Xact® 640i Monitoring System

COOPER ENVIRONMENTAL
A DIVISION OF SCI

Multi-Metal Continuous Emissions Monitoring System (CEMS)

Description

Cooper Environmental's Xact® 640i system uses reel-to-reel filter tape sampling and nondestructive energy dispersive X-ray fluorescence (XRF) analysis to monitor hazardous air pollutant (HAP) metal emissions from point sources. The 640i utilizes a large diameter, high volume extractive system coupled with a low velocity sub-sampling system to transport a representative sample to the filter tape and XRF spectrometer. An integrated sample is deposited onto the filter tape for a user selected time interval. The sample is subsequently advanced to the XRF spectrometer while the next sample is being collected. This analysis approach allows continuous near real-time analysis with excellent sensitivity for a wide range of elements.

The 640i can be factory configured to monitor for total (vapor and particulate phase) or particulate elemental concentrations. Total measurements are performed using a patented reactive filter tape and chemical dopant process, while particulate measurements are performed using a non-reactive inert filter tape.

In 2007, through its Clean Air Excellence Award, the EPA recognized the 640 as an outstanding achievement in innovative clean air technology. The EPA also approved the 640 CEMS as an alternative method for periodic EPA Method 29 testing, feed stream analysis, and monitoring emissions during plant operation.

SailBri Cooper, Inc.

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Features

- Automatic quality assurance, alarms, and control features
- Identification and measurement of 67 elements simultaneously
- Internal calibration check incorporated with every measurement
- Automatic daily, upscale, blank and flow audit
- Sampling, analysis, and near real time reporting every 15, 30, 60, 120, and 240 minutes
- Recognized by EPA as an innovative clean air technology (Clean Air Excellence Award, 2007)
- Proven technology

Benefits

- Single monitor platform for mercury (Hg) and HAP metals monitor compliance
- No PM monitor needed to comply with MATS
- May be used to meet 40 CFR Part 60 and 63 regulations
- Measures total Hg in µg/m3
- Automated multi-metals analysis reduces expenses, time, and resources
- Non-destructive analysis allows for sample archiving
- Sensitive and reliable, ng/m3 to µg/m3 range

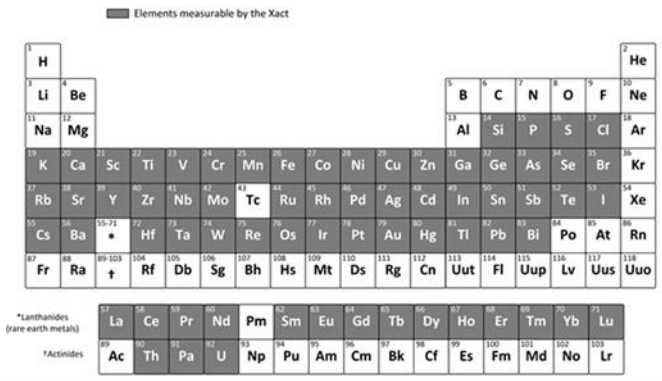
Applications

The Xact® 640i monitoring system can simultaneously identify and measure multiple metals in flue gas to provide data for use in the following applications.

- Hg CEMS
- HAP metals CEMS
- Benchmark a new process
- Optimization of emission controls
- Permitting
- Regulatory compliance
- Risk management
- Process control
- Corrosion monitoring

Elements Supported

Xact® 640i monitoring system identifies and measures the 67 elements highlighted in the periodic table. Some elements are only available for particulate metals analysis while others are only available for total metals analysis, contact your local representative for more information.



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Ordering Information

To place an order or for more information about the Xact® 640i continuous emissions monitoring system, contact your regional Cooper Environmental representative or email us at info@sci-monitoring.com.

Specifications

Measurement method	Based-on EPA Method IO 3.3: Determination of Metals in Ambient PM Using XRF
Key applicable elements	Sb, As, Ba, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mn, Ni, Se, Ag, Sn, Ti, Tl, V, Zn, and more available
Measurement range	Demonstrated from MDL up to 2 mg/m3
Detection limits	Element and sample time dependent; refer to MDL data in Performance Section
Sampling and analysis times	15, 30, 60, 120 and 240 minutes
Calibration stability check frequency	Automatically with each sample analyzed
Estimated recalibration frequency	Annually, when manufacturer's operating recommendations are followed
Linearity	Correlation coefficient >0.99
Size and weight	Base unit: 41"W x 34"D x 81"H, 580 lbs. Transport module: 38"W x 24"D x 74"H, 120 pounds
Power requirements	Base unit: 230 VAC @ 14 amps, 115 VAC @ 28 amps Transport module: 230 VAC @ 30 amps Compressed air: 25 CFM @ 50 psig Note: Base unit and air conditioner power can be energized independently; Transport module power depends on length of heated sample lines
Outputs	ASCII text files, Modbus TCP/IP
Options	• Add or subtract elements • Total or particulate phase elements • Sample line length • Probe length

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Performance

Total Metal Measurement - Minimum Detection Limits (ug/m³)						
Element	Atomic Number	Sampling Time (min)				
		15	30	60	120	240
Cr	24	0.14	0.05	0.018	0.006	0.002
Mn	25	0.14	0.05	0.018	0.006	0.002
Fe	26	0.38	0.13	0.048	0.017	0.006
Co	27	0.16	0.06	0.02	0.007	0.002
Ni	28	0.11	0.04	0.014	0.005	0.002
Cu	29	0.13	0.05	0.017	0.006	0.002
Zn	30	0.12	0.04	0.014	0.005	0.002
Ga	31	0.05	0.02	0.007	0.002	0.001
Ge	32	0.06	0.02	0.008	0.003	0.001
As	33	0.06	0.02	0.007	0.003	0.001
Se	34	0.07	0.02	0.009	0.003	0.001
Ag	47	2.17	0.77	0.271	0.096	0.034
Cd	48	2.88	1.02	0.36	0.127	0.045
In	49	3.39	1.2	0.424	0.15	0.053
Sn	50	3.74	1.32	0.467	0.165	0.058
Sb	51	0.33	0.12	0.042	0.015	0.005
Ba	56	0.47	0.17	0.059	0.021	0.007
Hg	80	0.09	0.03	0.012	0.004	0.001
Tl	81	0.09	0.03	0.012	0.004	0.001
Pb	82	0.11	0.04	0.014	0.005	0.002
Bi	83	0.12	0.04	0.015	0.005	0.002

Note: Interference-free, 95% confidence level detection limits

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