



Graphite Furnace System

Excellence in Measurement

ISO9001:2008 CERTIFIED COMPANY



CE CB RoHS

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SP-AA 4500

Atomic Absorption Spectrometer

Spectrum Instruments improve the optical precision, linear range and background correction effectively. SP-AA 4500 is an external computer controlled AAS equipped with 8-lamp positions and automatic gas control.

System Design

Optical system	Developed optical noise reduction technology, which combined optical component UV enhancement technology. It improved instrument's optical performance, linear range and enhanced background correction.
Monochromator	Czerny-Turner type with 2 focal lengths at 355.8 and 345.6 mm, automated wavelength selection and slit selection.
Wavelength range	185-900 nm
Grating	Holographic diffraction grating with 1800 lines/mm
Wavelength repeatability	±0.1 nm
Wavelength accuracy	±0.3 nm
Detection limited	Cd ≤1.0 pg
Slits	Automated slit selection 0.1; 0.2; 0.4; 0.7; 1.4; 2.0 nm
Detector	Wide range UV sensitive photomultiplier tube
Lamp	Automated 8-lamp turret with independent lamp power supply for each lamp and two heating circuits for preheating lamp operation. Non-coded lamp and coded lamp can be used.
Background Correction	Deuterium (D2) Background Correction and Self-absorption Background Correction.

Graphite furnace System

Heating System	Integrated computer-controlled Longitudinal Heated Graphite Furnace.
Function	Analytical furnace program up to 9 steps can be set up.
Temperature	Programmable temperature up to 3000 °C in 1 °C increment.
Heating Rate	Maximum linear heating rate is 2000 °C/s under software control.
Ramp time & Holding time	1s~255s
Gas Flow	Choice of two inert gases with computer-controlled flows. Separate control of inert gas stream is Argon for internal and external gas flow. The external gas flow is 1 L/min and internal gas flow in the graphite tube can be adjusted up to 250 mL/min
Cooling System	A closed circuit optimized to save time, water and provide stable condition. Water temperature during operation is approx. 25 °C.
Autosampler for Graphite	Injection volumes from 1 to 50 µL in increments of 1 µL are user selectable. Automatic dilutions and additions of three different modifiers are available. Corrosion resistant sample tray holds 87 positions.
Camera for Graphite tube	This camera provides a full-color image monitoring for observation of the sample injection by autosampler or manual injection. It is also able to observe the sample drying in Graphite tube.
Safety Functions	Warning will function when cooling water flow failure, gas pressure over, Furnace temperature too high, Graphite tube broken.
Hydride System (option)	The Hydride system is a continuous flow technique for the determination of As, Se, Sb, Sn, Te, Bi and Hg at low microgram per liter (ppb) concentration with electrothermal heating unit (600-950°C) to heat the quartz cell. The Hg will be determined with the cold vapour technique. The system has the gas flow control including two peristaltic pumps for supply the reagent, acid and samples solution.

Other information

Software	SPWinAA Software Package
Weight	120kg
Dimensions (W x D x H)	800 mm x 570 mm x 580 mm
Environmental Requirements	10 °C up to 35 °C Rel. humidity max. 85 %
Power Requirements	110 / 220V±10%, 50/60Hz