

AMINO ACID ANALYZER SYSTEM S 633

- ◆ PROTEIN HYDROLYSATES
- ◆ PHYSIOLOGICAL FLUIDS
- ◆ BIOGENIC AMINES



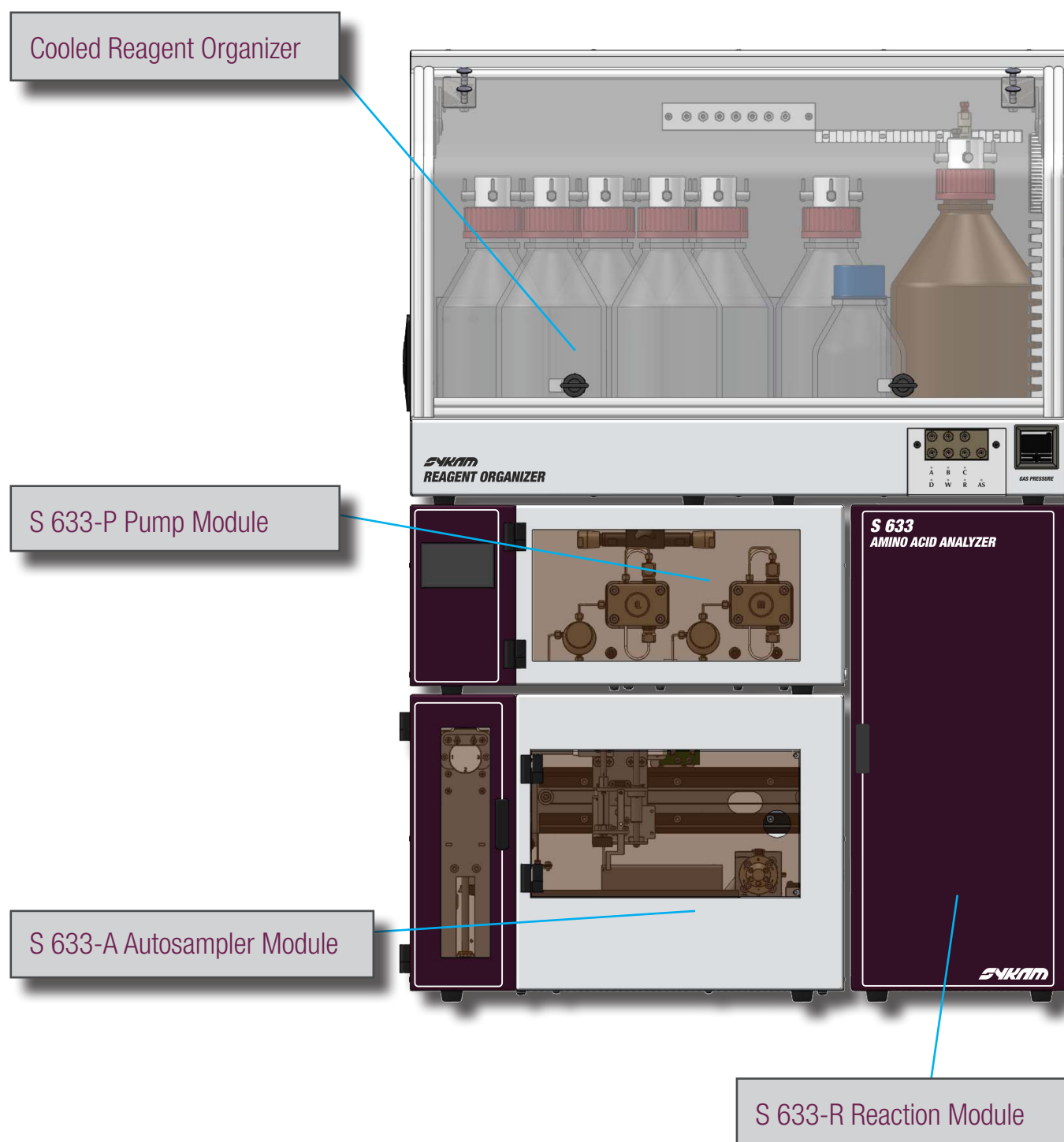
AMINO ACID ANALYZER S 633

The **Amino Acid Analyzer S 633** is the latest generation of Amino Acid Analyzer produced by Sykam for more than 30 years.

The modular proven design of the new Model

S 633 features the latest technological advancements in the field of analytical instruments.

