PALAS®

FIDAS® SMART SYSTEM

AMBIENT AIR QUALITY MEASUREMENT

Highly accurate fine dust measurement

Made in Germany

Compact. Accurate. Certified.
FIDAS® SMART SYSTEM

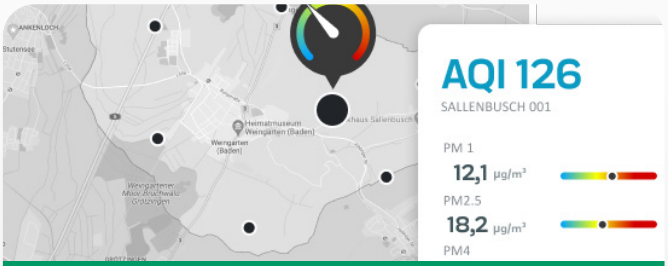
Do you want to ensure that the requirements of official immission controls are complied with? Do you want to obtain additional air quality data? FIDAS® SMART 100 is suitability-tested in accordance with EN 16450 and also MCERTS certified, allowing a valuable contribution to your processes.

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.

Application examples



REGULATORY ENVIRONMENTAL MONITORING

CONSTRUCTION SITES

NETWORKS WITH ROADS, RAILS & PORTS

SMART CITY

OCCUPATIONAL SAFETY

INDUSTRY

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 $PM_{2.5}$ as well as PM_{10} and is additionally MCERTS certified for $PM_{2.5}$ and PM_{10}.

mCERTS
Sira MC 210388/00

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.

Special advantages and benefits

Latest Technology

- MCERTS Indicative certified ($PM_{2.5}$ and PM_{10} simultaneous) and EN 16450 compliant ($PM_{2.5}$ and PM_{10} simultaneous)
- 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): PM_1, PM_4, PM_{10}, TSP, C_N, PSD, CO_2, TVOC, source indication, Air Quality Index

Durability

- Long-term stability thanks to self-calibration; up to 2 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, TVOC, Air Quality Index, source indication (depending on configuration)
Measurement range (number C_N)	0 – 20,000 particles/cm³
Measurement range (size)	0.175 – 20 µm
Measurement range (mass)	0 – 20,000 µg/m³
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)
Volume flow	1 l/min ≙ 0.06 m³/h
Time resolution	1 s
User interface	Touchscreen, 800 • 480 Pixel, 7“ (17.78 cm)
Interfaces	USB, Ethernet (LAN), Wi-Fi, 4G
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
Linearity	0.95 – 1.05 (measured against EN 16450 certified **FIDAS® 200**)

Subject to technical changes

More measure devices

... for use in regulatory environmental monitoring.

The aerosol spectrometer **FIDAS® 200** continuously analyzes fine dust particles in ambient air.
Like the functionally identical variants **FIDAS® 200 E** and **FIDAS® 200 S**, it is certified according to the EN 16450, EN 15267-1 and -2 guidelines.

... for air quality monitoring.

With the **AQ GUARD SMART**, the series of aerosol spectrometers for ambient air is extended by a robust device. In addition to the measuring principle of optical scattered light measurement of single particles based on the technology of the EN 16450-certified **FIDAS® 200** for fine dust measurement.

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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Version: May 2022