

EWAI Products

ICP-TOF-MS 3800 Inductively Coupled Plasma Time-of-Flight Mass Spectrometer
Ebio Reader 3700/Ebio Reader 3700 Plus Time of Flight Mass Spectrometer
PRO-MS 3600 Process Mass Spectrometer
PTR-QMS 3500 Proton transfer reaction mass spectrometry
GC-MS 3200/3250 Gas Chromatograph-Mass Spectrometer (Quadrupole)
GCxGC TOF MS 3300 Comprehensive Two-dimensional Gas Chromatograph – Time of Flight - Mass Spectrometer
GC-4000A/4100/4200 Series Gas Chromatograph
EW-4400 Portable PID Gas Analyzer
LC-5520 High Performance Liquid Chromatograph
IC-2800 Ion Chromatograph
ICP-7700/7760HP/7762 ICP Spectrometer
AA-7003/7020/7050/7050D/7090/7095 Atomic Absorption Spectrometer
UV-6010/UV-6020 UV-visible spectrophotometer
AF-7500/7500B/7550 Atomic Fluorescence Spectrometer
LC-AF 7590 liquid chromatography-atomic fluorescence spectrometer
XD-8010 Energy Dispersive X-Ray Fluorescence Spectrometer
CA-9000 Mobile Inspection Lab
Bundle monitoring system and coal mine specialized analytical instruments
LIMS Laboratory Information Management System

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AA-7003 Series

Atomic Absorption Spectrometer
EAST & WEST ANALYTICAL INSTRUMENTS, INC.

Simply Precise

EWAI stands out through its commitment to excellence and diverse product portfolio. Our modern international management ensures continuous improvement in product performance and quality, while delivering customized solutions.

Our journey began in China, where we have maintained strong dedication to advancing scientific instrumentation. The 2007 launch of our independently developed GC-MS 3100 marked a milestone in China's analytical instrumentation industry.

EWAI has grown from a single product to hundreds of models across chromatography, spectroscopy,

mass spectrometry, and rapid detection systems. With global distribution reaching dozens of countries, we have become a recognized player in the analytical instrument market.

Our strategic vision led to the 2013 acquisition of GBC Scientific Equipment, establishing production bases in China, Australia, and Malaysia. The "EWAI" brand is increasingly influential internationally.

We remain dedicated to our core values of quality and innovation, working collaboratively with customers to achieve shared success.

- ISO9001 Quality Management System Certificate
- 21315 Quality Credit AAA Grade Certificate
- Top Ten Chromatography Instrument Awards from BCEIA
- Gold Award from BCEIA
- The Designated Enterprises for Coal Mine Safety Equipment
- The Most Popular Manufacturer Award in the instruments and equipment industry

- ISO14001 Environmental Management System Certificate
- CE Certificate
- Top Ten Spectroscopy Instrument Awards from BCEIA
- Innovation Award
- Beijing Science and Technology Award
- Scientific Instruments Product Excellence Award



High Tech Enterprise Certificate



ISO9001



ISO14001



21315 Quality Credit AAA Grade Certificate



Innovative Design Red Star Award



National Important New Product

AA-7003 Series Atomic Absorptrometer

Application

The AA-7003 series atomic absorption spectrophotometer can be widely used in the fields of metallurgy, petrochemical industry, geology, medical science, environmental protection, scientific research, agriculture, disease control, food, material science, quality inspection etc. The AA-7003 series can be used to analyze over 70 elements at both normal or trace levels.



Features

Advanced Optical System

- The AA-7003 series features a unique suspension design for the optical system. Shaking of the instrument bench or change of the environmental temperature will have no effect on instrument's stability. (Patent no. ZL200620023296.X)
- First domestic manufacturer to use an 1800 lines/mm diffraction grating, which increases resolution and energy efficiency.
- Carefully designed deuterium lamp background deduction and self-absorption background deduction, results in more accurate calibration.
- The fully automatic six-lamp rotating turret is completely controlled by a computer. 1 "click" operation would allow automatic selection of lamp, wavelength scanning, wavelength positioning, energy balancing, etc.

Integrated Design

- The AA-7003 features an integrated flame and graphite furnace design that contains the optical system, atomizer, graphite furnace power supply and electronics all in one unit. It is first such design and one of the most compact AAS in the world. (Patent No. ZL200620023298.9)
- Optimized lamp power supply technology to prolong lifetime of element lamps.