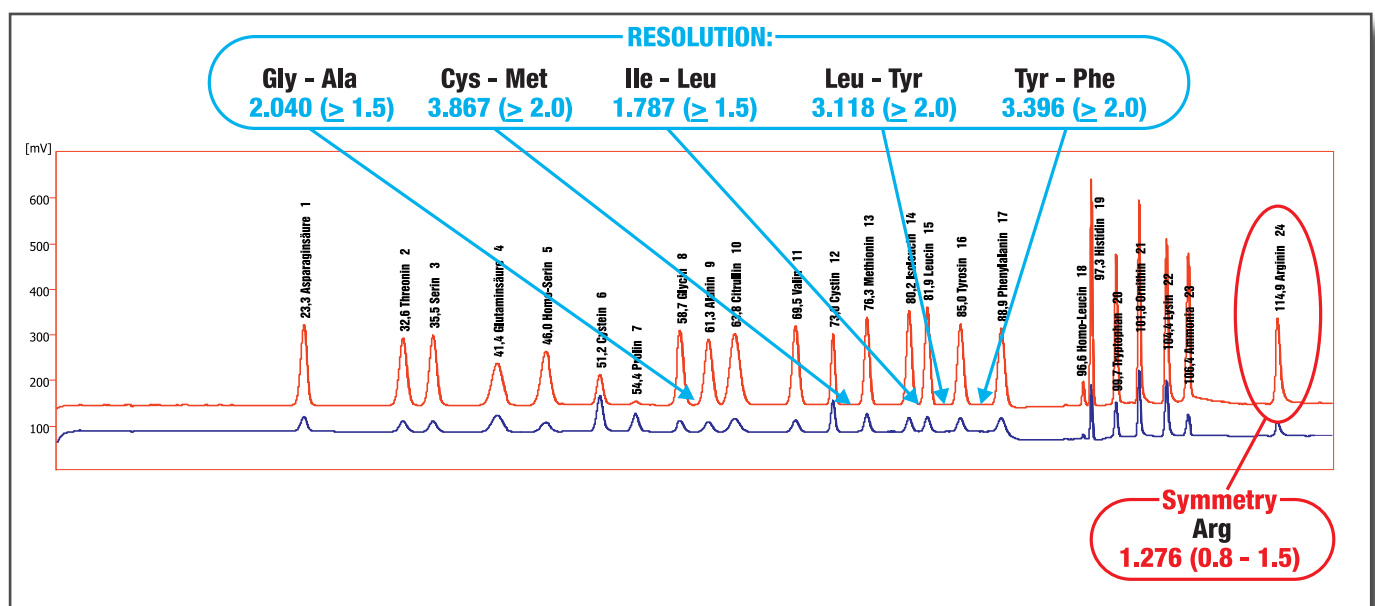
The whole system is inert and suitable for biological samples.



Amino Acid Applications

The Amino Acid Analyzer offers a high range of analysis profile from a variety of applications.

- Sample Matrices
 - Protein Hydrolysates
 - Physiological Fluids (Serum/Urine)
 - Pharmacological Sample
- Applications / Features
 - Feedstuff
 - Foodstuff
 - Biogenic Amines
 - Pharma Quality Control
 - Pharma Conformity (*Pharmacopoea*)



Pharmacopoea Requirements for Amino Acid Analysis

PUMP MODULE S 633-P

The **Pump Module S 633-P** is a solvent delivery system consisting of three major parts:

Low Pressure Gradient Pump

The low low pressure gradient pump is a reliable HPLC-grade pump system with a highly effective gradient mixer.

Reagent Pump

The isocratic reagent pump delivers the post-column derivatization agent. A reliable solenoid valve is used for the selection of reagent and washing solution.

Online Degasser

The integrated vacuum degasser uses 7 separate channels to degass all available solvents and reagents important for the analysis: the four gradient buffers, the reagent and washing solution of the reagent pump and an additional channel for the autosampler washing solution.

Active Piston Backflushing

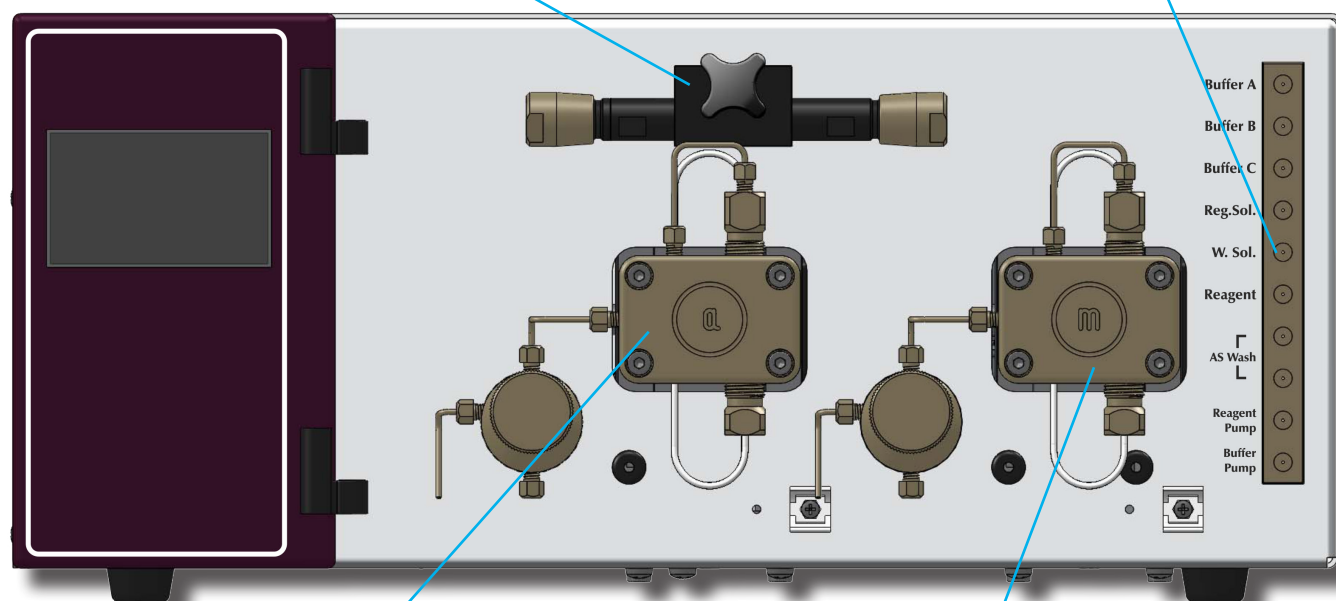
The integrated active piston backflushing prevents damage to the primary sealing by keeping is constantly flushed of salt buffer residues.

