



# atomic absorption spectrometers

Atomic Absorption  
Spectrometers



## THE GBC VISION

*GBC Scientific Equipment will advance people's knowledge and their capacity to enhance the quality of life for all humankind.*

## Experience, innovation and quality

GBC has been designing and manufacturing atomic absorption spectrometers since 1978. In that time, we have developed a reputation for innovative thinking, producing a range of products at the leading edge of technology that set new standards in performance. Coupled with an obsession for quality and reliability, this has made GBC the fastest growing AA manufacturer in the world. To support this growth, GBC has established a world-wide network providing service and applications support in over seventy countries.

## An extensive range of instruments and accessories

GBC now produces one of the most extensive ranges of computer controlled AA spectrometers in the world, all offering automation features normally associated with the most expensive instruments. The instruments are complemented by a wide range of performance enhancing accessories.

## Guaranteed performance

All instruments are provided with a guarantee of sensitivity and precision. GBC's guaranteed performance is superior to that of any other company in the world.

Avanta  $\Sigma$



Avanta  $\Sigma$  AAS with SDS-270 flame sampler

## Total automation with Avanta $\Sigma$

The GBC Avanta  $\Sigma$  is the most advanced atomic absorption system ever. It is a fully automatic, multi-element instrument with all parameters under the control of an external computer. It has a motorized 8-lamp turret and, with an automatic sample changer, can determine up to 12 elements in a batch of samples without operator intervention. Selection of wavelength, slits, lamps and gas flows are all automatic. Even the lamp alignment is automatic.

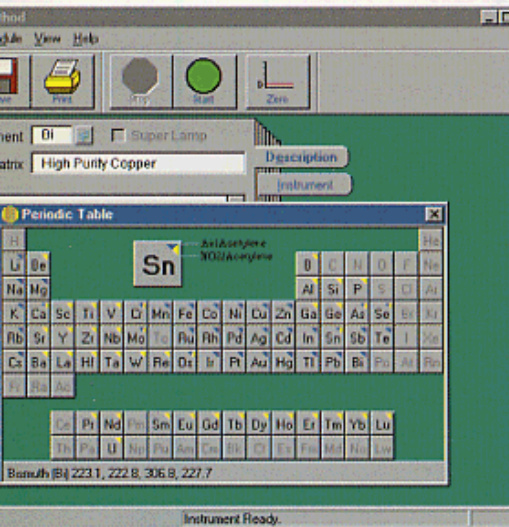


Avanta AAS with graphite furnace option

The unique capabilities of the Avanta  $\Sigma$  include:

- ULTRA-PULSE background correction for accurate results with rapidly changing signals of up to 2.5 absorbance.
- Asymmetric Modulation for lower noise.
- The widest analytical range of any AA (up to 100 times wider than conventional systems).
- Automatic Burner Rotation to eliminate the need for sample dilution.
- Inbuilt Super Lamp power supply for higher performance with low intensity elements.
- Automatic burner adjuster to ensure optimum performance for every element.

The total automation provided by the Avanta  $\Sigma$  makes it ideal for laboratories with high sample loads. The ability to store, recall and automatically set up parameters also makes these models attractive to laboratories with inexperienced operators or those with several operators, while the storage and manipulation of data and graphics is very useful to those doing research work.



### Advanced capability with Avanta

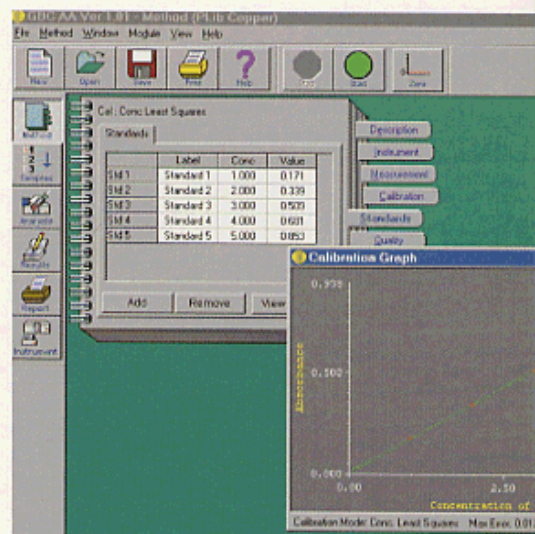
The double beam Avanta AAS is a state-of-the-art instrument for the budget-conscious laboratory. With automatic wavelength and slit control and a four lamp turret, it is controlled from an external computer. Options include programmable flame control and inbuilt Super Lamp power supply. An optional motorized turret provides automatic sequential multi-element analysis.