Automated Switch between Flame and Graphite Furnace

- The convenient switchable workbench enables a manual quick switch between flame and graphite furnaces in just two seconds.
- Optics do not need to be adjusted between switches. (Patent No. ZL200620023297.4)

Reliable Safety System

- Safe and reliable control alarm devices to ensure over-current protection for hollow cathode lamps.
- Under-pressure protection of combustion gas/protection gas, leakage alarm of combustion gas, over-heating protection for graphite furnace and protection against abnormal flame.



A patent for our unique optical system suspension design.



A patent for our compact AAS design.



A patent for our flame/graphite furnace workhead switching design.

Features

Flexibility

- Optional HG-01 hydride generator that utilizes a heated ceramic tube to realize trace analysis of As, Pb, Se, Hg, Bi, Sb, Sn, Te with high sensitivity.
- Optional graphite furnace autosampler that allows for automated preparation of standard solutions and automated analysis.
- Flame autosampler (optional).
- Optional Nitrous Oxide/Acetylene selection system allows for analysis of more than 30 high atomization temperature elements.

High Degree of Automation

- Automatic wavelength positioning, automatic slit switching, and automatic optimization of lamp current and gain. All of these operations can be completed within 40 seconds.
- The six lamp rotating turret is controlled by a computer for automated element lamp selection, which allows for automated analysis of up to six elements in sequence.
- Automatic flame ignition, automatic control of the combustion gas flow rate, and automatic gas leakage alarm.

Excellent Graphite Furnace

Advanced Longitudinal Heating Mode

Atomization temperature can reach 3000 °C. This meets the atomization temperature demands of Ni, Mo, V, Co, etc.

High Stability

Advanced optics system ensures high optical energy of the instrument. High signal-noise ratio ensures repeatable data.

Maximum Sample Size Increased

Maximum sample size is 70 μL. This feature is useful for multiple samples and analysis of samples with low concentrations.

High Performance Background Correction

Continuous light source (D₂) and self absorption background correction is capable of 1 A of background correction.

Fast Heating

Optical temperature control greatly increases heating rate and allows for rapid atomization.

High Precision Homogeneous Heating

Unique design of the graphite furnace ensures homogeneous heating during atomization to obtain accurate data.

Titanium Nebulizer and Burner

Utilizing aerospace technology, the industrial grade pure titanium nebulizer and burner head is cast using the paraffin method.

These parts have excellent resistance to corrosion and oxidation, can withstand high temperatures, and are extremely durable.

Convenient Injection Port

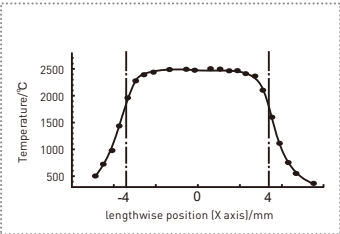
Design of the injection port simplifies sample injection and decreases error. Good precision can be obtained even by manual injection.

Advanced Graphite Furnace

Graphite cone can be replaced when worn to ensure stable conductivity of electrodes. [Patent No. ZL200720104071.1]



Six Lamp Rotating Turret



Iso-temperature Line During Atomization



Titanium Nebulizer



Convenient Injection Port



Graphite Furnace and Graphite Cone



Patent Certificate of Graphite Furnace

Data Processing Workstation



Software Interface

User Friendly Interface

Run on the Windows10 operating system in many languages including Chinese, English, and Korean among others.

Strong Analysis Capabilities, Fault-tolerant Processing, and Flexible Modification of Curve Fitting Equation

Report Printing

Customizable report templates are capable of generating reports of any format the user may need.

Powerful Data Management

The workstation has powerful data management capabilities including backup and subsequent treatment of historic data, including search, edit, sort, etc. Data files can be exported into many different formats.

QA/QC Control

The QA/QC feature allows for automated determination of whether the analysis result or some function of the result exceeds user-defined limits. If the result exceeds the limit, the system automatically runs the analysis again according to setup parameters. Functions of QA/QC include standard deviation (SD) detection, relative standard deviation (RSD) detection, correlation coefficient detection, QC detection, baseline drift (sensitivity correction) detection, sample upper limit detection (automatic online dilution).

