AQ Guard

Measuring device for monitoring indoor air quality. Measurement of dust concentrations starting at 150 nm (*1) incl. CO_2 and tVOC for calculation of air quality and infection risk index.

Benefits

- Technology based on the type approved Fidas® 200 series (EN16450 and MCERTS); simultaneous measurement of C_n, PM_1, $PM_{2.5}$, PM_4, PM_{10}
- With "Indoor Air Hygiene Professional" extension: increased counting efficiency for nano-scaled particles from 150 nm
- Computation of air quality index based on measurements of particulates, CO_2, and VOC
- Estimation of infection risk based on measurements of CO_2 and particulate matter
- High accuracy due to advanced algorithms
- Long term stable due to self calibration for measurement of flow rate, particulates, and gaseous pollutants
- 2 years operation without calibration
- Operates on AC, DC, or power-over-Ethernet

Applications

- Industry:
  - Production processes
  - Bulk material handling (mixing, discharge, storage, packaging etc.)
  - Fenceline Monitoring
- Construction sites: Roads, railroads, demolition sites
- Buildings: Schools, kindergartens, hospitals, hotels, offices, public service buildings
- Residential buildings near construction sites or other polluted areas
- Public transportation: Airports, train stations, tramway underground stations, cruise ships, passenger cabin, e.g. in tram, train

https://www.palas.de/product/aq-guard

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Datasheet

Parameter	*Description*
Interfaces	USB, Ethernet (LAN), Wi-Fi, optional: 4G
Measurement range (size)	0.175 – 20 μm (with IAHP-Package installed, starting from 0.150 μm)
Size channels	64 (32/decade)
Measuring principle	Optical light scattering of single particles
Measurement range (number C_N)	0 – 20,000 particles/cm³
Volume flow	1.0 l/min $\triangleq$ 0.06 m³/h
Data acquisition	Digital, 22 MHz processor, 256 raw data channels
Light source	Long term stable LED
Power consumption	< 20 W
User interface	Touchscreen 800 • 480 pixel, 5" (12.7 cm)
Dimensions	175 • 280 • 140 mm (H • W • D)
Weight	2.4 kg
Operating system	Windows 10 IoT Enterprise
Data logger storage	10 GB
Software	PDAnalyze
Response time	1 s, moving average configurable
Aerosol conditioning	Optional: thermal with compact IADS
Measurement range (mass)	0 – 20,000 μg/m³
Reported data	PM_1, $PM_{2.5}$, PM_4, PM_{10},TSP, C_N, particle size distribution, pressure, temperature, relative humidity, CO_2, TVOC, Infection Risk Index, Air Quality Index
Installation conditions	-20 – +50 °C
Linearity	0.95 – 1.05 (measured against EN16450 certified Fidas® 200)
Accuracy	R2 > 0.98 for $PM_{2.5}$ and R2> 0.94 for PM_{10} versus EN16450-certified Fidas® 200 (15 min average, each)

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