

Trusted solutions
for cloud and aerosol measurements

MCPC Mixing Condensation Particle Counter

Model 1720

Fast-response particle total number concentration measurements down to a few nanometers



Features:

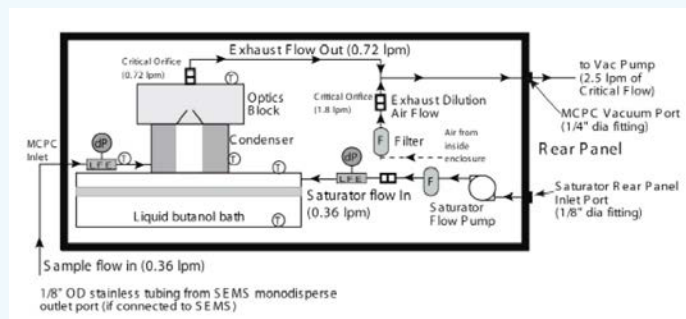
- 180 ms ultra-fast time response
- 7.0 nm 50% detection diameter
- Ideal for rapid DMA scanning
- Independently proven 100% counting efficiency
- 5Hz and 1Hz output data frequencies
- On-board data storage
- Voltage output proportional to concentration
- Tilt tested anti-flooding design
- Extremely compact & lightweight
- Proven continuous long-term operation
- Easy-to-use data logging software

BRECHTEL

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Dedicated to furthering scientific discovery

Schematic of MCPC



Applications

- Continuous monitoring of size distributions using the BMI Model 2100 Scanning Electrical Mobility Sizer (SEMS) or BMI Model 9404 mSEMS
- Ambient concentration measurements
- UAV, ballon, kite and other mobile platform measurements
- Laboratory flow-tube reactor studies
- Cloud condensation nucleus studies
- Visibility reduction studies
- Aerosol health impacts
- Long-term air quality monitoring
- Turbulent flux measurements
- HTDMA measurements
- CVI/GCVI inlet cloud residue measurements

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 SPN accessory

Publications:

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

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 (BMI HTDMA) for studying hygroscopic properties of aerosol particles*, Aerosol Science and Technology, July 2014; DOI: 10.1080/02786826.2014.952366.

How to Order

Part No.	Description
1720	Mixing-Based Condensation Particle Counter (MCPC)
8008	Particle Round Jet Impactor (0.5 micrometer cut size, 0.6 lpm flow)
8009	Particle Round Jet Impactor (1.0 micrometer cut size, 0.6 lpm flow)
8010	Particle Round Jet Impactor (1.0 µm cut size, 2.0 lpm flow)
8011	Particle Round Jet Impactor (2.0 µm cut size, 2.0 lpm flow)
MCPC-P115	External vacuum pump, 115 V
MCPC-P230	External vacuum pump, 230 V
MCPC-PC	Computer with 1720 MCPC control software
ACC-Dryer	Sample flow dryer
MCPC-BOT	Large 1000 ml butanol fill bottle for 1720 MCPC
MCPC-Kit	Maintenance Kit for 1720 MCPC
SPN	Low pressure saturator pump option to run MCPC at low pressure



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