PALAS®

PROMO® LED SYSTEM

PROCESS AEROSOL SPECTROMETER

High Resolution, Flexibility and Long Life Time

Made in Germany

Precise Process Spectrometers: PROMO® LED SYSTEM

Aerosol spectrometers are used in many monitoring and measurement applications to determine particle number concentration and distribution. These measurement devices are required by relevant standards and regulations in air filter and mask testing. Particularly in research, spectrometers that measure over a wide concentration range are used.

In all these applications, high precision and more advanced analysis of aerosol composition such as particle count or size distribution is needed.

The PROMO® LED SYSTEM is able to provide this information precisely over a size range from 0.145 up to 100 µm and a concentration range up to 10^6 particles/cm³ in single count mode.

Application Examples

FILTER TESTING

MASK CHECK

LONG-TERM MEASUREMENTS IN R&D

PRODUCTION MONITORING

WORKPLACE MEASUREMENTS

EMISSION MEASUREMENT

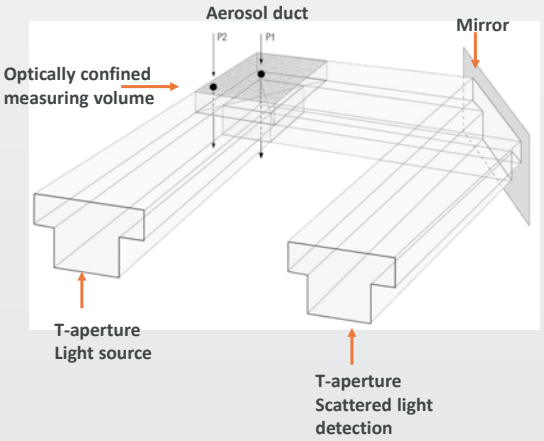
Principle of Operation

PROMO® LED 2000 is a 90° scattered light aerosol spectrometer for particle size analysis and concentration determination.

PROMO® LED sensors equipped with different measuring volumes can be connected to the control unit of the **PROMO® LED 2000** and exchanged as required. These sensors allow reliable measurement in the concentration range from < 1 particle/cm^3 up to 10^6 particles/cm^3 in gases.

The powerful LED light source offers an especially long service life and maximum stability in particle size analysis. Thus, the advantages of the white light source with 90° scattered light detection in the measurement of particle size and concentration are implemented.

The **PROMO® LED** sensors with built-in signal converter can be placed close to the sampling point to save space. Thus, a separation of measuring probe and control unit is possible especially under difficult environmental conditions, such as in process analytics.



Promo® LED System

Size measurement at the single particle: The **Promo® LED System** consists of three variants covering different concentration ranges. Common to all is the combination of a control unit with a precise optical sensor and the ability to determine particle number concentrations with size resolution.

Promo® LED aerosol sensor 2070

FOR DUST, OIL OR DROPLET MEASUREMENTS IN VERY HIGH CONCENTRATIONS

- Measuring range: 0.2–40 µm
- Particle concentrations up to max. 10^6 particles/cm³

Promo® LED aerosol sensor 2300

FOR MEASUREMENTS IN PRODUCTION OR EMISSIONS IN NORMAL ENVIRONMENT

- Measuring range: 0.145–100 µm
- Particle concentrations up to max. 20,000 particles/cm³

Promo® LED aerosol sensor 2900

FULL-FLOW ANALYSIS FOR THE APPLICATION IN VERY SMALL CONCENTRATIONS

- Measuring range: 0.5–100 µm
- Particle concentrations up to max. 200 particles/cm³

Special Advantages and Benefits

Flexibility

- Space-saving installation near the sampling point with separate sensor unit
- Applicability of numerous standards for dust and particle measurement
- Three sensor variants for different concentration ranges
- Photometer mode selectable

Accuracy

- Higher resolution than commercially available spectrometers
- Information on size-resolved particle concentrations
- Detailed analysis software PDAnalyze

Reliability

- Low maintenance due to long-life and stable LED light source
- Long operating intervals without calibration
- Control unit can be placed in protected environment

Technical Features

Measuring principle	Optical light scattering of single particles
Measurement range (number C_N)	0–10^6 particles/cm^3
Measuring range (size)	0.145–100 µm
Volume flow	5 l/min
Pressure	-100–+50 mbar
Interfaces	USB, Ethernet (LAN), RS-232
User interface	Touchscreen, 800 • 480 Pixel, 7“ (17,78 cm)
Installation conditions	+5–+40 °C
Dimensions (H • W • D)	Control unit: 184 • 483 • 313 mm, sensor: 185 • 125 • 305 mm
Weight	Control unit: 8.2 kg, sensor: 3.2 kg

Palas is a leading developer and manufacturer of highprecision instruments for the generation, measurement and characterization of particles in air.

With more than 30 active patents, Palas develops technologically leading and certified fine dust and nanoparticle analyzers, aerosol spectrometers, generators and sensors as well as related systems and software solutions. Palas was founded in 1983 and employs more than 100 people.

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