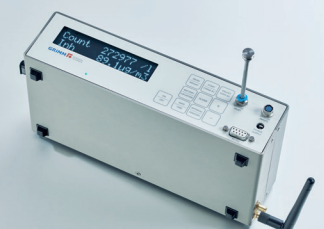


# Indoor Wide Range Aerosol Spectrometer

A combination of mobility particle size spectrometer and optical aerosol spectrometer

- SMPS+C and 11-D
- Wide range aerosol size spectrometer covering 5 nm ... 35  $\mu$ m
- Reliable nanoparticle sizing and counting



## Features

- Unique number of measured parameters
- Number size distributions from 5 nm ... 35 µm
- Reported mass fractions
  - Inhalable, thoracic, respirable, pm10, pm2.5 and pm1
  - TSP, PM<sub>10</sub>, PM<sub>4</sub>, PM<sub>2.5</sub>, PM<sub>1</sub>, PM<sub>Coarse</sub>
- Vienna type Differential Mobility Analyzers (M-DMA and L-DMA)
- n-butanol based CPC 5416
- Portable and battery operated aerosol size spectrometer 11-D
- Excellent counting statistics and reproducibility

## Technical data

Mobility Particle Size Spectrometer: SMPS+C	
Measurement principle	Electrostatic classification with subsequent detection in a condensation particle counter
Particle size range	• M-DMA: 5 ... 350 nm • L-DMA: 10 ... 1094 nm
Particle size resolution	• Stepping mode: 45 ... 255 channels • Scanning mode: 64 channels per decade; logarithmic spacing
Maximum particle concentration	Up to 10 <sup>7</sup> particles/cm <sup>3</sup> depending on aerosol neutralizer
Min. scan time	150 s
Working fluid CPC	n-butanol (n-butyl alcohol)
Response time CPC	t <sub>10</sub> ... t <sub>90</sub> < 3 s
Aerosol sample air flow rate	0.3 l/min
DMA sheath air flow rate	3.0 l/min
Flow control	Critical orifices with stabilized temperature
Connectivity	USB, USB flashdrive, RS-232, analog pulse output, analog input for meteorological sensors
Power requirements	90 ... 264 VAC; 47 ... 63 Hz; wide range power supply 80 ... 130 W
Operating conditions	• Ambient temperature: 10 ... 40 °C (50 ... 104 °F) • Ambient humidity: 0 ... 95 % RH, non-condensing • Absolute pressure range: 500 ... 1 100 mbar
Transport and storage	0 ... +50 °C (32 ... 122 °F), RH < 95%

## Benefits

- Laboratory desktop setup
- Wide Range Aerosol Spectrometer Software 5478 for online data presentation
- Fast and easy change of size ranges with different DMAs
- High precision with CPC and OPC at low and high concentrations
- Compact design allows easy integration in laboratory or mobile setups
- Customization possible

Optical Aerosol Spectrometer: 11-D	
Measurement principle	Light scattering at single particles; detection volume aerodynamically focused, no border zone error
Particle size range	0.253 µm ... 35.15 µm
Concentration range	1 ... 5 300 000 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
Interfaces	RS-232, USB, Ethernet, Bluetooth
Power supply	100 ... 240 VAC, 47 ... 60 Hz, out: 13 VDC
Temperature range	10 ... +35 °C (50 ... 95 °F), RH < 95%
Pressure range	530 ... 1 100 mbar; flow rate automatically adjustable to pressure

