Skyray Instruments

Atomic Absorption Spectrometry



Atomic Absorption Spectrometer(AAS) Series


- AAS9000 Flame and Graphite Furnace Atomic Absorption Spectrometer
- AAS 8000 Graphite Furnace Atomic Absorption Spectrometer
- AAS 6000 Flame Atomic Absorption Spectrometer

AAS Series Atomic Absorption Spectrometers

Various Configurations to meet specific analysis demands

Overview

Atomic Absorption Spectroscopy is a spectroanalytical procedure for the quantitative determination of chemical elements. AAS technique is widely applied for determining the concentration of a elements in Chemistry and other fields such as metallurgy, environmental, petrochemical, industrial and pharmaceutical. Skyray Instruments Atomic Absorption Spectrometers feature low limits of detection with multiple atomization modes and state-of-the-art user friendly software.

AAS6000 Flame AAS

AAS Series

AAS 6000 Flame Atomic Absorption Spectrometer

Flame atomic absorption is applied to micro and trace metallic elements testing, covering over 30 elements including Cu, Zn, K, Na, Au, Ag and others.Skyray AAS6000 Atomic Absorption Spectrometer features fast lamp switching for convinient operation. With simple structure and great testing speed AAS6000 Flame AAS is a powerful and reliable tool for micro trace analysis.

AAS8000 Graphite Furnace AAS

AAS8000 Graphite Furnace Atomic Absorption Spectrometer

Graphite Furnace Atomic Absorption is suitable for trace and ultra-trace metallic elements test, covering over 60 elements and suitable for testing Cd, Cr, Pb, Al, Mo, etc. AAS 8000 with graphite furnace auto sampler and AAS 8000-M without graphite furnace auto sampler feature low detection limits, high sensitivity and Skyray state-of-the-art user friendly software. With simple structure and great testing speed AAS8000 Graphite Furnace AAS is a powerful and reliable tool for trace and ultra-trace analysis.

AAS 9000 Integrated AAS

AAS 9000 Integrated Atomic Absorption Spectrometer

AAS 9000 Integrated Atomic Absorption Spectrometer combines flame and graphite atomizers, incorporating both Flame and Graphite Furnace features. With Skyray state-of-the-art user friendly software users can switch atomizers quickly and automatically based on their needs. Users can also choose a cost effective AAS 9000-M option which comes without graphite furnace autosampler.

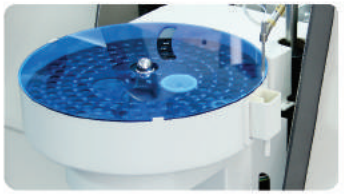
AAS Series Atomic Absorption Spectrometers

Features

All 8 lamps have individual power supplies. During operation 7 lamps are preheated simultaniously while the other lamp is working-thus dramatically reducing lamp switching and preheating
C2H2 analysis and flame measurement: full reflection and corrected aberration
Fully automatic operation
Safety protection of gas circuit
230nm grating blazed wavelength, enhanced ultra-violet zone sensitivity
1800 g/mm grating density and optimized resolution

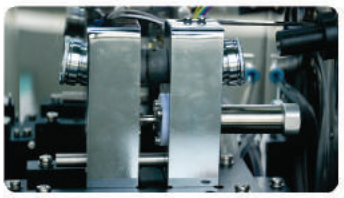
Scientific R&D

8-element lamp turret



Auto-sampler

Flame System



Graphite Furnace System

System Details

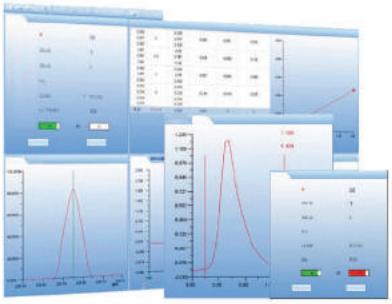
Host machine	Monochromator	Czerny-Turner
	Wavelength coverage	190nm ~ 900nm
	Wavelength accuracy	±0.25nm
	Wavelength repeatability	< 0.10nm
	Slits	auto-switch among 0.1/0.2/0.4/0.7/1.4 nm
Flame system	RSD(Cu)	< 1%
	Detection limit (Cu)	< 0.006μg/mL
	Characteristic concentration (Cu)	< 0.025μg/mL/1%
	Static stability	0.003 Abs
	Dynamic stability	0.005 Abs
Graphite furnace system	Temperature control range	room temp. - 3000℃
	Heating rate	3000℃/s
	RSD (Cd)	⩽ 2% (for auto sampling)
	RSD (Cd)	⩽ 5% (for manual sampling)
	Detection limit (Cd)	⩽ 1pg

