

BRECHTEL

**Solutions for your
research challenges**

HTDMA Humidified Tandem Differential Mobility Analyzer Model 3100



Measure the water uptake by aerosols as large as 2 micron diameter up to 93% RH

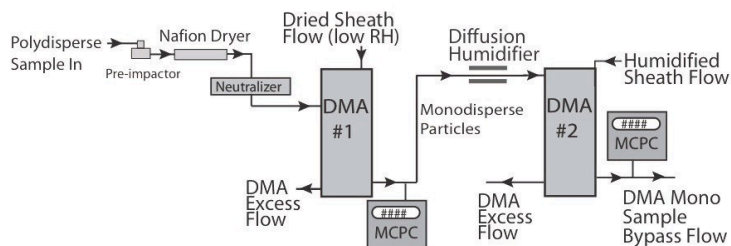
Features:

- Fully automated and field tested
- Characterized in peer-reviewed literature
- Easy-to-use experiment scheduler software
- Large particle performance: select up to 2 μm
- Rapid RH and particle size changes
- Fast response barrier-free diffusion-based humidifier
- Easily integrated with chemical composition devices
- Integrated aerosol generation system (optional)
- Integrated thermodenuder (optional)
- Integrated pre-humidifier (optional)
- Rack mount kit (optional)

**www.brechtel.com
sales@brechtel.com**

Providing Aerosol Measurement Solutions

Schematic for HTDMA



Specifications

Parameter	Value
DMA polydisperse flow rate	0.2-2.0 lpm
DMA sheath flow rate	2.5-10.0 lpm
Relative humidity range	2-93 % RH
RH control stability at 80% RH (1 σ)	0.5% RH
Time to reset RH set point by 10%	<180 seconds
Time to reach 93% RH from 2%	<300 seconds
Time to reach 80% RH from 2%	<300 seconds
DMA particle diameter sizing range	0.01-2.0 μ m
CPC particle diameter size range	0.005-2.0 μ m
CPC counting range	0.001-10 ⁵ cm ⁻³
Operating pressure range	200-1000 mb ^{NOTE1}
Operating temperature range	15-35 °C
SEMS footprint size	18.9 x 13 in/48x33 cm
HSEMS footprint size	15 x 22.85 in/38x58 cm
Height	25.2 in/64 cm
Total weight	150 lb/68 kg
HTDMA instrument power	240 watts
Pump power required (@230vac)	650 watts
Operating voltage	100-230 VAC

Note 1: Only with SEMS-Exp options

Copyright ©2020 All specifications are subject to change without notice. BMI assumes no responsibility for inaccuracies in this document or for any obligation to update information in this document. BMI reserves the right to change, modify, transfer or otherwise revise this publication without prior notice.

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

Publications:

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.

Ming Chee Yeung, Berto P. Lee, Yong Jie Li and Chak K. Chan (2014), Simultaneous HTDMA and HR-ToF AMS measurements at the HKUST Supersite in Hong Kong in 2011, Journal of Geophysical Research Atmospheres, 119, DOI:10.1002/2013JD021146.

Applications

- Aerosol climate impact studies
- Measurement of hygroscopic growth of rapidly evolving aerosol size distributions
- Cloud condensation nucleus studies
- Visibility reduction studies
- Aerosol health impacts
- Long-term climate and air quality monitoring
- Process monitoring
- Tobacco smoke inhalation studies
- Volatility studies

How to Order

Part No.	Description
3100	Humidified Tandem Differential Mobility Analyzer (HTDMA) System
3110	Aerosol pre-humidifier (0.1 to 2 lpm flow)
3105	Thermodenuder
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)
9000	Aerosol charge neutralizer (Requires Polonium-210 sources)
9001	Aerosol non-radioactive charge neutralizer (available 2021)
9002	Aerosol Soft X-ray Charger
9200	Aerosol Generation System
9202	Automated Aerosol Generation System: includes Model 9200 AGS plus Auto-3 way Valve Chassis
HT-DAIR115	External dry air supply, 115V
HT-DAIR230	External dry air supply, 230V
HT-P115	External vacuum pump, 115V
HT-P230	External vacuum pump, 230V
HT-PPSoft	Post-processing software to allow off-line data inversion
RackH	Rackmount kit for 3100 HTDMA
HTDMA-Kit	Maintenance Kit for 3100 HTDMA