



The Fidas® Sense system are high-resolution aerosol sensors for indoor use.

The Fidas® Sense 2900 sensor measures particle number concentrations in single count mode up to 200 particles/cm<sup>3</sup>. This makes it suitable for use in environments where particle contamination is critical to the product or process.

Fidas® Sense 2300 can analyze up to 20,000 particles/cm<sup>3</sup> in single count mode with size resolution. Thus, it is designed for general indoor and hall air monitoring, but also in driver's cabs or similar areas to ensure occupational health and safety.

The sensor system calculates and transmits the specified parameters at 10-second intervals via the integrated USB interface directly to the connected computer system using suitable software for further processing.

## OPERATION PRINCIPLE

### AEROSOL SENSORS

The sensors manufactured by Palas® operate on the proven principle of single particle measurement using the scattered light method with high resolution to determine the distribution of particle size and concentration. For years they have been used in industry and science for the analysis and evaluation of airborne particles as well as in official and continuous fine dust monitoring according to the EN 16450 standard.

Like all sensors of the Fidas® line, the sensors can be easily calibrated on site using monodisperse particles and thus allow a constant and stable measurement of particle concentration values and mass fractions of PM<sub>1</sub> - TSP.

## Comparison measurements



Pic.1: Parallelism of two Fidas® Sense 2300 systems

Precise optical analysis with high channel resolution and single particle analysis allow an assessment of the measured particle spectrum down to a particle size of 180 nm. Thus, an accurate determination of all mass concentrations even at low PM values with low uncertainty is possible. This is especially critical for environments that typically must have low particle number and mass concentrations.

## BENEFITS

- Direct evaluation of data and provision for further processing
- Mechanically robust, durable and free of maintenance
- Unambiguous and specific calibration of particle size determination via NIST-retraceable monodisperse aerosol
- Long-term stable light source with long service life
- No consumables and therefore low maintenance
- Optics can be cleaned by trained personnel - high availability
- Closed housing (protection class IP67) and therefore easy to clean

## DATASHEET

Reported data	$C_N$ (Fidas® Sense 2900), $PM_1$ , $PM_{2.5}$ , $PM_4$ , $PM_{10}$ , TSP, $C_N$ , particle size distribution (Fidas® Sense 2300)
Measurement range (number $C_N$ )	0 – 200 particles/cm <sup>3</sup> (Fidas® Sense 2900), 0 – 20,000 particles/cm <sup>3</sup> (Fidas® Sense 2300)
Measurement range (size)	0.3 – 20 $\mu\text{m}$ (Fidas® Sense 2900), 0.18 – 18 $\mu\text{m}$ (Fidas® Sense 2300)
Measurement range (mass)	< 10,000 $\mu\text{g}/\text{m}^3$ (Fidas® Sense 2300)
Volume flow	2.8 l/min
Size channels	max. 235
Time resolution	10 s
Interfaces	USB
Protocols	ASCII
Light source	Long term stable LED
Power supply	24 V
Power consumption	24 W
Installation conditions	+5 – +40 °C (non condensing)
Dimensions	312 • 176 • 105 mm (H • W • D)
Weight	3.8 kg

## APPLICATIONS

- Various quality-determining monitoring control parameters such as:
  - Number concentration  $C_N$
  - Aerosol size distribution PSD
  - Detection of specific concentrations of a particle size or area
  - On-line calculation of mass concentrations in aerosols
- Control, monitoring or regulation of, for example:
  - Large-scale ventilation and air-conditioning systems
  - Process and contamination monitoring
  - Particle analysis for quality monitoring of particle-generating production processes
  - and many more



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