High Speed Amino Acid Analyzer
LA8080

HITACHI
Inspire the Next

AminoSAAYA

avantor™
delivered by VWR™
VWR.COM

Distributor of Hitachi High-Tech America, Inc.

Reduced workload for operators
Feel of the “Ease of use”

2017 Emergence of
AminoSAAYA

Comfortable

With consideration for the work and motions of operators based on the ergonomic concept.

Designed with consideration for the operational perspectives, daily work, and motions of users.

Consideration for operability and safety

While retaining the conventional front access design, the height of the reagent setup unit was adjusted for better accessibility. It is devised to ensure the smooth operation of daily tasks such as reagent replacement and sample setup and maintenance, and the work performed in a half-sitting position has been minimized (The front door is also removable).

Reliability and stability of Hitachi amino acid analyzer

55 years since the product launch. After achieving high speed, high resolution, and computerization, AminoSAAYA was born.

Model L-8900
Easy operation was achieved

Model L-8800
PC was installed in the control unit
Reaction column method was employed

Model L-8500
First in the industry
Column (3 μm particles)
Nihydrin two-reagent system
Analysis time: 30 min

Model 835
Column (5 μm particles)
Analysis time: 50 min
Computerized control

Model KLA-5
Column (17 μm particles)
Analysis time: 2 hrs
Installed with autosampler

Launched in 1962

Model KLA-2
Column (40 μm particles)
Analysis time: 22 hrs

Features of Hitachi Amino Acid Analyzer

Dedicated column for ion-exchange chromatography and various modules optimized for amino acid analysis.

Since the product launch, Hitachi high speed amino acid analyzers have been used by a wide range of operators, from beginners to experts.
Their various application areas include the quality control of food and pharmaceutical products as well as biochemical research and contract analyses.
This time, AminoSAAYA was developed in a compact design while maintaining the reliability and stability cultivated over many years.
The product was realized from users' perspectives with the aims to provide a better usability for beginner operators and a more comfortable operating environment.

Compact

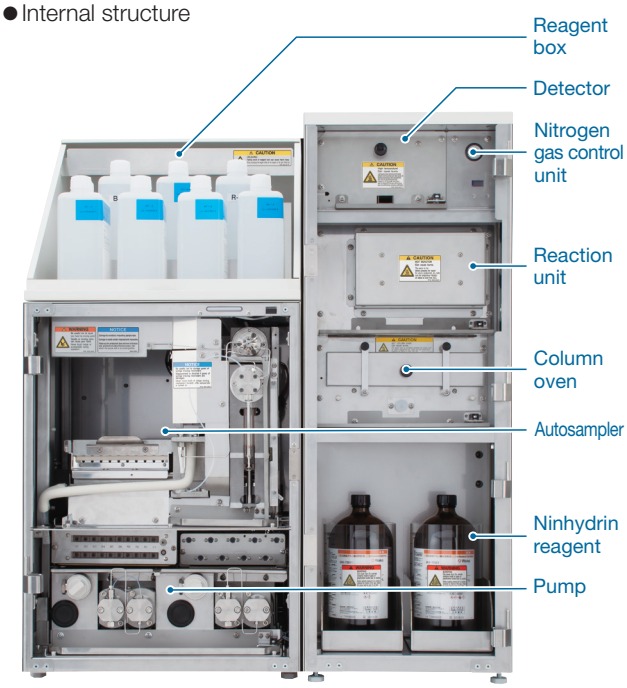
Space-saving compact design (System setup area was reduced by about 30 %).

Compact design with the unchanged reliability and stability of the dedicated system.

Space-saving Design

By optimizing the locations of the flow channel system and main unit internal module, the compact (system setup area reduced by about 30 %) desktop type system was realized.

● Internal structure



*Liquid waste tank accessory

Amino acid analyzer

The system is designed specially for amino acid analysis. Unlike general-purpose HPLC systems, it is comprised of component modules specifically designed for amino acid analysis. Therefore, the system can provide excellent performance for amino acid analysis.

Reliable

Use of highly reliable and stable post-column nihydrin method.

