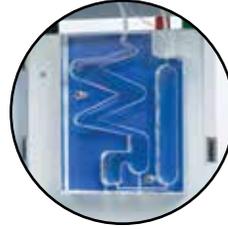
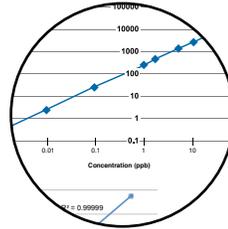




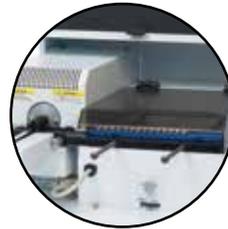
**TELEDYNE LEEMAN LABS**  
Everywhere you look™



**Innovative**



**Intuitive**



**Versatile**



**Hydra II**<sub>AA</sub>  
Mercury Analyzer

At Teledyne Leeman Labs; atomic spectroscopy is our business – our only business. We are industry leading innovators with a proven track record providing systems that deliver outstanding performance, robustness and operational simplicity.

Teledyne Leeman Labs mercury analyzers were the first to offer 'turnkey' operation for Hg analysis.

The Hydra II analyzers incorporate technological improvements to give you exceptional performance, greater analysis throughput and simplified operation. Furthermore, the Hydra II analyzers are built around an innovative, integrated modular design so that the system can be easily reconfigured to perform both Hg reduction or combustion techniques, as your analytical requirements change.



# Key Features of the *Hydra II*<sub>AA</sub>

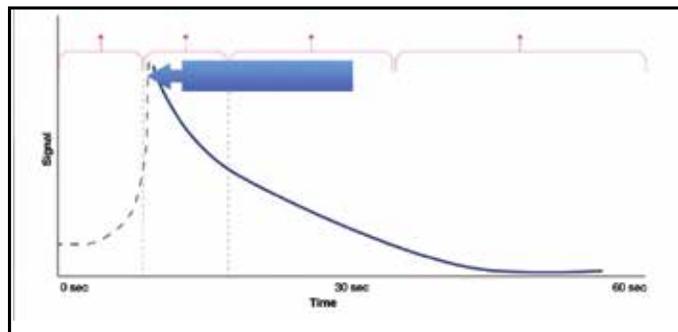
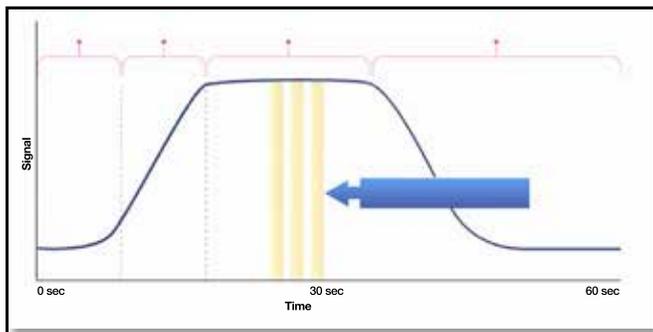
- $\leq 5.0$  ng/L instrument detection limits
- Dual detection cells for high or low sample concentrations, configurable in minutes; usable ranges, 5 ng/L – 1 mg/L
- Advanced contamination control, over range and smart rinse features
- Large volume QC reservoirs for uninterrupted large batch analytical runs
- Upgradeable to a combustion (thermal decomposition) CVAA analyzer



# The Hydra II<sub>AA</sub>

## Sample Digestion Cold Vapor Atomic Absorption (CVAA)

The Hydra II<sub>AA</sub> employs the most widely used mercury analysis technique: sample digestion followed by cold vapor atomic absorption (CVAA). This technique's popularity is in its ability to deliver both sensitivity and selectivity needed to meet or exceed the requirements of many US and European standard methods. With its ng/L detection capability, exceptional stability and powerful over-range protection system the most stringent QCs can be satisfied while its high capacity autosampler assures a long period of unattended operation.

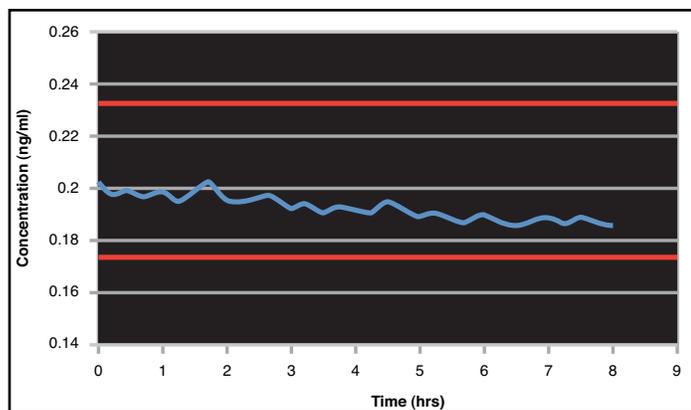


### Fast Results, Better Decisions

The Hydra II<sub>AA</sub> provides fast analysis cycle times; less than 1 minute. Unlike other systems that consume the full sample, it is able to conduct multiple analyses from the same sample cup in the same amount of time or less. This approach ensures better analysis results and samples can be re-analyzed if needed. For example if intelligent quality control is utilized.

