

**AAS - ATOMIC
ABSORPTION
SPECTROPHOTOMETER
AAS3000F (FLAME
FURNACE TYPE)**



AAS - Atomic Absorption Spectrophotometer AAS3000F (Flame Furnace Type) is a high-precision instrument designed specifically for metal analysis, offering exceptional selectivity, a wide application range, high sensitivity, easy operation, cost efficiency, and outstanding accuracy.

APPLICATIONS

It is widely used across numerous fields, including geology, mining, metallurgy, agriculture, forestry, hydrology, environmental protection, petrochemical industries, food and drug safety, and third-party testing.

The AAS3000F's advanced flame system includes dependable flow control for precise automated regulation, ensuring reliable operation. Equipped with a robust gas-liquid separation system, gas filter, and other essential accessories, it maintains optimal functionality even in high-humidity or low-gas conditions.

For added safety, the AAS3000F features multiple interlocking devices and proactive information protection, providing automatic power-down and alert functions during any safety-related irregularities. Its modular structure and circuit design allow users to efficiently replace or repair components as needed.

This instrument also supports versatile analytical methods, such as the hydride method, flame emission method, and high-temperature flame method, and accommodates various accessories, including an automatic flame sampler, for enhanced flexibility.

FEATURES

Performance Specifications

- **Wavelength Range:** 170 nm to 900 nm
- **Wavelength Accuracy:** ± 0.10 nm
- **Wavelength Repeatability:** ± 0.05 nm
- **Baseline Stability:** Drift ≤ 0.002 Abs; Noise ≤ 0.001 Abs over 30 minutes (steady); Drift ≤ 0.002 Abs; Noise ≤ 0.001 Abs over 15 minutes (dynamic)
- **Resolution:** Spectral bandwidth deviation ≤ 0.02 nm; Manganese double-line valley-to-peak energy ratio $\leq 25\%$
- **Flame Method for Copper Analysis:** LOD ≤ 0.002 $\mu\text{g/mL}$; Characteristic concentration ≤ 0.025 $\mu\text{g/mL/1\%}$; Precision $\leq 0.3\%$
- **Background Correction:** Deuterium calibration at 1.0 Abs, self-absorption correction at 2.0 Abs, both exceeding 90 times background capacity

Light Source System

- **8 Lamp Position Design:** Offers automatic rotation, switching, and alignment for improved efficiency
- **Simultaneous Illumination:** Supports 1-8 lamps for preheating, accelerating analysis
- **Memory Function:** Stores lamp settings, eliminating the need for manual configuration

Optical System

- **Monochromator:** Utilizes Czerny-Turner design with a 277 mm focal length
- **Diffraction Grating:** 1800 grooves/mm with a blaze wavelength of 250 nm
- **Spectral Bandwidth:** Adjustable in 0.1, 0.2, 0.4, 0.8, and 1.6 nm increments
- **Detector:** High-sensitivity, wide-bandwidth photomultiplier tube
- **Automation Features:** Includes automatic peak detection, bandwidth adjustment, and wavelength optimization

Flame System

- **Burner Head:** 10 cm titanium air-acetylene burner head with an emission burner

- **Spray Chamber:** PPS material for corrosion and temperature resistance
- **Adjustable Burner Positioning:** Offers height and angle adjustments for precise flame control
- **Automatic Ignition and Flame-Out:** Fully automated fuel flow control
- **Flame Pedal Readout:** Ensures easy data tracking

Software Workstation

- **One-Key Optimization:** Simplifies multi-task analysis setup
- **Repeat Measurements:** Allows up to 99 measurements with automated statistical calculations
- **Automated Data Handling:** Curve fitting, concentration calculations, and standard additions
- **Data Output:** Exports results in Word, Excel, and other formats

Safety Features

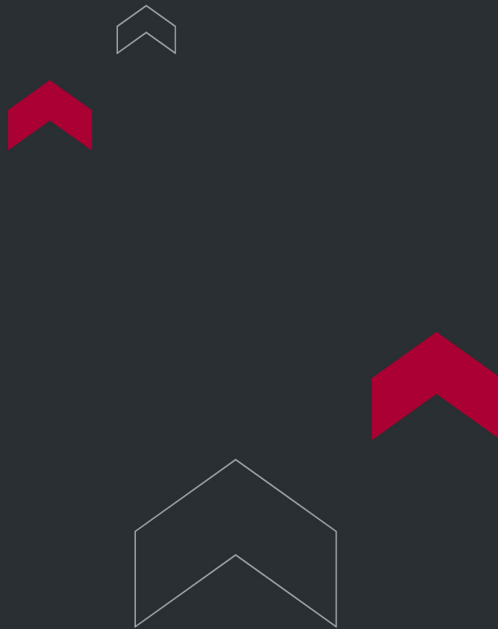
- **Dual Alarm System:** Comprehensive hardware and software safety alerts
- **Flame System Protection:** Automatic shut-off and alerts for ignition issues, gas leaks, and flow irregularities
- **Independent Safety Devices:** Includes emergency flame shutdown and graphite furnace current protection

Additional Functional Configurations

- **Flame Automatic Sampler (Optional):** Independent, easy-to-install sampler with 70 sample trays and automated cleaning
- **Oxygen-Rich High-Temperature Flame (Optional):** Enables safe analysis of high-temperature elements without hazardous N_2O
- **Wide Slit Combustion Head (Optional):** For stable analysis of complex samples with an adjustable nebulizer
- **Hydride Vapor Generator (Optional):** Expands analysis to additional elements
- **Audit Trail Software (Optional):** Features electronic signatures, user management, and traceability for compliance

TECHNICAL SPECIFICATIONS

- Main Unit: 1020mm×530mm×500mm(L×W×H), 85kg
- Flame automatic sampler: 440mm×290mm×440mm(L×W×H), 14kg.



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