

TOPLAB INDIA
"Serving Science with Solution"



TL-1800AA

Atomic Absorption Spectrophotometer



Double Beam
High stability
Most universal
Easy installation
Very competitive price
Excellent after sales service

Flame Analytical System

TOPLAB INDIA'S TL-1800AA Series Atomic Absorption Spectrophotometer is Double beam spectrophotometer, absorbed the latest technology and next generation R & D, application experience with decades of spectral instruments. The AAS product includes the Flame, Graphite furnace and Hydride generation system can be equipped with various accessories, flexible configuration program can meet different customer demand. TL-1800AA atomic absorption spectrometer can be used for analysis of complex samples, full automatic multifunctional, and various analysis methods can automatically switch, unmanned automatic analysis.

TL-1800AA Series Atomic Absorption Spectrophotometer is now widely used in scientific research, quality control, disease control, Soil testing, Water testing, environmental protection, metallurgy, Fertilizer, agriculture, chemical industry .Hardware and software design of innovation to ensure the accuracy, safety, ease of use in the analysis of samples, equipment maintenance, simple and convenient.

Main features

High Precision Automatic Optical System

Double beam Optical System with 1800 lines/ mm reticle (dispersion rate) large area grating monochromator, a new type self-collimation, all lenses are quartz coating, the detection range and the stability of optical broad to ensure the precision of analysis. Automatic 6 socket configuration of Six Lamps (L6) independent power supply, can be respectively preheating

Polymer spray chamber

Polymer materials corrosion spray chamber, acid and alkali resistance, Including hydrofluoric acid, either organic or inorganic solution can be the highest sensitivity and stability

Titanium burner

Titanium burner, 100mm burner and the optional 50mm Nitrous Oxide, Air cooling pre-mixed type, corrosion resistant, resistant to high salt, greatly Improve the analysis efficiency and accuracy of the flame. The new 50mm Nitrous Oxide enriched flame technology can be upgraded, The flame temperature rises to above 2700°C, realizing a high-temperature flame without dangerous chemical laughing gas, and ensuring the determination of high-temperature elements



Grating



**100mm & 50mm
Burners**

Automatic analysis

It can automatically accomplish safety ignition, extinction and switching, reliable structure, low fault rate, thus ensuring the sensitivity and reproducibility of the flame method. The light source system Six lamp automatic conversion, can be directly used high performance hollow cathode lamp, improve the sensitivity analysis of the flame, the automatic adjustment of the power supply parameters and the beam position, automatic wavelength scanning and searching peak.

Software function

PC Operated TL-1800AA system with high intelligent software, powerful function, friendly interface operation. Automatic instruments and additional control, flame, graphite furnace operating mode can be switched automatically, automatic optimization, automatic dilution; mouse operation, automatic setup menu data and correction method.



Automatic Gas Control System

Graphite Furnace Analytical System

Graphite furnace temperature control

Gas dual temperature control inside and outside, 20 order linear or nonlinear heating, to ensure that the measured elements has the highest sensitivity; furnace enriched up to 20 times, the longitudinal optically monitoring the pyro coated high density graphite cuvettes suitable for all temperature, maximum temperature to 3000°C.

High technology index

TL-1800AA Series Double Beam Atomic Absorption Spectrophotometer elements test sensitivity meet international best level, sensitivity of less than or equal to 0.015µg/mL/1%; baseline drift is less than 0.003Abs/30m, the stability is better than 0.005Abs/4h.

Background correction system

Using D2 lamp and self-absorption background deduction of Background correction, & advanced Zeeman Background Correction for Graphite Furnace to eliminate the interference of molecular absorption of low content determination, reducing the noise emission of deuterium lamp and prolongs the service life, has excellent stability. Deuterium lamp background signal for 1A, background correction ability > 50 times.

Intelligent analysis

TOPLAB INDIA'S TL-1800AA Series has Great intelligence, humanized design, Integrated Flame and Graphite furnace atomizer automatic switching, automatic optimization of Graphite furnace atomizer, automatically set the flame height adjustment, automatic ignition, automatic optimization of the horizontal position, system automatically sets the gas flow. In the case of power failure, disoperation, acetylene leakage, the system will automatically start the safety protection

Automatic sampler

Integrative design of Graphite Furnace, using high precision syringe, lowest in 0.5µl samples, with intelligent online dilution and concentration function.

Hydride Generator

High sensitivity: Determination of As: index: 0.08ng/ml/1%A Low detection limit: 3 times the standard deviation calculation, Numerical sensitivity is known as 2/3(ng/ml), which can meet the requirement of sample 0.01 – 0.1ppm test. High degree automation: Just press the start button can automatically complete the sampling, occurrence, reading, cleaning of the whole process. Single sampling 2- 2.5ml, single measurement time is less than 30S.

Atomizer

High efficient nebulizer common type metal glass. Lifting capacity 1-10mL. Continuously adjustable metal sleeves glass high efficiency glass atomizer. Hydrofluoric acid resistant metal sleeves high efficiency atomizer.



