



Single Beam

Quality Products for Reliable Results

ISO9001:2008 CERTIFIED COMPANY



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Headquarter

SPECTRUM INSTRUMENTS AUST PTY LTD
1211/ 7, Riverside Quay, South Bank,
Victoria 3006, Australia.
Website: www.spectrum-instruments.com.au
Email: info@spectrum-instruments.com.au

Internatinoal Support Center

SPECTRUM INSTRUMENTS AUST PTY LTD
121/2, 7th Fl. Sricharoenchai Bldg.,Tiwanon Rd.,
Talat Khwan, Mueang, Nonthaburi 11000. Thailand.
TEL : +66 (2) 5265621-2 FAX : +66 (2) 9689272
Website: www.spectrum-instruments.com.au
Email: info@spectrum-instruments.com.au

Asia Pacific Support Center

SPECTRUM INSTRUMENTS AUST PTY LTD
Asia Pacific Representative Office
121/2, 7th Fl. Sricharoenchai Bldg.,Tiwanon Rd.,
Talat Khwan, Mueang, Nonthaburi 11000. Thailand.
TEL : +66 (2) 5265621-2 FAX : +66 (2) 9689272
Email: sales_apac@spectrum-instruments.com.au

SP-AA 3000

Atomic Absorption Spectrometer

The SP-AA 3000 from Spectrum Instruments is a fully automated computer controlled Flame AAS instrument featuring an 8-lamp turret, automatic gas box and automatic burner height setting. The instrument and all accessories are controlled by the SPWin-AA Software. The majority of samples will run smoothly with this instrument, if the stored default methods are applied. In case of unique challenges our application experts will take personal responsibility for responding to the customers' needs.

System Design

Optical System	High light throughput Single Beam
Modes of Operation	Atomic Absorption and Atomic Emission
Monochromator	Czerny-Turner type with 2 focal lengths at 355.8 and 345.6nm, Automated wavelength and slit selection.
Wavelength Range	185-900 nm
Grating	Holo graphic grating with 1800 lines
Slits	Automated slit selection 0.1; 0.2; 0.7 and 1.4 nm
Detector	Wide range UV sensitive photomultiplier tube
Lamp	Automated 8-lamp turret with independent lamp power supply for each lamp. Two additional heating circuits for preheating lamps.
Background Correction	Deuterium (D ₂) Background Correction and Smith-Hieftje (Self-absorption) Background Correction.

Flame System

Burner-Nebulizer-System	Titanium 100mm and 50mm burner heads: 100mm burner head for air / acetylene operation, 50mm burner head for both air/acetylene and nitrous oxide/acetylene operation. Adjustable nebulizer using all Platinum / Iridium capillary, PEEK Nozzle and fixed ceramic impact bead is supplied as standard. Automated burner height setting for each element by software, using a motorized burner mount for vertical burner adjustment. The optimization of the operating flame condition is also fully automatic and software controlled.
Spray Chamber	The PPS (Polyphenylene Sulfide) spraychamber is used for both aqueous and organic solution.
Gas Controls	Software controlled gas box allows the automatic setting of gas flows for each element.
Safety Functions	Interlocked safety system prevents selection of the nitrous oxide flame if the nitrous oxide burner is not fitted. Sensor controls for protection to use the incorrect burner head and check the siphon system. In case of pressure failure of fuel or oxidant gas, or power failure, safety interlocks will shut down the gases automatically in the right order.
Hydride System (option)	The Hydride system is a continuous flow system for the determination of As, Se, Sb, Sn, Te, Bi and Hg at low and sub microgram per liter (ppb) levels using an electrically heated quartz cell. For the determination of Hg, the cold vapor technique is used. Gas flow and two peristaltic pumps for the supply of reagent, acid and sample solutions are controlled by the software.
Autosampler for Flame (option)	Corrosion resistant 85 position sample tray. Standard preparation and sample dilution function is included.

Graphite Furnace System (option)

Graphite Furnace	Integrated computer-controlled Longitudinal Heated Graphite Furnace.
Furnace Programs	Analytical furnace programs can be set with up to 9 steps.
Temperature	Programmable temperature up to 3000 °C in 1 °C increments. Maximum linear heating rate is 2000 °C/s under software control.
Gas Flow	Choice of two inert gases with computer-controlled flows. Separate control of inert gas stream is Argon for internal and external gas flows.
Cooling System	A closed circuit cooling system is optimized to save time, water and provide stable furnace condition. Water temperature during operation is approx. 38 °C.
Autosampler	Injection volumes from 1-50 µL in increments of 1 are user selectable. Automatic dilutions and additions of three different modifiers are available. Corrosion resistant sample tray holds 87 positions.

Other information

Software	SPWin-AA Software Package
Weight	100kg
Dimensions (W x D x H)	800 mm x 600 mm x 575 mm
Environmental Requirements	10 °C up to 35 °C Rel. humidity max. 85 %
Power Requirements	110 / 220V±10%, 50/60Hz, 1000W (Max.)