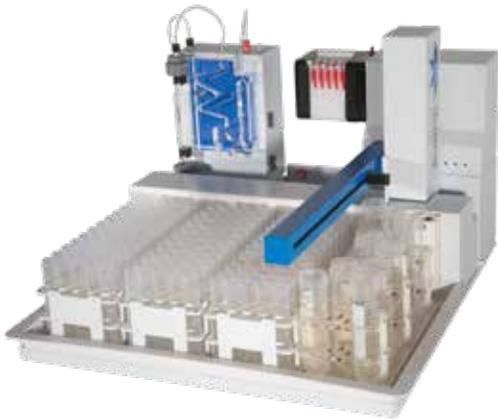
### Built-in Safety Net

Systems can become contaminated if a sample with an unexpectedly high concentration of mercury is encountered forcing unanticipated shutdown and cleaning. This is easily avoided with the Hydra II<sub>AA</sub>'s unique over-range protection by which samples with high mercury concentration are automatically detected BEFORE contamination can occur. Analysis is automatically aborted and the system flushed so the next sample can be analyzed correctly. Unplanned downtime is avoided saving time and money.



### Stability You Can Depend On

In EPA Method 245.1 a Laboratory Fortified Blank (LFB) with a mercury concentration >10 times the method detection limit must be run every 20 samples. The chart on the left shows the LFB consistently passes the  $\pm 15\%$  accuracy limits (depicted in red).



### Analyzing Many Samples is Easy

The *Hydra II* autosampler is designed for the flexibility needed to take advantage of the system's fast analysis speed as well as to accommodate the use of a wide variety of low cost sample cups. It has two large reservoirs for recurring QCs, including CCVs and CCBs, with enough capacity for a complete automated run without operator intervention.



### Difficult Samples Made Simple

The novel gas/liquid separator ensures that samples prone to foaming such as municipal wastewater and industrial effluent do not enter the gas phase and contaminate the system.



*A wide variety of commercially available sample cups are supported to achieve maximum productivity and to ensure compatibility with your lab's digestion vessels*

### Innovative Integrated Modular Design

The *Hydra II* modular design enables one system technique to be reconfigured to another in your lab should your analysis needs change saving money, time and bench space.

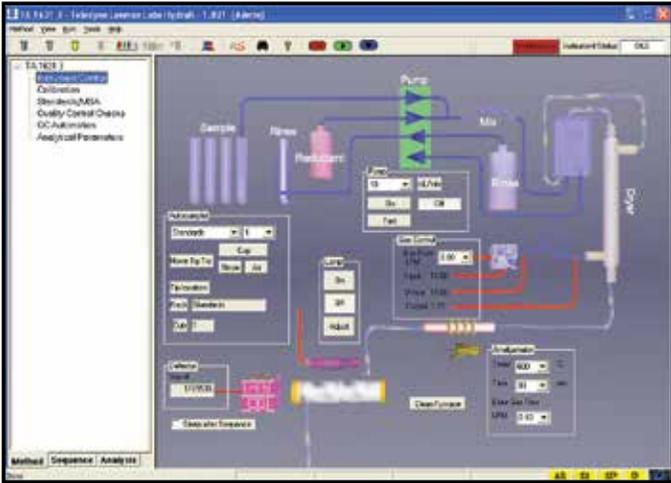


*Hydra II<sub>C</sub> Atomic Absorption Detection – Direct analysis of Solid, Semi Solids and Liquid Samples*