The analysis methods are compatible with ones of conventional models, L-8800 and L-8900.

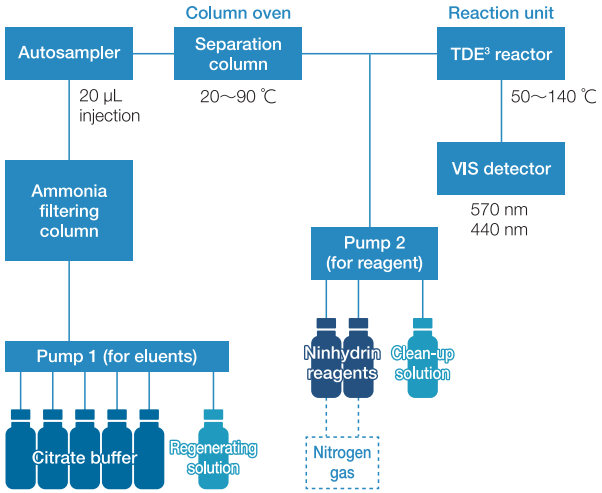
Reliability and stability cultivated over many years

As the analysis methods are inherited from conventional models, the basic analytical conditions, columns (packing materials), and reagents that have been in use can be used without making any changes.

Post-column ninhydrin derivatization method

By using the ninhydrin reagent which gives a characteristic color reaction with amino acids, highly selective analysis without the interference by contaminants (components other than amino acids) in samples can be achieved.

● Flow line diagram



Select the analysis method (column, reagent, analytical conditions) depending on the purpose. Commercially available buffer solutions and reaction reagents (dedicated reagents) can be used without preparation.
Unstable ninhydrin reagents usually require refrigeration. However, with Hitachi amino acid analyzer, the two solutions are mixed immediately before the derivatization reaction. Therefore, there is no need for refrigeration.

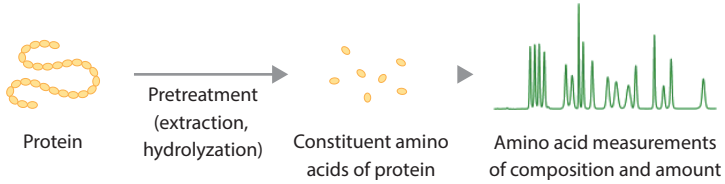
Analysis Method and Analysis Column Selection

Select and use the analysis column (column, analysis conditions) depending on the purpose.
Either the "Standard analysis method" or "Physiological fluid analysis method" can be selected depending on the analyte in the sample, analysis time, resolution, etc.

Protein hydrolyzate analysis method (standard analysis method) and physiological fluid analysis method

PH Protein hydrolyzate analysis method (standard analysis method)

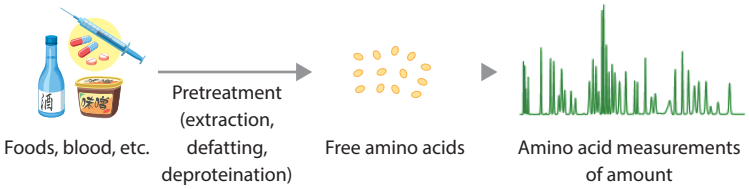
Analysis for constituent amino acids of protein (approx. 20 components)



Nutrients	Analysis of amino acids as nutrients in food products
Fertilizer feedstuff	Analysis of nutritional values of amino acids contained in fertilizers or fodders
Pharmaceutical products	Analysis of medicinal amino acids used for infusion or pharmaceutical products. Analysis of the amino acid compositions for biopharmaceutical products, etc.

PF Physiological fluid analysis method

Analysis for free amino acids (approx. 40 components)



Food	Analysis of amino acids for tastes and flavors in food
Biological samples	Analysis of amino acids in urine and blood (for research purpose only)

Analysis Column and Analysis Time

Based on the amino acids (amino acids as analytes) contained in samples, analysis time, and resolution, select the analysis method (PH or PF) and analysis column from those listed below.

