Atomic Absorption. Redefined.

contrAA 800

Atomic Absorption Spectrometer

analytikjena
An Endress+Hauser Company

Your Core Element – contrAA 800

Multi-element analysis and ease of use at a manageable cost. The contrAA 800 combines the best of standard AAS instruments and ICP-OES spectrometers. Take your demand for precision and performance to the next level.

contrAA 800

Atomic Absorption. Redefined.

Fast multi-element analysis

- Cover the entire element range of AAS with a single lamp
- Reduce measurement time by up to 30% thanks to fast-sequential analysis
- Real simultaneous measurement for selected applications

Accurate results with maximum precision

- Ensure optimal detection limits with high-resolution optics
- Flexible method development with 3D visualization of absorption spectra
- Unique spectral background correction to increase the robustness of analysis

Extended measuring range

- Determination of metals, semi-metals and even non-metals
- Coverage of concentration range from sub ppb to %
- Flexible application in a single platform for all AAS techniques
- Skip sample digestion thanks to fully automated direct solid sampling

	contrAA 800		
Model	contrAA 800 F	contrAA 800 G	contrAA 800 D
Flame mode	✔		✔
Graphite furnace mode		✔	✔
Mercury / Hydride mode	■	●	■
Solid sampling		■	■

✔ Standard
■ Optional
● HydrEA

Any Wavelength. Any Element. Any Time.

Ready to analyze any element without lamp exchange. Comprehensive and detailed information for each sample increases confidence in results and extends your AAS applications.

Inspiration from practical experience

The contrAA 800 was developed – by laboratory experts, for laboratory experts – to be as compact and as easy to use as possible. With the dual atomizer concept, both flame and graphite furnace atomization are combined in a compact sample compartment with minimized footprint and maximum performance. The automatic atomizer change and the two-dimensional atomizer alignment allow for flexible and easy handling and facilitate switching between the different atomization techniques.

contrAA 800 D with flame and graphite furnace technique in a single sample compartment

From high concentration to trace analysis

The Nebulizer-Burner system with quick-lock for easy replacement, constructed from acid-resistant materials and containing several safety features, guarantees safe and reliable analysis of highly concentrated samples using flame atomization. The outstanding performance of the transversely heated graphite furnace atomizer (THGA) with tube observation by an integrated furnace camera enables excellent detection limits for trace analysis. The contrAA 800 with its High-Resolution-Continuum-Source-AAS (HR-CS-AAS) combines these proven atomization techniques with the unique optical system consisting of the xenon short arc lamp and a high-resolution spectrometer with CCD detector.

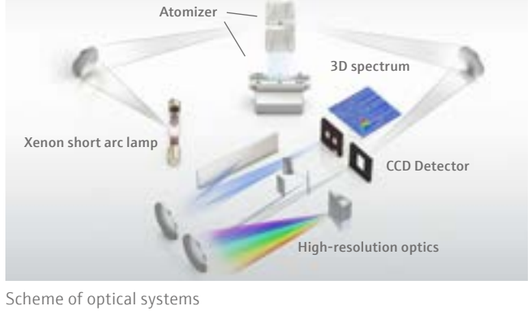
A single light source for all applications

The continuum emission spectrum of a xenon short arc lamp covers the complete spectral range of AAS. Lamp-changing for AAS is a matter of the past. Replacement costs compared to HCL instruments are significantly lower, whereas the light intensity is significantly higher than with traditional AAS light sources. It provides an excellent signal-to-noise ratio resulting in improved detection limits. Any element in the applicable spectral range can be analyzed on primary or secondary lines. Along with metals and semi-metals, non-metals like sulfur, phosphorus, fluorine, and halogens can also be determined by evaluating molecule absorption bands, extending the application range of the contrAA 800.

Xenon short arc lamp

Maximize sample throughput

Since the complete spectral range is always available, all relevant elements can be analyzed in a single aspiration step in flame mode. This fast-sequential analysis reduces the measurement time significantly by up to 30%. At the same time, your sample throughput can be maximized thanks to the autosampler with dilution function.



Scheme of optical systems

High resolution – confidence in results

A high-resolution spectrometer with a CCD detector maps a high-resolution absorption spectrum for each sample. Thus, providing comprehensive and extremely detailed information on the sample. The 3D spectrum display allows for visual proof of the correct evaluation of the absorption lines and their spectral background. It provides a tool for checking the absence of spectral interferences, which serves to assure correct measurements and strengthens confidence in results.

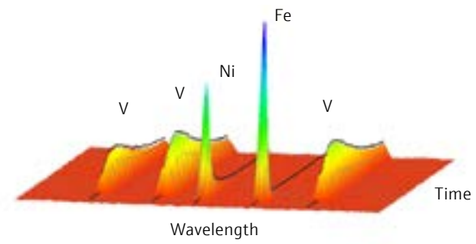
Simultaneous quantification

The spectrum provides information beyond a single element line and offers vast advantages in data evaluation. If required, other elements contained in the sample, which occur within the spectral observation range can be quantified simultaneously. Powerful software tools such as automatic baseline correction (ABC) or simultaneous correction of spectral interferences (CSI) significantly boost your productivity. The additional side pixel evaluation is an established evaluation routine. It allows the adaptation of the concentration range for the determination of trace and major elements in the same sample with a single method.

