

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.

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 convenient operation. With simple structure and great testing speed AAS6000 Flame AAS is a powerful and reliable tool for micro trace analysis.



AAS6000 Flame 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.



AAS8000 Graphite Furnace 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 9000 Integrated AAS

AAS Series Atomic Absorption Spectrometers



Features

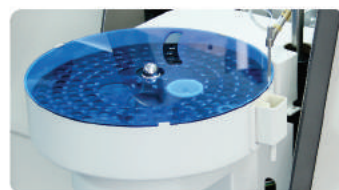
All 8 lamps have individual power supplies. During operation 7 lamps are preheated simultaneously while the other lamp is working—thus dramatically reducing lamp switching and preheating
 C₂H₂ analysis and flame measurement: full reflection and corrected aberration
 Fully automatic operation
 Safety 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°C |
| | Heating rate | 3000°C/s |
| | RSD (Cd) | ≅ 2% (for auto sampling) |
| | RSD (Cd) | ≅ 5% (for manual sampling) |
| | Detection limit (Cd) | ≅ 1pg |

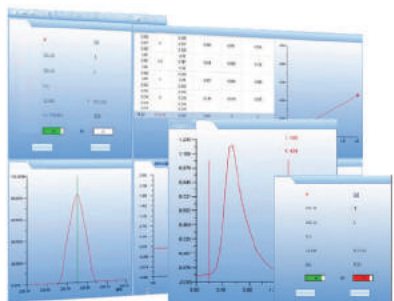
Optional Items

| | |
|------------------------|-----------------------------------|
| 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 ₂ H ₂ leaking (2)C ₂ H ₂ pressure monitoring (3)Air pressure monitoring (4)Burner monitoring (5)Flaming burning monitoring | | (1)C ₂ H ₂ leaking (2)C ₂ H 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 ₂ H ₂ flow control | Precise mass flow controller adjust C ₂ H ₂ flow, ensuring stable flow, safe and reliable | | Precise mass flow controller adjust C ₂ H 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



Contact us for LATAM:
Nanometrix Analytical Instruments
México

++55 4350 1226
www.nanometrix.com.mx
info@nanometrix.com.mx

• 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