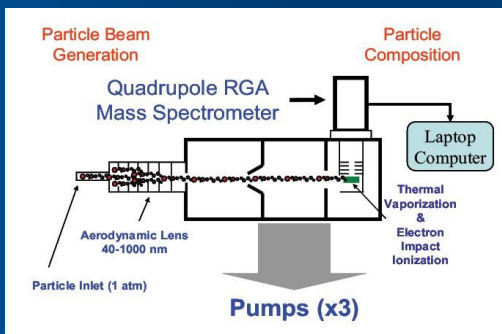




## ACSM

### Aerosol Chemical Speciation Monitor

Measure real-time, non-refractory aerosol particle mass and chemical composition.



#### APPLICATIONS

- Continuous on-line measurement of ambient aerosol mass concentrations.
- Composition analysis for particulate ammonium, nitrate, sulfate, chloride, and organic species.
- Routine air quality monitoring.
- Source characterization.
- Optical/CCN closure.
- Aerosol chamber studies.
- Industrial process monitoring.

#### ADVANTAGES

- Aerodynamic particle lens for efficient gas-particle separation.
- Linear universal detection through two-step thermal vaporization (~600 C) and electron impact ionization process.
- Mass spectrometric analysis (0-200 amu).
- Internal calibration reference.
- Automated zeroing (filter).
- Minimal maintenance.
- Remote control ready.
- Separation and quantification of organic aerosol species including HOA (hydrocarbon-like organic aerosol, linked to primary combustion sources) and OOA (oxygenated organic aerosol, linked to secondary aerosol sources).

# Aerosol Chemical Speciation Monitor

## SPECIFICATIONS:

### Sensitivity

( $\mu\text{g m}^{-3}$ , 30 minute,  $3\sigma$ ):

Organic:	0.3
Sulfate:	0.04
Nitrate:	0.02
NH <sub>4</sub> :	0.5
Chloride:	0.02

### Data Rate:

Adjustable, 30 minutes is typical

### Sample Flow:

85 cc min<sup>-1</sup> (volumetric flow)

### Operating Pressure:

Ambient

### Operating Temperature:

< 35° C

### Aerosol Size range:

40 nm to 1  $\mu\text{m}$  (vacuum aerodynamic diameter).

### DAQ Control:

Ethernet based, laptop provided

### Size/Weight:

Bench top, 21" x 19.5" x 34", 140 lbs  
[53.34 cm x 49.53 cm x 86.36 cm , 64 kg]

### Electric Power:

300 W; 85-264 VAC, 47-63 Hz

### Software:

Custom acquisition and analysis routines. Specialized routines for PMF analysis of the organic fraction.

