

# BRECHTEL

**Solutions for your  
research challenges**

## CVI Aircraft-based Counterflow Virtual Impactor Inlet

**Model 1204**



Explore aerosol-cloud interactions in cloud, right where the action happens.

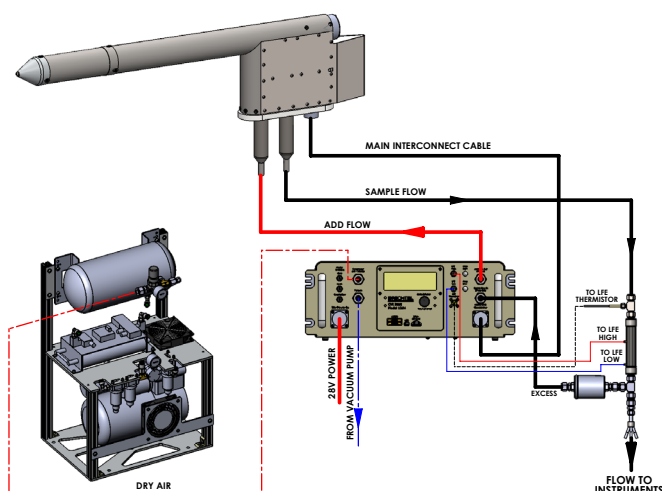
### **Features:**

- Fully automated hands-off operation
- Controllable droplet cut size (7 to 15  $\mu\text{m}$ )
- Wind tunnel tested, field validated and peer-reviewed
- Easy to remove tip for cleaning and replacement
- Custom mounting solutions available
- 15 lpm of instrument sample flow
- Laminar flow element measures sample flow for automatic adjustment to changing instrument flows
- Counter flow rate adjustable between 1 and 10 lpm to vary droplet cut size in real-time
- Easy to use control software
- Heated Add Flow to evaporate cloud droplets
- Anti-icing system

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# Providing Aerosol Measurement Solutions

## Schematic of the CVI Inlet System



## Specifications

Parameter	Value
Droplet diameter cut size range	7-15 $\mu\text{m}$
Add flow rate range to tip	16-25 lpm
Add flow temperature range	20-45 $^{\circ}\text{C}$
Range of counterflow air flow rate	1-10 lpm
Constant air sample flow rate	15 lpm
Total air sample flow available to instruments	15 lpm
Compressor, vacuum pump (max)	990 watts @ 230 VAC
Anti-icing/flow heater power (max))	917 watts @ 28 VDC
Operating temperature range	-50-35 $^{\circ}\text{C}$
Operating pressure range	200-1,000 mb (abs)
Rack mountable electronics chassis size	17 x 7 x 12 in/43.2 x 17.8 x 30.5 cm
Electronics chassis weight	20 lb/9 kg
Total system weight	100 lb/45.4 kg

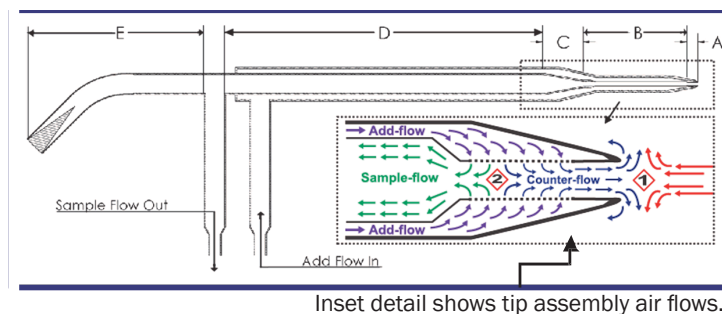
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\*Some products may be shown with optional accessories, which are sold separately. Items shown may not be to scale.

### Publication:

T. Shingler, S. Dey, A. Sorooshian, F. J. Brechtel, Z. Wang, A. Metcalf, M. Coggon, J. Mulmenstadt, L. M. Russell, H. H. Jonsson, and J. H. Seinfeld (2012). Characterisation and airborne deployment of a new counterflow virtual impactor inlet, Atmos. Measurement Techniques, 5, 1259-1269, 2012.

## Schematic of CVI inlet probe



## Applications

- Aircraft-based CCN measurements
- Weather modification studies
- Cloud condensation nucleus studies
- Cloud microphysics & radiation studies
- Pollution impacts on clouds
- Visibility impacts of fogs
- CCN & precipitation feedbacks
- Global climate model CCN datasets

## How to Order

Part No.	Description
1204	Counterflow Virtual Impactor (CVI) Sampling Inlet System
CVI-GND	Ground operation kit for 1204 CVI Ground
CVI-Tip	Removable tip assembly for 1204 CVI
CVI-Kit	Maintenance Kit for 1204 CVI