

**High-Resolution Continuum Source
Atomic Absorption Spectrometer**

contrAA[®] series



contrAA® series

PC-controlled High-Resolution Continuum Source Atomic Absorption Spectrometer with continuum light source for simultaneous element analysis or sequential multi element analysis.

	contrAA® 300	contrAA® 600	contrAA® 700
Technique	flame technique hydride technique	graphite furnace technique HydrEA technique direct solid sampling technique	flame technique graphite furnace technique hydride technique HydrEA technique direct solid sampling technique
Monochromator	<ul style="list-style-type: none"> Optimized high resolution Echelle double monochromator Premonochromator with quartz prism Highest wavelength accuracy by automatic wavelength correction 		
Optical bench	<ul style="list-style-type: none"> Optical parts are mounted on a strong and compact basic plate for strength and stability With a cover to prevent dust, vapour and humidity ingress 		
Wavelength range	185-900 nm		
Spectral range	2 pm/ 200 nm		
Detector	<ul style="list-style-type: none"> CCD array detector with high quantum efficiency and increased UV-sensitivity 		
Lamp	<ul style="list-style-type: none"> Xenon short arc lamp working in optimized Hot-Spot-Mode for the full measurement range of AAS Immediately ready for measurement Simultaneous drift correction 		

Background Correction

Unique simultaneous background correction without loss of real measurement time and sensitivity. Complete correction of structured background.

Flame technique

Burner-Nebulizer-System	<ul style="list-style-type: none"> ▪ All-titanium, 5cm/10 cm single slot burner for air/acetylene gases and 5 cm burner for acetylene/nitrous oxide flame are available and each is coded for automatic recognition ▪ They both utilise a wide slit profile to prevent against incrustation, with reproducible burner rotation and easy change over by bayonet coupling ▪ Automatic cleaning device for 5 cm burner head (Scraper) ▪ Adjustable nebulizer with internal Pt/Rh capillary and acid resistant ceramic impact bead
Spray chamber	<ul style="list-style-type: none"> ▪ PPS spray chamber with mixing wing for aqueous and organic solutions
Gas control	<ul style="list-style-type: none"> ▪ Fully computer controlled Total Flow Gas box ▪ Computer controlled automated flame ignition ▪ Automatic input of additional gases for organic solvents
Safety functions	<ul style="list-style-type: none"> ▪ Sensor control of the burner head ▪ Check of the siphon system ▪ Automatic shut down of gases if the flame is not detected or in case of a system power failure or as a defined action during a multi routine

Graphite furnace technique

- Integrated computer-controlled transverse heated graphite furnace
- Graphite tube is transverse heated to provide a constant temperature profile over the entire length of the tube and to reduce matrix interferences
- Independent gas controls for the external and internal gas flows around and through the tube allow easy removal of volatile matrixes whilst protecting the tube against interference from outside air during the internal gas stop hence maximizing tube life
- The advanced furnace concept, utilising the adaptive sensor-less temperature control and emission independent temperature control ensures constant, precise, reproducible and accurate temperature conditions
- Integrable high-end furnace camera – to observe the deposition of droplets and the drying phase the graphite tube
- Analytical programs with up to 20 steps can be set up and all steps are easily programmable
- Self Check System – safety interlocks monitor all important parameters

Temperature	<ul style="list-style-type: none"> ▪ Programmable up to 3000° C in steps of 1° C
Gas Flow	<ul style="list-style-type: none"> ▪ Separate control of inert gas flow of Argon ▪ Programmable in 4 steps from 0 up to a max gas flow of 2 L/min for internal and external flow rates
Graphite Tube	<ul style="list-style-type: none"> ▪ Pyrolytically coated graphite tubes with patented platform technique or tube atomisation without platform

Graphite furnace technique

- Intelligent autosampler for maximum flexibility and any sample type or matrix
- 108-sample position table with random-access positions for matrix modifiers and diluents
- Automatic dilutions or additions of up to five different modifiers
- Hot and cold injection
- **Graphite autosampler**
- Insert volumes from 1 to 50 µL in increments of 1 µL are user selectable
- Freely programmable rinse cycles
- Automatic calibration of up to 65 points from one or multiple stock standard solutions
- PC controlled dilution by volume reduction or intelligent fully automatic dilution

Hydride and Hg Generation

- Modular Hg-/Hydride systems for the determination of hydride-forming elements and Hg in Batch or Flow Injection modes
- Optional amalgamation unit
- Integrated electro thermal heating unit
- Connection to autosampler is possible

HydrEA technique

- Combination of hydride and graphite furnace technique for the determination of hydride forming elements
- Improved detection sensitivity - enrichment in the graphite tube

Direct solid sampling technique – solidAA®

- Analysis of the original solid sample, directly and without any laborious sample preparation
- Wide measurement range
- True micro-method
- Avoiding hazardous reagents
- Easy handling
- Immediate results
- High sensitivity

Additional technical data

Dimensions (W x H x D)	800 mm x 650 mm x 700 mm	790 mm x 645 mm x 735 mm	1200 mm x 570 mm x 765 mm (B x H x T)
Weight	90 kg	130 kg	230 kg
Environmental requirements	<ul style="list-style-type: none"> ▪ Temperature +10°C up to 35°C ▪ Rel. Humidity max. 90% at +30°C, non condensing 		
Power requirements	230 V (±10%), 50/60 Hz; max. 460 VA	230V (±10%); 50/60Hz, slow fuse with 35 A, 2100 VA	230V (±10%); 50/60Hz, slow fuse with 35 A, 2100 VA