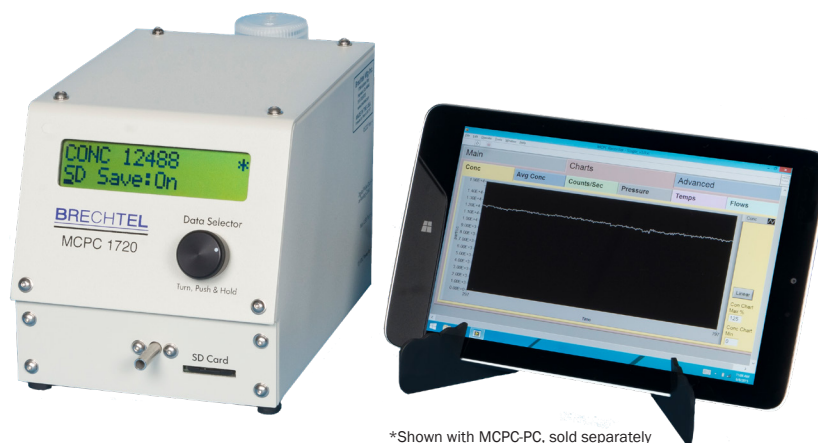


# BRECHTEL

**Solutions for your  
research challenges**

## MCPC Mixing Condensation Particle Counter Model 1720



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

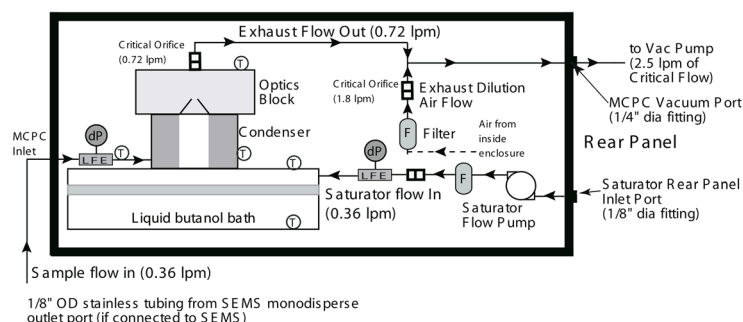
### Features:

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

**[www.brechtel.com](http://www.brechtel.com)  
[sales@brechtel.com](mailto:sales@brechtel.com)**

# Providing Aerosol Measurement Solutions

## Schematic of MCPC



## 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 <sup>NOTE1</sup>  |
| 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/<br>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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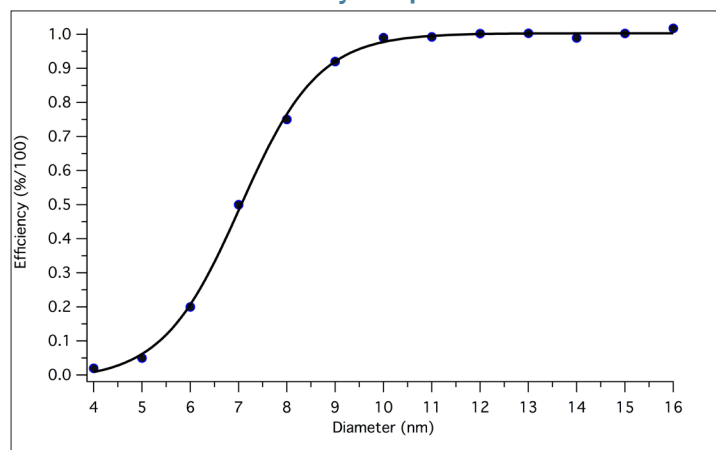
\*Some products may be shown with optional accessories, which are sold separately. Items shown may not be to scale.

### Publications:

J. Wang, V. Faye McNeill, D. R. Collins, and R. C. Flagan (2002). 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.

## 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      | 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-Kit  | Maintenance Kit for 1720 MCPC                                       |
| SPN       | Low pressure saturator pump option to run MCPC at low pressure      |