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.

优势

- Continuous and simultaneous real-time measurement of PM_1, $PM_{2.5}$, PM_{10} 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

特点

- 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 $93~\mu m$

应用领域

- 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

技术数据

测量原理	Optical light scattering at single particles	报告数据	PM_1, $PM_{2.5}$, PM_4, PM_{10}, TSP, C_N, particle size distribution
测量范围(数量浓度)	0 – 20,000 particles/cm³	测量范围(粒径)	0.18 – 93 μm (2 measurement ranges)
测量范围(质量)	0 – 100 mg/m³ (depending on the composition of the aerosol)	体积流量	1.4 l/min
Size channels	32/decade, 256 raw data channels	接口	USB, Ethernet (LAN) by USB-adapter, Wi-Fi access point
User interface	Touchscreen, 1,280 • 800 pixel, 8″ (20.32 cm)	Data logger storage	Approx. 16 GB (extendable by micro-SD)
Data acquisition	Digital, 20 MHz processor, 256 raw data channels	Light source	LED
外壳	Synthetic housing	Operating system	Windows 10
Power consumption	13 W	Installation conditions	0 – +40 ℃
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	Dimensions	100 • 240 • 150 mm (H • W • D)
重量	Approx. 2.1 kg (operating panel: 0.4 kg, measuring unit: 1.7 kg)		

标准和证书

EN 481:1993, ISO 21501-1