FIDAS® 200

The Fidas® System particulate matter monitor was explicitly developed for environmental regulatory monitoring. It is the market leader for continuous and simultaneous monitoring of ambient $PM_{2.5}$ and PM_{10} in European countries and countries close to Europe. The Fidas® 200 version is a 19″ plug-in unit for air-conditioned monitoring stations (temperature range 5 - 40 °C). Fidas® 200 E has a remote sensor for easier integration into stations with existing roof penetration. Fidas® 200 S is designed for outdoor installation (with stainless steel weatherproof housing), whereby this does not require full air conditioning, but can be operated with an auxiliary heater. All versions are available with different weather stations and sampling tubes of different lengths.

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 (LTSA)
Power supply	115 – 230 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)