MOBILE ENVIRONMENTAL ULTRAFINE PARTICLE COUNTER EDM 465

The EDM 465 combines the reliable technology of our butanol condensation particle counters with easy handling and flexible application for environmental monitoring due to a compact, robust and mobile weather housing.

The EDM 465 is applicable for short and long-term continuous monitoring of ultrafine particles and enables a real-time data analysis of nanoparticles and meteorological measurement data.

This configuration places the EDM 465 in the leading position of the mobile ultrafine particle monitoring. The EDM 465 is a fit for purpose, state-of-the-art system capable of performing accurate and high-resolution measurements.

FEATURES

- real-time monitoring of ultrafine particles according to CEN TS 16976:2016
- fully automatic 24/7 monitoring system
- low maintenance, 30 days unattended operation, remote access
- energy-efficient sampling with isothermal drying system
- high precision at low and high concentrations
- excellent counting statistics and reproducibility
- low diffusion losses
- versatile data acquisition and communication (data logger with GSM via internet)
- self-test of all optical and pneumatic components for high quality standards
- rinsing air for protecting laser and detector in optical cell
- meteorological sensors
- instrument parameters secured against data loss

APPLICATIONS

- mobile monitoring of ultrafine particles
- traffic emission monitoring
- source identification
- epidemiological health studies
- public site and urban monitoring

CPC | **CEN/TS 16976** | **24/7** | **GPS** | **real - time**

EARPRO EARTH PROTECTION

TECHNICAL DATA

SPECIFICATIONS

measurement principle	condensation particle counter
working fluid	n-butanol (n-butyl alcohol)
particle size range	4 nm to 1 µm (pre-impactor)
detection efficiency	D_{50} = 7 nm (verified with silver particles), D_{90} < 14 nm
max concentration single count mode	150 000 p/cm^3
max concentration photometric mode	10^7 p/cm^3
reproducibility	> 95% for single particle count mode
response time	t_{rise}<5 s, t_{fall}< 5 s

FUNCTION

sampling and conditioning	1 m sampling pipe with sampling head, isothermal humidity extraction via Nafion membrane, sensor-controlled
diffusion losses	< 30% for smallest relevant particle size of 7 nm
weather housing	stainless steel, powder-coated, thermally isolated, temperature-controlled
climate sensors	wind speed and direction, precipitation, pressure, temperature relative humidity; GPS positioning
pumps	pulse free carbon vane pumps, flow rate of sample air 0.3 L/min
flow control	critical orifice, temperature-stabilized
total flow rate	1.5 L/min, ≤ 5% difference to the nominal flow rate

HANDLING

operation	data logger and netbook integrated in housing for online data, meteorological sensor and GPS position
interfaces	data logger, USB, GSM with SIM card for mobile network
analog input	1 port (0 – 10 V) for auxiliary sensors
power supply	110 – 220 VAC, 50 – 60 Hz
power consumption	100 - 150 W
temperature range	- 20 to + 40°C (-4 to104°F), RH < 95%,
pressure range	500 – 1100 mbar
dimensions (d x w x h)	housing: 49 x 28 x 65 cm (19.3 x 11 x 25.6 in), total height with sampling pipe and meteorological sensor: 140 cm (55.1 in)
weight	38 kg (83 lbs)