TRACE SERIES
Atomic Absorption Spectrometers

TRACE AI 1800

TRACE AI 1200P

SOLUTIONS FOR LIFE & ENVIRONMENTAL SCIENCES

TRACE Atomic Absorption Spectrometers

The TRACE series of atomic absorption spectrometers ensures the highest level of sensitivity, accuracy and reproducibility. Our optics provide the sharpest image possible for highly accurate elemental analysis. Switching between atomizers (Flame, Graphite Furnace and Vapor/Hydride Generator) is easy with one click in the software. The transversely-heated graphite furnace tube provides high heating rate while sustaining high throughput efficiencies with our Fast Dry technology. The universal XYZ autosampler enables automated, high throughput analysis from almost any container. The TRACE Series combines excellent performance and reliable software for a complete solution in trace metal analysis.
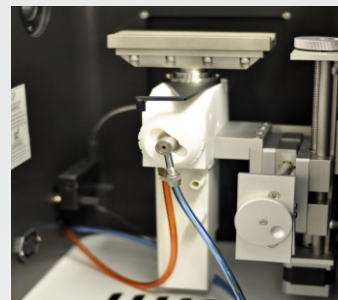
Features

Flame(F) Atomizer
- **Fully inert Teflon spray chamber -** Chemically inert to provide superior resistance against the most corrosive reagents, including organic solvents
- **Titanium burner head**
- **Pre-adjusted high-efficiency nebulizer**
- **Automatic gas flow rate optimization**
- **Extensive safety interlocks to detect:**
  - Combustion head type
  - Gas pressure
  - Liquid trap level
  - Flame status
  - Atomizer installation
- **Power outage protection:**
  - Automatic gas valve closure
  - Internal air tank to prevent flashbacks

Flame Atomizer

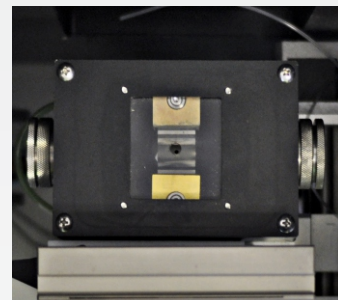### Graphite Furnace (GF) Atomizer
- **Transversely-heated GF tube**
  - Ensures uniform temperature distribution
  - Eliminates "memory effects"
  - Lowers atomization temperatures and times extending graphite tube life
- **High GF heating rate**
  - Heating rates of 3800K/s using as many as 30 programmable heating steps
  - Ensures well-defined absorption peak with higher sensitivity, fewer matrix effects and decreased background noise

GF Sample Compartment
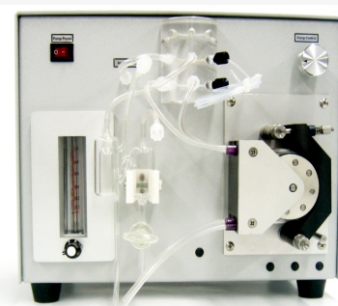
Vapor/ Hydride Generator (VG)
- **Enhanced Sensitivities and reduced interference** - Enables sub-trace detection levels of mercury and hydride-forming elements
- **Advanced gas-liquid separator with option to add drying agent** - Minimizes pressure fluctuations and enhances precision of measurements
- **Three mixing levels in reaction manifold** - Enables convenient online addition of reagents for acidity adjustments, pre-reduction/ oxidation or masking of interferences

Vapor/Hydride Generator

Features

Universal XYZ Autosampler
- **Most advanced autosampler on the market** - Compatible with vials, 24, 96, and 384 well plates, bottles, test tubes etc.

8-Lamp Turret/Array
- **Computer-controlled turret holds up to eight (8) pre-heated hollow cathode lamps (HCLs)**

Quick Switch between F, GF and VG Atomizers
- **Quick changeover using software controlled motorized switch** - Eliminates human intervention and saves experimental time

Switchable Single/Double Beam Optics

Online Dilution
- **Calibration curves created from a single standard solution using the digital micro-piston pumps** - Dramatically decreases sample preparation times and potential contamination

Fast Dry Furnace Technology
- **Analysis of samples in under 30 seconds**
- **Adjustable pre-heating and cooling temperatures and sample injection times**
    - Decreases sample splattering and drying times
    - Improves reproducibility, sensitivity and detection limits

Built-In Power Supplies
- **Integrated power supplies for GF and HCLs**

Background Correction
- **Optimum techniques to resolve background interferences:**
    - Deuterium
    - Smith-Hieftje
    - Time-resolved

Software
- **Single and batch run modes**
- **Real-time data output**
- **Adjustable wavelength scanning range and speed**
- **LIMS compatible**
- **Data output to CSV format**
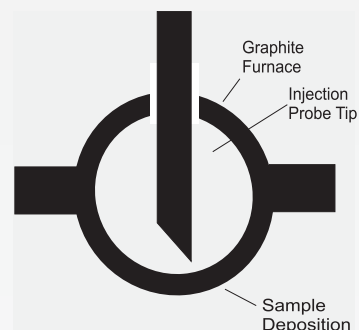- **Pre-developed database**

Regulatory Guidelines
- **EPA compliant**
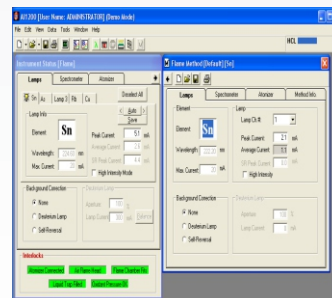- **CSA compliant**
- **Title 21 CFR Part 11 compliant**

Universal Autosampler

8 Lamp Turret

Graphite Furnace

Injection Probe Tip

Sample Deposition

Optimized sample injection into pre-heated graphite furnace tube

TRACE software operation mode

Specifications

Model	Categories	TRACE AI1200P	TRACE AI1800
Atomizer	Atomizer configuration	F with optional GF, VG	F/GF with optional VG
Optics	Wavelength range	185-900nm	180-900nm
	Wavelength scan rate	300 nm/min	1200 nm/min
	Lamps	8-lamp turret with automatic lamp selection, positioning and alignment	8-lamp 2D motorized array with automatic lamp selection, positioning and alignment
	Switchable single/double beam	All-reflective, high efficiency optic design, switchable single/double beam optics	
	Monochromator	Czerny-Turner	
	Grating	1800 lines/mm	
Flame	Safety	Burner head identification, gas pressure monitoring, flame sensor, emergency flame shutdown switch, flame liquid trap water level sensing	
	Gas control	Automatic gas control with auto ignition, optimization and change-over	
	Sensitivity	2 mg/L Cu: Abs≥0.4, RSD<0.5%	
	Online dilution	Patented digitized flame online dilution	
Graphite Furnace	GF video	Optional GF monitor	Including GF monitor
	Safety	Cooling water monitoring sensor with interlock	
		Automatic gas control, overtemperature protection, and overcurrent protection	
	Heating	Transversely-heated graphite tube, up to 3800K/s heating rate	
Auto sampler	Autosampler module	Optional autosampler for F, GF, and VG, random access	Standard universal autosampler for F/GF and VG, random access
	Pre-defined sample tray	Optional	Built-in
Others	Dimensions	L85 X W75 X H43cm (without autosampler) L85 X W75 X H77cm (with autosampler)	L84 X W68 X H80cm (with autosampler)

ISO 9001 REGISTERED

Aurora
ILLUMINATING SOLUTIONS