

# LUMEX INSTRUMENTS



## SOLUTIONS FOR MERCURY ANALYSIS



- Environmental applications
- Oil & gas industry applications
- Emission monitoring
- Food analysis
- Chemical industry
- Health & Safety

## ZEEMAN SPECTROSCOPY

Operation of all the Lumex mercury analyzers is based on differential Zeeman Atomic Absorption Spectrometry using high frequency modulation of light polarization (ZAAS-HFM).

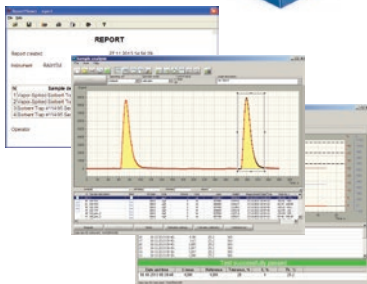
## ADVANTAGES

The analyzers are supersensitive highly selective real-time instruments that do not require any chemicals, any carrier or zero gases for the operation. Thereby most of the samples are analyzed directly avoiding time-consuming sample preparation and without preconcentration on the gold trap.

## WORLD RECOGNITION

Lumex mercury analyzers are used by thousands customers worldwide for research, environmental and industrial applications, and we are doing our best to give our full support to the customers wherever our instruments are installed.

## LUMEX MERCURY ANALYZERS



**RA-915M** 915M is a supersensitive highly selective mercury analyzer that allows real-time operation for air and gases under lab and field conditions. Moreover, RA-915M is a versatile portable multifunctional analyzer capable of analyzing gaseous, liquid and solid samples when combined with **RP-92 Cold Vapor Attachment** and **Pyro-915+ Pyrolysis Attachment**. Its wide dynamic measuring range covers up to six orders of magnitude. The analyzer is robust and easy to use. It is equipped with a built-in performance verification test cell and auto zero function. No chemicals, no carrier gas and no zero gas are needed for the operation.

Powerful **RAPID software** provides serviceability check up, data acquisition, storage and processing for continuous monitoring and all kinds of samples analyses made with RA-915+ / RA-915M and the attachments.

Last version of the RAPID enables thermoscaning option for mercury thermospeciation study and closed-loop automatic temperature adjustment control for analysis of samples with very high mercury concentration.

**PYRO-915+ attachment** implements unique advantages of Zeeman AAS: direct analysis of any solid and liquid samples excluding sample preparation procedures. The PC programmable heating modes and full control over atomization process makes it possible to select the best thermal decomposition procedure and optimize analysis conditions for specific samples over a wide range of the mercury concentration.

**RP-92 attachment** is designed for fast, sub-ppt analysis of liquid samples using classical Cold Vapor technique.

# IN MERCURY ANALYSIS

**RP-91NG attachment** provides direct analysis of hydrocarbon gases of complex composition. The technique significantly simplifies sampling and enables analyses both from the gas stream and from gas containers (Tedlar® bags, cylinders, etc.).

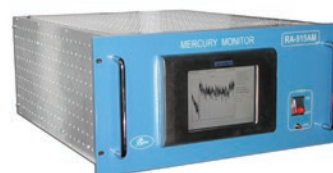


**Light-915** is a compact light-weight instrument for workplace monitoring, pollution revealing and mapping, and mercury spill clean-up verification. As compared to RA-915M, it is equipped with a shorter analytical cell to expand the measurement range up to mg/m<sup>3</sup> and simpler interface and is intended for measuring higher mercury concentrations. Data logger has capacity for 122 hrs data acquisition.



## LUMEX MERCURY MONITORS

**RA-915AM** is designed for the continuous mercury concentration measuring in ambient and indoor air, in hydrocarbon and process gases. This stand-alone monitor has the highest sensitivity and selectivity and is optimized for long-term unattended continuous measurements. No compressed gases are required.



It operates in automatic mode, including automatic zero drift and span drift correction, automatic recalculation to standard conditions, self-diagnostic and preventive maintenance functions.

## STACK GAS SAMPLING AND ANALYSIS

**Sorbent Trap method** is the most cost-effective and accurate method for mercury measurement in flue and process gases. For over 15 years, the method has been widely used in power generation industry, cement production industry, etc. Sorbent traps are fine-tuned and customized to different types of source conditions. They provide total mercury measurement as well as speciated mercury measurement (oxidized and elemental mercury phases). The reliability of Sorbent Trap method is RATA proven. Traps are specifically designed to assure the best US EPA Method 30B performance.



The **OLM30B** is a dual train, fully functional sampling system, complete with Mass Flow Controllers, vacuum gauges, a WatLow controller with thermocouple input and probe power port.



The system is fully compliant with US EPA Method 30B and the most portable sampling system with exceptionally steady flow control.

**IRM-915** is a portable mercury CEM (with speciation option] based on the analytical approach of the thermal catalytic conversion and Atomic Absorption Spectrometry for detection of mercury with Zeeman background correction. Designed as an instrumental replacement for Ontario Hydro method, it is a good tool for testing certification of stationary CEMMs and on-site performance evaluation of Mercury Control technologies.





# APPLICATIONS

**Environmental applications** – analyses of soils and sediments, biota, ambient air, natural and waste waters, precipitations, filters.

**Oil & gas industry applications** – monitoring of hydrocarbon gas, analyses of crude oil and gas condensate, naphtha, stratal and waste waters.

**Emission monitoring** – analyses of stack/flue gases, fly ash, coal and other fuels, sludge, gypsum, absorbents, etc.

**Food analysis** – analyses of all kinds of food products (fish, meat, cereals, vegetables, beverages, etc.).

**Chemical Industry** – analyses of process gases, quality control, catalyst research.

**Health & safety** – workplace monitoring, waste treatment, exhaled air, urine, hair, and blood analyses.

Matrix	Configuration of the equipment
Ambient air	RA-915M, Light-915, RA-915AM
Natural gas and other gases	RA-915AMNG, RA-915M with RP-91NG
Water, aqueous solutions, sub-ppt +	RA-915M with RP-92 (Cold vapor)
Water, aqueous solutions, ppb +	RA-915M with PYRO-915+
Solid samples (soils, rocks, sediments)	RA-915M with PYRO-915+
Stack gases with sorbent traps	RA-915M with PYRO-915+
Stack gases on-line	IRM-915
Coal and other solid fuels	RA-915M with PYRO-915+
Oil and oil products	RA-915M with PYRO-915+
Biological samples (tissues, blood, hair, etc.)	RA-915M with PYRO-915+
Biological samples (urine)	RA-915M with RP-92 (Cold vapor)
Foodstuff, animal feeding, raw materials	RA-915M with PYRO-915+

**LUMEX**  
INSTRUMENTS

The information and specifications in this publication are subject to change without notice.

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