

# Trusted solutions for cloud and aerosol measurements

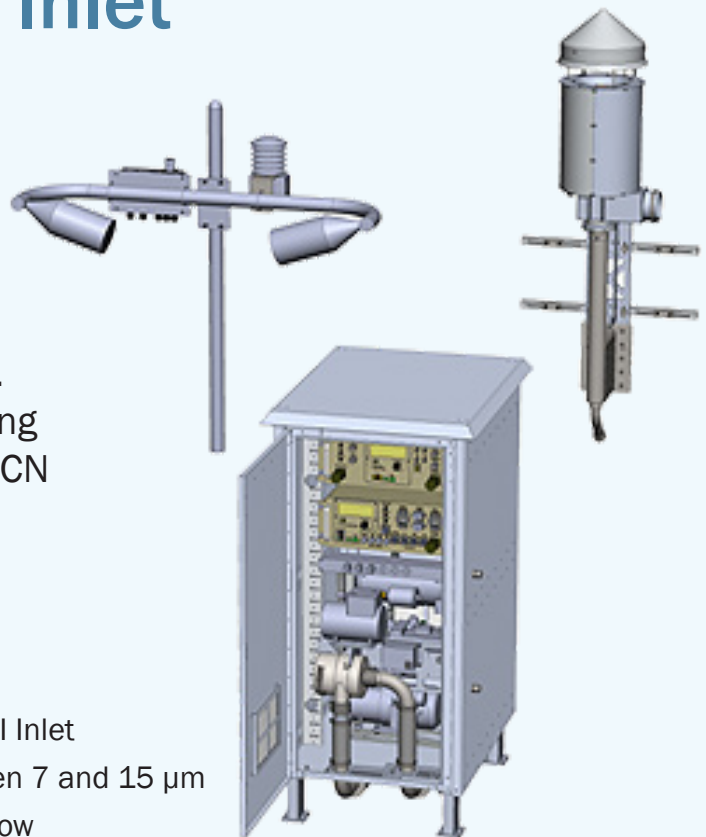
## GCVI Ground-based Counterflow Virtual Impactor Inlet

### Model 1205

Explore aerosol-cloud interactions with the ease of ground operation. The GCVI is the ideal tool for probing the detailed properties of actual CCN within real clouds.

#### Features:

- Peer-reviewed & characterized CVI Inlet
- Droplet cut size diameters between 7 and 15  $\mu\text{m}$
- 15 lpm total instrument sample flow
- Fully automated for long-term operation
- Weather-proof, rugged design
- Automatic power on/off with cloud arrival/departure
- Wind tunnel lid opens & closes automatically
- Integrated rain/snow sensor
- Tower mountable
- Integrated anti-icing systems
- Removable and easily cleaned CVI tip assembly

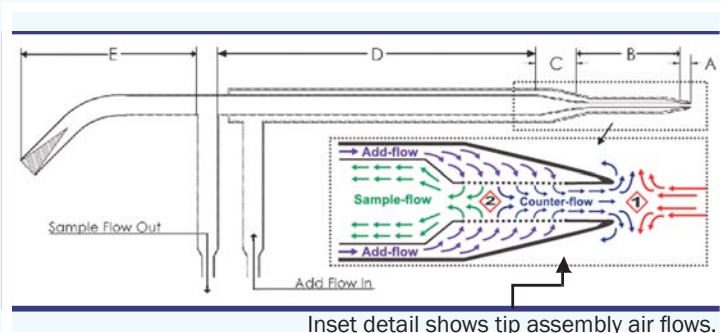


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# Dedicated to furthering scientific discovery

## Schematic of CVI inlet used in the GCVI



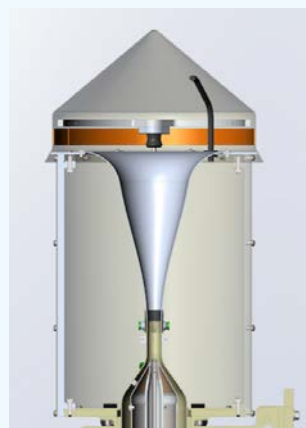
## Specifications

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 °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 and blower power (max)	2000 watts @ 230 VAC
Anti-icing power (max, provided by GCVI)	1160 watts @ 28 VDC
Other power (external laptop)	50 watts @ 115 VAC
Weather-proof enclosure size	25"W x 50"H x 34"D
Weather-proof electronics enclosure weight	220 lb/99.8 kg
Total system weight	290 lb/131.5 kg
Wind tunnel inlet height (tower mounted)	2 to 10 meters AGL
Wind tunnel flow rate	750-1,500 lpm
Wind tunnel throat velocity range	50-100 m/sec
System footprint size	2x2 meters
Operating temperature range	-20-35 °C
Operating pressure range	500-1,000 mb (abs)

### Publications:

Linn Karlsson, Radovan Krejci, Makoto Koike, Kerstin Ebell, and Paul Zieger. (2021). A long-term study of cloud residuals from low-level Arctic clouds, *Atmos. Chem. Physics* 21(11): 8933-8959, doi:10.5194/acp-21-8933-2021.

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.



Cross-section of wind tunnel lid, horn and CVI tip assemblies.



Photo of CVI inlet with wind tunnel assembly installed.

## Applications

- Mountain station cloud sampling sites
- Aerosol-cloud interactions
- Cloud condensation nucleus studies
- Cloud microphysics & radiation studies
- Pollution impacts on clouds
- Visibility impacts of fogs
- CCN & precipitation feedbacks
- Global climate model CCN datasets
- Weather modification studies

## How to Order

Part No.	Description
1205 - 115V or 1205 - 230V	Ground-based CVI Sampling Inlet System with Model 1204 CVI inlet system
Options:	
GCVI-I	Automated 3-way valve chassis
GCVI-Kit	Maintenance Kit for 1205 GCVI



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Email us at [sales@brechtel.com](mailto:sales@brechtel.com)

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