

5800 Atomic Absorption Spectrophotometer



5800 Atomic Absorption Spectrophotometer is a modified model based on 7800. It is an economical flame atomic absorption spectrophotometer with high performance, easy operation, accurate measurement and stable functions. It meets the requirement of limited budget and is well received by vast number of users.

Main Features

- On the basis of 7800 AAS, considering commonly used functions, selectively keep some functions, highly cost effective.
- The instrument has good stability, wide measurement range, low detection limit, high resolution and high sensitivity
- Unique optical design greatly increases the sensitivity in visible range. The outstanding mechanical and optical system plus excellent software ensure measurement accuracy
- Rapid change of gas flow, grating rotation, slit and hollow cathode lamps
- Widely used in rare earth analysis, precious metal analysis, environmental protection, water quality inspection, alloy materials, construction materials, medicine and health, colleges and universities for quantitative analysis of elements
- Practical structure, simple operation, easy to master
- Fully satisfy the users who require flame analysis only
- Optional nitrous oxide is available. It expands measurement range and meets the demands from different areas.

Specifications

- Wavelength range: 190-900nm
- Grating: 1800lines/mm
- Wavelength repeatability: ± 0.1 nm
- Wavelength indication error: ± 0.2 nm whole range
- Optical system: Czerny-Turner, integrated optical platform, fully closed optical system
- Resolution: spectral bandwidth = 0.2nm, can separate Mn two lines (279.5nm and 279.8nm), valley/peak energy ratio < 30%
- Spectral bandwidth: 0.1, 0.2, 0.4, 1.0nm
- Static baseline drift: ≤ 0.004 ABS/30min (Cu)
- Background correction technology: D2 (background signal = 1Abs, correction capability ≥ 50 times)
- Instrument design: integrating structure of suspended internal and external optical path
- Lamp turret: 4-lamp turret (4 lamps can preheat simultaneously)
- Burner head: air/acetylene (100mm, optional 50mm nitrous oxide/acetylene burner is available)
- Nebulizer: high-efficiency glass nebulizer
- Ignition dynamic baseline drift: ≤ 0.004 ABS/30min (Cu)
- Characteristic concentration: Cu ≤ 0.025 μ g/ml/1%
- Detection limit: Cu ≤ 0.008 μ g/ml
- Reproducibility: $\leq 0.5\%$; (Cu, absorbance > 0.8 ABS)

- Gas flow control: manual
- Ignition: via buttons on the control panel
- Safety protection: automatically cut off gas in case of low pressure, power failure, flame out, or burner mismatched
- Background correction method: SR and D2, can correct 1A background. Background signal = 1A, correction capability ≥ 50 times
- Dimension: 700*550*530mm

Accessories

Graphite Furnace

- Graphite furnace atomization device is an electrothermal atomizer that increases the sensitivity of most metal elements from mg/L to $\mu\text{g/L}$
- Advanced optical controlled temperature programming system, realize automatic full power heating at atomization stage.
- Heating condition setup: drying, ashing, atomization and two heating modes.
- Temperature range: ambient-3000°C
- Temperature control mode: voltage feedback mode for drying and ashing, voltage or optical control feedback for atomization
- Characteristic concentration: $\text{Cu} < 1.0 \times 10^{-10} \text{g}$, $\text{Cd} < 1.0 \times 10^{-12} \text{g}$

Auto Sampler

- Automatic curving function: do not need manual set of calibration curves. Prepare a standard solution, then the sampler will automatically set the calibration curve and measure.
- Intelligent residual removal function: do not need artificial judgement and operation. It will automatically tell whether there are residuals and remove residuals to eliminate cross-contamination
- Intelligent dilution function: fully automatic dilution. According to sample concentration, the instrument will automatically give dilution ratio, match to the best measurement area, and automatically finish dilution and measurement. The whole process needs no manual intervention
- In-tube visual system: monitor injection and drying process. All tiny subtleties of drying come into your view, enabling fast and accurate setup of ashing temperature
- Quality control: intelligent analysis quality control technology, calibrate blank and quality control sample at regular intervals and monitor the precision of test results

Hydride Generator

- Essential analytical equipment for environmental monitoring, food hygiene, quality inspection, commodity inspection, and drinking water monitoring
- Highly automated: only one start key. Sampling, generating, measuring and cleaning will all be done by pressing the button.
- Unique electrothermal quartz absorption tube: Small and exquisite device, heated quickly, convenient to install, with stable temperature, more than 10 times lifetime than flame, free of gas consumption, analytical

method can be rapidly changed once it is cooled down.

