BRECHTEL

Solutions for your research challenges

MCPC Mixing Condensation Particle Counter

Model 1720



*Shown with MCPC-PC, sold separately

Real-time particle total number concentration measurements down to a few nanometers

Features:

- 180 ms ultra-fast time response
- 8.0 nm 50% detection diameter
- · Ideal for rapid DMA scanning
- Independently proven 100% counting efficiency
- On-board storage of real-time data
- Voltage output proportional to concentration
- · Improved butanol handling minimizes flooding
- Tilt tested anti-flooding design
- Extremely compact & lightweight
- Proven continuous long-term operation
- Easy-to-use data logging software

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Schematic of MCPC



Sample flow in (0.36 lpm)

1/8" OD stainless tubing from SEMS monodisperse outlet port (if connected to SEMS)

Specifications

Parameter	Value
Particle diameter size range	7 to 2000 nm
Response time	180 milliseconds
Concentration range	0.01-100,000 particles/cc
Coincidence corrected concentration uncertainty @ 100,000/cc	+/- 8%
Particle sample flow / saturator air flow	0.36 lpm / 0.36 lpm
Butanol use	1.9 ml/hr
Butanol usage per week	320 ml/week
Reservoir capacity	250 ml (1000 ml available)
Ambient temperature range	-20°C to 38°C
Ambient pressure range	200 to 1,000 mb ^{NOTE1}
Ambient relative humidity range	0 to 95% RH non-condensing (a sample flow dryer is recommended for high RH operation)
Size	5.3 x 8 x 5.8 in/13.5 x 20.3 x 14.6 cm
Weight	6 lb/2.7 kg
Power (@110-230 VAC)	<80 watts

Note:

1. Operation at pressures <850mbar requires factory installed saturator flow control

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

Publications:

J. Wang, V. Faye McNeill, D. R. Collins, and R, C. Flagan (2002). <u>Fast Mixing</u> <u>Condensation Nucleus Counter: Application to Rapid Scanning Differential Mobility</u> <u>Analyzer Measurements</u>, Aerosol Sci. & Tech., 36, 678-689.

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

Size Detection Efficiency Graph



Applications

- Continuous monitoring of size distributions using the BMI Model 2100 Scanning Electrical Mobility Sizer (SEMS)
- Ambient concentration measurements
- · Laboratory flow-tube reactor studies
- · Cloud condensation nucleus studies
- · Visibility reduction studies
- · Aerosol health impacts
- · Long-term air quality monitoring
- HTDMA measurements
- · CVI/GCVI inlet cloud residue measurements

How to Order

Part No.	Description
1720	Mixing-Based Condensation Particle Counter (MCPC)
8008	Round Jet Impactor with 0.5 micrometer cut size, 0.6 lpm flow
8009	Round Jet Impactor with 1.0 micrometer cut size, 0.6 Ipm flow
MCPC-P115	External vacuum pump, 115 V
MCPC-P230	External vacuum pump, 230 V
MCPC-PC	Computer with 1720 MCPC control software
MCPC-Dryer	Sample flow drying package for 1720 MCPC
MCPC-BOT	Large 1000 ml butanol fill bottle for 1720 MCPC
MCPC-Kit	Maintenance Kit for 1720 MCPC

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