PH

VWR Cat. No.	Product Name	Remarks	Time (min)
76493-012	STANDARD ANALYSIS COLUMN	#2622, 4.6 mm × 60 mm	30
76493-014	HIGH RESOLUTION PH COLUMN	#2622, 4.6 mm × 80 mm	80

PF

VWR Cat. No.	Product Name	Remarks	Time (min)
76493-016	PHYSIOLOGICAL FLUIDS ANALYSIS COLUMN	#2622SC, 6.0 mm x 40 mm	120

Note) Ammonia filtering column is neccesary for the usage.

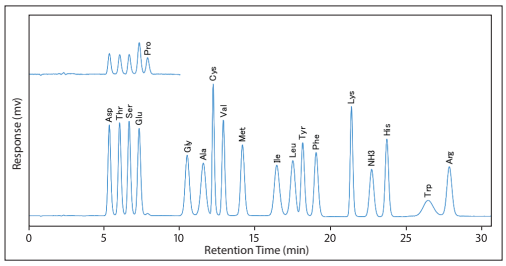
* The most suited combinations for general-purpose analysis are PH method + STANDARD ANALYSIS COLUMN and PF method + PHYSIOLOGICAL ANALYSIS COLUMN.

Analysis Examples by Various Analysis Methods

Protein hydrolyzate analysis method (30 min)

PH

◦ Analyte: amino acids of protein hydrolyzate



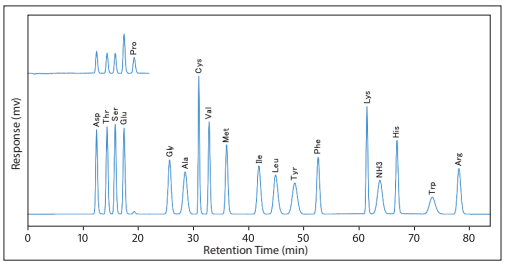
* STANDARD ANALYSIS COLUMN (Cat. No. 76493-012)

Basic method for the simultaneous analysis of 18 protein-constituting amino acids.

High resolution standard analysis method (80 min)

PH

◦ Analyte: amino acids of protein hydrolyzate



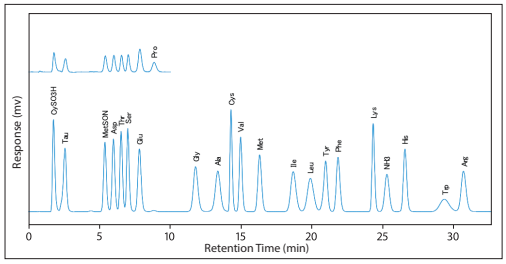
* HIGH RESOLUTION PH COLUMN (Cat. No. 76493-014)

Analysis method for the high resolution simultaneous analysis of 18 protein-constituting amino acids. It is suitable for the analysis of samples with a wide range of amino acid contents or those containing contaminants (components other than amino acids).

Performic acid-oxidized protein hydrolysate analysis method (30 min)

PH

◦ Analyte: amino acids of protein hydrolyzate



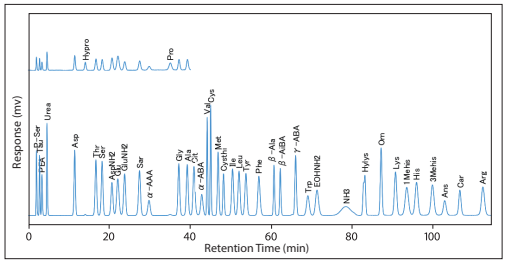
* STANDARD ANALYSIS COLUMN (Cat. No. 76493-012)

The performic acid oxidation allows the analysis of CySO3H (cysteic acid) and MetSON (methionine sulfone).

