AQ Guard / AQ Guard ambient

Advanced compact monitors for indoor and ambient air

Every one of us inhales 12 cubic meters of air per day, every day, and all of us should thus care about the pollutants contained. The new Palas® AQ Guard provides exact, reliable information about indoor and ambient air quality, as a standalone unit as well as in a network of devices for area monitoring.

STATE OF THE ART TECHNOLOGY

AQ Guard is equipped with the advanced high resolution optical particulates sensor of the Fidas® 200, used for regulatory monitoring worldwide. Based on single particle counting and sizing, advanced algorithms determine the level of particulate matter pollution accurately under all conditions.
AQ Guard offers real time access via cellular, wireless and wired network interfaces. No cloud access is required, so data stays within the user's dataspace.
AQ Guard is an advanced analyzer, data logger and information server.
AQ Guard can be upgraded with sensors for CO_2 and TVOC to determine the air quality index based on the European AQI model. AQ Guard also tracks air temperature, air pressure and relative humidity.

APPLICATIONS

- Certified ambient air particulates monitoring
- Surface mining, industrial production, bulk material handling, general fenceline monitoring
- Construction sites, road and railroad works, demolition sites, landfill sites
- Classrooms & lecture halls, nurseries, hospitals, hotels, offices, public service buildings
- Residential areas near potential sources of pollution
- Public transportation sites such as train, bus, tram & underground stations, air & naval ports

YOUR ADVANTAGES

- Technology based on the Fidas® 200 series (EN16450 and MCERTS certified);
  simultaneous measurement of C_n, PM_1, $PM_{2.5}$, PM_4, PM_{10}
- Computation of air quality index based on measurements of particulates, CO_2, and TVOC
- High accuracy due to advanced algorithms
- Long-term stable due to self calibration for measurement of flow rate, particulates, and gaseous pollutants
- Up to 2 years of operation without calibration;
  user can recalibrate on site with NIST traced test powder
- Operates on AC, DC, or power-over-Ethernet

Measuring principle	90° optical light scattering, single particle counting with enhanced mass conversion signal analysis High resolution Fidas® dust sensor Long life light source New, compact **I**ntelligent**A**erosol**D**rying**S**ystem design for humidity and fog compensation and aerosol conditioning Automatic online firmware update (optional)
Range (PM concentration)	PM_1, $PM_{2.5}$, PM_4, PM_{10} 0 – 20,000 µg/m³, resolution 0.1 µg/m³ **EN16450 and MCERTS certification pending**
Range (Number concentration)	Total number concentration C_n 0 – 10,000 #/cm³
Range (Particle size)	Optional: 64 bin particle size distribution from 0.18 – 18 µm Compliant with ISO 21501-4
Range (Gas)	Temperature -20 – 60 °C Relative humidity 0 – 100 % Pressure 700 – 1100 hPa CO_2 0 – 5,000 ppm (NDIR sensor) TVOC 0 – 60,000 ppb (MOX sensor); Air Quality Index based on $PM_{2.5}$, PM_{10}, CO_2 & TVOC
Linearity (PM data)	slope 0.95 – 1.05 against EN16450-approved Fidas® 200
Accuracy (PM data)	R^2 of 15 minute averaged data better than 0.98 for $PM_{2.5}$ and better than 0.94 for PM_{10}, compared against data from EN 16450 certified Fidas® 200 Re-calibration with NIST traced test powder possible on site
Zero point (PM data)	< 0.1 µg/m³; < 0.1 #/cm³
Air sampling rate	1.0 l/min
Response time (PM data)	Down to 1 s (depending on user defined averaging period)
Stability (PM data)	< 0.2 µg/m³ drift over 24 h Internal auto diagnostics & self calibration
Interfaces	High resolution RGB display with touch functionality USB, HDMI, Ethernet WiFi (local hotspot) for remote operation via mobile device Optional: UMTS (SIM card) for full remote access from anywhere automated upload to Cloud Webserver for easy access, data visualization and downloading
Data storage	Internal 10 GB
Communication protocols	UDP ASCII data stream ASCII/TCP, Modbus/TCP, UIDEP, Bayern-Hessen
Operating conditions	Outdoor -20 – 50 °C with weather protection hood
Power supply	12 V DC (wall outlet adaptor or DC source), PoE
Power consumption	< 15 W (indoor); < 60 W (outdoor)
Weight	3.9 kg
Dimensions	320 • 190 • 240 mm (WxDxH)
Mounting	VESA 70 mount

In case of further questions, the Palas® staff will be pleased to be of assistance.

Palas GmbH | Greschbachstrasse 3 b | 76229 Karlsruhe, Germany
www.palas.de | mail@palas.de