

FIDAS® FROG





The fine dust measurement device Fidas Frog allows for a fast, reliable, and quality-assured determination of fine dust, e.g., monitoring within the scope of Health, Safety, and Environment (HSE) management at workplaces (exposure assessment) or in the range of indoor air quality measurements . It simultaneously measures the environmentally relevant mass fractions PM_1 , $PM_{2.5}$, PM_4 , PM_{10} , and TSP, as well as the particle number and the particle size distribution within the particle size range of $0.18-93~\mu m$. The very compact and light design as a portable hand-held monitor with either battery or mains power operation and the operation time of up to 8 hours per battery charge allow for a flexible application at any measurement sites.

BENEFITS

- Continuous and simultaneous real-time measurement of PM₁, PM_{2.5}, PM₁₀ and TSP-values, particle number concentration and size distribution
- Adjustable time resolution from 1 s
- Direct comparison of different measurements
- Configuration of limit values possible
- Separation of the measuring device and the Tablet-PC for control (communication via WLAN)
- Ergonomic design and low weight
- Intuitive and simple operation
- Integrated camera for documentation of the measurement
- Export function for measured data in various formats
- Remote monitoring and control via network integration easily possible

FEATURES

- On-site calibration and adjustment (particle size and volume flow)
- Up to eight hours of measurement time in battery mode
- Detachable tablet, connected via WLAN
- Firmware can also be installed on PC
- Extended measuring range up to 93 μm

APPLICATIONS

- Fine dust monitoring at alternating locations or in movement
- Air quality monitoring indoors, at the workplace, or inside vehicles
- Use as an aerosol spectrometer in setups where space is limited

DATASHEET

Measuring principle Optical light scattering at single particles, 90° sideways scattering Reported data PM1, PM2,5, PM4, PM10, TSP, CN, T, rH, p, particle size distribution

Measurement range (number C_N) $0 - 20,000 \text{ particles/cm}^3$

Measurement range (size) 0.178 - 17.8 (extended to 93 μ m)

Measurement range (mass) $0 - 100 \text{ mg/m}^3$

Measurement uncertainty Approximately 12% for PM_{2.5}, approximately 12% for PM₁₀

Volume flow 1,4 l/min (Time-Of-Flight)

Size channels Max. 256 raw data channels (32 size channels/decade)

Time resolution Rolling average 1s - 600s adjustable, interval 1.5, 10, 60s, distribution 5, 10,

30, 60s, UDP 1.5, 10, 60s interval

Interfaces USB, Ethernet (LAN) über Adapter, Wi-Fi

User interface Touchscreen, 1,280 • 800 pixel, 8" (20.32 cm)

Protocols UDP, MODBUS RTU

Data logger storage Approx. 16 GB

Data acquisition Max. 256 raw data channels (32 size channels/decade)

Light source Polychromatic LED

Housing Plastic housing with tablet

Operating system Windows 10

Power supply 115–230 V, 50/60 Hz, output: 19 V

Power consumption 13 W Installation conditions 0 - +40 °C

Battery operation Li-ion batteries, non-removable, base unit: 77 Wh (14.8 V; 5,200 mAh), 8 cells

tablet: 20 Wh (3.8 V; 5,200 mAh), 2 cells

Sampling head Rohr DN 10

Dimensions 100 • 240 • 150 mm (H • W • D)

Weight Approx. 2.1 kg (operating panel: 0.4 kg, measuring unit: 1.7 kg)

Resolution 0,1 μ g/m³

Data Management Prepared for connection to the Palas Cloud MyAtmosphere ("MyAtmosphere-

ready")

NORMS AND CERTIFICATES

EN 481:1993, ISO 21501-1