

WELAS[®] DIGITAL 3000



The welas[®] digital 3000 is a flexible, powerful, and economic light-scattering spectrometer system with two aerosol sensors^a, which determines particle concentration and size precisely and reliably. Unique are up to four measuring ranges in only one device:

- 0.2 μm – 10 μm
- 0.3 μm – 17 μm
- 0.6 μm – 40 μm
- 2 μm – 100 μm (additionally for sensors 2300 and 2500)

welas[®] digital 3000 is famous for up to 128 size channels per measuring range and a concentration range from $< 1 \text{ particle}/\text{cm}^3$ to $10^6 \text{ particles}/\text{cm}^3$.

^aaerosol sensors: <https://www.palas.de/en//product/aerosolsensorswelas2000>

BENEFITS

- Measuring range of 0.2 to 100 μm (4 measuring ranges selectable in one device)
- Up to four measuring ranges in only one device:
 - 0,2 μm – 10 μm
 - 0,3 μm – 17 μm
 - 0,6 μm – 40 μm
 - 2 μm – 100 μm (additionally for sensors 2300 and 2500)
- Up to 128 size channels per measuring range
- Concentration range of 1 particle/ cm^3 up to $10^6 \text{ particles}/\text{cm}^3$
- Calibration curves for different refractive indices
- Very high and reproducible counting efficiency rate starting at 0.2 μm (see Graph 2)
- High temporal resolution down to 10 ms
- Optical fiber technology
- Measurement in potentially explosive environment
- Long service life of the light source of 2000 h
- Extensive PDControl
- Simple operation
- Calibration, cleaning and lamp replacement can all be performed independently by the customer
- Low maintenance

APPLICATIONS

- Separation efficiency determination of automotive cabin air filters, engine air filters, ambient air filters, compressed air filters, vacuum cleaner filters, cleanable filters, electrostatic precipitators, oil separators, cooling lubricant separators, wet separators, cyclones, and other separators
- Isothermal and isobaric particle size and quantity determination, e.g., in the automotive, chemical, pharmaceutical, and food industries
- Investigation of fast, transient processes
- Test of smoke detectors
- Particle measurement for cloud formation

MODEL VARIATIONS



welas[®] digital 3000 H
With heating regulation up to 250 °C for welas[®] aerosol sensors

<https://www.palas.de/product/welasdigital3000h>

DATASHEET

| | | | |
|--------------------------|--|-----------------------------------|---|
| Measuring principle | Optical light-scattering | Measurement range (number C_N) | $< 1 \cdot 10^6$ Partikel/cm ³ |
| Measurement range (size) | 0.2 – 10 μm , 0.3 – 17 μm , 0.6 – 40 μm , 2 – 100 μm | Volume flow | 5 l/min |
| Size channels | Max. 64/decade | Time resolution | ≥ 10 ms |
| Interfaces | USB | User interface | Laptop |
| Software | PDControl | Thermodynamic conditions | +10 – +40 °C, -100 – 50 mbar |
| Data acquisition | Digital, 20 MHz processor, 256 raw data channels | Light source | Xenon arc lamp 35 W |
| Housing | Table housing, optional: with mounting brackets for rack-mounting | 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. 18 kg, sensor: approx. 2.8 kg | | |