

Ohio Lumex Co., Inc.



Ohio Lumex Sorbent Trap Mercury Analyzer



*If you are Required to Test Mercury
Emissions, You need a Sorbent Trap
Mercury Measurement System
Including an*

*Ohio Lumex Sorbent Trap
Mercury Analyzer*



Photo: www.netl.doe.gov/KeyIssues/clean_power.html

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Testing Sites where RATA criteria was met using Appendix K Ohio Lumex analyzer:

1. Allegheny Armstrong Power Plant July 2006, WKU Tester.
2. Trimble County RATA July 7- 12, 2005, Arcadis Tester.
3. Reliant Energy Power March 24, 2006, EERC Tester.
4. EPRI Round Robin Test, multiple locations, 2006.
5. NIPSCO power plant Indiana, APEX ETV EPA verification 2006, Battele Tester.
6. AND MANY, MANY OTHERS!

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Practicality of Ohio Lumex Analyzer and Sorbent Trap System Compared to Other Methods for RATA

Ohio Lumex

- Typical RATA in 1.5-2 days.
- Minimal Runs Required (As Few As 9) Since Data Integrity can be Determined On-Site.
- Testing Team Has Complete Control Over Analysis.

Ontario Hydro

- 3-5 Days Required to Get 12 Runs.
- Results Analyzed Off-Site.
- Testing Must Be Repeated if it is Discovered that 4 or More Runs Failed.
- Equipment is Expensive and Fragile.

Sorbent Traps analyzed Off-Site

- Must do Extra Runs to Ensure 9 Good Runs (12 vs. 9).
- Retesting Required if 4 or More Runs Prove to be Bad.
- Impossible to predict Spike value for Field Recovery Test.

Using a CEMM as an Instrumental Reference Method

- Expensive.
- Dynamic spiking is complicated to perform.
- No Portable NIST Traceable Calibrator for “Total” Hg is commercially available.
- Wet Stacks and High Particulates can Cause Problems.

The Best Choice for EPA Method 7473

Thermal Analysis

- Analyze samples from 0.2ng/g (0.2ppb) to 30,000,000ng/g (30,000ppm).
- Most analyses take 90 seconds. Very High Level Samples take only 8-11 minutes.
- Sample Sizes up to 5g.
- Versatile: Analyze aqueous samples thermally down to 5ug/L with no digestion.
- Analyzer module is the finest Hg vapor monitor available, able to detect < 2 ng/m³
- With no catalyst, gold amalgam, or drying tube, the analyzer is not prone to damage from high-level or halogen contaminated samples.



Ohio Lumex Sorbent Trap Analyzer

What is a Sorbent Trap Mercury Measurement System?

Using a sample probe that will be inserted into the emission stack and a sampling console that can accurately measure the volume of gas sampled,



the emission gases will be pulled onto a pair of Sorbent Traps.

Here, the mercury will be trapped in order to be measured on the Sorbent Trap Mercury Analyzer.



A Sorbent Trap System can be the Best Choice as a Primary System for Compliance Monitoring.

Advantages of Sorbent Trap Systems Over Continuous Emissions Mercury Monitors (CEMMS)

- Capital and Operating Costs a Fraction of CEMMS costs.
- Mature Proven Technology, Reliability Proven by Many Systems in Use.
- Simple, Dependable, Easy and Inexpensive to Maintain.
- The Only System Capable of Reliably Measuring Low Levels (<0.5 micrograms per cubic meter.) This will be Critical where Mercury Reduction is Mandated.

For Facilities that will have CEMMs, a Sorbent Trap Measurement System will be a Valuable Additional Tool

- Can be used as a Low-Cost Back-Up System During CEMMs Maintenance and Repair where a Loss of Data can mean Tens of Thousands of Dollars.
- Check the Accuracy of your Calibrators.
- Perform your own RATA and Pre-Rata Tests.
- Excellent CEMMs Trouble-Shooting Tool.
- Perform Speciation Studies using our Ohio Lumex Speciation Traps.
- Flexible for Testing at Different Points and Assessing Mercury Reduction Schemes.
- Can be used to Determine Mercury Levels in Coal and Ash and Other Materials.
- Perfect to reveal best Optimization of Sorbent Injection Systems.

Stack Testers Will Find that a Sorbent Trap System Including an Analyzer is a Useful and Profitable Tool

- Much Simpler to perform than Method-29 or “Ontario Hydro” Method.
- Results in Minutes.
- Quickly Categorize Source Levels On-Site.
- Only Collect the Number of Samples Needed (9 versus 12 Runs) No Need to Collect Extra Runs to Assure 9 Good Results.
- Finish RATA using Method Compliant Results Before Leaving the Site.
- Saves money Compared to Other Methods or Off-Site Analysis.
- “One-Shot” Argument: Both Digestion and Thermal Methods are Destructive if Sample is Lost on Trap Disassembly. The Penalty for On-Site Thermal Analysis is Merely Another Run.

Ohio Lumex RA-915+/RP-M324 Sorbent Trap Mercury Analyzer Features

- Able to Quantify 1ng to 100,000ng per Analysis.
- Easy to Calibrate.
- Can Analyze an Entire Trap Section Including Glass Wool in One Run.
- Most RATA Analyses Take About 90 Seconds.
- High Level Analyses Take 8-10 minutes.
- Exhaust is Scrubbed, No Clean Room or Hood is Needed.
- Perfect for Field Use.
- Works Great in the Lab.
- Real-Time Peak Viewing Allows Run-Time Adjustment for Aberrant Samples.
- Contains no Catalyst, Gold Amalgam, or Drying Tube that Require Frequent Expensive Replacement.
- Requires no Compressed Gases (other Analyzers Require Compressed Oxygen).
- No Autosampler, But Samples can be Analyzed in the Time Required to Load an Autosampler, and There’s no Potential for Contamination of Samples Traveling together in the Sample tray.
- This Analyzer is the Industry Standard for Method 30-B and Appendix-K with about 100 in use.
- Unique Application of Zeeman AA Technology prevents interference and allows a Simpler Furnace Design.
- Operation is Easy to Learn, Training and Certification takes One Day.