Ammonia Filtration Column

Convenient holder for ammonia filtration column easily accessible from the front.

Degasser Inlets

Solvent inlets for all 7 degasser channels

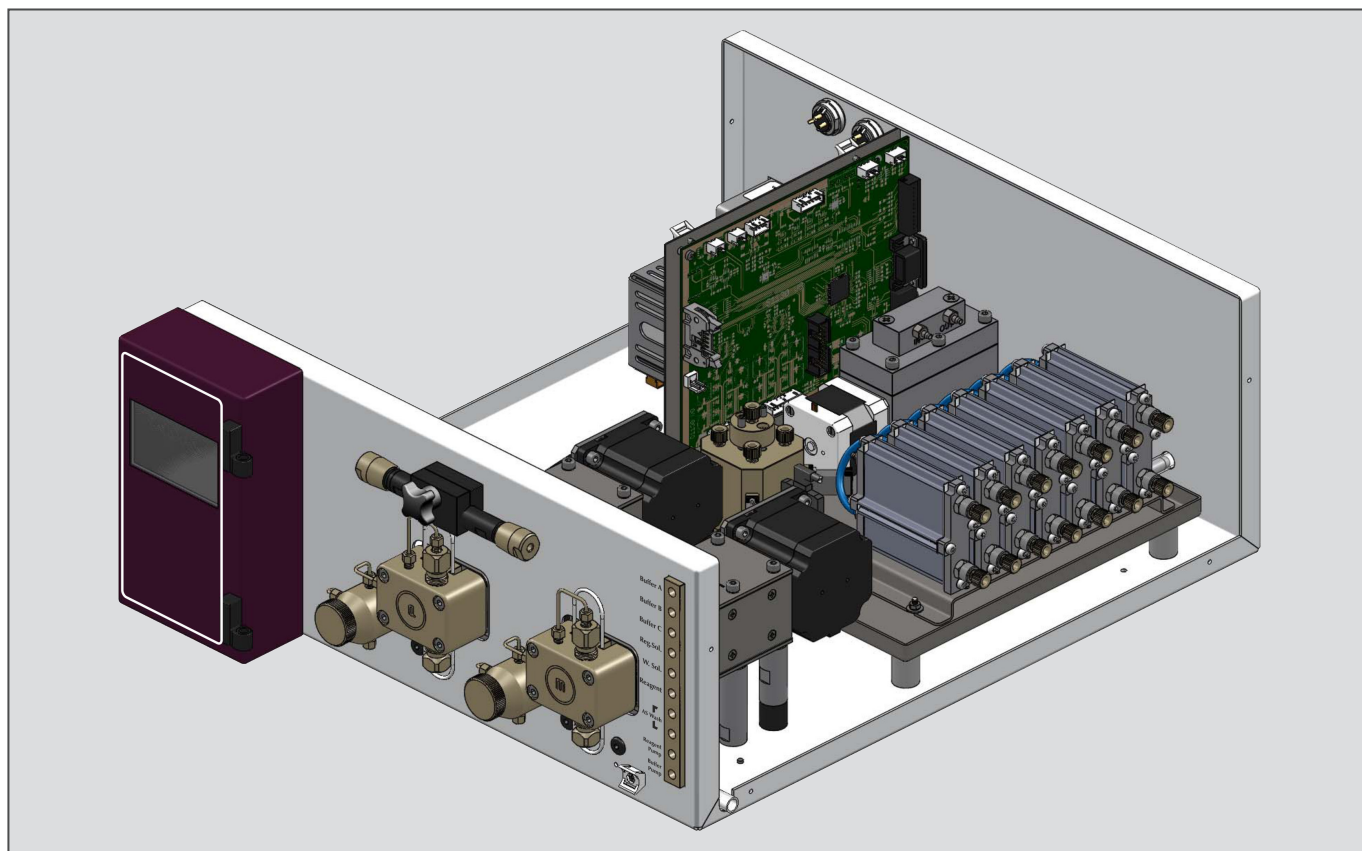


Buffer Pump

Inert low-pressure gradient pump with active mixer.

Reagent Pump

Inert isocratic micro pump.



