PROMO® 1000



Promo® 1000 is a light-scattering aerosol spectrometer system for particle size analysis and concentration determination that can be equipped with all welas® 1100 and 1200 sensors. These sensors allow reliable measurement in the concentration range from < 1 particle/cm^3 - 5 • 10^5 particles/cm^3. With Promo® 1000, particle sizes above 120 nm can be reliably measured, as the unique high-power xenon high-pressure lamp with very high light intensity and the photomultiplier are directly integrated into the aerosol sensor.

Promo® 1000 is famous for up to 128 size channels per measuring range and a concentration range from < 1 particle/cm^3 to 5 • 10^5 particles/cm^3.

BENEFITS

- Very high size resolution
- Concentration range from < 1 particle/cm^3 to 5 • 10^5 particles/cm^3
- Calibration curves for different refractive indices
- Very high and reproducible counting efficiency even from 0.12 µm
- High temporal resolution of up to 10 ms
- Calibration, cleaning, and lamp replacement can be performed independently by the customer
- External control via RS 232 or Ethernet
- Low maintenance, reduces operating costs

APPLICATIONS

- Determination of the separation efficiency of car interior filters, engine air filters, room air filters, compressed air filters, vacuum cleaner filters, cleanable filters, electrostatic precipitators, oil separators, cooling lubricant separators, wet scrubbers, cyclones and other separators
- Isothermal and isobaric particle size and quantitative determination, for instance in the automobile, chemical, pharmaceutical and food industries
- Analysis of fast, transient processes
- Inspection of smoke detectors
- Particle formation for cloud formation

FEATURES

- Up to four measuring ranges can be selected: 0.12 µm - 3.5 µm | 0.2 µm - 10 µm | 0.3 µm - 17 µm | 0.6 µm - 40 µm
- Up to 128 size channels per measuring range
- Clear calibration curve thanks to white light source with 90° stray light detection
- Patented T-aperture: No edge zone error
- Digital single signal processing: Coincidence detection and correction on the single signal
- Selectable sensors for optimized measurement with regard to concentration
- On-site calibration and adjustment (particle size and volume flow)

MODEL VARIATIONS

...model available in additional variations

DATASHEET

Measuring principle	Optical light-scattering
Measurement range (number C_N)	$< 5 \cdot 10^5$ particles/cm^3
Measurement range (size)	0.12 – 3.5 μm, 0.2 – 10 μm, 0.3 – 17 μm, 0.6 – 40 μm
Volume flow	5 l/min, 1.6 l/min
Size channels	Max. 128 (64/decade)
Time resolution	1 s
Interfaces	USB, Ethernet (LAN), Wi-Fi, RS-232/485
User interface	Touchscreen, 800 • 480 pixel, 7″ (17.78 cm)
Data logger storage	4 GB Compact Flash
Software	PDControl, FTControl, PDAnalyze
Thermodynamic conditions	+10 – +40 °C, -100 – 50 mbar
Data acquisition	Digital, 20 MHz processor, 256 raw data channels
Light source	Xenon high pressure lamp 75 W
Housing	Table housing, optional: with mounting brackets for rack-mounting
Support options	Direct remote access, Palas webserver service
Operating system	Windows 10 IoT (LTSC)
Power supply	115 – 230 V, 50/60 Hz
Power consumption	100 W
Installation conditions	+5 – +40 °C (control unit)
Dimensions	185 • 450 • 315 mm (H • W • D) (19″)
Weight	Control unit: approx. 8 kg, sensor: approx. 18 kg