OPM250

OPTICAL PARTICLE MONITOR FOR AEROSOL



OPM250 is an optical aerosol spectrometer with a unique counting efficiency design enabling for real-time PM monitoring under any environmental conditions.

FEATURES & **BENEFITS**

- QAL 1 certified by TÜV for PM10 and PM2.5 according to EN 16450
- Continuous real-time monitoring with high temporal resolution, with 1min averaging period.
- Measures of up to six dust mass fractions TSP, PM10, PM4, PM2.5, PM1, PMcoarse, total particle concentration and particle number size spectrum
- Unique particule size range from 0.178 µm to 29.4 µm
- Easy-to-use display with intuitive navigation and access to diagnostic functions

- Weatherproof sampling system,
 -40 to 60 °C, 60 g/m3 absolute humidity and wind
- With unique design allowing no border zone error
- PSL traceable particle sizing as per ISO 21501-1
- Flexible data protocols: Modbus, GESYTEC / Bayern-Hessen





COMPLIANCE WITH: EN 16450, EN 12341, EN 15267-1 & EN 15267-2, VDI 4202-3



MAIN BENEFITS

- Without site specific calibration needed
- Suitable for PM monitoring under any environmental conditions and at all sites (traffic, urban, background, maritime, mountain and others)
- Approved measuring device for particulate matter PM10 and PM2.5 in air monitoring network
- Vibration-resistant, it can easily be used in vehicles.
- Robust design, consumption and low operating costs
- Low maintenance due to internal particle-free purge-air circuit to protect the optical components

OPTIONS & **ACCESSORIES** (UPON REQUEST)

- Calibration and test equipment:
 - Complete calibration equipment
 - Complete field test kit
 - Pump head nozzle cleaning kit
- Meteorological sensor:
 LUFFT WS300 weather sensor: Temperature (-40 °C to +60 °C) and relative humidity (1 to 99.9 %), cable length 1.5 m.

TECHNICAL SPECIFICATIONS

Detection principle	Light scattering at single particles with diode laser; detection volume aerodynamically focused (ISO 21501-1), no border zone error
Measured mass fractions	TSP, PM10, PM4, PM2.5, PM1, PMcoarse
Particle size range	0.178 μm < ø < 29.4 μm (optical latex equivalent diameter)
Size channels	72, channel boundaries equidistant, 32 channels per decade
Mass concentration (with 10% coincidence error for Arizona Dust A1 ultrafine)	• PM10: 0 to12,000 μg/m³ • PM2.5: 0 to 5,100 μg/m³
Detection limit for PM10	0.1 µg/m³
Zero level	<=0.1 µg/m³
Sample volume flow	1.2 l/min, automatic regulation at the orifice plate
Internal purge air	0.3 to 0.5 l/min, protection of laser optics
Storage interval	Selectable, 6 seconds, 1, 5, 10, 15, 30, 60 minutes, daily average value
Data communication links	RS-232, USB-B, Ethernet, USB flash drive (USB 2.0), data logger
Data communication protocol	OPM protocol, Modbus TCP, Gesytec/Bayern/Hessen Protocol
Setting interface	Via touch display or PC via data interface
Power supply	touch panel and DAS - Modbus TCP
Power consumption	Typical 25 W to 80 W (depending on the environment condition)
Conditions (sample air on site)	• Temperature: – 40 °C 60 °C • Relative humidity: 100 % 30 % (60 °C)
Conditions (measuring container)	Temperature: 5 °C 40 °C • Relative humidity: 5% 90%, non-condensing
Storage and transport conditions	– 20 °C +50 °C, RH < 95 % (non-condensing)
Dimensions (H x W x D)	19» spectrometer: 180.5 x 434 x 320 mm, Sample tube holder: 88.9 x 441 x 156 mm, Sample tube with sampling head: 1500 (L) x Ø 45 (tube) / Ø 105 mm (Sigma-2 sample inlet)
Weight	 Total: 20.5 kg • 19» spectrometer: 10.45 kg • Sample tube holder: 2.4 kg Sample tube with sampling head: 5.3 kg

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10/04/2025 OPM250 Product Sheet OPM250 - Specifications subject to change without notice ISO 45001:2018 ISO 14001:2015 ISO 9001:2015 CERTIFICATION

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