TECHNICAL SPECIFICATIONS

S 633-P Pump Module

Wetted Materials:	PEEK, PTFE, Teflon AF
Dimensions:	396 x 165 x 478 mm (WxHxD)
Power Supply:	100 - 250 ~V (47 - 63 Hz)
Power Consumption:	max. 300 W

S 633-P Gradient Pump

Flow Range:	0.0001 - 10.000 ml/min
Flow Accuracy:	< 1.0% RSD at 0.45 ml/min
Flow Precision:	< 0.1% RSD at 0.45 ml/min
Max. Pressure:	350 bar (5076 psi)
Gradient:	low pressure gradient with active mixer
Gradient Accuracy:	< 1.0% at 1.0 ml/min
Gradient Precision:	< 0.1% RSD at 1.0 ml/min
Propulsion:	stepper motor

S 633-P Reagent Pump

Flow Range:	0.0001 - 2.000 ml/min
Flow Accuracy:	< 1.0% RSD at 0.25 ml/min
Flow Precision:	< 0.1% RSD at 0.25 ml/min
Max. Pressure:	350 bar (5076 psi)
Propulsion:	stepper motor
Solvent Selection:	solenoid valve (closed, washing, reagent)

S 633-P Online Degasser

No. Channels:	7
Degassing Efficiency:	< 20% solved gases
Internal Volume:	< 400 µl / channel
Propulsion:	stepper motor
Channel Usage:	<ul style="list-style-type: none"> • Buffer A • Buffer B • Buffer C • Reg.Solution • Washing Solution • Ninhydrine Reagent • Autosampler Wash

AUTOSAMPLER MODULE S 633-A

The **Autosampler Module S 633-A** features a mechanically durable X/Y/Z-Sampling-Mechanic designed for long life operation. The self-lubricating bearings keep the routine maintenance at a minimum and avoid troubles caused by dusty environments.

High precision stepper motors drive the X/Y axis for accurate positioning. Microstepping mode enables a high resolution for the syringe dosing and vial positioning.

Dual-Needle Design

The Dual-Needle design of the autosampler avoids system blockages due to septum particles injected into the system. The ventilation needle pierces the septum before the injection needle moves into the sample vial (see figure on the right).

As the more fragile injection needle does not need to

pierce the vial septum, stronger vial caps or plastic vials can be used without problems.

Sample Cooling

The sample racks can be cooled down to 5°C to handle temperature sensitive sample material.

Optional Pre-Column Derivatization

The autosampler module can optionally be equipped with an automatic pre-column derivatization feature to run high sensitive samples with fluorescence detection.

Front Door

The sample cabinet is closed with a door for easy access and good temperature stability.

Dosing Syringe

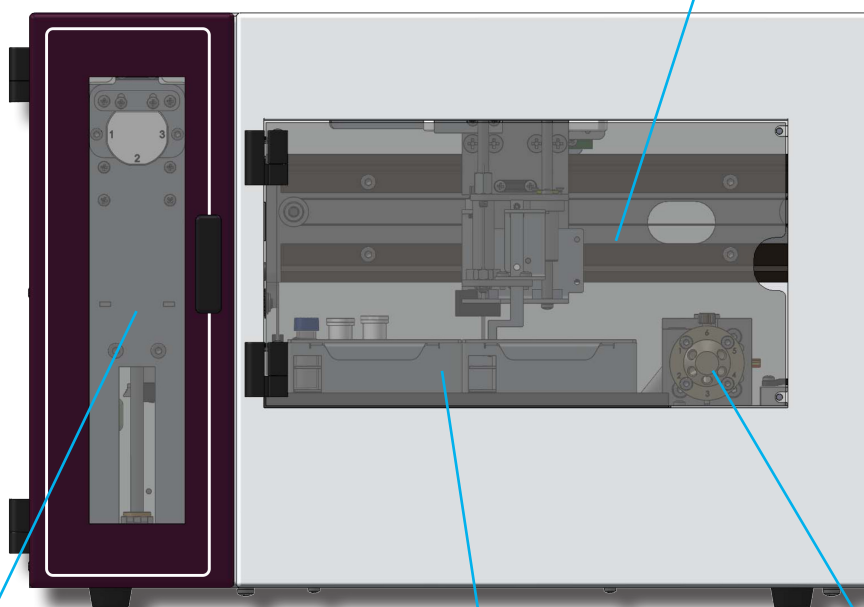
Easy access for troubleshooting and maintenance.

