

# AAS - 3220A/B

## ATOMIC ABSORPTION SPECTROPHOTOMETER



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

**Analytical Technologies Limited**

An ISO 9001 Certified Company

[www.analyticalgroup.net](http://www.analyticalgroup.net)

## ►► FEATURES

### Higher Reliability

- More than 40 years experience in AAS R&D and manufacturing
- Aberration eliminated C-T type monochromator with stable performance
- Modular electronic circuits design with easy operation and maintenance
- Reliable gas-liquid separator and fuel gas filter device provide the robustness even in high humid and harsh environment. and other soft tissue organs are very clear and intuitive in magnetic resonance imaging.

### Higher Safety

- Intelligent feedback detection technique, real-time monitors the lamp current and protects the hollow cathode lamps.
- Simple structure modular gas supply system provides lower fault rate, higher safety and reliability.
- High precision mass flow controller and stable electronics in flame system control the fuel flow accurately. Temperature control protection system together with dual air circuit breakers in GF system, effectively prevent current overload or abnormal temperature rise.
- Multiple safety interlock device and prompt information display prevent possible dangers. netic resonance imaging.

### More easy to use

- Unique light source system , with 8-lamp turret fully automatic change and optimization , supports 1 lamp working and 7 lamps preheating in the same time.
- Easy changing emission burner for easily ionized elements such as K, Na, etc., with linear range 3 times that of normal flame.
- Temperature control modes in graphite furnace analysis can be switched over easily between optical control and constant voltage control, according to different elements and graphite tubes, for the best results and extending the lifetime of graphite tubes.
- One-click automatic optimization, easy analytical condition setting, expert database support, for easy operation with no worries.

### Fewer Faults

- Hamamatsu's high performance PMT as the detector.
- Molding PPS spray chamber has high chemical stability, withstanding high temperature and strong acids etc..
- The communication system is based on the mature bussing technique. It improves anti-jamming capability and data transmission reliability.

## ►► SPECIFICATIONS

### Wavelength Range

- 190nm ~ 900nm

### Light Source

- 8-lamp turret automatically rotates and aligns
- 2 positions for High performance lamp.
- 8-lamp power on and multiple lamp preheat at the same time.
- Lamp current range: 0~15mA

### Optical System

- Czerny-Turner monochromator
- Diffraction Grating : Groove 1800lines/mm, blaze wavelength 250nm
- Focal Length : 277mm
- Spectral Bandwidth : 0.1nm, 0.2nm, 0.4nm, 0.8nm, 1.6nm
- automatically change (Model A )
- 0.1nm, 0.2nm, 0.4nm, 1.2nm automatically change (Model B )
- Automatic peak-picking, automatic spectral bandwidth setting, automatic energy and wavelength optimization.

### Flame System

- 10cm Ti burner head for air-acetylene flame, emission burner provided.
- Burner head height and horizontal position automatic adjustment, with burner angle rotatable. (Model A )
- Burner head height push-button adjustable and horizontal position manually adjusted, with burner angle rotatable. (Model B )
- Direct forming spray chamber with corrosion-resistant material PPS
- Automatic ignition with high precision mass flow control system, realizing fully automated fuel gas flow control an adjustment.

### Graphite Furnace System (Type A )

- Longitudinal heating GF system with temperature up to 3000°C, heating rate more than 2500°C/s.
- Two temperature control modes selectable: optical and constant voltage. Both slope and stepped temperature programming are available.
- Fully automatic GF height and horizontal position setting and optimization.

- Inner gas, external gas and make up gas are controlled separately. Circulating water and gas flows monitoring system is equipped.
- Different types of graphite tubes can be used.

### **Safety Protection**

- Full package of safety protection measures, with hardware and software dual alarm system.
- Real-time monitoring for flame condition and air pressure etc., with automatic flame shutting down, gas supply cutting off and activating alarm when abnormal detected, such as ignition failure, fuel gas leakage, flow control error, etc.
- Real-time monitoring for GF conditions and heating program etc., with automatic power cut-off and alarm when abnormal detected, such as water and gas control error, graphite tube installation mistake, and temperature control problem etc..

### **Background Correction**

- D2 lamp background correction, with correction ability more than 30 times.
- S-H background correction, with correction ability more than 30 times.

### **Software and Communication**

- Intelligent operation software compatible to WinXP, Win7, Win8, Win10.
- One-key operation for instrument optimization, supporting multi-task analysis.
- Automatic curve fitting, automatic re-slope, automatic concentration calculation, etc.
- Repeat measure 1~99 times, automatic calculation of Average Value, Standard Deviation, RSD, etc..
- Standard USB communication port.

