



## LTOF-AMS for Increased Chemical Resolution of Particulate Matter

*Measures real-time, non-refractory, size-resolved particulate chemical composition and mass.*



### APPLICATIONS

- Climate change and air quality research.
- Organic aerosol quantification and analysis.
  - Separation and quantification of organic components including HOA (hydrocarbon-like organic aerosol, linked to primary combustion sources) and OOA (oxygenated organic aerosol, linked to secondary aerosol sources).
  - Elemental composition (O:C, H:C, N:C).
- Fast response plume studies up to 100 Hz.
- Aerosol chamber studies.
- Combustion exhaust monitoring and source characterization.

### ADVANTAGES

- Particle beam source for efficient separation of gas and particle.
- Resolution approaching 8000 M/ $\Delta$ M.
- Thermal particle vaporization with electron impact ionization source.
- Direct linear detection of sulfate, nitrate, ammonium, chloride and organic aerosol species.
- Fast response, up to 100 Hz mass spectra.
- Single particle spectra, event triggering.
  - Particle aerodynamic diameter determined from particle time-of-flight (velocity) measurements using a particle beam chopping technique.
- Compatible with 1064 nm laser vaporization module.

# L-TOF AMS

## SPECIFICATIONS

**Particle Size Range:** 40-1000 nm aerodynamic diameter standard or PM 2.5 option

**Mass Range:** Greater than 1000 AMU

**Data Rate:** 1-5 minute typical data reporting interval  
Maximum mass spectra data rate 100 Hz (TOF-MS systems only)  
Maximum size distribution data rate 150 Hz

**Data System:** High speed acquisition of 1.6 Gs/s with custom firmware for single particle (eventtrigger) mode

**Sample Flow:** 0.085 l min<sup>-1</sup>

**Available Options:** Black carbon detection module, efficient particle time-of-flight (ePTOF), sample flow line controller, aerosol dryer, PM 2.5 capable, beam width probe

**Size/Weight/Power:** 55" L x 24" D x 27" H, 275 lbs  
[139.7 cm x 60.9 cm x 68.6 cm, 124.7 kg]  
600 Watts (24VDC vacuum system)