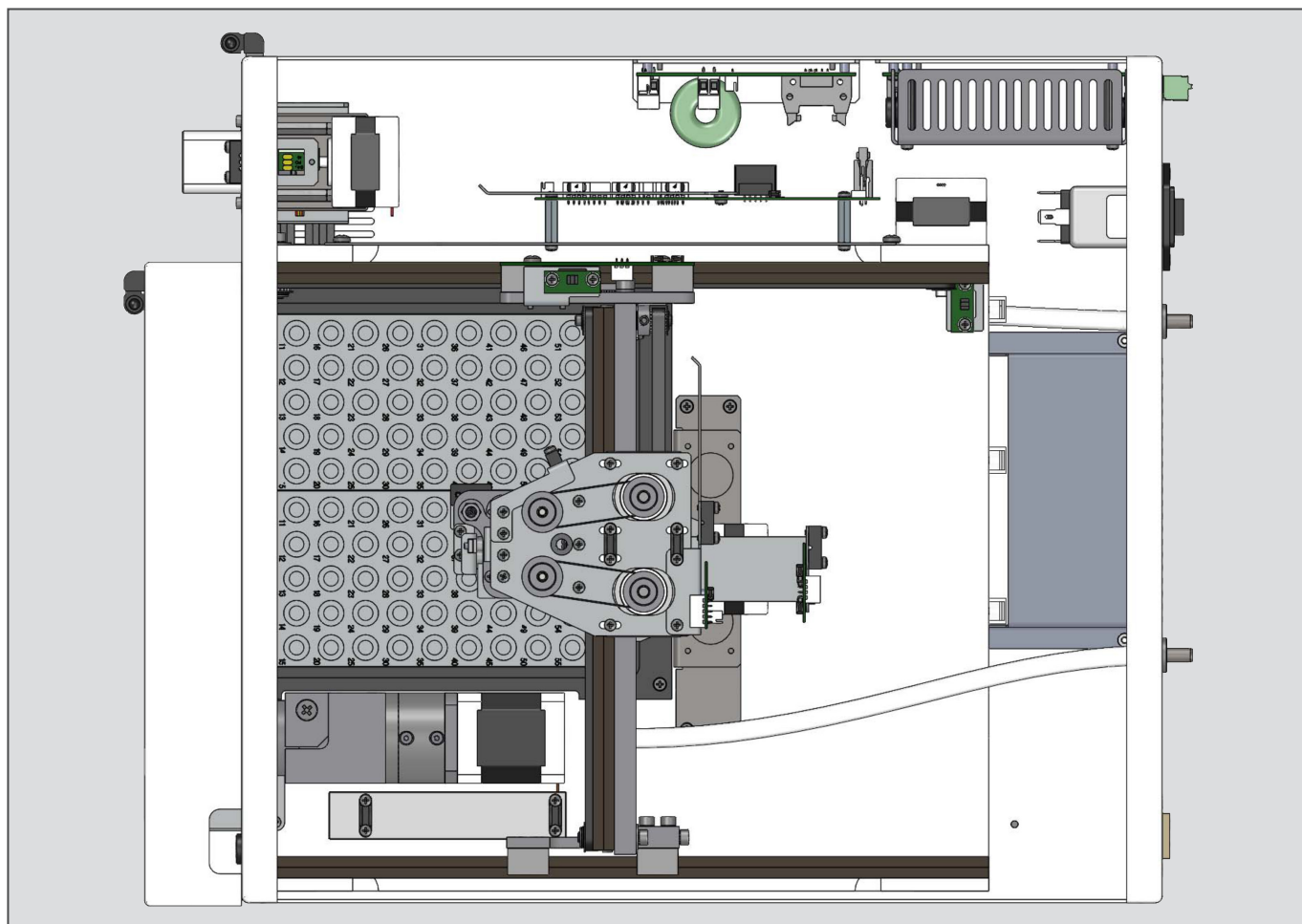
120 Vial Capacity

The standard sample racks have a capacity of 120 1.5ml vials.

Injection Valve

The injection valve is easily accessible from the front.



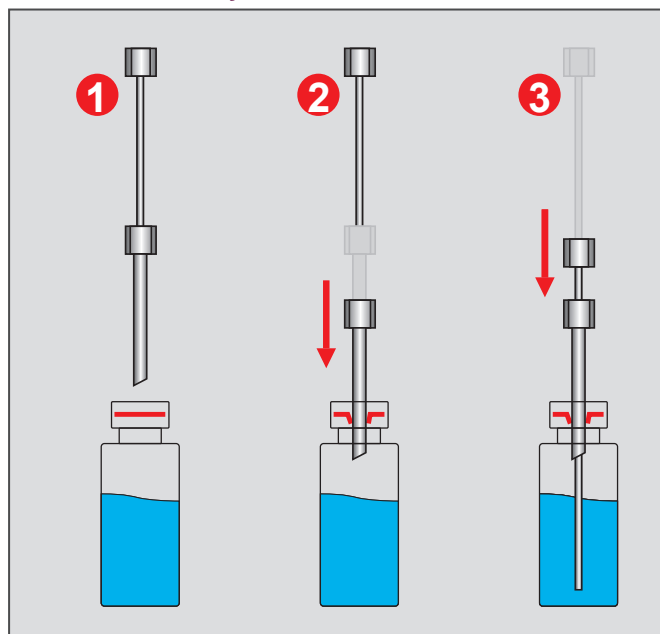


TECHNICAL SPECIFICATIONS

S 633-A Autosampler Module

Wetted Materials:	PEEK, PTFE, PVDF
Sample Capacity:	120 (1.5 ml), 192 (microtiter plate; optional)
Injection Volume:	0.1 - 999.9 μ l
Injection Precision:	< 0.5% RSD variable volume injection
Carry Over:	< 0.05 %
Sample Cooling:	+5°C to +60°C (at 20°C ambient temperature)
Dimensions:	396 x 165 x 478 mm (WxHxD)
Power Supply:	100 - 250 ~V (47 - 63 Hz)
Power Consumption:	max. 300 W