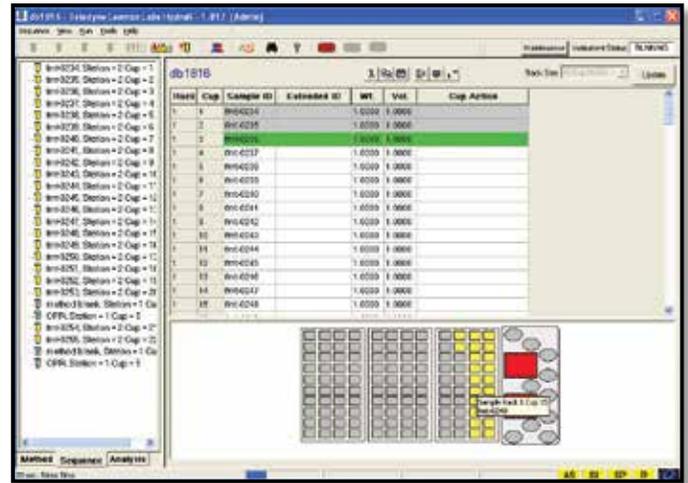


*Hydra II<sub>AA</sub> Atomic Absorption Detection – Liquid Samples*

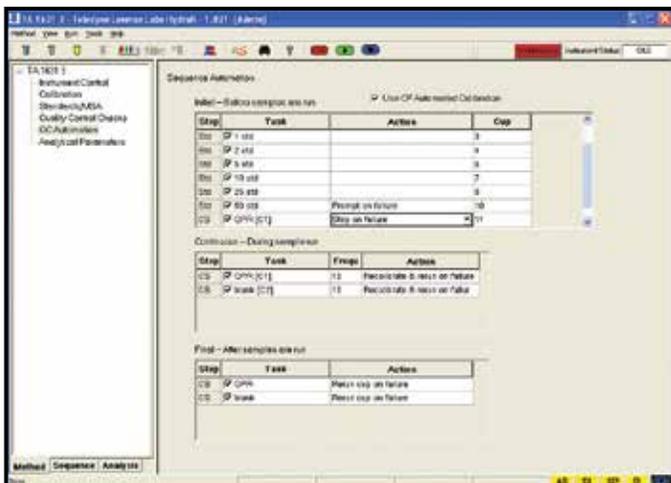
# Hydra II Envoy Software



**Instrument Control** is fully automated and appears on a single screen. The graphical display helps operators to understand how the system functions. System parameters are automatically stored and can be recalled at any time to satisfy audit requirements. On start-up, simply clicking the start button returns all system conditions to the last setting saved with the method.



**'On-the-fly' Sample Programming** saves valuable time by allowing the operator to start a sample sequence even if individual sample entries are not yet complete. Samples can be easily located, added and positioned using the convenient rack map display.



**Intelligent Quality Control** enables the analyst to define acceptance limits for quality control checks and to choose from a variety of corrective actions when the limits are not met. Each QC sample can be programmed as an initial, recurring, and/or final QC with unique corrective actions.



**Preventive Maintenance.** The software keeps a record of routine maintenance and notifies the analyst when maintenance is required. When a maintenance procedure is required, the *Hydra II* provides the analyst with step-by-step instructions, including audio/visual support.

## Technical Specifications

Minimum Computer Requirements	
Microsoft® Windows® 10	
2 GB RAM for Microsoft® Windows® 10	
Video running 1024 x 768 with 24-bit color	
Pentium Dual Core 2.3 GHz	
One available USB port	
One standard factory installed Ethernet connection, if network connection is desired	
Internet Explorer 4 or higher must be installed for the online Help to function	

Technical Specifications	
Carrier Gas (N <sub>2</sub> or Ar)	Supplied at 15 psi
Power Requirements	100/220 VAC, 50/60 Hz, 100W
Height	47 cm
Width	49.5 cm
Depth	49.5 cm
Weight	40.6 lbs (18.4 Kg)
Computer Interfaces	USB
Autosampler	AS
Warranty	12 month limited

## Leeman Labs and Elemental Analysis

Our experience isn't limited to Mercury analysis alone. It extends to a variety of other techniques, with the same quality, precision, functionality and thorough engineering we've built our reputation on. If you're seeking elemental analysis for your specific application or industry, Teledyne Leeman Labs is the solution.

### Inductively Coupled Plasma – Optical Emission Spectrometers (ICP-OES)

ICP-OES is ideal for low to trace level analysis of metals, metallic components in a very wide variety of sample matrices. Whether you need to measure sodium content of sea water or trace levels of toxic elements in drinking water, ICP is a powerful and effective tool for the job.

### DC Arc Spectrometer

Our DC Arc Spectrometers are the ultimate solution for elemental analysis of the most challenging solid samples. The DC Arc can perform elemental analysis on samples that are difficult or nearly impossible to digest, or samples in their native form without digestion.





**TELEDYNE LEEMAN LABS**  
Everywhereyoulook™

[www.leemanlabs.com](http://www.leemanlabs.com)



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