### **Power Supply**

- Main Unit for model A :Single phase AC, 110V/3220V , max power consumption: 0.2kVA
- Main Unit for model B :Single phase AC, 110V/3220V , max power consumption: 0.15kVA
- GF Power Supply for model A :Single phase AC, 3220V , max power consumption: 5.5kVA

### **Dimensions and Weight**

- Main Unit for Type A :1020mm (L )×530mm (W )×500mm (H ) , 85kg
- Main Unit for Type B :1020mm (L )×530mm (W )×500mm (H ) , 80kg
- GF Power Supply for Type A : 350mm (L )×490mm (W )×430mm (H ) , 40kg

Function		Model A Series			Model B Series		Model C Series		
		3220A Pro	3220A	3220A Es	3220B	3220B Es	3220CPro	3220C	3220C Es
Wavelength range		190 nm~900 nm			190 nm~900 nm		190 nm~900 nm		
Optical System	Lamp turret	8	8	8	8	8	8	8	8
	High performance lamp	2	2	0	2	0	2	2	0
	Multi-lamp warming-up	8	4	2	4	2	8	4	2
	Slit selection	5	5	4	5	4	5	5	4
	Monochromator	C-T Type	C-T Type	C-T Type	C-T Type	C-T Type	C-T Type	C-T Type	C-T Type
	Photomultiplier	R928	R928	CR131	R928	CR131	R928	R928	CR131
Atomizer	Graphite furnace	●	●	●	○	○	●	●	●
	Air-C2H2 Flame	●	●	●	●	●	○	○	○
	Flame emission	●	●	○	●	○	○	○	○
	Rich oxygen air-C2H2 flame (manual adjustment)	○	○	○	○	○	○	○	○
Background Correction System	Deuterium lamp	●	●	●	●	●	●	●	●
	Self-absorption	●	●	○	●	○	●	●	○
Automation and Control System	Auto-wavelength	●	●	○	●	○	●	●	○
	Automatic flame ignition	●	●	●	●	●	○	○	○
	Automatic gas flow	●	●	○	●	○	○	○	○
	Flame auxiliary system	●	●	○	●	○	○	○	○
	Flame sampler	●	○	○	○	○	○	○	○
	Graphite furnace sampler	●	○	○	○	○	●	○	○
Comprehensive Security Protection and Alarm System	Graphite furnace visualization system	●	○	○	○	○	●	○	○
		●	●	●	●	●	●	●	●
Function expansion	Audit trail function	○	○	○	○	○	○	○	○
	Hydride generator	○	○	○	○	○	○	○	○
	Special burner for high salt	○	○	○	○	○	○	○	○
	Mono-atomizer upgrade	○	○	○	○	○	○	○	○

● Standard    ○ Optional    ○ Not Available

## HPLC Servicing, Validation, Trainings and Preventive Maintenance :

**HPLC Servicing** :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

**Trainings** :We also take up preventive Maintenance to reduce downtime of HPLC's Trainings.

**AMC's/CMC** :AMC's/CMC :We offer user training both in-House and at customer sites on HPLC principles, operations, trouble-shooting.

**Validations** :Validations :We have protocols for carrying out periodic Validations as per GLP/GMP/USFDA norms.

**Instruments** :Instruments :We offer instruments/Renting Services Modules like pumps,detector etc. on Rent.



## About Analytical Technologies

Analytical Technologies is synonymous for offering technologies for doing analysis and is the Fastest Growing Global Brand having presence in at least 96 countries across the global. Analytical Technologies Limited is an ISO:9001 Certified Company engaged in Designing, Manufacturing, Marketing & providing Services for the Analytical, Chromatography, Spectroscopy, Bio Technology, Bio Medical, Clinical Diagnostics, Material Science & General Laboratory Instrumentation. Analytical Technologies, India has across the Country operations with at least 4 Regional Offices, 6 Branch Offices & Service Centers. Distributors & Channel partners worldwide.

## Our Products & Technologies



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Liquid Particle  
Counter



Optical Emission  
Spectrophotometer



DSC/TGA



Semi Auto Bio  
Chemistry Analyzer



HEMA 2062  
Hematology  
Analyzer



Micro Plate  
Reader/Washer



URINOVA 2800  
Urine Analyzer



Total Organic  
Carbon 3800



Fully Automated  
CLIA



NOVA-2100  
Chemistry Analyzer



PCR/Gradient PCR/  
RTPCR



TOC  
Analyzer



Laser Particle  
Size Analyzer



Ion Chromatograph



Water purification  
system

## Regulatory compliances



## Corporate Social Responsibility

Analytical Foundation is a nonprofit organization (NGO) found for the purpose of:



# Analytical Foundation

1. Research & Innovation Scientist's awards/QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personalities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at [Info@analyticalfoundation.org](mailto:Info@analyticalfoundation.org)

2. Improving quality of life by offering YOGA Training courses, Work shops/Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.



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