

ENVI-CPC 100 / 200

Environmental Condensation Particle Counter

Nanoparticle counter for ambient air measurements with Nafion® aerosol dryer and stand-alone applications with unattended operation of months



The Palas® **condensation particle counter ENVI-CPC** is a CPC for environmental ambient air monitoring available in two models, each of them being optimised for a different concentration range. Model 100 is created for lower concentrations, whereas model 200 is appropriate for high concentrations and offers single particle counting up to 2,000,000 particles/cm³. The latter one can be used for ambient air monitoring without a dilution system.

The ENVI-CPC 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, it 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. Another advantage is the high aerosol flow rate of 0.9 l/min which reduces diffusion losses to a minimum. The ENVI-CPC 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.

As user interface the ENVI-CPC has a 7" touch display. For remote and network applications the ENVI-CPC supports a standardized 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.

The ENVI-CPC can be easily upgraded to a U-SMPS system or U-Range system (including the Type-approved and EN-certified fine dust monitor Fidas® 200) for realtime monitoring of particle concentration and size distribution from 7 nm to 40 µm with a high resolution of up to 64 channels per decade!

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Particular advantages:

- The unique, patented way of providing the working fluid for unattended operation of months
- Depending on the sensor used (exchangeable by the user), the ENVI-CPC counts up to 2,000,000 particles/cm³ in count mode
- Ambient air monitoring without dilution system
- Integrated computer with 7" touch screen
- Intuitive user interface with sophisticated software for data evaluation, powerful software package
- Integrated data logger
- Limitless integrated network connectivity that supports remote operation and data storage in the internet
- Aerosol dryer without consumables

Perfectly suited for:

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

Technical parameters:

- Particle size range: dp = 7 nm – 10,000 nm
- Concentration range:

ENVI-CPC 100	C _{Nmax} ≤ 70,000 1/cm ³ (single counting)
	C _{Nmax} < 10 ⁷ 1/cm ³ (photometric mode)
ENVI-CPC 200	C _{Nmax} ≤ 2,000,000 1/cm ³ (single counting)
	C _{Nmax} < 10 ⁷ 1/cm ³ (photometric mode)
- Concentration accuracy: 5 % (single counting)
 10 % (photometric mode)
- Response time: t₉₀ = 3 s
- Working fluid: Butanol
- Aerosol flow rate: 0.9 l/min
- Digital single signal detection: 20 MHz processor, 256 raw data channels
- Light source: High stability, long life LED
- Operation terminal: Touch screen 800 x 480 pixels
 1.6 GHz Intel Atom™ Processor
 2 GB Compact Flash
- Interfaces: USB, LAN, RS-232/485
- Power supply: 115/230 V; 50/60 Hz
- Dimensions (HxWxD): 33 x 38 x 24 cm (13 x 15 x 9.5 in)
- Weight: 10 kg (22 lbs)

Accessories:

- Transportation case
- Replacement reservoir with different volume for working fluid
- Outdoor housing IP65
- Sigma-2 sampling head

Palas® is continuously setting standards in aerosol technology with more than 50 patents filed since 1983. Our innovations result in products of superior quality and long durability, which lead to unique technical and economic advantages for our customers.

On this account, Palas® could established itself as a world-wide market leader in aerosol generation, aerosol dilution and aerosol particle measurement.