

## 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
  - $D_{50} = 4.0 \text{ nm}$
  - 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  $\mu\text{m}$

## TECHNICAL DATA

<b>Measurement principle</b>	Electrostatic classification with subsequent detection in a condensation particle counter
<b>Particle size range</b>	<ul style="list-style-type: none"> <li>• M-DMA: 5 ... 350 nm</li> <li>• L-DMA: 10 ... 1 094 nm</li> </ul>
<b>Particle size resolution</b>	<ul style="list-style-type: none"> <li>• Stepping mode: 45 ... 255 channels</li> <li>• Scanning mode: 64 channels per decade; logarithmic spacing</li> </ul>
<b>Maximum particle concentration</b>	Up to $10^7$ particles/cm <sup>3</sup> depending on aerosol neutralizer
<b>Min. scan time</b>	150 s
<b>DMA parameters</b>	$R_i = 26 \text{ mm}$ ; $R_o = 40 \text{ mm}$ $L = 88 \text{ mm}$ (M) or 350 mm (L)
<b>Output HV module</b>	5 ... 10 000 V positive polarity; negative polarity on request
<b>Working fluid CPC</b>	n-butanol (n-butyl alcohol)
<b>Response time CPC</b>	$t_{10} \dots t_{90} < 3 \text{ s}$
<b>Aerosol sample air flow rate</b>	0.3 l/min
<b>DMA sheath air flow rate</b>	3.0 l/min
<b>Flow control</b>	Critical orifices with stabilized temperature

<b>Handling</b>	
<b>Connectivity</b>	USB, USB flashdrive, RS-232, analog pulse output, analog input for meteorological sensors
<b>Power requirements</b>	90 ... 264 VAC; 47 ... 63 Hz; wide range power supply 80 ... 130 W
<b>Operating conditions</b>	<ul style="list-style-type: none"> <li>• Ambient temperature: 10 ... 40 °C (50 ... 104 °F)</li> <li>• Ambient humidity: 0 ... 95 % RH, non-condensing</li> <li>• Absolute pressure range: 500 ... 1 100 mbar</li> </ul>
<b>Transport and storage</b>	0 ... +50 °C (32 ... 122 °F), RH < 95 %
<b>Dimensions</b>	
<b>(h x w x d) with M-DMA</b>	22 x 48 x 41 cm (6.7 x 19 x 16.1 inch)
<b>(h x w x d) with L-DMA</b>	48 x 48 x 41 cm (18.9 x 19 x 16.1 inch)
<b>Weight</b>	
<b>With M-DMA</b>	21.9 kg (48.3 lbs)
<b>With L-DMA</b>	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