Physiological fluid analysis method (120 min)

PF

◦ Analyte: Free amino acids



* PHYSIOLOGICAL ANALYSIS COLUMN (Cat. No. 76493-016)

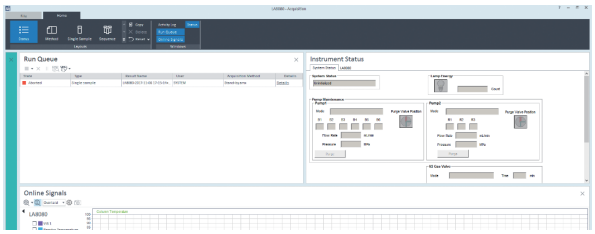
42 components including the protein-constituting amino acids can be simultaneously analyzed. Suitable for the analysis of free amino acids (amino acids found in physiological samples).

Note) The resolution may be reduced depending on the separation conditions. To obtain the data similar to that in the analysis example, it is necessary to optimize the separation conditions as the analysis system, column, etc. change over time.

Simple operation by various special screens

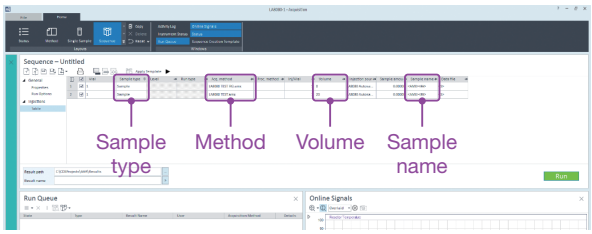
Sample information entry and method selection

Single sample analysis



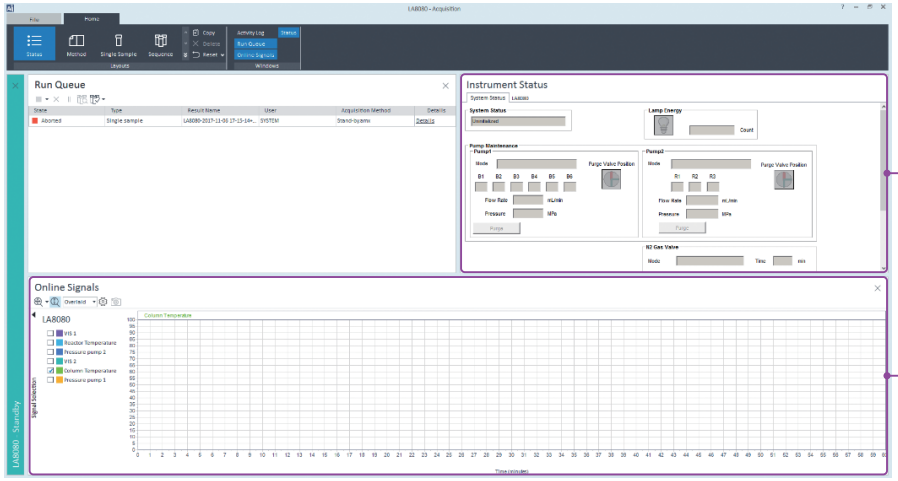
Single sample start.

Sequence analysis



Depending on the application, select a dedicated method, then run the sequence.

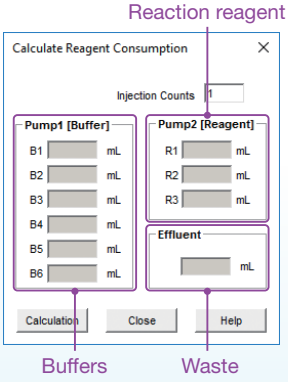
Data Acquisition screen



Recalculation of other data is also available during acquisition.

Screen for automatic reagent amount calculation function

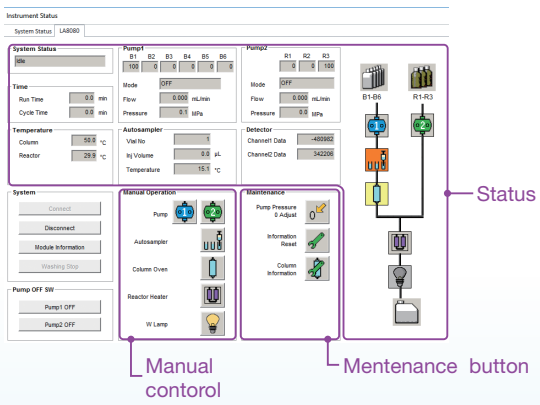
Calculate Reagent Consumption



Press the button of reagent consumption calculation in instrument condition window, then a dialogue box appears. The function can estimate the consumption amount of the measurement, during editing the method, or after determining that.

