FIDAS® 200

The Fidas® system was developed specifically for use in regulatory environmental monitoring. It is the market leader for the continuous and simultaneous monitoring of $PM_{2.5}$ and PM_{10} ambient concentrations in European countries and those that follow European standards. Fidas® 200 is a 19-inch rack-mount unit designed for use in climate-controlled monitoring stations (temperature range 5–40 °C). Fidas® 200 E features a remote sensor (for easier integration into stations with existing roof penetrations). Fidas® 200 S (with a stainless steel weatherproof housing) is designed for outdoor installation. ...

BENEFITS

- Type-approved and certified according to latest EN requirements (EN 15267)
- Continuous and simultaneous real-time measurement of multiple PM values
- Additional information on particle number concentration and particle size distribution
- Long service life
- Low maintenance
- External check of calibration on site possible
- Intuitive and easy to operate
- Reliable function, very high data availability (> 99 %)
- Permanent monitoring of status, among others online monitoring of calibration
- No radioactive material and no consumables
- Low energy consumption

FEATURES

- On-site calibration and adjustment (particle size and volume flow)
- Light source: LED with high stability and a long lifetime
- Two pumps in parallel operation for additional operational safety due to redundancy

APPLICATIONS

- Regulatory pollution control in monitoring networks
- Ambient air monitoring campaigns
- Long-term studies
- Emission source attribution
- Emission dispersion studies (e.g. fires, volcanoes)

MODEL VARIATIONS

Fidas® 200 E

EN 16450 approved fine dust aerosol spectrometer for simultaneous measurement of $PM_{2.5}$ and PM_{10}, featuring a separate sensor for existing roof glands

https://www.palas.de/en/product/fidas200e

Fidas® 200 S

EN 16450 approved fine dust aerosol spectrometer for simultaneous measurement of $PM_{2.5}$ and PM_{10} in weatherproof cabinet for outdoor installation

https://www.palas.de/en/product/fidas200s

DATASHEET

Measuring principle	Optical light scattering at single particles, 90° sideways scattering
Reported data	PM_1, $PM_{2.5}$, PM_4, PM_{10}, TSP, C_N, particle size distribution, ambient pressure, ambient temperature, rel. ambient humidity
Measurement range (number C_N)	0–20,000 particles/cm^3
Measurement range (size)	0.178 - 17.8 μm (additional: 0.4 - 40μm, 1-100μm)
Measurement range (mass)	0–10,000 $\mu g/m^3$
Measurement uncertainty	9.7 % for $PM_{2.5}$, 7.5 % for PM_{10}(expanded measurement uncertainty according to EN 16450, 450, (see Qal1.de))
Volume flow	4.8 Nl/min (25°C, 1013 hPa) < +/- 1% (MFC-controlled diaphragm pump)
Size channels	64 (32/decade)
Time resolution	1s - 24h variable adjustable
Interfaces	USB, Ethernet (LAN), RS-232, Wi-Fi (Dongle), digital
User interface	Touchscreen, 800 • 480 pixel, 7″ (17.78 cm)
Protocols	UIDEP, UDP, ASCII, MODBUS, Bayern-Hessen
Data logger storage	Capacity for 2 years continuous operation at 60 s storage interval
Data acquisition	Max. 256 raw data channels (32 size channels/decade)
Light source	Polychromatic LED
Housing	19″, 4U (desktop and rack-mount housing)
Operating system	Windows 10 IoT (LTSC)
Power supply	90 – 264 V, 50/60 Hz
Installation conditions	Operating temperature: +5–+40 °C, operating humidity: 0–100% (non-condensing)
Sampling head	Sigma head (non-selective passive collector)
Dimensions	482 • 320 • 182 mm (W • D • H)
Weight	Control unit: 9.3 kg, sample head: 2.25 kg, sample tube: 4.5 kg
Sampling system	Drying of the aerosol by IADS (Intelligent Aerosol Drying System)
Noise emission	< 70 dB(A)
Resolution	0.1 $\mu g/m^3$
Power consumption	Normal operation: 60 W, max. 200 W
Data Management	Prepared for connection to the Palas Cloud MyAtmosphere (“MyAtmosphere-ready”)
Repeatability	3 %

NORMS AND CERTIFICATES

VDI 4202-1, VDI 4203-3, EN 12341, EN 14907, EN 16450, EU-Äquivalenzleitfaden, EN 15267-1/-2, ISO 21501-1, LCSQA (2023)