■ Adopt advanced flow injection technology. Sample reaction is more uniform. The stability is improved. RSD<2%

■ Measurement rate: 100times/hour

■ Single sampling volume: <2mL

Flame System

Item	5800	7800
Wavelength Range	190-900nm	190-900nm
Grating	1800lines/nm	1800lines/nm
Wavelength Repeatability	±0.1nm	±0.1nm
Wavelength Indication Error	Whole range ±0.2nm	Whole range ±0.2nm
Optical System	Czerny-Turner system, integrated optical platform, fully sealed optical system	Czerny-Turner system, integrated optical platform, fully sealed optical system
Resolution	Spectral bandwidth =0.2nm can separate Mn two lines (279.5nm and 279.8nm, valley/peak energy ratio <30%)	Spectral bandwidth =0.2nm can separate Mn two lines (279.5nm and 279.8nm, valley/peak energy ratio <20%)
Spectral Bandwidth	0.1nm, 0.2nm, 0.4nm, 1.0nm	0.1nm, 0.2nm, 0.4nm, 0.7nm, 1.0nm, 2.0nm
Static Baseline Drift	≤0.004ABS/30min (Cu)	≤0.002ABS/30min (Cu)
Background Calibration Technology	D2 (background signal =1Abs, background correction capability ≥50 times)	D2 (background signal =1Abs, background correction capability ≥50 times)
Instrument Design	Integrating structure of suspended internal and external optical path	Integrating structure of suspended internal and external optical path
Lamp Turret	4-lamp turret (4 lamps can be preheated simultaneously)	6-lamp turret (6 lamps can be preheated simultaneously)
Burner Head	Air-acetylene burner head (100mm, optional 50mm nitrous oxide-acetylene is available)	Air-acetylene burner head (100mm)
Nebulizer	High-efficiency glass nebulizer	High-efficiency glass nebulizer
Ignition Dynamic Baseline Drift	≤0.004ABS/30min (Cu)	≤0.004ABS/30min (Cu)
Characteristic Concentration (Cu)	≤0.025μg/ml/1%(Absorbance>0.8ABS)	≤0.02μg/ml/1%(Absorbance>0.8ABS)
Detection Limit	Cu≤0.008ug/ml	Cu≤0.004ug/ml

Repeatability (Cu)	≤0.5%	≤0.5%
Gas Flow Control	Manual	Auto
Ignition Method	via buttons on the control panel	PC control
Safety Protection	Automatically cut off gas in case of low pressure, power failure, flame out, or burner mismatched	Automatically cut off gas in case of low pressure, power failure, flame out, or burner mismatched
Background Correction Method	SR and D2, correct 1A background. When background signal =1Abs, correction capability ≥50 times	SR and D2, correct 1A background. When background signal =1Abs, correction capability ≥50 times
Dimension	700*550*530mm	700*550*530mm

Graphite Furnace System

Item	Specification
Graphite Furnace Visual System	Must be configured with graphite furnace visual system, to intuitively monitor the sample's dynamic evolution during drying, ashing and residue burning process in the graphite tube, conveniently observe the auto sampler's capillary injection needle reaching the best position and depth in the tube, as well as the position of the platform placed in the graphite tube. It ensures analysis precision and graphite tube's lifetime. Meanwhile, it is a perfect training tool.
Graphite Furnace Protection	Instantly stop heating and alarm in case of graphite furnace accidentally broken
Heating Method	Longitudinally
Internal Gas Flow	Automatic adjustment
Working Temperature	Ambient - 3000°C
Max. Heating Rate	≥3000°C/s
Characteristic Value	Cd≤1pg, Cu≤10pg
Measurement Repeatability	Cd≤3%, Cu≤3%
Temperature Control Method	Power control for drying and ashing, optical control max. Power heating for atomization
Operation Software	Windows operation software
Extended Function	Hydride generator

Dimension	280*550*450mm
-----------	---------------

Auto Sampler

No. of Samples	85 positions	Sampling Volume	1µL-50µL
Cup Material	Polypropylene	Sampling Precision	Better than 1% when volume ≥10µL
No. of Matrix Modifier	5	Min. Increment	1µL
Standard Cup Volume	2mL sample, 10mL reagent		