioning
APN settings to be configured via USB port
LoRaWAN provisioning
Communication mode to be configured via USB
(default keys and EUI are already preconfigured in the node)
Node configuration
Via "Smart Devices App" (Java desktop app)
Remote configuration
Via Libelium's Services Cloud Manager (OTA and remote parameters configuration)
Operating temperature
-30 ºC to +40 ºC
Market certifications
CE (Europe) and FCC (USA)

3 Aeroqual School Air Quality Testing Kit

The School Air Quality Testing Kit can be used by teachers to educate students on measuring the common pollutants found near schools. It can also be used by school administrators to inform parents and lobby local authorities for pollution reduction measures.

The School Air Quality Testing Kit features Aeroqual's proven Series 500 portable monitor that can be used to measure a range of pollutants. Simply swap the sensor heads for the pollutant you wish to monitor. Nitrogen dioxide, ozone, and particulate matter are major pollutants in and around schools. Nitrogen dioxide (NO2) and particulate matter (PM) are emitted directly by stationary vehicles and ozone (O3) is created when NO2 and volatile organic compounds (VOCs) combine in the presence of sunlight. The health effects of these pollutants are well-documented. The School Air Quality Testing Kit includes the following: a particulate matter sensor (PM2.5/PM10), either an NO2 or O3 sensor, and a combined temperature and relative humidity sensor. For a full set of tools, including additional sensor heads measuring CO and VOCs, see the Outdoor Air Quality Test Kit (Pro).

BENEFITS

- Educate students and parents on air quality in and around schools
- Series 500 monitor with inbuilt real-time data logger
- Active fan sampling sensor heads (PM2.5/PM10, plus NO2, or O3) ensure high accuracy measurements
- Zero and span calibrate sensors in the field
- Long-life lithium battery technology
- Connect direct to PC via USB
- Free PC software (Windows 7 and above)

APPLICATIONS

- Educational learning tool
- Raising pollution awareness with the school community
- Understanding air quality in and around schools
- Personal exposure monitoring

https://www.aeroqual.com/product/school-air-quality-testing-kit?utm_term=air%20quality%20monitoring&utm_campaign=Rule+1466&utm_source=adwords&utm_medium=ppc&hsa_acc=2328362084&hsa_cam=13994525434&hsa_grp=122984621657&hsa_ad=537226745976&hsa_src=g&hsa_tgt=kwd-354710999447&hsa_kw=air%20quality%20monitoring&hsa_mt=p&hsa_net=adwords&hsa_ver=3&gclid=Cj0KCQjwtrSLBhCLARIsACh6RmjvXP_Xt6z8sOJGdhrHc3NflYZB69tYwlA0ESGIovsv3YW2Uwajj2caAr-gEALw_wcB

4 AIR4100 Room Air Quality VOC Sensor

The AIR4, Air Quality Sensor uses an advanced MEMS metal oxide semiconductor sensor to detect poor air quality. The sensor reacts quickly to detect a broad range of VOCs such as smoke, cooking odors, bio-effluence, outdoor pollutants and from human activities. The sensor captures all VOC emissions that are completely invisible to CO2 sensors. Extensive studies and research have shown that there is direct correlation between CO2 levels and VOC levels and the Air Quality Sensor has been calibrated to provide a "CO2-equivalent" ppm measurement value, thereby achieving full compatibility to existing HVAC CO2 ventilation standards.
The CO2-equivalent sensor output value was developed over a period of several years to allow the IAQ sensor to be optimized for Demand Controlled Ventilation applications. The long-term IAQ sensor performance was monitored in various locations including offices, cafeterias, schools, production facilities, apartments and homes in direct comparison to infrared-absorption CO2 sensors.

https://www.measurementsystems.co.uk/sensors_and_meters/air_quality_and_gas_sensors/air4100-room-air-quality-voc-sensor?gclid=Cj0KCQjwtrSLBhCLARIsACh6RmhLUEtzjLF0hNVCCVhuanNgrPjSR49YY8XeIgclnMGdOozSM3ly8SAaArGdEALw_wcB

- Direct correlation to CO2 levels
- High sensitivity and fast response
- Stable long-term operation
- 0 to 2000 ppm CO2 equivalent output signal
- LCD to display air quality information
- Internal menu for easy setup
- Analog stepped output for damper control
- Linear output for logging and control
- Selectable 0-5 or 0-10 Vdc signal
- Tri-color LED to indicate IAQ level
- Optional relay output with adjustable setpoint
- Optional override switch output

- Optional resistive temperature sensors