The system automatically determines whether the analysis results are appropriate, and the system will remeasure the sample automatically according to the set if the scope is exceeded. About the QA/QC functions of this system mainly includes: the detections of the standard deviation (SD), relative standard deviation (RSD), correlation coefficient, QC, baseline drift(sensitivity amendment) and the upper limit of samples.

Status Monitoring

Real-time dynamic monitoring of working conditions. For flame method: type of burner head (air + acetylene or nitrous oxide + acetylene), water level of the liquid trap, status and pressure of the combustion gas and the oxidant gas, flow rate of the combustion gas, acetylene leakage alarm. For graphite furnace method: over-current protection, water temperature, water flow rate, pressure of the protection gas.and so on.

Management of Lamp Use Time

Automatically records the usage time of element lamps.

Graphite tube firing count monitoring

Optional specialized pharmaceutical industry software which conforms to GMP certification requirements.

Technical Specifications

Optical System

Wavelength range: 190~900 nm	Spectral bandwidth: Automatic switching between 5 levels: 0.1, 0.2, 0.4, 1.0, 2.0 nm
Mono-Chromator: C-T Grating Mono-Chromator	Grating: 1800 lines/mm
Wavelength repeatability: ≤0.1 nm	Wavelength Indication Error: ±0.2 nm
Blaze Wavelength: 250 nm	Baseline Stability: ≤0.003Abs/30min (Dynamic) ≤0.001Abs/30min (Static)
Spectral Bandwidth Deviation:The measured halfwidth of line is +-0.02nm when the spectral bandwidth is 0.2nm	
Resolution: Manganese double line (279.5 nm and 279.8 nm) can be separated, and trough-to-peak ratios is <30% when the spectral bandwidth is 0.2nm	

Flame Method

Benchmark Concentration of Cu: ≤0.02 µg	Detection Limit: ≤0.004 µg/ml
Precision RSD: ≤1.0%	Burner: Interchangeable full titanium burner of 50mm and 100 mm
Position Adjustment: Adjustable height and angle.	
Flame to hydride can be switched in less than 1 minute.	

Background Correction

Background correction is available for both flame and graphite furnace method.
Correction mode: Deuterium lamp, Self absorption background correction(optional)
Correction capability: When background absorption approaches 1.0 Abs, the instrument is capable of a background correction of 50 times or more.

Graphite Furnace Method

Benchmark Concentration of Cd: 5.0×10 ⁻¹³ g	Detection Limit: 0.5×10 ⁻¹² g
Temperature Range: Room temperature to 3000 °C	Precision RSD: ≤2.0%
Temperature Control Program: Max 20 step temperature program. 3 modes of temperature rise: step, slope and flat.	Optical Control Temperature Rise Rate: ≥3000 °C/s
Max Power Temperature Rise Rate: ≥2000 °C/s	Heating Modes: Max power heating and optical control rapid heating (optional)

Main Unit with Integrated Graphite Furnace Power Supply

Dimensions: 880 (L) x 540 (W) x 450 (H) mm, 125 kg
Power Supply: ~220 V 50 Hz single phase, main unit power: 200 W, graphite furnace power: 4 KW

Data Processing

Measurement methods: Flame absorption, flame emission, graphite furnace, and hydride method
Analysis method: Linear fitting, nonlinear fitting, standard addition method
Printing output: Calibration curve, spectrum, analysis conditions, analysis parameters, and analysis results can be automatically stored and printed.

The AA-7003 series of the simplified table

Model	Explanation
AA-7003	Flame atomizer, graphite furnace atomizer
AA-7003F	Flame atomizer
AA-7003G	Graphite furnace atomizer

HG-01 Hydride Generator

The HG-01 uses a peristaltic pump for sample injection, and has an atomizer consisting of a ceramic electric heating tube heating a quartz tube. It allows for ultra low trace analysis of the eight elements (As, Se, Hg, Pb, Bi, Sb, Sn and Te), which have relatively low sensitivity using the atomic absorption method. The instrument is fast and easy to operate. It is compatible with any AAS using the hydride-atomic absorption method.

Features

- Samples are continuously pumped by 3 channels using a peristaltic pumps. Injection volume is 1~5 mL.
- Uses Tygon wear-resistant durable pump tube. The life span of these pump tubes can be as long as 500~1000 hr.
- Using a uniquely designed ceramic electric heating tube, the HG-01 is oxidation-resistant and expels no waste. It can withstand temperatures of up to 1000 °C for a many hours with no damage to the quartz tube.
- Temperature control is fast and accurate. The temperature range is 100~1000 °C with an accuracy of ±2 °C.The optimal atomizing temperature can be quickly reached and precisely controlled.
- Compact design and easily mounted on the AAS in the flame nebulizer base position.