Dual-Needle Injection



REACTION MODULE S 633-R

The **Reaction Module S 633-S** is a post-column derivatization module. The module consisting of three major parts:

1.) Column Oven

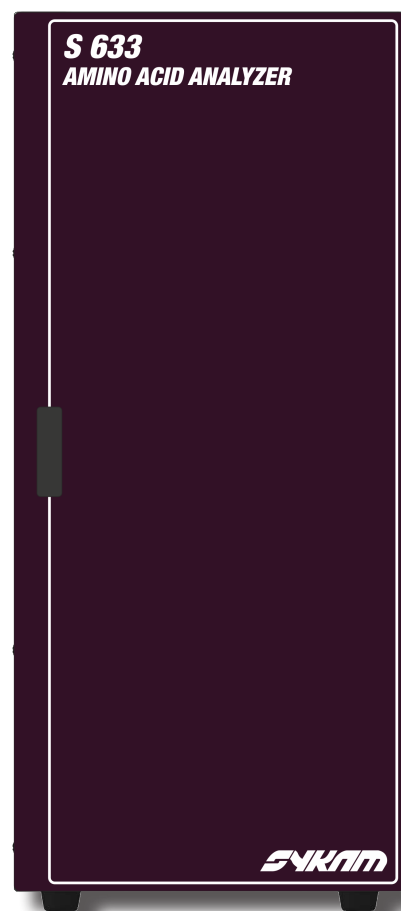
The integrated column oven has a temperature range from +30°C to 99° C and is capable of temperature gradient programs.

2.) High Temperature Reactor

The high temperature reactor (30°C to 150 °C) guarantees a stable and fast ninhydrine reaction for consistent results.

3.) 2-Channel LED Detector

The integrated 2-Channel (440 & 570 nm) detector uses LED as a light source. The lifetime and wavelength stability is much better then the conventionally used tungsten lamp.



TECHNICAL SPECIFICATIONS

S 633-R Reaction Module

Wetted Materials:	PEEK, PTFE, Quarz glas
Dimensions:	396 x 165 x 478 mm (WxHxD)
Power Supply:	100 - 250 ~V (47 - 63 Hz)
Power Consumption:	max. 300 W

S 633-R Column Oven

Temperature Range:	30°C to 99 °C; gradient capable
Temperature Accuracy:	< 1.0°C at 60 °C
Temperature Precision:	< 0.2°C at 60 °C
Temperature Control:	peltiers
Other Features:	column saver

S 633-R Reactor

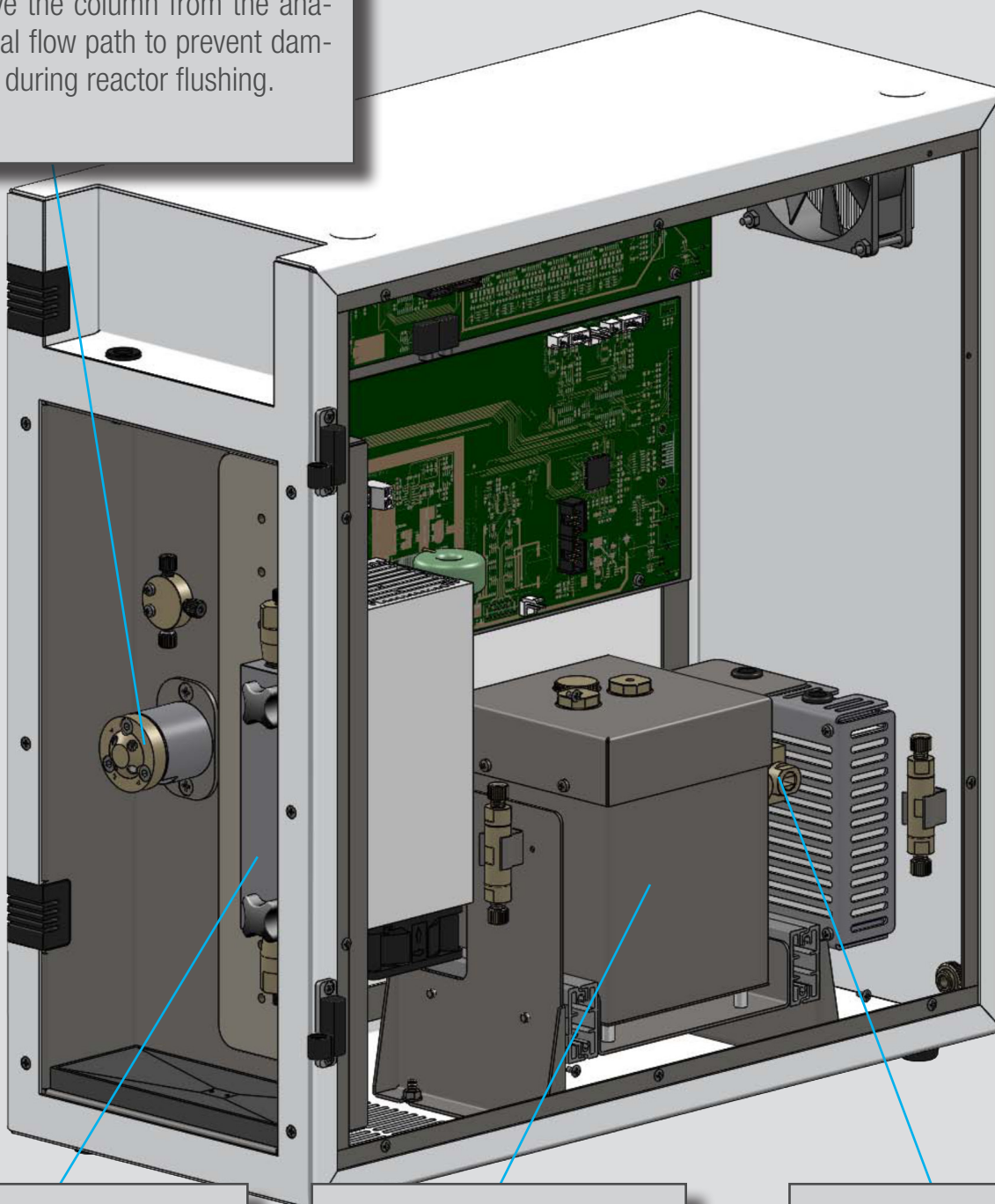
Temperature Range:	30 °C to 150 °C
Temperature Accuracy:	< 1.0°C at 130 °C
Temperature Precision:	< 0.5°C at 130 °C
Temperature Control:	heating foil
Reactor Type:	PTFE capillary coil
Other Features:	temperature fuse

