INDOOR WIDE RANGE AEROSOL SPECTROMETER
WRAS SMPS+C & 11-D

The Indoor Wide Range Aerosol Spectrometer combines two technologies for particle counting and classifying: a Scanning Mobility Particle Sizer (SMPS+C) with a butanol condensation particle counter for nanoparticles and the portable optical aerosol spectrometer (11-D) for dust particles.

The system can be used for accurate and high resolution measurements of the entire particle size range from 5 nm to 35 µm in 71 particle size channels.

The system is easy to operate and suitable for all kind of aerosol research.

FEATURES

- real-time monitoring of the entire particle size range
- high precision with CPC and OPC at low and high concentrations
- excellent counting statistics and reproducibility
- low diffusion losses
- self-test of all optical and pneumatic components for high quality standards
- instrument parameters secured against data loss

APPLICATIONS

- monitoring of ultrafine particles and dust
- aerosol science
- workplace monitoring

SMPS+C	11-D	5478 software	5 nm - 35 µm	real - time

TECHNICAL DATA

SPECIFICATIONS

SMPS+C

measurement principle	electrostatic classification with subsequent detection by condensational growth
particle size range	selectable M – DMA (5 – 350 nm) or L – DMA (10 – 1094 nm)
minimum scan time	150 s
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
working fluid	n-butanol (n-butyl alcohol)

optical aerosol spectrometer

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 – 3 000 000 p/L
reproducibility	> 97% for single particle count mode

FUNCTION

sample air flow rate	0.3 L/min CPC, flow control with critical orifice, temperature stabilized 1.2 L/min aerosol spectrometer, ± 3% constant due to self-regulation

HANDLING

operation	Wide Range Aerosol Spectrometer Software 5473 for online data presentation
interfaces	RS-232, USB, Ethernet, Bluetooth
power supply	SMPS+C: 85 – 264 VAC, 47 – 440 Hz, optical aerosol spectrometer: 100 – 240 VAC, 47 – 60 Hz, out: 13 VDC
temperature range	10 to +35°C (50 to 95°F), RH < 95%
pressure range	SMPS+C: 600 – 1100 mbar optical aerosol spectrometer: 530 - 1100 mbar; flow rate automatically adjustable to pressure