

## Technical Specifications

### Pump

Simultaneous 2- piston technology of reagent and eluent lines  
Pump head made of titanium material  
Max. pressure: 400 bar  
Flow rate: 0,01 - 1,49 mL/min  
Reproducibility of flow rate: 0,1 % (RSD) at 100 µL/min

### Tubings

PEEK and FEP

### Microphotometer

Wave length: 570 nm, 440 nm  
Noise: 0,02 mAU, 1s  
Drift: < 1,0 x 10<sup>-5</sup> AU / h  
Linearity deviation: 0,3 % bei 1 AU  
Measuring range: high, low  
Analog signal: 0 - 5 V  
Base line adjustment: free programmable  
Auto-Zero function: free programmable  
Flow cell: 10 µL volume  
maintenance free

### Separation column

Cation exchange resin: 3µm  
Different dimensions; Stainless steel or PEEK  
Temperature adjustment by Peltier elements  
Temperature range: 20 - 100° C  
Temperature accuracy: 0,1° C

### Reactor

Highly inert material  
Peltier elements  
Temperature range 50 - 150° C  
Auto-Shut-down safety routine in case of failure alarm

### Autosampler

Patented x y z- robot  
Sample cooling 8° C by Peltier elements  
Syringe pump, motor- injection valve  
Sample rack: 4 x 48 Vials (1,5 mL Standard) or  
4 micro plates (96 format)  
Dosage: 1 - 40 µL in 1 µL- steps free programmable

### Eluents and Reagent

Reagent- and washing solution, integrated into central unit  
5 eluent bottles, 1 regeneration bottle integrated in separate eluent unit

### Control- Software

32 bit software *iControl*  
including optimized separation programs  
comfortable creation & modification of separation programs  
automatic log-file generation of analysis parameters

### Data-acquisition/ handling Software

Data- acquisition and Data- analysis by *aminoPeak* software  
specially designed for amino acid analysis,  
fast and user-friendly

### Interfaces

2 USB Ports for ARACUS- operation and  
signal registration of photometers

### Ready to use reagent kits

Kits including eluents, reagent and additional dilutions buffers,  
pre- and separation column for 500 or 1000 analytical runs  
Reproducibility of retention time: 1%, RSD  
Reproducibility of peak area: 3%, RSD

# ARACUS

## Amino Acid Analyzer



innovative technology combined  
with classical method

Subject to change without further notice

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# ARACUS

- highest precision

- easy handling

The amino acid analyzer ARACUS with its modular concept is the ideal instrument for the analysis of amino acids in research, quality control and in the clinical laboratory.

It combines innovative technologies with the classical routine analysis of amino acids by the post-column derivatization with ninhydrin.

This produces on the day by day use results with the highest precision, reproducibility and accuracy.



The eluent rack contains 6 glass bottles. The fluid volume of each bottle is actively monitored during operation.

Eluents, ninhydrin and washing reagent are selectively chosen through buffer selection valves and degassed in micro vacuum chambers. The innovative technology of the pump allows the simultaneous operation of two fluid lines (eluent side and reagent side), which guarantees a constant mixing.

The maintenance free photometers detect the separated amino acids at 570 nm and 440 nm and the signals are registered by the software **aminoPeak**.

- Physiological amino acids  
Analysis of free amino acids in biological and medical applications (serum, plasma, urine, culture media) or food.
- Proteinogenic amino acids  
Analysis of proteins, peptides, feedstuff or nutrition after hydrolysis.
- Analysis of specific amino acids  
PKU or homocysteine are two examples of specific applications with dedicated short run programs.

## Innovative chemistry

The concept of the ready-to-use eluent and reagent kits allows the reproducible analysis of the amino acid samples. Each kit is produced under standardized procedures, tested and certified before shipping it to the customer.

Depending on the application, each kit contains the necessary amount for 500 or 1000 analysis runs.

## Operation Control

ARACUS is operated with the user friendly, self-explaining software **iControl**. Implemented, optimized separation programs are correlated with each sample for the analysis. Correlation with new samples can be done when the instrument is analyzing a sample.

The current status of important instrument parameters is shown as well as the fluid volumes of each eluent and reagent bottled. As soon as a minimal value is reached, different alarm levels inform the operator.

All operation parameters and events of each analysis are documented in a log-File.

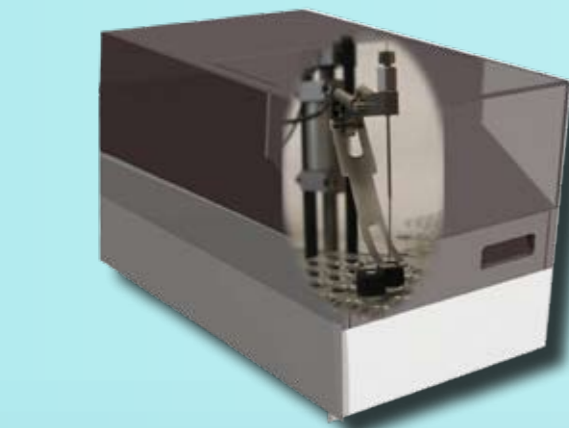
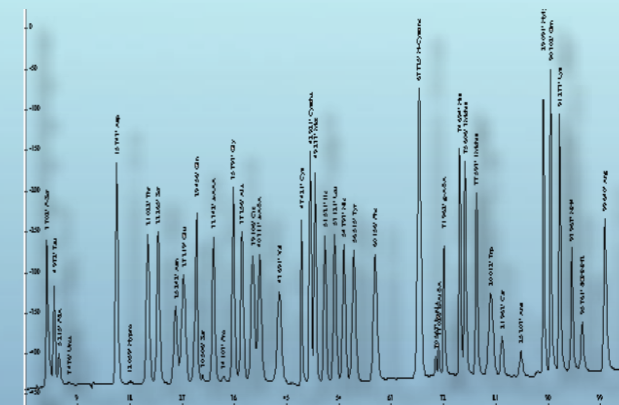


## Data Acquisition and Handling

The data acquisition and data analysis system **aminoPeak** records simultaneously 2 analogue channels (570 nm, 440 nm). Chromatograms are shown on-line.

Internal data banks allow the fast peak identification. Quantitative calculations are performed with internal or external standards, dilution and/or multiplication factors.

Several analysis runs can be compared using compiler programs. The results of each analysis is documented in an individual report.



The setup of the instrument allows the continuous analysis of up to 192 samples (4 x 48 vials) or 384 samples using micro plates.

The samples are stored at 8°C in the autosampler. The mechanics of the patented xyz-robot allow the injection of the samples in 1µl steps without sample loss. A washing routine of the injection valve and syringe pump guarantees zero cross-contamination.

