



Nanoparticle counter for ambient air monitoring with integrated Nafion<sup>®</sup> aerosol dryer (optional) for up to  $10^5$  particles/cm<sup>3</sup> (single count mode)

## Description

The Palas<sup>®</sup> 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 can be equipped with an isothermal Nafion<sup>®</sup> 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.

The 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. A protective outdoor housing is available.

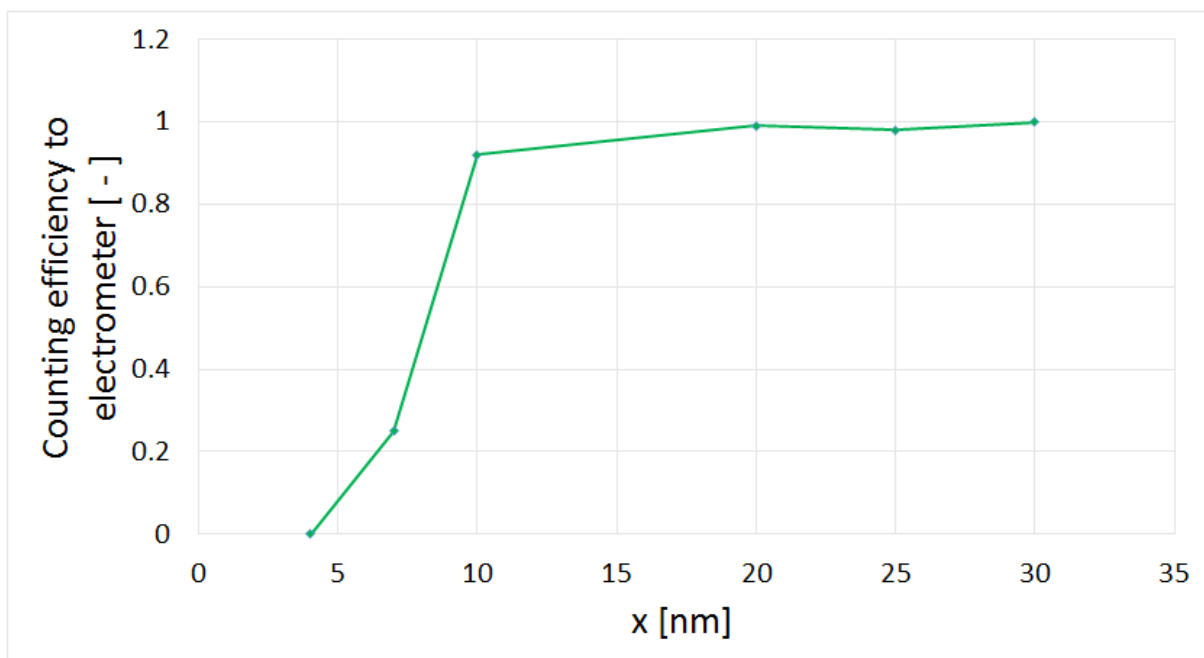


Fig. 1: Counting efficiency curve of the ENVI-CPC measured at the Leibniz Institute for Tropospheric Research

# ENVI-CPC 100



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.

# ENVI-CPC 100



## 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

Parameter	Description
<b>Interfaces</b>	USB, Ethernet (LAN), RS-232/485
<b>Measurement range (size)</b>	4 – 5,000 nm
<b>Measurement range (number <math>C_N</math>)</b>	$1 \cdot 10^5$ particles/cm <sup>3</sup> (single count mode), $1 \cdot 10^5 - 10^7$ particles/cm <sup>3</sup> (nephelometric mode)
<b>Volume flow</b>	0.9 l/min
<b>Data acquisition</b>	Digital, 20 MHz processor, 256 raw data channels
<b>Light source</b>	LED: High stability, long-lasting
<b>User interface</b>	Touchscreen, 800 • 480 pixel, 7" (17.78 cm)
<b>Power supply</b>	115 – 230 V, 50/60 Hz
<b>Dimensions</b>	33 • 38 • 24 cm (H • W • D)
<b>Weight</b>	Approx. 10 kg
<b>Accuracy</b>	5% (single count mode), 10% (nephelometric mode)
<b>Response time</b>	$t_{90} = 3$ s
<b>Operation liquid</b>	Butanol
<b>Installation conditions</b>	+10 – +30 °C (others on demand)

## Applications

- Aerosolforschung
- Umweltmessungen
- Umweltüberwachungsmessnetze
- Arbeitsplatzsicherheit und Studien zur Belastung am Arbeitsplatz
- Verkehrsemissionsüberwachung
- Gesundheitsstudien
- Mobile Studien zu Aerosolen

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