Pre-programmed satisfaction

The ASpect CS software was exclusively developed for multi-element analysis with the contrAA 800. The intelligent user interface is intuitive in operation and optimized for routine applications. Comprehensive quality control functions guarantee reliable and traceable results at any time. Pre-programmed methods and optimization routines simplify method development and ensure ideal measuring conditions. Maximum flexibility even for challenging analyses beyond daily routine is provided by simultaneous evaluation of multiple element lines as well as advanced correction algorithms for spectral background correction.

- Pre-programmed methods
- Wide range of innovative evaluation tools
- Quality control function for Good Laboratory Practice
- FDA 21 CFR Part 11 Compliance



3D Spectrum plot of one sample with signals of different elements (vanadium, nickel, iron)

Access All Areas – Your Universal Analyzer

An extensive range of accessories significantly expands the possibilities of applications and facilitates your lab work.

Autosampler for high sample throughput – AS-F/AS-FD and AS-GF

- Enables fully automated routine analysis in a 24/7 environment
- Automatic cleaning control prevents contamination of subsequent samples
- AS-FD and AS-GF allow fully automated sample dilution to a ratio of 1:800

Minimum effort in sample preparation with direct solid sampling – SSA 600

- Optimized sample carrier for many kinds of solids ensures a reliable transfer process and ideal atomizing conditions
- Loaded sample carrier is automatically weighed with the integrated microbalance and transported into the furnace
- Automatic handling of liquid standards and modifiers with built-in liquid dosing unit

Selective analysis of mercury and hydride-forming elements – Hydride systems

- Compliant with DIN, ISO, EPA and ASTM methods for mercury and hydride analysis
- System with fully automated flow injection or batch mode for difficult matrices
- Trace analysis with unique combination of graphite furnace and hydride technique
- Mercury analysis with additional amalgamation module and mercury cell

Automatic burner head cleaning – Scraper

- Simplifies working with the acetylene-/ nitrous oxide flame
- Automatically cleans the slot before each measurement and in standby mode
- Guarantees a continuous and reproducible measuring cycle in routine analysis

Easy handling of matrix-rich samples – Switching valve technology SFS 6.0

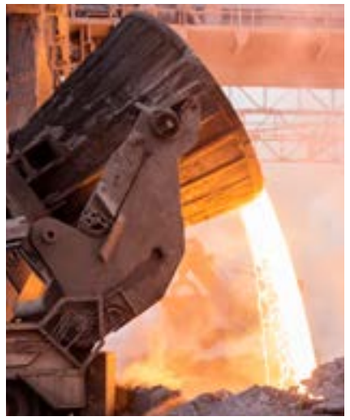
- Time-controlled flow injection of small sample segments into the flame
- Stable flame conditions ensure a reproducible measurement process
- Reduction of carryover effects from samples with high salt and matrix content
- Reduced sample consumption and minimized risk of burner head clogging

Meeting Industry Needs

The all-rounder in elemental analysis established in many laboratories worldwide. Convincing performance in different applications.

Beyond one industry

Small footprint, low operating cost, and ease of use make the contrAA 800 an indispensable partner in many industries. It provides support for process monitoring and sets high standards in quality control. Thanks to its high-resolution optics, the contrAA 800 enables several new applications, particularly in research and development. Clients from various industries, e.g. food & agriculture, metals & mining, environment, and chemicals put their trust in its performance and stability.



Environment

- Continuous monitoring of waste and soil, effluents, surface and drinking water
- Determination of heavy metals and toxic elements
- Governmental or private QC labs

Food & Agriculture

- Quality control for food and beverages
- Quality control for fertilizers, grains and supplements
- Determination of toxic trace elements
- Determination of vital minerals
- Additional determination of non-metals like sulfur
- Direct solid sampling, e.g. of plant materials

Pharma & Life Science

- Forensic science
- Pharmaceutical research

Geology, Mining & Metals

- Quantification of base and noble metals in ores and pre-concentrated metallic forms
- Direct solid sampling, e.g. of multiple metals in alloys
- Process control, e.g. in electroplating
- Industrial monitoring labs

Chemicals & Materials

- Analysis of raw materials such as plastics, fine chemicals, packaging materials or cement
- Single element quantification of metals and semi-metals
- Direct solid sampling, e.g. for multiple metals in pigments
- Industrial monitoring labs

Headquarters

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Subjects to changes in design and scope of delivery as well as further technical development.

High-Resolution Continuum Source AAS (HR-CS AAS) was developed in cooperation between the Leibniz Institute for Analytical Sciences – ISAS – and Analytik Jena and is firmly established on the market with the contrAA series of instruments.

Based on patented ISAS Technology

ISAS
Institute for Analytical Sciences

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