The Avanta shares many of the advanced capabilities of the Avanta  $\Sigma$ , including ULTRA-PULSE background correction, Asymmetric Modulation, storage of graphics traces, and zoom and pan on graphics.

Avanta is ideal for the routine analytical laboratory. Automatic set-up and the storage and recall of analytical methods means simple operation. The display of signal graphics on the video screen and disk storage of graphics traces are particularly beneficial for graphite furnace work.

The programmable flame control option provides an added degree of safety, and allows optimum conditions to be accurately reproduced, even by inexperienced operators.

Powerful software for Windows<sup>®</sup> 95, with a full range of high performance features and a familiar graphical interface



### 932/933 provides high performance in a compact size

The double beam 932 and single beam 933 are compact instruments, which, despite their small footprint, offer an impressive array of high performance features, including ULTRA-PULSE background correction, emission capability, automatic wavelength and slit control, and automatic flame control. All of these features combine to provide error-free set-up and ease of operation.

The 932 and 933 utilize the same high performance software as the Avanta series, and offer the same performance guarantee.



## Accessories

All GBC AA spectrometers are compatible with a full range of accessories, including graphite furnaces, autosamplers and hydride/vapour generation systems. In all instances, the accessories connect directly to the AA spectrometer with no need for extra interfaces.

### HG3000 Hydride Generator

The HG3000 is an automatic, continuous-flow vapour generation system for the analysis of arsenic, selenium and the other hydride-forming elements at part-per-billion levels. It can also be used to determine mercury by the cold vapour method and it is compatible with all GBC AA spectrometers. Samples may be presented manually or via the SDS-270 flame sampler for totally automated analysis.

### EHG3000 Electrically Heated Cell

The EHG3000 is an electrically heated cell for use with the hydride generator. Because a flame is not required for operation, hydride analyses can be carried out totally unattended. Heating the cell electrically provides more accurate temperature control than is possible with flame heating, leading to improvements in sensitivity and detection limit.

### MC3000 Mercury Concentrator

The MC3000 is a mercury concentration accessory for the HG3000 that lowers the detection limits for mercury analysis to parts-per-trillion levels. Utilising a specially designed inductive heating system to release the mercury trapped on the gold film, the MC3000 offers shorter analysis times than other systems, plus lower detection limits and better sensitivity.

### HSA3000 High Solids Analyser

The HSA3000 enables samples containing high concentrations of dissolved solids to be analysed. With conventional sample introduction, samples with more than about 2% dissolved salt tend to cause blockage of the nebulizer or burner. With the HSA3000, analysis of samples containing up to 30% dissolved solids is possible.

### System 3000 Graphite Furnace

The System 3000 Graphite Furnace allows trace element determinations at part-per-billion levels. The system comprises the GF3000 power supply and PAL3000 autosampler, both of which are controlled by the central AA computer. The software incorporates a complete graphite furnace package, including furnace graphics, standard additions calibration, hot injection, automatic pre-concentration and automatic dilution.

### SDS-270 Autosampler

The SDS-270 Flame Autosampler is a fully programmable transverse (x,y) sampler which provides automatic analysis of up to 270 samples, with automatic calibration using up to 10 standards. Provision for pumping rinse solution during the sample probe rinse cycle ensures prevention of carry over contamination between samples.

### Other Accessories

Other accessories available for GBC AA spectrometers include:

- Atom Trap to improve sensitivity and detection limit for many elements.
- Super Lamp power supply for any GBC AA spectrometer. Super Lamps give lower noise, better sensitivity and better detection limits with many elements.
- Printers for all GBC AA spectrometers.
- Hollow Cathode Lamps for 67 elements.
- Installation accessories such as compressors, fume extraction systems and gas regulators.



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GBC reserves the right to  
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