

## EDM 665

# Outdoor Wide Range Aerosol Spectrometer

Nano meets enviro – a combination of mobility particle size spectrometer and optical aerosol spectrometer

- SMPS+C and EDM 180
- Wide range aerosol size spectrometer covering 5 nm ... 32 µm
- Unattended 24/7 operation for up to one month



## Features

- Particle size range from 5 nm ... 32 µm
- Fully automatic 24/7 monitoring system for up to one month of unattended operation
- Sampling with isothermal drying system
- Fully air-conditioned mini container
- Versatile data acquisition and communication (data logger with GSM via internet)
- Meteorological sensors for wind speed and direction, precipitation, barometric pressure, temperature and relative humidity

## Benefits

- Mini format supersite
- Change your research location easily
- Energy-efficient, low maintenance, remote access
- Wide Range Aerosol Spectrometer Software 5478 for real time data presentation
- High precision with CPC and OPC at low and high concentrations
- Excellent counting statistics and reproducibility
- Customization possible
- Sampling pipe available with different lengths and sampling heads

## Technical data

Mobility Particle Size Spectrometer: SMPS+C	
Measurement principle	Electrostatic classification with subsequent detection by condensational growth
Particle size range	<ul style="list-style-type: none"> <li>▪ M-DMA: 5 ... 350 nm</li> <li>▪ L-DMA: 10 ... 1094 nm</li> </ul>
Particle size resolution	<ul style="list-style-type: none"> <li>▪ Stepping mode 45 ... 255 channels</li> <li>▪ Scanning mode 64 channels per decade; logarithmic spacing</li> </ul>
Min. scan time	150 s
Max. particle concentration	Up to 10 <sup>7</sup> particles/cm <sup>3</sup> ; depending on aerosol neutralizer
Working fluid CPC	n-butanol (n-butyl alcohol)
Aerosol sample air flow rate	0.3 l/min CPC, flow control with critical orifice, temperature stabilized
DMA sheath air flow rate	3.0 l/min
Optical Aerosol Spectrometer: EDM 180	
Measurement principle	Light scattering at single particles; detection volume aerodynamically focused, no border zone error
Particle size range	0.25 µm ... 32 µm
Concentration range	1 ... 3 000 000 particles/l
Reproducibility	>97% for single particle count mode
Sample air flow rate	1.2 l/min aerosol spectrometer, ± 3% constant due to self-regulation

Outdoor Wide Range Aerosol Spectrometer: EDM 665	
Sampling and conditioning	Sampling pipe with sampling head, isothermal humidity extraction via Nafion membrane, sensor controlled, without loss of semi-volatile compounds (SVC)
Weather housing	Stainless steel, powder-coated, air-conditioned
Climate sensors	Wind speed and direction, precipitation, pressure, temperature, relative humidity; GPS positioning
Total inlet flow rate	1.5 l/min, ≤ 5% difference to the nominal flow rate
Operation	Data logger and netbook integrated in housing for real time data, meteorological sensor and GPS position
Interfaces	Data logger, USB, GSM with SIM card for mobile network
Power supply	230 VAC, 60 Hz
Power consumption	Max. 950 W (750 W only weather housing with air conditioning)
Temperature range	-20 ... +55 °C (-4 ... 131 °F), RH < 95%
Pressure range	<ul style="list-style-type: none"> <li>▪ SMPS+C: 600 ... 1 100 mbar,</li> <li>▪ EDM 180: 900 ... 1 100 mbar; flow rate adjustable to pressure</li> </ul>
Dimensions (h x w x d)	<ul style="list-style-type: none"> <li>▪ Housing: 107 x 65 x 224 cm (42.1 x 25.6 x 88.2 inch)</li> <li>▪ Total height with meteorological sensor: 270 cm (106.3 inch)</li> </ul>
Weight	250 kg (551 lbs)

## Optional accessories

- 570-1.X-TSP      Sampling pipe with 1.0 or 1.5 m with TSP head  
 570-1.X-Sigma    Sampling pipe with 1.0 or 1.5 m with Sigma 2 head