Optional Items

Optional configuration	Low noise oil-less air compressor
	Auto water cooling system
	Hydride generator

AAS Series Atomic Absorption Spectrometers

Advanced Software



- Windows based advanced analytical AAS Software
- User-friendly design for quick training and simplified operation
- One Software covers all functions- parameter setting, instrument control, data processing, spectrum display, curve fitting, status monitoring etc.
- Multiple Report options including Excel export

Application Fields

- Geology, minerals, metallurgy, steel, non-ferrous metals
- Environmental analysis: air, water quality, soil and solid waste
- Petrochemical industry and light industrial products, crude oil and additional products
- Food, biomedicine and health products
- Building materials (glass, ceramic, paints, etc.)

AAS Series Atomic Absorption Spectrometers

Technical Specifications

	AAS 6000	AAS 8000	AAS 9000
Description	Only flame method, automatic	Only graphite furnace method, automatic	Flame and graphite furnace automatic
Host machine			
Optical system	No lens, concave lens, total reflection, achromatic optical system		
monochromator	Czerny-Turner		
Grating groove	1800lines/mm		
Slit	auto-switch among 0.1，0.2，0.4，0.7，1.4nm		
Detector	photomultiplier		
Light source	8-element lamp turret, 8 independent lamp power,7 lamps heating simultaneously at most while one is working		
Flame system			
Safety protection	(1)C_2H_2 leaking (2)C_2H_2 pressure monitoring (3)Air pressure monitoring (4)Burner monitoring (5)Flaming burning monitoring		(1)C_2H_2 leaking (2)C_2H_2 pressure monitoring (3)Air pressure monitoring (4)Burner monitoring (5)Flaming burning monitoring (6)Water seal monitoring If unusual, shut down automatically,with pop-up window displayed
Combustion system	Universal atomizer, easy to replace, pure Ti atomizing chamber and burner,high temperature and corrosion resistance		Universal atomizer, easy to replace, pure Ti atomizing chamber and burner, high temperature and corrosion resistance
Waste discharge system	Manual		Automatic water seal and monitoring system
Positioning of flame atomizer	Vertical and horizontal adjustment controlled by software		Vertical and horizontal adjustment controlled by software
C_2H_2 flow control	Precise mass flow controller adjust C_2H_2 flow, ensuring stable flow, safe and reliable		Precise mass flow controller adjust C_2H_2 flow, ensuring stable flow, safe and reliable
Graphite furnace system			
Positioning of graphite atomizer		Vertical and horizontal adjustment controlled by software	Vertical and horizontal adjustment controlled by software
Graphite furnace safety control		(1)Cooling water flow monitoring (2)Carrier gas pressure monitoring (3)Graphite tube temperature monitoring (4)Graphite furnace temperature monitoring	
Graphite furnace gas circuit		The internal and external gas of graphite furnace are PC-controlled. External gas protects graphite pipe from air oxidation, to maximize service life; internal gas carries matrix composition of drying and ashing process out of graphite tube.	
Replace of graphite tube		Pneumatic control	
Power supply		Built-in integrated design, compact structure, less electromagnetic interference, better power efficiency	
Furnace temperature control		Ramped heating mode, high power heating mode and light control heating mode used in combination to stabilize temperature control.	
Auto-sampler		Available as option	
Others			
Size (L×W×H)	870mm×565mm×595mm	1250mm×525mm×537mm	1296mm×565mm×532mm
Weight	100Kg	155Kg	165Kg
Power supply	220V±22V 50HZ±1HZ Power 2KW	220V±22V 50HZ±1HZ Power 2KW Graphite furnace: 220V±22V 50HZ±1HZ Power 5KW	
Environment	Temperature 5℃～35℃, relative humidity <80%		

Skyray Instruments

Skyray Instruments USA, Inc
1717 N. Akard Street, Ste 2520
Dallas, Texas, 75201 USA

+1 972 638 9035
www.skyrayinstruments.com
sales@skyrayinstruments.com

- Spectroscopy
- Chromatography
- Mass Spectrometry

Skyray Instruments specializes in the R&D, manufacturing and sales of analytical and measuring instruments in Spectroscopy, Chromatography and Mass Spectroscopy fields. Our Products include X-ray Fluorescence Spectrometry, Atomic Absorption Spectrometry, Gas Chromatography, Inductively Coupled Plasma Spectrometry, Mass Spectrometry and many others

Skyray has been providing customers around the world with reliable and affordable Scientific Instruments for more than 20 years