

ENVI-CPC 100



The ENVI-CPC 100 is a butanol-based particle counter with high efficiency for monitoring ultrafine particle (UFP) concentrations in the ambient air. The Model 100 is designed for typical concentrations of up to 10^5 particles/cm³. It is part of our modular nanoparticle measurement system. It can be combined with different systems for measuring the size distribution and concentration of UFP. The patented evaporator and condensation module is maintenance-free. This allows continuous operating times of up to one year without maintenance and cleaning.

The system meets the requirements of the current standard EN 16976:2024 (Harmonized measurement of number concentrations using CPC) in all areas. It can be operated directly with a NAFION[®] based sampling system if desired. The pumps required for this are already integrated.

BENEFITS

- The unique, patented way of providing the working fluid for unattended operation for months
- Intuitive user interface with sophisticated software for data evaluation
- Limitless, integrated network connectivity that supports remote operation and data storage on the internet
- Powerful software package
- Low maintenance

APPLICATIONS

- Aerosol Research
- Environmental measurements
- Environmental monitoring measurement networks
- Workplace safety and occupational exposure studies
- Traffic emission monitoring
- Health studies
- Mobile aerosol studies

FEATURES

- Expandable to U-SMPS spectrometer
- Automatic measurement data storage
- Measurement of the particle size distribution of condensed particles for quality assurance
- Integrated pump
- External butanol reservoir with low-level alarm (1 L standard, other sizes available upon request)

DATASHEET

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| Measuring principle | Condensation of ultrafine particles with optical measurement of concentrations |
| Measurement range (number C_N) | 10^5 particles/cm ³ (single count mode) |
| Measurement range (size) | Approx. 5 μ m |
| Volume flow | 0.9 l/min +/- 2% (optional 0.5 l/min additional) (pressure loss isotherme capillary) |
| Time resolution | 1s - 60s |
| Interfaces | USB, Ethernet (LAN), weather station/butanol level sensor, RS-232, T/rH sensor |
| User interface | Touchscreen, 800 • 480 pixel, 7" (17.78 cm) |
| Protocols | UDP, UIDEF, B/H, MODBUS TCP/RTU, ASCII TCP/Seriell |
| Data logger storage | Approx. 6 GB data storage (2 years) |
| Software | PDAnalyze |
| Detection efficiency (at low particle size) | D50 = 10 ± 1 nm (others on request); D90 < 20 nm, D95 @ 40 nm \pm 10 nm, D90 @ 1000 nm \pm 100 nm |
| Data acquisition | Digital, 20 MHz processor, 256 raw data channels |
| Light source | Long term stable LED |
| Housing | Tabletop device |
| Power supply | 90 – 264 V, 50/60 Hz |
| Power consumption | Average power consumption: 40 W |
| Installation conditions | +10 – +30 °C (others on request) |
| Accuracy | 5% (single count mode), 10% (nephelometric mode) |
| Response time | $t_{90} < 3$ s |
| Working fluid | n-Butanol (>99.5%) |
| Dimensions | 330 • 380 • 240 mm (H • W • D) |
| Weight | Approx. 10 kg |
| Resolution | Min. 1s |
| Data Management | Prepared for connection to the Palas Cloud MyAtmosphere ("MyAtmosphere-ready"); Internet access and separate registration required. The MyAtmosphere terms of use apply. |

NORMS AND CERTIFICATES

EN 16976:2024-09, ISO 27891:2015