



PALAS[®]

FIDAS[®] SMART SYSTEM

AMBIENT AIR QUALITY MEASUREMENT

Highly Accurate Fine Dust Measurement

Made in Germany

Compact. Accurate. Certified.

FIDAS[®] SMART SYSTEM

Do you want to ensure compliance with the requirements of official immission controls? Do you want to obtain additional air quality data? FIDAS[®] SMART 100 is suitability-tested in accordance with EN 16450 and also MCERTS indicative certified, allowing a valuable contribution to your processes.

The highly advanced, certified and compact measuring device FIDAS[®] SMART 100 offers optimal conditions with regard to highly accurate fine dust measurement for industrial plants, inner-city zones, and for temporary or permanent densification of official air quality measuring networks.

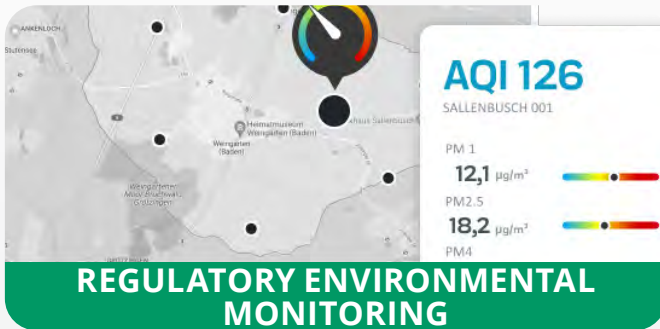
The airborne particulate matter is analyzed continuously and reliably, providing comprehensive and accurate information.

By means of integrated sensors, FIDAS[®] SMART 100 can also record pressure, temperature and relative humidity of the ambient air as a standard feature.

The measurement data can be transmitted via the Palas Cloud MyATMOSPHERE.



Application Examples



Principle of Operation

FIDAS® SMART 100 is a compact aerosol spectrometer for ambient air. By using the measuring principle of optical scattered light measurement on single particles based on the technology of the EN 16450 certified FIDAS® 200, it offers optimal conditions for air quality evaluation.

FIDAS® SMART 100 features a heated aerosol inlet. This means that the measurement result is independent of humidity or fog droplets. It is tested for compliance with EN 16450 for $PM_{2.5}$ and PM_{10} . It is also MCERTS Indicative certified for $PM_{2.5}$ and PM_{10} .



FIDAS® SMART 100 is designed for continuous operation and can easily be operated for extended periods without any need of recalibration.

Equipped with a rugged, modern weather shield, it can be combined with a variety of commercially available mounting systems via a VESA mount. The compact design simplifies installation and integration into existing infrastructure.

FIDAS[®] SMART SYSTEM

FIDAS[®] SMART SYSTEM is offered in two suitability-tested designs to meet different measurement requirements and installation situations.

- FIDAS[®] SMART 100 easy to install outside e.g., on top already existing shelters and poles
- FIDAS[®] SMART 100 E with extended inlet for existing roof openings



FIDAS[®] SMART SYSTEM is offered with different licence models:

... for regulatory entry level measurements

- FIDAS[®] SMART 100 / 100 E $PM_{2.5}$
- FIDAS[®] SMART 100 / 100 E PM_{10}

... for regulatory measurements

- FIDAS[®] SMART 100 / 100 E $PM_{2.5}, PM_{10}$

... with additional parameters

- FIDAS[®] SMART 100 $PM_1, PM_{2.5}, PM_4, PM_{10}, PM_{xCE}, TSP, C_N, PSD, CO_2$
- FIDAS[®] SMART 100 E $PM_1, PM_{2.5}, PM_4, PM_{10}, TSP, C_N, PSD$

Special Advantages and Benefits

LATEST TECHNOLOGY

- EN 16450 compliant (PM_{2.5} and PM₁₀) and MCERTS Indicative certified (PM_{2.5} and PM₁₀)
- High accuracy due to advanced algorithms
- Fast data interfaces
- Compact design and easy installation making it ideal for temporary measurement campaigns
- Also available as **FIDAS® SMART 100 E** with extended aerosol inlet and thus easily integrable into existing measuring containers

DIFFERENT MEASUREMENTS

- All parameters are measured and calculated simultaneously
- Ambient Air Quality Professional Package (optional): PM₁, PM₄, PM₁₀, TSP, C_N, PSD, CO₂, source indication, Air Quality Index

DURABILITY

- Long-term stability thanks to self-calibration; up to two years of operation without calibration possible
- Unique: on-site recalibration with NIST traceable test dust

Technical Features

Measuring principle	Optical light scattering of single particles
Reported data	PM ₁ , PM _{2.5} , PM ₄ , PM ₁₀ , TSP, C _N , particle size distribution, pressure, temperature, relative humidity, CO ₂ , Air Quality Index, source indication (depending on configuration)
Measurement range (number C _N)	0–20,000 particles/cm ³
Measurement range (size)	0.175–20 µm
Measurement range (mass)	0–20,000 µg/m ³
Measurement uncertainty	R2 > 0.98 for PM _{2.5} and R2 > 0.94 for PM ₁₀ versus EN 16450-certified FIDAS® 200 (15 min average, each)
Size channels	64 (32/decade)
Time resolution	1 s
Interfaces	USB, Ethernet (LAN), Wi-Fi, 4G (optional via LTE stick)
User interface	Touchscreen, 800 • 480 Pixel, 7" (17.78 cm)
Protocols	UDP, ASCII, Modbus
Data Management	Prepared for connection to the Palas Cloud MyATMOSPHERE („MyATMOSPHERE-ready")*
Power supply	100/240 V, 50/60 Hz
Power consumption	Normal operation: 15 W, max. 60 W
Dimensions (H • W • D)	240 • 320 • 190 mm



Palas is a leading developer and manufacturer of high precision instruments for the generation, measurement and characterization of particles in air.

With more than 30 active patents, Palas develops technologically leading and certified fine dust and nanoparticle analyzers, aerosol spectrometers, generators and sensors as well as related systems and software solutions. Palas was founded in 1983 and employs more than 100 people.

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