Aurora
ILLUMINATING SOLUTIONS

TRACE AI1200 Atomic Absorption Spectrometer

The TRACE AI1200 atomic absorption spectrometer is the 3rd generation AAS instrument developed by Aurora. For more than 10 years, Aurora's TRACE AI1200 has built a reputation in elemental analysis research, with unbeatable performance, sensitivity and flexibility. These instruments are used in a variety of fields including environmental, agriculture, clinical, and mining. Standard configurations include the **TRACE AI1200 Flame (F), TRACE AI1200 Flame/Graphite Furnace (F/GF), TRACE AI1200 Flame/Vapour Generation (F/VG)** and **TRACE AI1200 Flame/Graphite Furnace/Vapour Generation (F/GF/VG)** enabling analyses at multiple concentration levels.

Spectrometer

Optics	High light throughput single/double switchable optics, including low UV range. Narrow beam optical design for flame and furnace configuration. Aberration corrected 30cm Czerny-Turner monochromator with software controlled wavelength selection and optimization
Dimensions	W 65 x D 55 x H 37cm
Band Pass	Software adjustable 0.2, 0.6 and 1.2 nm and 0.6 nm reduced slit height for GF
Grating	53mm x 53mm diffraction grating with 1200 lines/mm
Wavelength Range	185-900 nm controlled by software
Wavelength Scan / Optimization	From 185-900 nm in any selected range with Zoom FunctionAutomatic wavelength optimization with graphical display
Background Correction	Rapid self-reversal method. Deuterium lamp with 1 ms rapid response for accurate correction. Electronic modulation with deuterium current control and aperture attenuation
PMT	High quantum efficiency, 185-900 nm, automatic gain control
Drift Correction	ADC (Automatic Drift Correction) permits the full intensity of the light beam to pass through the sample resulting in superior detection power. No HCL preheating is required
Data Sampling Rate	D2 and hollow cathode lamps operate at 1000 Hz data sampling rate
Light Source	6 lamp motorized turret with independent power supply Automatic alignment and coded lamp capability
Built-in High Intensity Hollow Cathode Lamps	2 channel independent high intensity power supply provides improved sensitivities and lower detection limits

Elemental Analysis

Atomizers

The configuration of the atomization compartment allows rapid changeover between atomization sources.

Flame:

Gas control	Software controlled with automatic changeover between different flame systems
Spray Chamber	Solid Teflon spray chamber, inert to acids and organic solvents
Burner	Corrosion resistant titanium burners available for both air/acetylene and nitrous-oxide/acetylene
Flow-rate / Control	Software controlled
Sample Introduction	Automatic on-line dilution and preparation of calibration curves from a single standard
Fume Exhaustion	Conventional laboratory extraction system
Safety System	Safety interlock mechanism that monitors the burner type, burner fitted, gas pressures. Flame on/off sensors; Power failure automatic shutdown. Liquid trap system, pressure relief plug and flame shield to protect from UV radiation

Transversely-heated Graphite Furnace:

Purge Gas	Computer controlled flow rate of Ar or He from 0 to 5.0 L/min
Furnace Tube	Pyrolytically coated integrated contact cuvette, 5.7mm internal diameter x 19mm, transversely heated, temperature gradient of less than 20°C
Temperature Range	Programmable from ambient up to 3000°C. Full range temperature sensors for direct real-time temperature display and control over the full temperature range
Furnace heating rate	Up to 3800 K / s
Program flexibility	Heating programs of up to 30 steps. Each step can be programmed separately
Ramp Time	The heating time of the graphite tube to the preprogrammed temperature can be varied in steps of 0.1 sec
Hold Time	Selectable from 0 s up to 25 s in steps of 0.1 sec

Vapor and Hydride Generator:

Absorption Cell	Constant temperature electrothermally heated quartz absorption cell with temperature range of ambient to 1000 °C
Pump	Continuous flow peristaltic pump with speed control
Accessories	High efficiency mixing section, gas-liquid separator, tubing and connectors included
Performance	Cold vapor and hydride generation determinations of Hg, As, Se, Te, Bi, Sb, Sn and other hydride-forming elements at sub-trace levels

Autosampler:

Optional XYZ Autosampler for Flame, GF and/or VG atomizers:

Bench top high capacity XYZ autosampler for flame and vapor generation atomization:

Autosampler design	Free movement in XYZ directions allows user to adapt system to any suitable sample container
Sample Introduction	Combined with on-line dilution, the flame autosampler offers calibration from a single standard and automatic dilution of over-range samples

XYZ Autosampler:

Instrument mounted with high capacity XYZ autosampler for flame, graphite furnace, vapor generation:

Dispensable reagent volume	Up to 1000µL, selectable in increments of 1µL
Sampling capacity	Holds standard 192 sample cup/test tube (0.5 or 10 mL) sample racks. Also compatible with standard solvent extraction test tubes, ICP test tubes, micro plates and custom made trays
Super Fast-Dry function	Software controlled preheating and sample injection speed. Allows for 3 sample/min turn-around time with Graphite Furnace
Sample Introduction	Random access with adjustable sample/reagent volume, automatic standard and sample preparation, and bulk standard calibration mode

NOTE: Instrument specifications may change without notice as an ongoing effort of product improvement.

North American Sales: Aurora Biomed Inc.
1001 East Pender Street
Vancouver BC Canada V6A 1W2
Phone: 1.800.883.2918 • 604-215-8700
Email: info@aurorabiomed.com
Website: www.aurorabiomed.com

Aurora
Illuminating Solutions

International Sales: Aurora Instruments Ltd.
1001 East Pender Street
Vancouver BC Canada V6A 1W2
Phone: 604-215-8700 • Fax: 604-215-9700
Email: info@aurora-instr.com
Website: www.aurora-instr.com