Atomic Absorption Spectrophotometer - AAS Analyzer - 190-900 nm - 3000°C Graphite Furnace

Model **MSSP-IAA4530SWISS** | Brand **Master Science**









The Master Science Atomic Absorption Spectrophotometer is a PC-controlled AAS for measuring metals in solution by flame absorption and flame emission. A floating optical platform protects the light path from vibration, and the software handles lamp selection, burner position, slit, gas flow, ignition and wavelength peak searching automatically.

KEY HIGHLIGHTS

- Safer flame operation
- Faster multi-element runs
- Steady optical signal
- Accurate furnace heating

AT A GLANCE

3000 °C GRAPHITE FURNACE MAX TEMPERATURE	**190 to 900 nm** WAVELENGTH RANGE
±0.15 nm WAVELENGTH ACCURACY	

Request a Quotation
Contact us for pricing, configuration options and delivery details.

support@themsci.com
www.themsci.com

Scan to view online

Overview

An eight-lamp turret preheats all hollow cathode lamps at once, so sequences across several elements run without waiting, and an optional graphite furnace extends detection to very low concentrations.

Key specifications of the Master Science Atomic Absorption Spectrophotometer and its flame and graphite furnace systems:

Laboratories that also measure organic contaminants often pair AAS with the Master Science gas chromatograph.

How the Master Science Atomic Absorption Spectrophotometer helps with common metal analysis issues:

Overview

- PID temperature control with fast sampling
- Up to 20 heating steps
- Three-level adjustable inert gas flow
- Alarms for gas or cooling water failure

Technical Specifications

GENERAL

Brand	Master Science
Model Number	MSSP-IAA4530SWISS
SKU	MSSP-IAA4530SWISS
Atomization	Flame (graphite furnace optional)
Characteristic Concentration	0.02 µg/mL/1% (Cu)
Detection Limit	0.004 µg/mL (Cu)
Precision	0.5 %
Grating	1800 lines/mm
Burner	All-metal titanium burner, 100 mm air-acetylene
Nebulizer	High-efficiency glass nebulizer
Background Correction	Deuterium lamp and self-absorption; ≥ 50× at 1 A background
Flame RSD	≤ 0.5 % (Cu, absorbance > 0.8 A)
Graphite Furnace Max Temperature	3000 °C
Graphite Furnace Heating Rate	≥ 2000 °C/s
Graphite Furnace Characteristic Mass	Cd ≤ 0.5×10^{-12} g; Cu ≤ 0.5×10^{-11} g
Graphite Furnace Precision	Cu ≤ 3 %, Cd ≤ 3 %

OPTICAL PERFORMANCE

Wavelength Range	**190 to 900 nm**
Spectral Bandwidth	0.1, 0.2, 0.4, 1.0 and 2.0 nm
Wavelength Accuracy	**±0.15 nm**
Wavelength Repeatability	**≤ 0.04 nm**
Baseline Stability	≤ 0.002 A/30 min (Cu)
Lamp Positions	8, automatic switching and preheating
Flame Dynamic Baseline Drift	≤ 0.006 A/30 min
Waiting for lamps to warm up	all eight lamps preheat together.

POWER

Graphite Furnace Power	220 V ±22 V AC, 7000 W
Main Unit Power	220 V ±22 V AC

DIMENSIONS & WEIGHT

Graphite Furnace Size / Weight	730 × 625 × 700 mm, 79.3 kg
Package Size	840 × 700 × 780 mm (main unit); 1170 × 645 × 900 mm (accessories)

COMMON LABORATORY PROBLEMS AND HOW THIS AAS HELPS

Operator safety with acetylene	automatic gas shut-off reacts to any abnormal condition.
Signal drift over long runs	the floating optical platform keeps the light path stable.
Insufficient sensitivity for trace levels	the optional graphite furnace reaches picogram-level detection.
Manual record keeping	results export to Excel and print directly.

Key Benefits

Safer flame operation
the system shuts off gas automatically on power loss, abnormal flame, low pressure or wrong burner.

Faster multi-element runs
eight lamps are preheated together and switched automatically.

Steady optical signal
the Master Science Atomic Absorption Spectrophotometer uses a floating optical platform that resists shock and drift.

Accurate furnace heating
PID control and 3 ms sampling overcome voltage and resistance changes during the temperature program.

Standard mains power
the graphite furnace runs on ordinary 220 V supply, with no 380 V line required.

Applications

The Master Science Atomic Absorption Spectrophotometer is used for metal analysis in: Environmental water, soil and sediment testing Food and agricultural products Pharmaceutical and cosmetic raw materials Metallurgy, mining and geology Clinical and public health laboratories

Full Software Control

- Element lamp selection and energy adjustment
- Burner height and front-rear positioning
- Slit selection and automatic wavelength peak search
- Gas flow control with automatic ignition and flame-out
- Graphite furnace method setup

Flame System

- Electronic flow control of acetylene
- Efficient nebulization for higher sensitivity
- Complete safety interlock chain

Data Handling

- Storage of more than 500 results with power-off protection
- Excel export and method recall
- Parameter, result and graph printing

Standard Accessories Included

- PC workstation
- Inkjet printer
- Oil-free air compressor
- Acetylene pressure-reducing valve
- Cu hollow cathode lamp
- Air filter

Optional Accessories

- Additional hollow cathode lamps
- Graphite tubes
- Recirculating cooling water system
- Hydride generator