

# LUMINA 3500 Atomic Fluorescence Spectrometer

Aurora is a well-known North American manufacturer of analytical instruments. LUMINA Atomic Fluorescence Spectrometers are designed for determination of more than 10 elements including mercury (Hg), Arsenic (As), Cadmium (Cd) at sub-trace level. With its unique cold vapor/hydride generation and ground breaking design, LUMINA series can provide high sensitivity, versatility, high accuracy and high precision determination of Hg and Hydride-Forming elements at sub-trace levels.



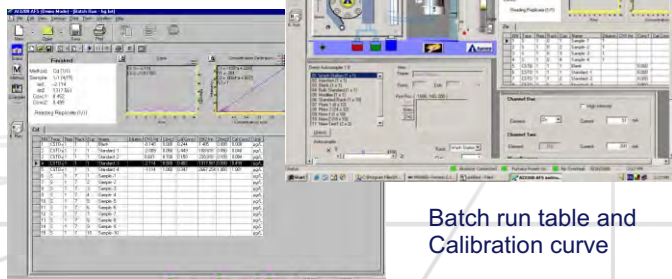
## LUMINA 3500

Continuous flow injection system  
6-channel peristaltic pump, 4-stage reaction mixer

## Control Software

The software uses a graphical user-friendly interface based on Windows systems, greatly facilitates autosampler control, data acquisition and analysis operation process. The software has two sample analysis modules (single/batch run) available for selection, the software displays real-time dual-channel fluorescence intensity vs time curve. The reporting format is compatible with LIMS and is easy to handle.

Software interface



Batch run table and Calibration curve

Complies with **CSA** specification  
Meet **21 CFR PART 11** requirements  
**ISO9001** certified and **CE** certified

## FEATURES AND BENEFITS

### Injection System

The LUMINA 3500 uses a continuous flow system which reduces signal drift and liquid interference, greatly improving the signal to noise ratio.

### Hydride Generator (VG)

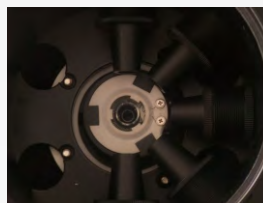
Aurora's unique hydride generator further enhances the sensitivity of detection, reducing the interference to obtain ultra-low detection limits.

### Reaction Mixer

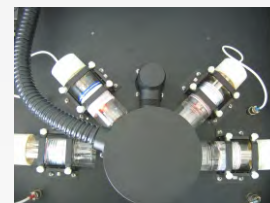
With multi-level reaction mixed layer design, it is faster to achieve complete mixing and reaction while offering the flexibility of the variety of mixed mode

### Optical System

Short focal length non-dispersive closed optical system greatly reduces the light interference, increase the signal to noise ratio and improve the instrument's sensitivity and precision. Fluorescent reflector is added to increase the fluorescence efficiency.



Inside of atomizer



Lamp holders and light path

### Gas-liquid Separator

Highly efficient flow liquid dispersion and dual gas-liquid separation design optimize separation efficiency of generated hydride and mercury vapour. With an added Ar stabilizer, the combined design effectively reduces the pressure fluctuation and improve the accuracy of the measurement.

### Dual Channel Test System

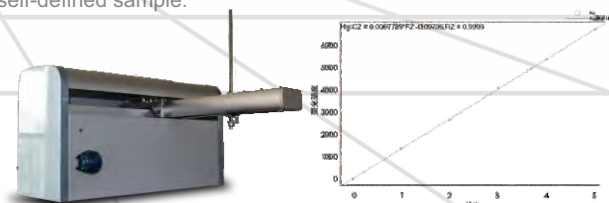
Two-channel electronic system is completely separated to achieve the simultaneous determination of two elements or sequence determination of single element. This greatly improves the detection efficiency and reduce the sample consumption.

### Exhaust Gas Recovery System

Fully enclosed integrated exhaust system exhausts waste gas through a pipe, effectively removing the discharge to outside. Built-in harmful gas capture device can further reduce the operator exposure to the harmful substance.

### XYZ Autosampler (optional)

The three-dimensional autosampler can accommodate four different standard sample racks for different test tubes, up to 192 samples. User can customize the sample import sequence and self-defined sample.



## SPECIFICATION

<b>Atomization</b>		
Atomizer	Double-layer quartz tube atomizer, argon-hydrogen flame automatic ignition, effectively reduce the interference	
Carrier gas / Shielding gas	Argon	
<b>Sample introduction</b>		
Steam / Hydride generator	Efficient multi-stage reaction mixer and dual stage gas-liquid separation device	
Peristaltic pump	6 channel peristaltic pump, with two pressure adjustable clamp, software speed control	
Exhaust system	Fully enclosed integrated system to eliminate pollution	
	Built-in harmful gas capture device can further reduce operator exposure to the harmful substance	
<b>Optics</b>		
Optical design	Short focal length, non-dispersive, integrated optical design	
Dual channel	Computer-controlled modulated pulse mode light source, enable two elements measurement at the same time or sequential	
Light source	Four-socket two-channel design: specially designed high-intensity hollow cathode lamp (HCL), dual-channel independent power supply, providing high sensitivity and lower detection limits	
Detector	High quantum efficiency, solar blind photomultiplier tube (PMT)	
Linear range	Over 3 orders of magnitude	
<b>Universal XYZ 3 dimensional autosampler</b>		
Sample Introduction	High sample capacity, automatic standard and sample introduction	
Sample handling capacity	Handles up to 192 samples using universal sample rack, suitable for all kinds of test tubes; compatible with customized sample rack. Also compatible with 96/384 well micro plates to handle up to 1536 samples	
<b>Others</b>		
Software	Windows-based AISPEC software, meet 21 CFR PART 11 requirements	
Communication interface	Rs232, with optional HPLC communication interface, to carry out species analysis and expand the function of equipment	
Instrument dimension	(L)662×(W)588×(H)436mm (without autosampler)	
<b>Element Detection Performance</b>	<b>Detection Limit (ng/L)</b>	<b>RSD (%)</b>
As,Se,Pb,Bi,Sb,Te,Sn	10ppt	<1.0
Hg,Cd	1ppt	<1.0
Zn	1000ppt	<1.0
Ge	50ppt	<1.0

NOTE: Instrument specifications may change without notice as an ongoing effort of product improvement

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