

# FIDAS<sup>®</sup> SMART 100



Fidas<sup>®</sup> Smart 100 is the most advanced compact measuring instrument for ambient air quality. It continuously and reliably analyzes airborne fine dust particles in the size range of 0.18 – 18  $\mu\text{m}$ . The Fidas<sup>®</sup> Smart is approved by TÜV for PM<sub>2.5</sub> and PM<sub>10</sub> for official measurements.

In addition to the fine dust fraction relevant for regulatory immission control, Fidas<sup>®</sup> Smart 100 simultaneously calculates and stores PM<sub>1</sub>, PM<sub>4</sub>, total dust, particle number concentration, and their particle size distribution, including pressure, temperature, humidity, CO<sub>2</sub>, and carbon-based PM fractions (PM<sub>x</sub>\_CE).

## BENEFITS

- Technology based on the certified Fidas<sup>®</sup> 200 series (EN16450 and MCERTS); simultaneous measurement of C<sub>n</sub>, PM<sub>1</sub>, PM<sub>2.5</sub>, PM<sub>4</sub>, PM<sub>10</sub>
- High accuracy due to advanced algorithms
- Long-term stable: up to 2 years of operation without calibration possible.
- On-site calibration with test dust (NIST traceable) is possible
- Operation with AC or DC power source
- Long-life blower for sample airflow
- Regulated aerosol heating to avoid condensation

## FEATURES

- Smallest and lightest EN 16450-certified device on the market
- On-site calibration and adjustment (particle size and volume flow)
- Installation and operation directly outdoors without air conditioning
- Data visualization via Palas Cloud ("MyAtmosphere-ready")
- Measurement data acquisition per second
- E-version also available with extendable sampling tube for installation in a measuring container

## APPLICATIONS

- Regulatory environmental monitoring
- Construction sites
- Networks with roads, railways, and ports
- Smart City
- Occupational safety

## MODEL VARIATIONS



### Fidas<sup>®</sup> Smart 100 E

Fine dust measuring device for existing roof openings for measuring PM<sub>2.5</sub> and PM<sub>10</sub> (EN 16450-certified) and other parameters such as PM<sub>1</sub>, PM<sub>4</sub>, TSP

<https://www.palas.de/en/product/fidasmart100e>

## DATASHEET

Measuring principle	Optical light scattering at single particles
Reported data	PM <sub>1</sub> , PM <sub>2.5</sub> , PM <sub>4</sub> , PM <sub>10</sub> , TSP, C <sub>N</sub> , particle size distribution, ambient pressure, ambient temperature, rel. ambient humidity, CO <sub>2</sub> , Air Quality Index, source indication (depending on configuration)
Measurement range (number C <sub>N</sub> )	0 – 20,000 particles/cm <sup>3</sup>
Measurement range (size)	0.18–18 µm (certified range, other measuring ranges on request)
Measurement range (mass)	0 – 20,000 µg/m <sup>3</sup>
Measurement uncertainty	9.0 % for PM <sub>2.5</sub> , 9.7 % for PM <sub>10</sub> (expanded measurement uncertainty according to EN 16450, TÜV Report)
Volume flow	1 l/min $\hat{=}$ 0.06 m <sup>3</sup> /h
Size channels	64 (32/decade)
Time resolution	1 s – 24 h
Interfaces	USB, Ethernet (LAN), Wi-Fi, 4G (optional via LTE stick)
User interface	Touchscreen 800 • 480 Pixel, 5" (12,7 cm )
Protocols	UDP, ASCII, Modbus
Data logger storage	10 GB
Software	PDAnalyze
Data acquisition	Digital, 22 MHz processor, 256 raw data channels
Light source	Long term stable LED
Housing	Polymer housing with weather protection and tripod/wall/pole mount option
Operating system	Windows 10 IoT Enterprise
Power supply	115 – 230 V, 50/60 Hz
Power consumption	Normal operation: 15 W, max. 60 W
Installation conditions	-20 – +50 °C (weatherproof)
Response time	< 2 s
Dimensions	240 • 320 • 190 mm (H • W • D)
Weight	3.9 kg
Sampling system	Drying of the aerosol by compact IADS (Intelligent Aerosol Drying System) - Version E: extended inlet for installation in measuring containers
Noise emission	< 40 dB(A)
Resolution	0.1 µg/m <sup>3</sup>
Power consumption	Normal operation: 15 W, max. 60 W
Data Management	Prepared for connection to the Palas Cloud MyAtmosphere ("MyAtmosphere-ready"); Internet access and separate registration required. The MyAtmosphere terms of use apply.

## NORMS AND CERTIFICATES

ISO 21501-1