

1371 MiniWRAS

Portable mini wide range aerosol spectrometer

For ultrafine particles and dust mass

- Two analyzers in one device
- Particle sizing and counting from 10 nm to 35 μm
- No liquids or consumables



Features

- **Two analyzers in one device**
Optical aerosol spectrometer and electrical particle detector
- **One combined data set**
PM₁₀, PM_{2.5}, PM₁, inhalable, thoracic, and respirable particle number size distribution
- **41 equidistant size channels**
From 10 nm to 35 µm
- **Intelligent Li-Ion battery**
For portable use up to 10 hours
- **Flexible data acquisition and communication**
With USB flash drive, Bluetooth and MiniWRAS software
- **Dried sheath air for Faraday Cup Electrometer and Particle free rinse air for protecting laser and detector**

Technical data

Detection principle	Electrical mobility spectrometer with Faraday Cup Electrometer (electrical) Aerosol spectrometer using light scattering at single particles with diode laser (optical)
Output	PM ₁₀ , PM _{2.5} , PM ₁ , dust mass fractions acc. EN 481: Inhalable, thoracic, respirable Particle number size distribution
Particle size range	10 nm ... 35.15 µm, 10 ... 193 nm (electrical), 0.253 ... 35.15 µm (optical)
Size channels	41 (10 electrical and 31 optical)
Particle number	0.25 ... 4000 fA (electrical) 0 ... 5 3000 000 particles/liter (optical)
Dust mass	0 µg/m ³ ... 100 mg/m ³
Reproducibility	± 30% for number concentration and geometric mean diameter (electrical) 98.2% for 0.3 µm, 99.5% for 0.5 µm, 91.8% for 1.0 µm, 91.0% for 5 µm, meets ISO 21501-1 (optical)
Time resolution	60 s for 10 channels, 6 s per channel sequentially, storage interval 1 min (electrical) 6 s for 31 channels, storage interval 1 min (optical)
Volume flow rate	1.2 l/min ± 3% due to self regulation according to ISO 21501-1
Rinsing air	0.4 l/min, protects laser optics, reference air for self-test
Sheath air	0.3 l/min dried, protects Faraday Cup Electrometer
Power supply	In: 100 ... 240 VAC, 47 ... 63 Hz, out: 18 VDC, 2.5 A

Benefits

- **Suitable for various applications**
 - Workplace monitoring for ultrafine particles (UFP) and dust mass fractions
 - Nanoparticle source identification
 - Indoor air quality (IAQ) in vehicles, airplane cabins, cockpits, busses, trains and buildings
 - R+D testing in industry
- **No consumables or liquids**
Fully portable, operation irrespective of its position
- **No handling license required**
Non-radioactive unipolar diffusion charger
- **Compact design**
Allows easy integration in laboratory or mobile setups

Battery	Intelligent Li-Ion-battery, 14.4 V, 6.8 Ah for minimum 10 h operation, recharge: 5 h with power supply
Data interfaces	Bluetooth, USB, RS-232, USB flash drive with Grimm MiniWRAS software
Dimensions (l x w x h)	34 x 31 x 12 cm (13.4 x 12.2 x 4.7 in)
Weight	7.6 kg (16.8 lbs)
Operating conditions	+ 4 ... +40 °C (39 ... 104 °F), RH < 95%, non condensing, 533 ... 1133 mbar
Transport and storage	-20 ... +50 °C (-4 ... 122 °F) RH < 95 %
Accessories	1152 Isokinetic sampling probe for 4 ... 25 m/s 1158 TRH External sensor for temperature and relative humidity