AS-600 Flame / Furnace Auto-Sampler

- At most 133 sample holders including 5 holders used for solutions. Many kinds of sample plates and both plastic and quartz injection tubes are compatible.
- Without moving the autosampler, automatic sampling can be switched from flame to graphite furnace or vice versa. Manual injection can be processed without removing the autosampler.
- Sampling depth and injection depth are software controlled.

- Sampling of tested samples, standard samples and chemical modifiers are all software controlled.
- After solution injection, the software will start the graphite furnace heating program automatically.
- The system immediately enters the automatic cleaning procedure after each injection to prevent pollution of samples. After each injection, the system runs an automatic rinse procedure to prevent samples from being contaminated.
- Automatic concentration and dilution.
- Graphite furnace supports hot injection and reservation function.



AS-500 Auto-Sampler for Graphite Furnace

The AS-500 auto-sampler for graphite furnace is multi-functional with high precision. Using an auto-sampler for graphite furnace analysis will improve analysis accuracy with an RSD of $\leq 1\%$. Automated preparation of solutions at various concentrations and automated addition of chemical modifiers helps analysis work to be more accurate and simple. It also significantly reduces the operator’s workload by realizing fully automated graphite furnace analysis.

Features

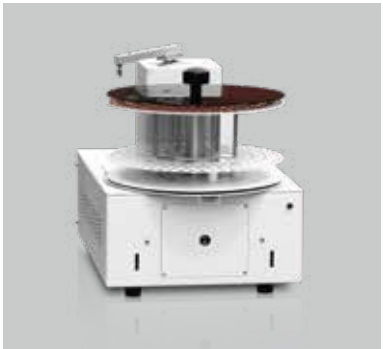
- At most 70 sample holders and 6 25 ml glass holders used for stock solutions, blank solutions and chemical modifiers.
- Software guide directs the operating procedures step-by-step, making it simple and convenient to set up an analysis.
- The calibration curve is automatically created. Up to 20 standard samples of different concentrations can be prepared from a single standard solution. Standards are directly injected into the graphite tube for analysis.
- Accuracy of liquid absorption can be as good as 0.1μL, and it can keep the sample position in the graphite tube unchanged. Accuracy of analysis is 1%(RSD) or better.



- Sampling of tested samples, standard samples and chemical modifiers are all software controlled.
- For the same sample, analysis can be repeated up to 99 times. The volume of sample injection is up to 70μL.
- After solution injection, the software will start the graphite furnace heating program automatically.
- The system immediately enters the automatic cleaning procedure after each injection to prevent pollution of samples. After each injection, the system runs an automatic rinse procedure to prevent samples from being contaminated.
- Automatic concentration and dilution.

AS-200 Auto-Sampler for Flame

- 123 positions for samples, 6 positions reserved for standard solution, blank solution, etc.
- The injection time and frequency can be set automatically through software.
- Automatic rinse.



EW-900CH Water Cooling System

The EW-900CH Water Cooling System is designed for various industrial applications with a strong protection and alarm system. It has the unique option of a purification configuration that ensures pure water is produced. This system provides a variety of alarms and output connections, along with a water level alarm, over temperature alarm and water flow alarm. All configurations can be customized according to the user’s requirements.

Features

- Large volume open tank, easy to clean, easy to do water bath testing.
- Multiple alarm protection, including water level alarm, water flow alarm and over temperature alarm
- Optional configurations for water purification

The first option: full stainless steel water pipelines;

The second option: built-in filtering devices to ensure water quality.



EW-320AC Air Compressor

- The EW-320AC is a double cylinder piston compressor that is stable, reliable and oil-less.
- It uses three filters(two filters for gas inlet and one filter for gas outlet) to ensure that the gas output is pure.
- Provides clean and dry compressed air with constant pressure for atomic absorption spectrometers.

Model	Gas Flow	Pressure Range	Dimensions	Features	Note
EW-320AC	20L/min	0.005~0.3 Mpa	400(W)×300 (L)×635 (H)	Quiet oilless dual piston compressors	Manual drain

