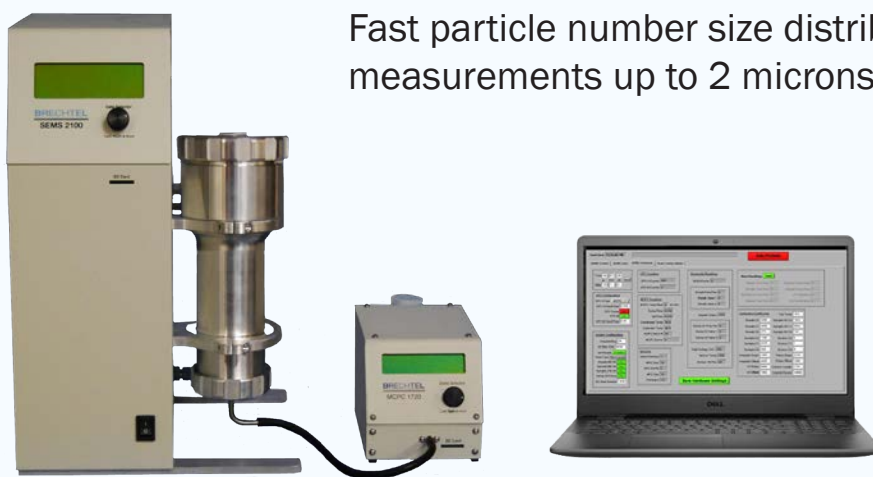


Trusted solutions
for cloud and aerosol measurements

SEMS Scanning Electrical Mobility Spectrometer

Model 2100

Fast particle number size distribution
measurements up to 2 microns



Features:

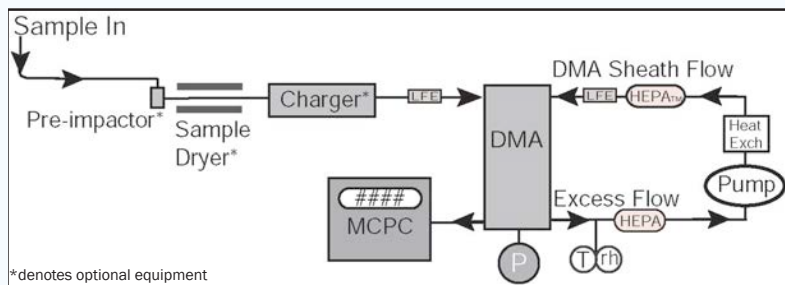
- Broadest available particle size range - select up to 2 micron diameter
- Recirculating DMA sheath flow or external pump versions
- Fast CPC response allows DMA scan times down to a few seconds
- Precise volumetric airflow measurement with laminar flow elements
- Easy to use software displays Number, Area & Volume size distributions
- Fully automated for long-term unattended operation
- Dry sizing package for low relative humidity operation
- High voltage design practically eliminates arcing problems
- Monodisperse particle selection and scanning software with inversion
- Real-time temperature, relative humidity and pressure measurements
- Remotely controllable via serial communication with simple-to-use commands

BRECHTEL

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Hayward, CA 94544
510-732-9723
sales@brechtel.com

Dedicated to furthering scientific discovery

Schematic of SEMS



Applications

- Continuous monitoring of ambient number size distributions
- Laboratory flow-tube reactor studies
- Cloud condensation nucleus studies
- Visibility reduction studies

Specifications

Parameter	Value
Selectable particle diameter size range	0.005-0.3; 0.005-1.0; 0.01-2.0 μm ^{NOTE 1}
Size resolution (set by $Q_{\text{aer}}/Q_{\text{sheath}}$)	Variable (28:1 typical)
Scan time range	5 secs to > 1 hour
Sheath flow range	2.5-12 lpm
Aerosol sample flow range	0.1 to 2.0 lpm
Particle concentration range	1-10 ⁷ /cm ³
Range of high voltage	0-6,000 Volts
Pre-impactor cut size diameter	0.5, 1.0 or 2.0 μm
Communications	Ethernet and RS-232
CPC working fluid	1-Butanol
Operating temperature	15-35 °C
Operating pressure	200-1,000 mb ^{NOTE 2}
Physical size: SEMS Chassis & MCPC External Pumps	20 x 20 x 20 in 12 x 12 x 8 in
Weight: SEMS Chassis & MCPC External Pumps	37 lbs/17 kg 18 lbs/8.2 kg
Power usage: SEMS Chasis & MCPC External Pumps	(85 to 230 VAC) 110 watts 100 watts

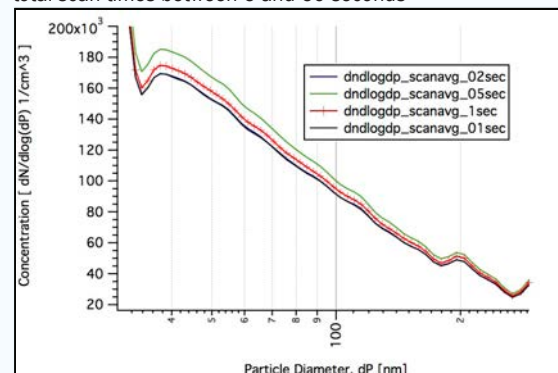
Notes:

1. Depends on model number selected.
2. Pressures less than 850 mb only using Models 2121 or 2122.

Publications:

Xerxes F. Lopez-Yglesias, Ming Chee Yeung, Stephen E. Dey, Fred J. Brechtel and Chak K. Chan (2014), Performance evaluation of the Brechtel Mfg. Humidified Tandem Differential Mobility Analyzer (BMLHMDMA) for studying hygroscopic properties of aerosol particles, Aerosol Science and Technology, July 2014; DOI: 10.1080/02786826.2014.952366

Ambient size distribution measurements with 60 size bins for total scan times between 6 and 60 seconds



How to Order

Part No.	Description
2100	Scanning Electrical Mobility Sizing (SEMS) System with DMA for 0.01 to 1 micron diameter selection
2101	Scanning Electrical Mobility Sizing (SEMS) System with DMA for 0.01 to 2 micron diameter selection
2102	Scanning Electrical Mobility Sizing (SEMS) System with DMA for 0.005 to 0.3 micron diameter selection
2121	Scanning Electrical Mobility Sizing System w/ Short DMA (0.01 to 1 micron), control electronics, external pumps, and MCPC..
2122	Scanning Electrical Mobility Sizing System w/ Long DMA (0.01 to 2 micron), control electronics, external pumps, and MCPC.
8008	Particle Round Jet Impactor (0.5 μm cut size, 0.7 lpm flow)
8009	Particle Round Jet Impactor (1.0 μm cut size, 0.7 lpm flow)
8010	Particle Round Jet Impactor (1.0 μm cut size, 2.0 lpm flow)
9000	Aerosol charge neutralizer (Requires Polonium-210 sources)
9002	Soft X-ray charger
9200	Aerosol Generation System
9202	Automated Aerosol Generation System: includes Model 9200 AGS plus Auto-3 way Valve Chassis
SEMS-DrySize	Sample flow dryer with pump and desiccant
SEMS-OPC-Kit	Optical Particle Counter Integration for any model SEMS (Size range: 0.01-35 microns, includes OPC, sample inlet, & dryer)
RackS	Rackmount kit for 2100 SEMS
SEMS-Kit	Maintenance kit for 2100 SEMS
SEMS-SampXS	Add additional pump and laminar flow element to SEMS for expanded sample & inlet flow range

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Email us at sales@brechtel.com

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*Some products may be shown with optional accessories, which are sold separately. Items shown may not be to scale.