

AROMA-ETO

Precision Chemical Vapor Analyzer

Model #ARETO-181-RSO

- ▶ Real-time **part-per-trillion** multi-chemical analysis in 15 minutes
- ▶ RapidScan molecular classification in 5 *seconds* with part-per-billion sensitivity, including **methane** and **ethylene oxide**
- ▶ Built for mobile and field deployments
- ▶ Demonstrated method detection limit as low as 2 pptv for ethylene oxide
- ▶ Unattended operation with automatic reporting
- ▶ Patented high performance CRDS system
- ▶ Intrinsic stability requires minimal maintenance and calibration
- ▶ Easy to use and reliable "Ph.D. Free" operation



Entanglement Technologies' AROMA-ETO trace vapor analyzer provides real-time part-per-trillion chemical detection in ambient air, soil gas, sewer headspace, and other complex, real-world sampling environments. Real-time, laboratory-grade results provide first responders with critical information on source location and hazard assessment during environmental accidents, upsets and industrial surveys. The analyzer is particularly well suited to air quality and vapor intrusion measurements where mobility and long-term stand-alone operation provide significant advantages over traditional sampling methodologies.

The AROMA-ETO analyzer provides a much faster response than low-resolution GC instruments while providing the sensitivity and selectivity of laboratory multi-column GC-MS systems. The AROMA family of instruments all share a simple interface that can be accessed from anywhere and that provides long term autonomous intervention. The intrinsic stability of the CRDS (cavity ring-down spectroscopy) analyzer core minimizes maintenance and calibration requirements greatly reducing instrument operation overhead.

AROMA provides world class performance anywhere, anytime.

Speciated Analysis Mode Analytical Performance

Species†	MDL (600 mL sample)*
1,3-butadiene	< 200 pptv (0.55 µg/m ³)
Acroleine	< 200 pptv (0.55 µg/m ³)
Ethylene Oxide	< 10 pptv (0.02 µg/m ³)
Additional Analytes	Isopropanol, Acetone, Methanol, Ethanol, Propane, Butane
<Zero level drift (per analyte)	< MDL
Analytical Precision (per analyte)††	greater of 25% of measured value or MDL
Analytical Accuracy (per analyte)††	greater of 30% or MDL

Measurement

Analysis Time	< 20 Minutes
Sampling Duration	1-45 Minutes
Calibration	As required by testing protocol
Data Reporting	Attached PC, WAN gateway compatible
Data Format options	json, csv, kml
Global Positioning System	Built-In
Sample Volume Range	5-5000 scc
Sampling Flow Range	2-500 sccm

† Additional species available upon request and via software updates
 †† Equivalent Performance to EPA TO-15 laboratory requirements

††† Preliminary Specification per customer request
 *MDL sample volume dependent

Rapid Scan Mode

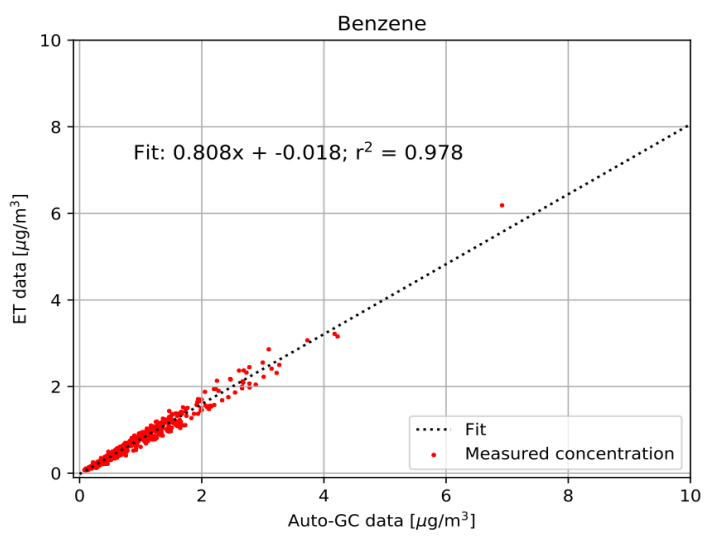
Response Time	2-10 seconds
Molecule Class labels	Aromatic, Diene, Chlorinated
Speciated Molecules	Methane, Water, Ethylene Oxide
Typical Sensitivity	down to 1 ppbv
Methane LOD	2 ppbv
Methane Precision	Greater of 2 ppbv or 10% of reading
Baseline Drift	< 3e-10 cm ⁻¹ /hour
Data Reporting	Attached PC, WAN gateway compatible



Physical Specifications	
Gas Connections	Swagelok® 1/8"
Analyzer Approximate Dimensions	18" w x 20" h x 23" d
Installation	Benchtop or 19" Rack
Analyzer Weight	< 50 kg (110 lbs)
Power Consumption	175W ave, 120 W Standby, Peak 450W (< 10 seconds)
Power Source	105-120 VAC, 60 Hz
Warm-up Time	< 45 minutes
Temperature Range	5°C – 30°C
Humidity Range	5%-85% RH, noncondensing
Power and Gas Connections	Front Panel

Consumables	
Ultrapure N2 consumption	< 5 standard L/h
Sorbent Collector Lifetime	> 5000 measurements
Analyte Focuser Lifetime	> 5000 measurements
Front-end Filter (for dust/smoke)	Condition dependent

Excellent statistical agreement between AROMA and Auto-GC across more than 600 side by side measurements shows TO-15 level performance. Instrument MDL was demonstrated using a diluted calibration standard at ET using EPA Method 301.





For more information, go to:
www.entanglementtech.com/products

Or contact us at
info@entanglementtech.com