

Enertechnix offers advanced aerosol sampling, concentration and delivery tools that enable significantly higher flow rates and concentrated particle collection. For system integrators designing biodetection systems, our tools greatly enhance the performance of traditional, flow-limited optical detectors. The increased sensitivity and higher sampling rate that can be achieved with Enertechnix's technology enables faster detection and more accurate results.

Omni-Directional, High Efficiency Inlet

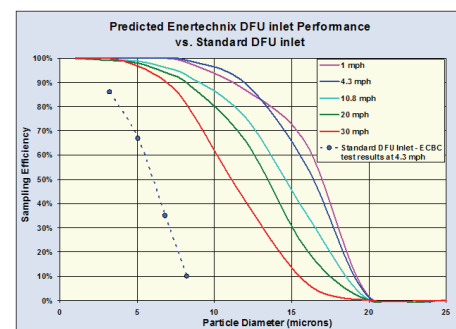


Prototype ETX Inlet on DFU (1000 lpm)

The Enertechnix High Efficiency Inlet is able to sample at high wind speeds, providing superior collection efficiency.

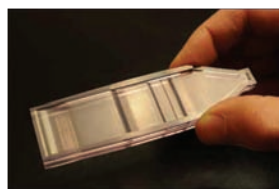
Benefits include:

- High collection efficiency (1 to 10 microns)
- Insensitive to wind up to 30 mph
- Rain-tolerant
- Developed for DoD's Dry Filter Unit
- Can be used in any aerosol sampling application



Non-steady 3-D CFD modeling of Enertechnix inlet

Micro Aerodynamic Lens (μ ADL) Aerosol Concentrator



Injection-molded single lens (10 slpm)

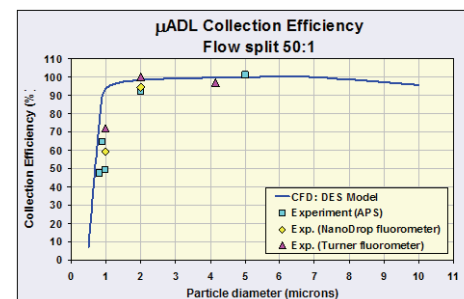
The Enertechnix μ ADL Aerosol Concentrator provides faster detection and higher sensitivity. Scalable to virtually any flow rate, it can operate at very high concentration ratios with high efficiency and very low pressure drop.

Benefits include:

- High concentration ratios (up to 100:1 per stage)
- Compact, scalable and modular
- No moving parts
- Low power, lightweight, and very low pressure drop
- Disposable and very low cost in quantity
- Adaptable (integrates readily with detection systems)
- Focused beam output (can deliver a 0.1 mm dia. beam)

Enertechnix's current devices offer the following:

- 10 to 1000 slpm
- One- or two-stage devices
- Up to 1000:1 concentration ratio



Experimentally measured collection efficiency matches CFD modeling predictions



Single lens in housing



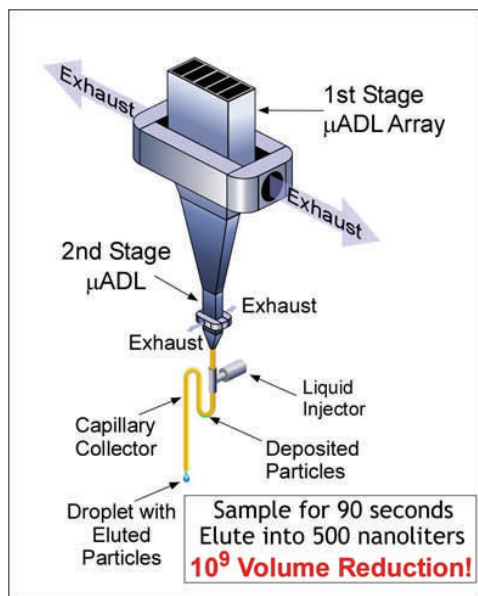
Advanced Aerosol Technology

Sampling, Concentration, Collection, Delivery and Detection



Enertech is a leader in research and development of aerosol sampling, concentration and delivery technology. Our diverse team of scientists delivers advanced aerosol technology to agencies such as the Departments of Defense and Homeland Security, and the National Institutes of Health.

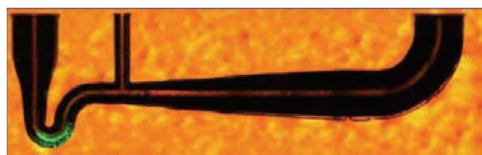
Micro-channel Impactor



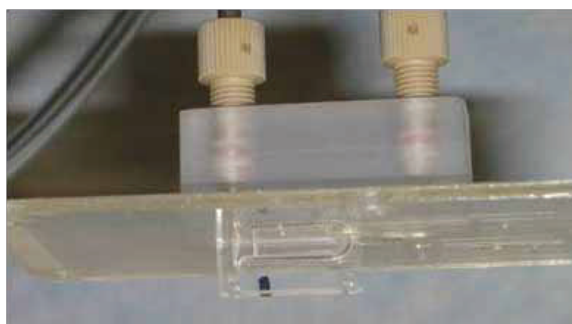
The Enertech Micro-channel Impactor allows aerosol delivery to microliter or nanoliter droplets. Easily coupled to a microfluidic platform, it serves as an inexpensive method for rapid acquisition of high-concentration samples.

Benefits include:

- Concentrator allows aerosol to be passed through micro-channel collector (capillary)
- Collection of all particles 1 micron or larger inside micro-collector by inertial impaction
- Elution of particles out of collector in small droplets (500 nl to 30 μ l)
- Achieves overall concentration ratio of $\sim 10^9:1$



Fluorescent 1-micron particles captured in micro-channel collector



Micro-channel collector interfaced to a microfluidic card

Enertech

About Enertech

Enertech develops innovative technologies for maximum efficiency. Our diverse team of scientists works with institutions such as the Departments of Defense, Homeland Security and Energy, National Institutes of Health, National Labs, top research universities, private companies and nonprofits to deliver innovative technologies.

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