

# FIDAS® SMART 100



Fidas® Smart 100 is the most advanced compact measuring instrument for ambient air quality. It continuously and reliably analyzes airborne fine dust particles in the size range of 0.175 – 20  $\mu\text{m}$ . The Fidas® Smart is approved by TÜV for PM<sub>2.5</sub> and PM<sub>10</sub> for official measurements.

In addition to the fine dust fraction relevant for regulatory immission control, Fidas® Smart 100 simultaneously calculates and stores PM<sub>1</sub>, PM<sub>4</sub>, total dust, particle number concentration, and their particle size distribution, including pressure, temperature, humidity, CO<sub>2</sub>, carbon-based PM fractions (PM<sub>x</sub>\_CE) and TVOC (total volatile organic components).

## BENEFITS

- Technology based on the certified Fidas® 200 series (EN16450 and MCERTS); simultaneous measurement of C<sub>n</sub>, PM<sub>1</sub>, PM<sub>2.5</sub>, PM<sub>4</sub>, PM<sub>10</sub>
- High accuracy due to advanced algorithms
- Long-term stable due to self-calibration; up to 2 years of operation without calibration possible.
- On-site recalibration with test dust (NIST traceable) is possible
- Operation with AC or DC power source
- Long-life blower for sample airflow
- Regulated aerosol heating to avoid condensation

## APPLICATIONS

- Regulatory environmental monitoring
- Construction sites
- Networks with roads, railways, and ports
- Smart City
- Occupational safety

## MODEL VARIATIONS



### Fidas® Smart 100 E

Fine dust measuring device for existing roof openings for measuring PM<sub>2.5</sub> and PM<sub>10</sub> (EN 16450 certified) and other parameters such as PM<sub>1</sub>, PM<sub>4</sub>, TSP

<https://www.palas.de/product/fidasmart100e>

## DATASHEET

|                             |       |                                                                           |                         |               |                                                                                                                                                                                                        |
|-----------------------------|-------|---------------------------------------------------------------------------|-------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measuring principle         |       | Optical light scattering at single particles                              |                         | Reported data | PM1, PM2.5, PM4, PM10, TSP, CN, particle size distribution, ambient pressure, ambient temperature, rel. ambient humidity, CO2, TVOC, Air Quality Index, source indication (depending on configuration) |
| Measurement (number $C_N$ ) | range | 0 – 20,000 particles/cm <sup>3</sup>                                      | Measurement (size)      | range         | 0.18 – 18 $\mu$ m (certified range, other measuring ranges on request)                                                                                                                                 |
| Measurement (mass)          | range | 0 – 20,000 $\mu$ g/m <sup>3</sup>                                         | Measurement uncertainty |               | 9.0 % for PM <sub>2.5</sub> , 9.7 % for PM <sub>10</sub> (expanded measurement uncertainty according to EN 16450, TÜV Report)                                                                          |
| Volume flow                 |       | 1 l/min $\hat{=}$ 0.06 m <sup>3</sup> /h                                  | Size channels           |               | 64 (32/decade)                                                                                                                                                                                         |
| Time resolution             |       | 1 s – 24 h                                                                | Interfaces              |               | USB, Ethernet (LAN), Wi-Fi, 4G (optional via LTE stick)                                                                                                                                                |
| User interface              |       | Touchscreen 800 • 480 Pixel, 5" (12,7 cm)                                 | Protocols               |               | UDP, ASCII, Modbus                                                                                                                                                                                     |
| Data logger storage         |       | 10 GB                                                                     | Software                |               | PDAnalyze                                                                                                                                                                                              |
| Data acquisition            |       | Digital, 22 MHz processor, 256 raw data channels                          | Light source            |               | Long term stable LED                                                                                                                                                                                   |
| Housing                     |       | Polymer housing with weather protection and tripod/wall/pole mount option | Operating system        |               | Windows 10 IoT Enterprise                                                                                                                                                                              |
| Power supply                |       | 115 – 230 V, 50/60 Hz                                                     | Power consumption       |               | Normal operation: 15 W, max. 60 W                                                                                                                                                                      |

additional parameter on our website ...