

SMPS+C 19"

Scanning Mobility Particle Sizer with
Condensation Particle Counter for 19" rack mounting

- Reliable nanoparticle sizing and counting
- DMA and CPC in one compact instrument
- Vienna type Differential Mobility Analyzers
- Ready for the combination with EDM 180



FEATURES

- Vienna type Differential Mobility Analyzers (DMAs)
 - Two size ranges (M and L-DMA)
 - Integrated high voltage power supply
 - Integrated temperature and pressure sensors
 - Integrated pre-impactor
- n-butanol based CPC
 - $D_{50} = 4.0$ nm
 - Droplet size control
 - Saturator shutter
- Integrated DMA controller
 - 3.0 l/min sheath air flow supply
 - High voltage control for DMA
- Internal sample air and sheath air pumps

BENEFITS

- Suitable for many nanoparticle applications
- All in one solution
 - Ready to use
 - Status control via LEDs for CPC and SMPS functionality
 - 5477 nanoSoftware for Sizers
- Different neutralizer options
- U-DMA option
 - Easy conversion of DMA classification length
- Compact design
 - 19 design for easy integration in measurement racks
 - Ready for the combination with GRIMM EDM 180 for Wide Range Aerosol Spectrometer (WRAS) operation from 5 nm ... 32 μ m

TECHNICAL DATA

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 10^7 particles/cm ³ depending on aerosol neutralizer
Min. scan time	150 s
DMA parameters	$R_i = 26$ mm; $R_o = 40$ mm L = 88 mm (M) or 350 mm (L)
Output HV module	5 ... 10 000 V positive polarity; negative polarity on request
Working fluid CPC	n-butanol (n-butyl alcohol)
Response time CPC	$t_{10} \dots t_{90} < 3$ 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

Handling	
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 ... 1100 mbar
Transport and storage	0 ... +50 °C (32 ... 122 °F), RH <95%
Dimensions	
(h x w x d) with M-DMA	22 x 48 x 41 cm (6.7 x 19 x 16.1 inch)
(h x w x d) with L-DMA	48 x 48 x 41 cm (18.9 x 19 x 16.1 inch)
Weight	
With M-DMA	21.9 kg (48.3 lbs)
With L-DMA	24.1 kg (53.0 lbs)

OPTIONAL ACCESSORIES

- 55-U DMA 571/5428** Universal DMA conversion kit
Long-term measurement butanol and condensate tank unit

