



ENVI-CPC 100

Nanoparticle counter for ambient air monitoring with Nafion® aerosol dryer and high volume flow for up to $70 \cdot 10^3$ particles/cm³ (single count mode)

Description

The Palas® condensation particle counter ENVI-CPC 100 is a CPC for environmental ambient air monitoring. Model 100 is created for lower concentrations.

The ENVI-CPC 100 is equipped with an isothermal Nafion® aerosol dryer that has no consumables and can be used for months without maintenance. The humidity of the aerosol at the inlet is measured and controlled. Additionally, the ENVI-CPC 100 has a second pump for the working fluid in order to suck it out of a large butanol reservoir. Due to those features it can operate for months without refilling the fluid reservoir.

cut-off diameter is, as requested for ambient air monitoring CPCs, at 7 nm (see fig. 1). Another advantage is the high aerosol flow rate of 0.9 l/min which reduces diffusion losses to a minimum. The ENVI-CPC 100 can be equipped with a powerful meteorological sensor that monitors ambient air temperature, pressure, humidity, wind speed, wind direction and precipitation type and intensity. An IP65 protective outdoor housing is available.

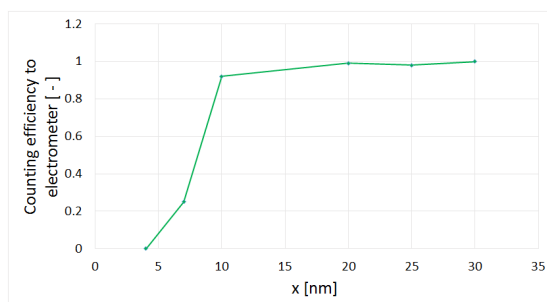


Fig. 1: Counting efficiency curve of the ENVI-CPC measured at the Leibniz Institute for Tropospheric Research

The control of the volume flow is enabled by an internal flow sensor with accessed long-life membrane pump. Contrary to a control with critical nozzle a contamination of the system does not lead to an drop of the volume flow. This is important especially for long-time measurements in ambient air. Additionally, the volume flow can be calibrated afterwards by the user.

As user interface the ENVI-CPC 100 has a 7" touch display. For remote and network applications the ENVI-CPC 100 supports a standardised interface with different protocol choices, e.g. Modbus, Bayern-Hessen protocol and features like remote access and data storage in the internet or in an internal network.



Benefits

- The unique, patented way of providing the working fluid for unattended operation of months
- Integrated computer with 7" touch screen
- Intuitive user interface with sophisticated software for data evaluation
- Integrated data logger
- Limitless integrated network connectivity that supports remote operation and data storage in the internet
- Powerful software package

Datasheet

<i>Parameter</i>	<i>Description</i>
Interfaces	USB, LAN, RS-232/485
Measurement range (size)	4 - 5000 nm
Measurement range (number C_N)	1 • 10 ⁵ particles/cm ³ (single count mode), 1 • 10 ⁵ - 10 ⁹ particles/cm ³ (nephelometric mode)
Volume flow	0.9 l/min
Data acquisition	Digital, 20 MHz processor, 256 raw data channels
Light source	LED - high stability, long life
User interface	Touchscreen, 800 • 480 Pixel, 7"
Power supply	115 - 230 V, 50 - 60 Hz
Dimensions	33 • 38 • 24 cm (H • W • D)
Weight	Approx. 10 kg
Accuracy	5 % (single count mode); 10 % (nephelometric mode)
Response time	t ₉₀ = 3 s
Operation liquid	Butanol
Installation conditions	+10 - +30 °C (others on demand)



Applications

- Aerosol research
- Environmental measurements
- Environmental monitoring networks
- Workplace safety and exposure studies
- Traffic emission monitoring
- Health Studies
- Mobile aerosol studies

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