S 633-R Detector

No. Channels:	2 (570 & 440 nm)
Light Source:	LED
Pathlength:	10 mm
Flowcell Volume:	< 8 µl
Baseline Noise:	< 200 µAu
Baseline Drift:	< 3x 10 ⁻⁴ AU/hr
Other Features:	channel signal addition

Switching Valve

Integrated switching valve to remove the column from the analytical flow path to prevent damage during reactor flushing.



Column Oven

Integrated column oven with temperature gradient capability from 30 to 99 °C.

High-Temperature Reactor

PTFE coil reactor with a temperature range from 30°C to 150°C.

Detector

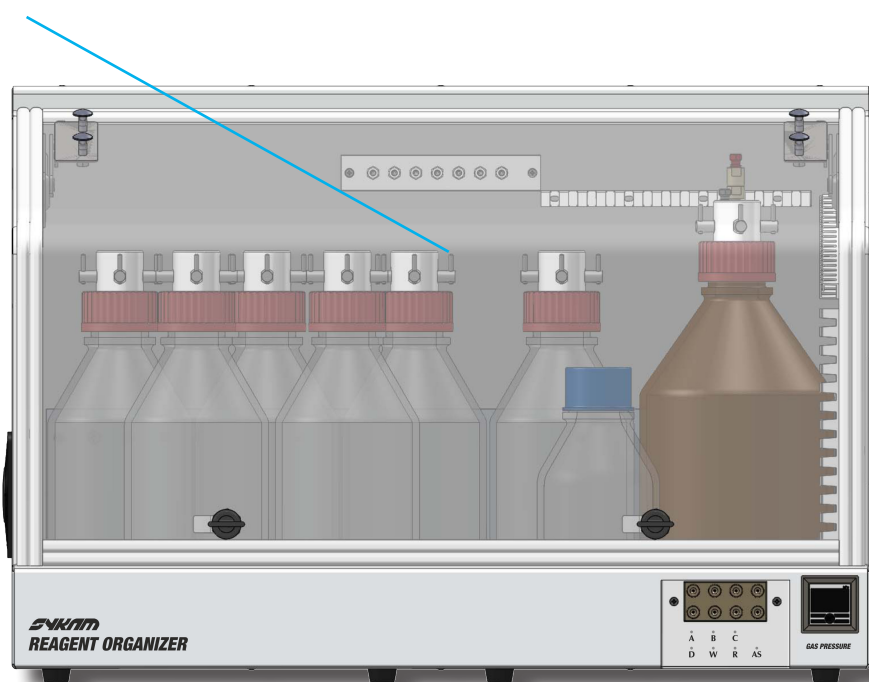
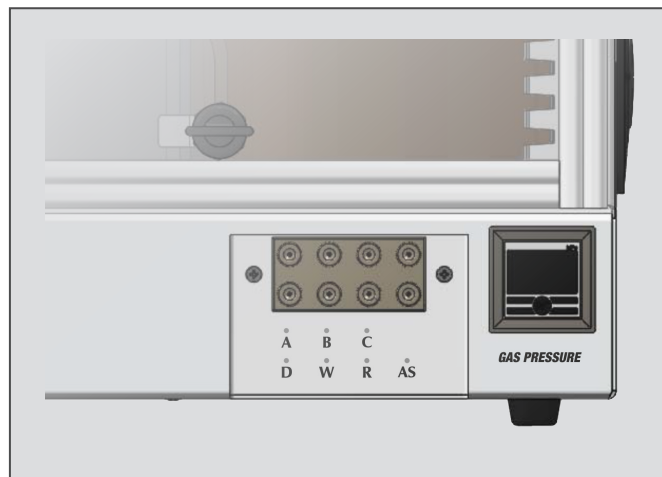
2-Channel LED
Detector (440 &
570nm)

REAGENT ORGANIZER S 7135

The *Reagent Organizer S 7135* is an integral part of the amino acid analyzer.

