

Meeting Every Demand

ZEEnit Series

Atomic Absorption Spectrometry



ZEEnit – Proven Zeeman AAS for Challenging Samples

Analytik Jena has a long tradition in developing high-quality analytical systems and has more than 50 years of experience in atomic absorption spectroscopy (AAS) with quality products Made in Germany. The ZEEnit series with its innovative Zeeman technology offers the highest performance for classic Zeeman background correction, combining excellent analytical results with a high degree of user-friendliness.

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Best in class usability

- Immediate analysis of major and trace elements without any manual effort with the One+One atomizer concept
- Best performance and maximum automation thanks to the proven optic concept, the 8-lamp changer with RFID tool, and super lamp power supply
- Furnace vision and operation tools developed for the user's needs

Reliable trace analysis even in most difficult matrices

- Trace analysis in most challenging samples using the reliable Zeeman background correction with highest magnetic field strength of up to one tesla
- Almost every element is accessible due to the optimum atomization conditions combined with highest temperatures

Wide concentration range

- Zeeman magnetic field control in 2-field and 3-field mode as well as dynamic mode
- Easily obtain results at higher element contents using a flame technique that meets the highest safety standards
- Skip sample digestion with fully automated direct solid sampling



ZEEnit Series		
Model	ZEEnit 650 P	ZEEnit 700 P
Flame technique		✓
Graphite furnace technique	✓	✓
Deuterium and Zeeman background correction	✓	✓
Hydride technique	■	■
Solid AA	■	■

✓ Standard
■ Optional

The Perfect Solution for Every Requirement

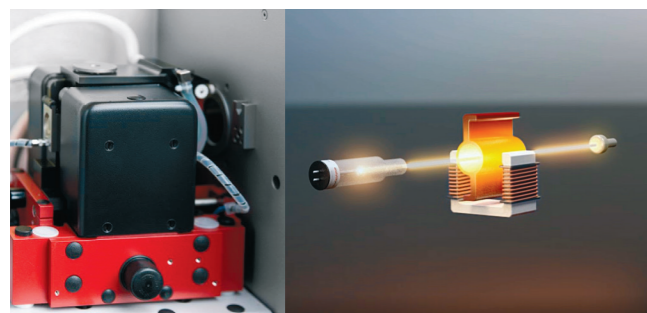
Benefit from best in class Zeeman background correction for trace element analysis in challenging sample matrices – with the sophisticated furnace design and magnetic field technology of the ZEEnit series.

Operating convenience

Handling this AAS system is simple and user-friendly, as many operations are automated. The **compact design** features numerous **integrated components**, such as durable quartz-coated optics in special encapsulation, a carousel for 8 hollow cathode lamps, an RFID tool for the use of coded hollow cathode lamps as well as super lamps and an autosampler for graphite furnace technology with automatic dilution function. The One + One Atomizer concept of the ZEEnit 700P offers remarkable functionality. **No manual interaction** is necessary to change between flame and graphite furnace technology. Just one click in the software and the system ready for operation without any adjustment or complicated change of autosampler.

A unique furnace desing

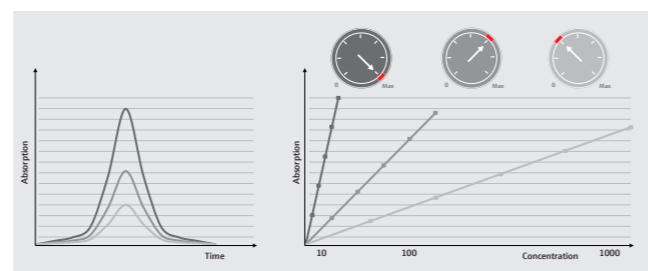
The state-of-the-art furnace design of the ZEEnit is based on the stabilized temperature platform furnace (STPF) concept, providing high performance and reliable results. The **transversely heated graphite furnace** design (THGA) guarantees uniform temperature conditions, eliminates memory effects and considerably reduces many interferences and therefore matrix effects. The Furnace Vision Tool is an integrated camera that delivers great **surveillance of the sample measurement in full-color image quality**. The furnace tube design makes graphite tube change easier than ever before.



ZEEnit furnace and graphite furnace tube in the magnetic field

Unmatched magnetic field technology

In addition to deuterium background correction, Zeeman technology is a must for many sample types. The freely adjustable magnetic field strength of up to 1.0 tesla and the use of two different correction modes guarantees **maximum sensitivity and optimum adaptation** to analytical requirements. The linear working range can be extended by the customizable sensitivity of the 3-field mode. The dynamic mode easily handles automatic adjustment to varying elemental content.