Graphite Pipe



Hollow Cathode Lamps



Automatic Sampling Device module



Hydride Vapour Generator



Atomizer

Technical parameters:

Main AAS System	Model	TL-1800AA
	Light Source	6 Lamps automatic turret, automatic alignment
	Optical System	Double beam Optics, fully closed optical system Large 1800 lines /mm grating reticle, 0.5nm/mm@ 200nm linear reciprocal dispersion
	Wavelength Range	180nm ~ 900nm Automatically peak find, a key optical optimization function
	Wavelength Accuracy	≤0.1nm
	Wavelength Repeatability	±0.02nm
	Spectral Bandwidth	0.1nm,0.2nm,0.4nm,1.0nm,2.0nm (5 steps with automatic changeover)
	Baseline Stability	≤±0.002A/30 min (Static) ≤±0.005A/30min (Dynamic)
	Absorbance Range	0 ~ 4 A
Flame Analytical System	Detector	Imported Photomultiplier Tube (PMT)
	Burner Head	Full titanium combustion head, 50mm or 100mm general combustion head
	Atomization Chamber	Polymer explosion-proof spray chamber
	Nebulizer	Atomizer efficient glass atomizer, can also be customized
	Flame Atomiser Positioning	Software controlled horizontal and vertical positioning
	Ignition Type	Microcomputer control, automatic ignition through software operating
	Gas Control	Automatic gas control system
	Detection Limits(Cu)	0.002µg/mL
	Precision	RSD≤0.5%
Graphite Furnace Analytical System	Heating Mode	Vertical heating
	Temperature Control Method	Vertical optical temperature monitoring graphite tube wall temperature
	Temperature Range	Room Temperature (RT) to 3000°C
	The Program	Automatic temperature control up to 20 order
	Furnace Vision System	Coloured GFTV camera system
	Temperature Control	The furnace enriched up to 20 times
	Characteristics Volume	0.5×10^{-12} g (Cd)
	Detection Limit	0.4×10^{-12} g (Cd)
	Precision	RSD≤3%
	The Cooling Water	Can choose cooling water circulation system
	Safety	The graphite tube damage, water flow, air pressure and other alarm temperature overheating protection
Autosampler	Sample Tray	130 sample cups, 6 reagent cup
	Sample Volume	1-100µl
	The Smallest increment	0.1µl
	The Volume of Sample Repeatability Volume	better than 1% (at the time of 10mL-100mL)
	Repeated Sampling Frequency	up to 99 Times
	Cleaning Waste Container Size	each 500mL
Power Supply	AC220V (+5% ~ -10%), 60/50Hz, Lamp Current : Pulsed power supply	
Weight/Size	150 Kg / Dimensions: (L)988mm *(W)412mm* (H)440mm	
Interface	Computer and USB interface communication	
Software	PC communication software to control AAS system, Data processing, Data analysis, Print etc.	

Hydride Vapour Generator	Method	The Hydride Atomic Absorption method is used to determine trace elements such as Arsenic(As), Selenium(Se), Antimony(Sb), Bismuth(Bi), Lead(Pb), Tin(Sn), Tellurium(Te) and Germanium(Ge). The cold Atomic Absorption is used to determine Mercury (Hg).
	Pneumatic Automated Technology	Auto-sampling system, Automatic fluid measurement system, low stabilizer, Program-time controller and so on are pneumatic automatic systems which are run by the carrier gas source pressure.
	Highly Automatic	After pressing the start key, the whole process (sampling, reacting, calibrating and cleaning) will be finished automatically.
	Unique Electric Quartz Absorption Tube (Atomizer)	Compact (can be used in the Zeeman AAS), Speedy Temperature rising, easy installation, and Stable Temperature
	Sensitivity	≤1ng/ml/1%A
	Sensitivity of Arsenic(As)	≤0.15ng/ml/1%A
	RSD	≤3%
	Less Solution	Sample 2-2.5mL (including clean), Potassium borohydride 1-1.5mL, carrier liquid 5-6mL.
	Measurement Time	25 – 35 Seconds
	Weight	1.5 Kg
	Size (L*W*H)	210*150*120mm
	Power Supply	AC220V, 50/60Hz
Oil-Free Air Compressor	Air Flow	118L/min
	Speed	1400RPM
	Max. Pressure	8Bar
	Restart Pressure	5Bar
	Tank Capacity	24Litre
	Noise Level	52dB
	Power	600W
	Weight	25 Kg
	Size (L*W*H)	400*400*520mm
	Power Supply	AC220V, 50/60Hz
Recirculating Water Chiller	Cooling Mode	Compressor Cooling
	Temperature Controller	PID Controller
	Temperature Range	5°C – 35°C
	Accuracy	±1°C
	Cooling Capacity	1300W @25°C
	Pump Pressure	≤1.3Bar
	Pump Flow	≤15Litre/min
	Tank Volume	8 Litre
	Tank Material	Stainless Steel SS304
	Refrigerant	R134a
	Size (W*D*H)	360*450*653mm
	Power Supply	AC220V, 50/60Hz

SPARE PARTS AND ACCESSORIES



BURNER ASSEMBLY



AUTOMIZER



INJECTION TUBE



DATA CABLE



ACETYLENE HOSE



HOLLOW CATHODE LAMPS



HYDRIDE GENERATOR



AAS FUME HOOD



CHILLER

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