Atomic Absorption Spectrophotometer
DW-200

FEATURES

Integrated flame/graphite furnace atomization system, changeable with flame emission burner

◆ Automatically controlled changeover of the integrated flame and graphite furnace atomizer featuring easy operation and time saving eliminates human labor.

◆ A flame emission burner head can be installed to perform flame emission analysis to Alkali metals as K, Na etc.

Accurate fully automated control system

◆ Automatic 6-lamp turret, automatic adjustment of lamp current and optimization of light beam position.

◆ Automatic wavelength scanning and peak picking

◆ Automatic spectral bandwidth changing

◆ Automatic changeover between flame and graphite furnace operation, automatic optimization of position parameters, automatic ignition and automatic gas flow setting

Reliable fully automatic graphite furnace analysis

◆ Adopting FUZZY-PID and dual curve mode light-controlled temperature control technique, temperature auto-correction technique, ensures fast heating, good temperature reproducibility and high analytical sensitivity. The temperature control accuracy is less than 1%.

◆ Graphite furnace with pneumatic control and pressure lock ensures constant pressure and reliable contact.

◆ Multi-function auto sampler features automatic standard sample preparation, automatic correction of sampling probe depth, automatic tracing and correction of liquid surface height in the sample vessel, with the sampling accuracy of 1% and reproducibility of 0.3%, realizing fully automation of graphite furnace analysis.

Perfect safety protection measures

◆ Alarm and automatic protection to fuel gas leakage, abnormal flow, insufficient air pressure and abnormal flame extinction in flame system;

◆ Alarm and protection function to insufficient carrier gas and protective gas pressure, insufficient cooling water supply and over-heating in graphite furnace system.

Advanced and reliable electronic design

◆ Adopting large-scale programmable logic array and Inter I2C bus technology

◆ European type sockets and AMP adapters with high reliability to ensure long term reliability of the whole electronic system.

Easy and practical analysis software

◆ Easy-to-use AAS analysis software is made under Windows operating system, realizing fast parameter setting and optimization.

◆ Automatic sample dilution, automatic curve fitting, automatic sensitivity correction.

◆ Automatic calculation of sample concentration (content), mean value, standard deviation and relative standard deviation calculation.

◆ Multi-elements determination in sequence to the same sample.

SPECIFICATIONS

Main Specification	**Wavelength range**	**190-900nm**
	Wavelength accuracy	**Better than ±0.25nm**
	Resolution	**Two spectral lines of Mn at 279.5nm and 279.8nm can be separated with the spectral bandwidth of 0.2nm and valley-peak energy ratio less than 30%.**
	Baseline stability	**0.004A/30min**
	Background correction	**The D2 lamp background correction capability at 1A is better than 30 times. The S-H background correction capability at 1.8A is better than 30 times.**
Light Source System	**Lamp turret**	**Motorized 6-lamp turret (Two high performance HCLs can be mounted on the turret to increase the sensitivity in flame analysis.)**
	Lamp current adjustment	**Wide pulse current: 0~25mA, Narrow pulse current: 0~10mA.**
	Lamp power supply mode	**400Hz square wave pulse; 100Hz narrow square wave pulse + 400Hz wide square pulse wave.**
Optical System	**Monochomator**	**Single beam, Czerny-Turner design grating monochromator**
	Grating	**1800 l/mm**
	Focal length	**277mm**
	Blazed Wavelength	**250nm**
	Spectral Bandwidth	**0.1nm, 0.2nm, 0.4nm, 1.2nm, auto switch over**
Flame Atomizer	**Burner**	**10cm single slot all-titanium burner**
	Spray chamber	**Corrosion resistant all-plastic spray chamber.**
	Nebulizer	**High efficiency glass nebulizer with metal sleeve, sucking up rate: 6-7mL/min**
	Emission burner provided	
Graphite Furnace	**Temperature range**	**Room temperature~3000°C**
	Heating rate	**2000°C/s**
	Graphite tube dimensions	**28mm (L) x 8mm (OD)**
	Characteristic mass	**Cd≤0.8 ×10^{-12}g, Cu≤5 ×10^{-12}g, Mo≤1×10^{-11}g**
	Precision	**Cd≤3%, Cu≤3%, Mo≤4%**
Detection and Data Processing System	**Detector**	**R928 photomultiplier with high sensitivity and wide spectral range.**
	Software	**Under Windows operating system**
	Analytical method	**Working curve auto-fitting; standard addition method; automatic sensitivity correction; automatic calculation of concentration and content.**
	Repeat times	**1~99 times, automatic calculation of mean value, standard deviation and relative standard deviation.**
	Multi-task Functions	**Sequential determination of multi-elements in the same sample.**
	Condition reading	**With model function**
	Result printing	**Measurement data and final analytical report printout, editing with Excel.**
	Standard RS-232 serial port communication	
Graphite Furnace Autosampler	**Sample tray capacity**	**55 sample vessels and 5 reagent vessels**
	Vessel material	**Polypropylene**
	Vessel volume	**3ml for sample vessel, 20ml for reagent vessel**
	Minimum sampling volume	**1μl**
	Repeatable sampling times	**1~99 times**
	Sampling system	**Accurate dual pump system, with 100μl and 1ml injectors.**
Characteristic Concentration and Detection Limit	**Air-C2H2 flame**	**Cu: Characteristic concentration ≤ 0.025 mg/L Detection limit≤0.006mg/L;**
Function Expansion	**Hydride vapor generator can be connected for hydride analysis.**	
Dimensions and Weight	**Main unit**	**107X49x58cm, 140kg**
	Graphite furnace	**42X42X46cm, 65kg**
	Autosampler	**40X29X29cm, 15kg**