Zeeman background correction in 2-field, 3-field and dynamic mode

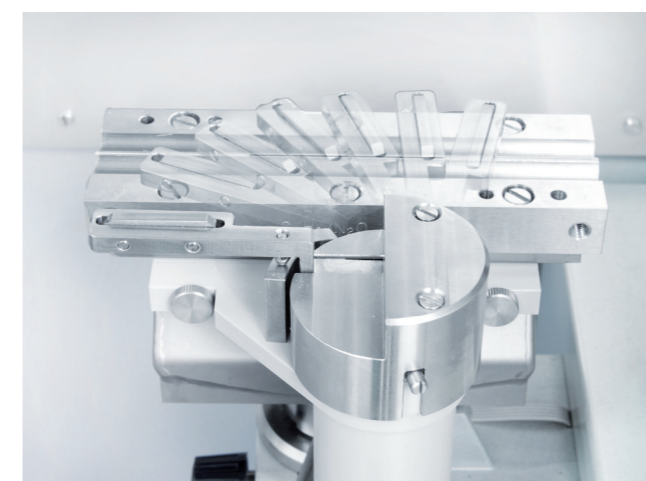
Wide dynamic measuring range

In addition to the conventional 2-field mode (magnetic field on/off), the unique 3-field mode (magnetic field off, medium, or maximum) provides the user with **unparalleled analytical capabilities**. The use of the variable magnetic field in the data extraction mode makes it possible to calibrate up to three concentration decades in Zeeman graphite furnace AAS. This considerably expands measuring range towards higher element concentrations. Problems caused by diluent contamination and error in sample preparation can be avoided, **saving time** and manual effort when analyzing higher elemental contents.

Flame technique with reliable functionality

The ZEEnit 700 P offers capabilities for fast, automated routine operations, whether in absorption or emission mode. A sophisticated burner-nebulizer system and the mixing chamber concept ensure **stable measurements with high repeatability** in flame mode. The fully automated total flow gasbox sets and monitors all gas parameters. Thanks to automatic height adjustment, the burner head is always in the perfect position and the automated setting ensures the analytes can always be measured under ideal conditions.

Safe operation is a priority for flame AAS. With a multitude of sensors, all safety-relevant parameters are constantly monitored and controlled. All functions, from flame ignition to switching between gas types and to safe flame shutdown, are controlled and fully automated.

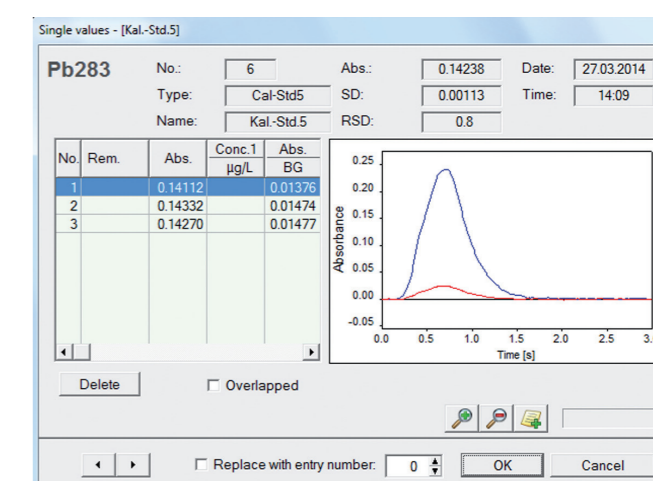


Burnerhead with Scraper

ASpect LS – Enhanced user-friendliness

The outstanding software concept provides intuitive and **easy handling** to make routine laboratory tasks highly efficient. The clearly laid-out user interface enables quick and easy method development. Pre-programmed and ready-to-use methods and worksheets as well as automatic optimizing routines ensure **fast measurement readiness**. Analytical quality assurance and quality standards play a major role in ASpect LS.

- Quick start for ready-to-use worksheets
- Pre-programmed methods
- Wide range of innovative evaluation tools
- Quality control function for Good Laboratory Practice
- FDA 21 CFR Part 11 Compliance



Display of measured data



Customize Your Technology to Your Needs

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



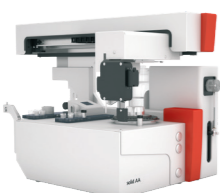
Included autosampler for graphite furnace technique - AS-GF

- Enables routine analysis overnight
- Automatic standard preparation from one or several stock solutions
- Intelligent sample dilution and enrichment as well as quality control via automated sample spiking
- Dosing of extremely small sample volumes and modifiers with excellent repeatability
- Matrix-adapted calibration due to the method of addition



Autosampler for high sample throughput using flame technique – AS-F and AS-FD

- Enables fully automated routine analysis
- Automatic cleaning control prevents contamination of subsequent samples
- AS-FD allows fully automated sample dilution, standard preparation, and method of addition



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

- Optimized sample carrier for many kinds of solids ensures a reliable transfer process
- Loaded sample platform 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 nitrous oxide-acetylene 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 Requirements

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

At home in many industries

Reliable results at lowest concentrations even in demanding samples, low operating costs, and ease of use make the ZEE nit series an indispensable partner in many industries. It supports process monitoring and sets high standards in quality control. Thanks to its top performance, especially for trace analysis in strong sample matrices, the ZEE nit series covers several applications. Customers from various industries, e.g., food and agriculture, environmental monitoring, pharmaceuticals, clinical chemistry, appreciate its ease of use and rely on its performance and stability.



Environment

- Monitoring of waste and soil, effluents, surface and drinking water
- Determination of heavy metals and toxic elements
- Governmental or private quality control labs

Food & Agriculture

- Quality control for food and beverages
- Quality control for fertilizers, grains and supplements
- Determination of toxic elements
- Determination of vital minerals
- Direct solid sampling, e.g., of plant materials

Pharma & Life Science

- Forensic science
- Elemental analysis in medical samples
- Quality control of pharmaceutical products
- Pharmaceutical research

Chemicals & Materials

- Single element quantification of metals and semi-metals in raw materials
- Industrial monitoring labs

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