



Depending on the aerosol composition to be measured, i.e., the carrier gas component and the particle material, pressure changes in the carrier gas can significantly influence the particle size distribution, e.g., due to condensation or evaporation.

For this reason, the [aerosol sensor welas[®] 1100 P¹](#) and the [aerosol sensor welas[®] 1200 P²](#) are equipped with a pressure-tight cuvette to ensure isobaric and isothermal sampling into the sensor's measurement volume.

The Promo[®]system is usually calibrated for the operating volume flow. As the operating volume flow changes with pressure, it is advantageous for the user if automatic volume flow regulation for the sampling volume flow is provided for in the device.

In the Promo[®] 1000 P, the pressure of the carrier gas is measured, and the required operating volume flow is automatically set to 5 l/min.

Includes:

- Mass flow controller for volume flow regulation
- Absolute pressure capsule
- Filter unit to protect the flow rate control

OPERATION PRINCIPLE

¹ aerosol sensor welas[®] 1100 P: <https://www.palas.de/en//en/product/aerosolsensorwelas1100P>

² aerosol sensor welas[®] 1200 P: <https://www.palas.de/en//en/product/aerosolsensorwelas1200p>

BENEFITS

Measuring range of 200 nm to 40 μm (3 measuring ranges selectable in one device)

Up to three measuring ranges in only one device:

- 0.2 μm – 10 μm
- 0.3 μm – 17 μm
- 0.6 μm – 40 μm

Up to 128 size channels per measuring range

Concentration range from $< 1 \text{ particle/cm}^3$ to $5 \cdot 10^5 \text{ particles/cm}^3$

Calibration curves for different refractive indices

Very high and reproducible counting efficiency rate starting at 0.2 μm

High temporal resolution down to 10 ms

PDAnalyze analysis software

Calibration, cleaning and lamp replacement can all be performed independently by the customer

External control by RS 232 or Ethernet

Optional: Software PDControl for operation as welas® digital available

Simple operation

Low maintenance

Reliable function

Reduces your operating expenses

DATASHEET

Measuring principle	Optical light-scattering
Measurement range (number C_N)	$< 5 \cdot 10^5$ Partikel/cm ³
Measurement range (size)	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
Thermodynamic conditions	+10 – +40 °C, -100 – 50 mbar
Data acquisition	Digital, 20 MHz processor, 256 raw data channels
Light source	Xenon Hochdrucklampe 75 W
Housing	Table housing, optional: with mounting brackets for rack-mounting
Operating system	Windows embedded
Power supply	115 – 230 V, 50/60 Hz
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

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
- Emission measurements
- Immission measurements



Mehr Informationen:
<https://www.palas.de/product/promo1000p>