

THE STANDARD FOR MOBILE ULTRAFINE PARTICLE MONITORING



MODEL EDM 465 UFPC

For more than 30 years GRIMM environmental dust monitors (EDM) are successfully used by thousands of reputable organizations. The EDM 465 Ultrafine Particle Counter combines reliable and rapid technology of our butanol condensation particle counters in a compact and mobile weather housing. The allrounder with no limits for all your applications! The EDM 465 is suitable for short or long-term continuous monitoring of ultrafine particles and enables real-time data analysis for nanoparticles and meteorological measurement data.

This configuration sets the EDM 465 Ultrafine Particle Counter into the worldwide leading position of mobile ultrafine particle monitoring for any common application. Especially where particle number concentration only or combined with PM values is of public or scientific concern. The EDM 465 is a "fit for purpose" state-of-the-art system capable of making more accurate and higher resolution measurements than many other monitoring devices on the market.



YOUR BENEFITS

- Real-time monitoring of ultrafine particles, according 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 for low and high concentrations (1 to 10^7 particles/cm³) single count mode up to 150 000 particles/cm³
- Excellent counting statistics and reproducibility
- Low diffusion loss
- Versatile data acquisition and communication (data logger with GSM via internet)
- Self-test for all optical and pneumatic components ensures high quality standards
- Internal rinsing air protects the laser and detector in the optical cell
- Meteorological sensors for wind speed and direction, precipitation, T and RH
- Instrument parameters secured against data loss. On return of mains voltage the instrument automatically continues with measurement.

APPLICATIONS

- Mobile monitoring of ultrafine particles
- Traffic emission monitoring
- Roadside monitoring
- Epidemiological health studies
- Environmental studies of combined PM values and ultrafine particle monitoring
- Public site and urban monitoring
- Source identification



CPC

CEN/TS
16976

24/7

GPS

REAL-TIME

TECHNICAL DATA

SPECIFICATIONS

Particle counter

Measurement principle	Condensation particle counter
Working fluid	n-butanol
Particle size range	4 nm to 1 000 (pre-impactor)
Detection efficiency	$D_{50} = 7$ nm (verified with silver particles), $D_{90} < 14$ nm
Concentration range	1 to 150 000 particles/cm ³ in single particle count mode, up to 10 ⁷ particles/cm ³ in photometric mode
Reproducibility	≤ 5 % for single particle count mode
Response time	$t_{rise} < 5$ s, $t_{fall} < 5$ s

Sampling system

Sampling and conditioning	1 m sampling pipe with sampling head, isotherm humidity extraction via Nafion membrane, sensor controlled
Diffusion loss	< 30 % for smallest relevant particle size of 7 nm

FUNCTION

Weather housing	Stainless steel, powder coated, thermally isolated, temperature controlled
Climate sensors	Wind speed and direction, precipitation, pressure, T and RH
	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
Power supply	110 – 220 VAC, 50 – 60 Hz
Power input	100 – 150 W
Dimensions	Housing: 49 x 28 x 65 cm / 19.3 x 11 x 25.6 inches (L x W x H), total height with sampling pipe and meteorological sensor: 140 cm / 55.1 inches
Weight	38 kg (83 lbs)
Operating conditions	
Temperature range	-20 to +40°C (-4 – 104°F), RH <95%
Pressure range	500 - 1100 hPa

This technical data may be subject to change without notice.
Datasheet_465_EDM_ENG_V2p0.pdf

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