The integrated cooling unit temperates the buffers and especially the ninhydrine reagent to $\sim 15^{\circ}\text{C}$.

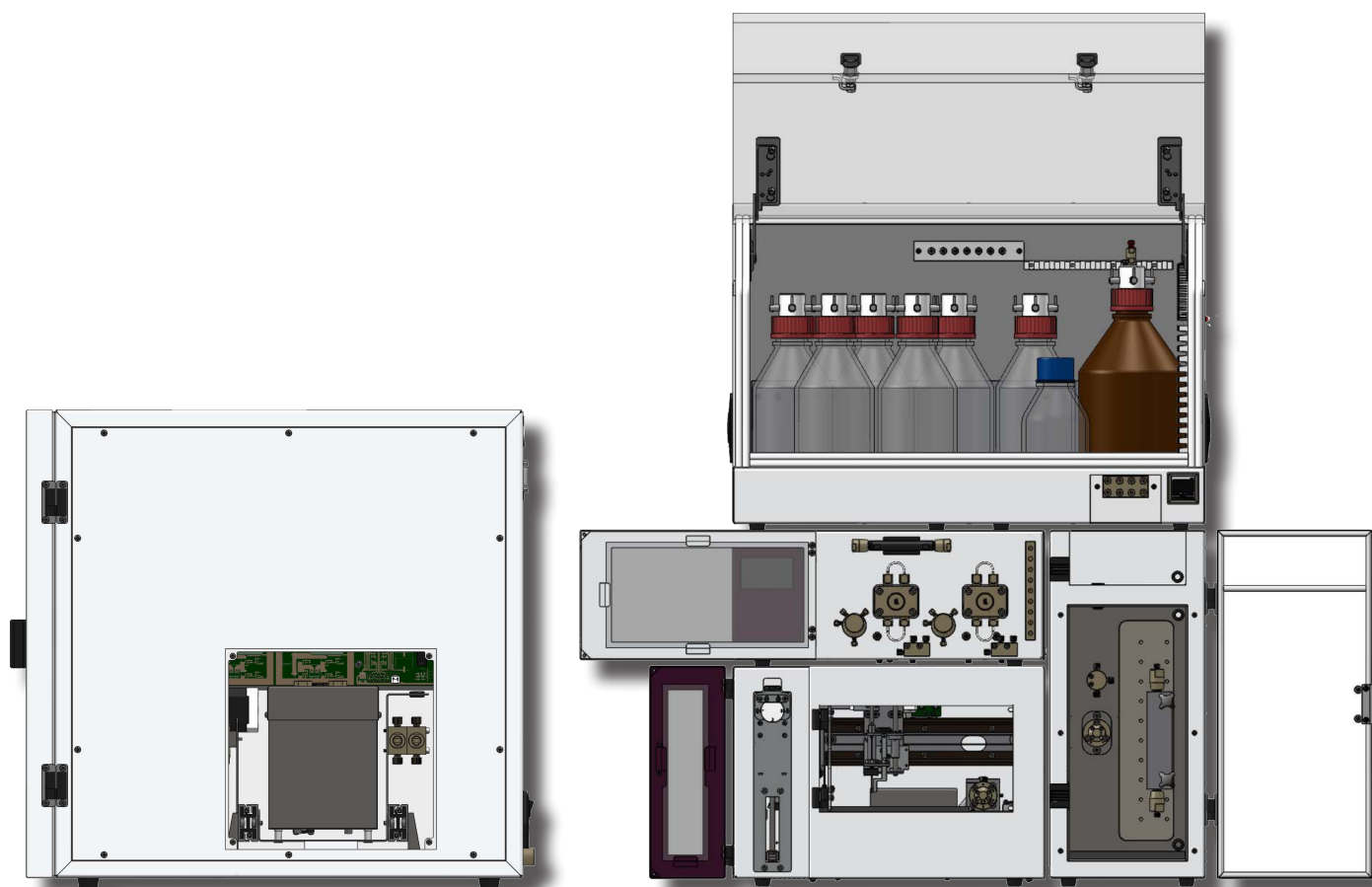
This increases the stability of the ninhydrine reagent considerably.



EASY MAINTENANCE

The system offers easy access to all necessary parts for routine maintenance and service.

Almost everything can be accessed from the front, except flowcell and reactor which can be comfortably accessed from the instrument's side side.





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