ENVI-CPC 50

The ENVI-CPC 50 is a butanol-based particle counter with high efficiency, especially for the smallest nanoparticles. It can monitor concentrations of ultrafine particles (UFP) in outdoor air. The Model 50 is designed for concentrations up to 10^4 particles/cm^3. This makes it ideal for long-term measurement- alone or as part of an overall system for measuring the size distribution and concentration of UFP. The patented evaporator and condensation module is maintenance-free. The system meets the requirements of the 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 of months
- Intuitive user interface with sophisticated software for data evaluation
- Limitless integrated network connectivity that supports remote operation and data storage in 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
- Integrated computer with 7″ touchscreen

DATASHEET

Measuring principle	Condensation of ultrafine particles, optical sensor for determining the number concentration and size distribution of the condensed particles
Measurement range (number C_N)	10^4 particles/cm^3 (single count mode), $10^4 – 10^7$ particles/cm^3 (nephelometric mode)
Measurement range (size)	Approx. 5μm
Volume flow	0.9 l/min +/- 2% (optional 0.5 l/min additional) (pressure loss isotheme 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, UIDEP, B/H, MODBUS TCP/RTU, ASCII TCP/Seriell
Data logger storage	Approx. 6 GB data storage (2 years)
Detection efficiency (at low particle size)	D50 = 10 ± 1 nm (others on request); D90 < 20 nm, D95 @ 40 nm ± 10 nm, D90 @ 1000 nm ± 100 nm
Data acquisition	Digital, 20 MHz processor, 256 raw data channels
Light source	Long term stable LED
Housing	Tabletop device
Power supply	115 – 230 V, 50/60 Hz
Power consumption	Average power consumption: 40 W
Installation conditions	Operating temperature: +10 – +30 °C, operating humidity: < 95% (non-condensing)
Accuracy	+/- 2% (according to calibration certificate)
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”)

NORMS AND CERTIFICATES

EN 16976:2024-09, ISO 27891:2015