AQ Guard Smart 1000

AQ Guard Smart 1000 is a compact and cloud-enabled air quality measurement device. The system is designed for the requirements of outdoor air measurement in the smart city environment to improve granularity while maintaining high comparability to official measurements for environmental monitoring and health protection.

Benefits

- Simultaneous measurement of PM_1, $PM_{2.5}$, PM_4, PM_{10}, TSP, C_N, CO_2
- Comprehensive factory calibration for optimal consistency, accuracy, and precise data
- Near-Reference Standard for particles, MCERTS Indicative certified, TÜV QAL1 in progress, EN TS 17660-2 Class 1-ready
- Quick and easy installation
- Long-term stability (24/7) and low maintenance
- On-site verification/calibration with test dust (NIST-traceable)
- Real-time access to data with high temporal resolution;
- Flexibility in communication and data transmission
- Integration via MyAtmosphere possible

Features

- On-site calibration and adjustment (particle size and volume flow)
- Communication via GPRS / 3G / 4G / Ethernet / Wi-Fi, optional: LoRaWAN
- Technology based on the certified Fidas® 200 series
- Expandable with third-party devices, metrology and sensors
- Data visualization via Palas Cloud (MyAtmosphere-ready)
- Secondary measurement data acquisition

Applications

- Indicative air quality monitoring and support for the development of air quality plans in accordance with Directive (EU) 2024/2881
- Smart City projects
- Monitoring of construction sites and redevelopment areas, as well as, for example, open-pit mines and bulk material handling facilities
- Fenceline/emission monitoring of industrial facilities
- Measurement of traffic-induced emissions
- Data collection for source and dispersion studies
- Monitoring of risk areas (natural and anthropogenic)

DATASHEET

Measuring principle	Optical light scattering at single particles
Reported data	PM_1, $PM_{2.5}$, PM_4, PM_{10}, TSP, CN, CO_2; particle size distribution, ambient pressure, ambient temperature, rel. ambient humidity
Measurement range (number C_N)	0 – 20,000 particles/cm³
Measurement range (size)	0.178 – 17.8 μm
Measurement range (mass)	0 – 100 mg/m^3 (depending on the composition of the aerosol)
Volume flow	1 l/min ± 1,5% (-20 - +50°C), time-of-flight volume flow control, usable up to altitudes of 5,000 m a.s.l.
Size channels	64 (32/decade)
Time resolution	1 min, moving average 1 min (MyAtmosphere), every second via internal protocols
Interfaces	USB, Ethernet (LAN), Wi-Fi, 3G/4G via Modem, optional: LoRaWAN
Protocols	ASCII, MODBUS, UDP
Light source	Long term stable LED
Power supply	Supplied power supply: 12 V
Power consumption	Standard operation: 1.2 A (1.7 A with additional heating)
Installation conditions	-20 – +50 °C
Dimensions	530 • 270 • 208 mm (H • W • D)
Weight	Approx. 6 kg
Special features	Heated inlet, mast / tripod mount
Data Management	Prepared for connection to the Palas Cloud MyAtmosphere (“MyAtmosphere-ready”)

NORMS AND CERTIFICATES

ISO 21501-1, MCERTS (Sira MC 220412/01)