

## BMI: Mixing Condensation Particle Counter - MCPC Model 1700

*BMI's MCPC offers ultra-fast time response with a 50% detection diameter of 5.5 nm. Unlike any other CPC, the MCPC grows particles rapidly through the turbulent mixing of particle and butanol-saturated flows.*

### Benefits:

Generally, scanning size distribution measurements suffer from the slow response times of available particle counters. Our MCPC's fast response increases the time resolution of size distribution measurements by more than a factor of 4.

MCPC Model 1700



### Key Features:

- Ultra-fast response - 180 ms
- Detects particles as small as 5nm
- Extremely compact & lightweight
- Low butanol fluid consumption
- Proven against numerous particle counting standards with accuracy of  $\pm 3\%$  ( $3\sigma$ )
- Active butanol recovery
- Anti-spill design
- Tilt tested to 12 degrees
- Field proven operation including on-board an Unmanned Aerial Vehicle over the Arctic

# BMI: Mixing Condensation Particle Counter (MCPC)

## Technical Specifications:

**Particle Size Range:** 5 to 3000 nm diameter

**Response Time:** 180 milliseconds

## Operating Temperatures:

Saturator: 45°C

Condenser: 20°C

Optics Block: 30°C

## Concentration Limits:

Minimum: 0.001/cc (<10 particles/hr)

Coincidence Error @ 100,000/cc: 35%

Maximum: 180,000/cc

## Flow Rates:

Particle Sample: 0.36 lpm

Saturator Filtered Air: 0.36 lpm

Total Exhaust Air with 1.3 lpm vent bypass: 2 lpm

## Fluid:

Working Fluid: Reagent-grade n-butyl alcohol

Working Fluid Usage: 1.5 ml/hour

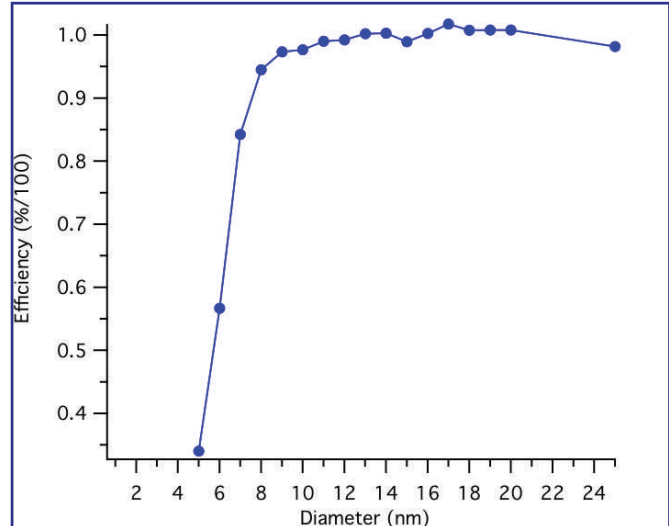
Butanol Usage: 250 ml (1 week continuous operation)

Reservoir Capacity: 250 ml

## Data Output:

Serial Communication: RS232

Individual Particle Counting: Digital Pulse 0-5V



Size dependent detection efficiency, determined using an electrometer

## Operation:

Ambient Temperature Range: 10°C to 35°C

Ambient Humidity Range: 0 to 90% RH

Power:

100/120/220/240 VAC

50/60 Hz, 40 Watts

Warm Up Time: 5 minutes at 20°C ambient

Operating Pressure (absolute): 0.5 to 1.0 atm

Operating Pressure (gauge): 0.1 atm

Angular tilt (tested): 11-12 degrees

## Size:

Weight: 2.95 Kg (6.5 lb)

Dimensions: 20.32 x 14.61 x 13.46 cm

(8 x 5.75 x 5.3 inches)

## Applications Include:

- Scanning Electrical Mobility Particle Size Distribution Measurements
  - Humidified Tandem DMA Measurements
  - Ambient Concentration Monitoring



For more information on MCPC's, please visit our website at [www.brechtel.com/aerosol.html](http://www.brechtel.com/aerosol.html) or contact our sales department by email at [sales@brechtel.com](mailto:sales@brechtel.com) or 510-732-9723