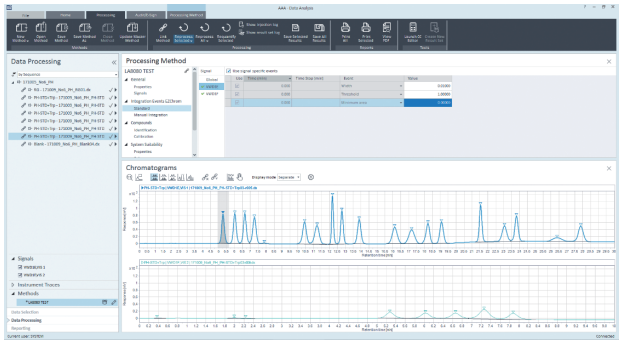
With the automatic calculation of reagent amount, the damage to the instrument due to the reagent exhaustion during the analysis or the waste overflow can be prevented.

User-friendly instrument status screen

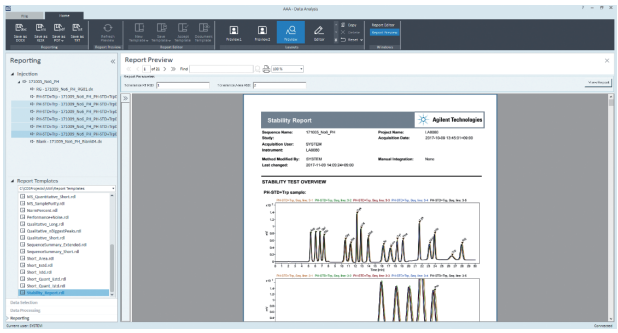


The operation buttons are situated to allow the manual operation while checking the instrument status.

Data Analysis screen

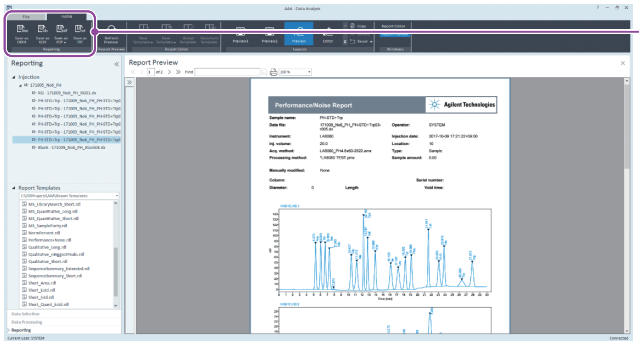


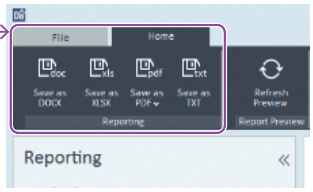
Change the parameters to process the integration, then execute reanalysis.



To check reproducibility, drag output data, click “Stability_Report.rdl” in report templates.The overlay chromatogram and reproducibility results (retention time and area value) are output.

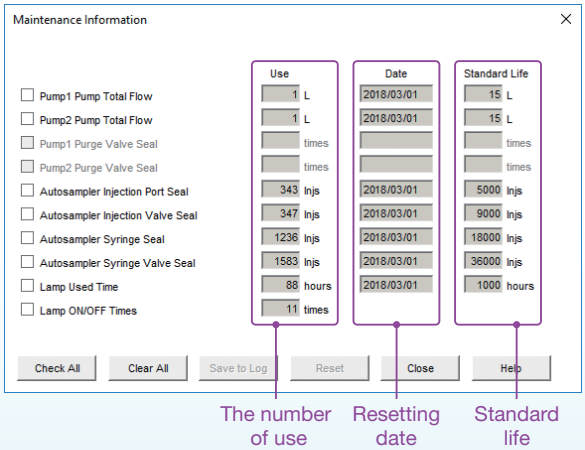
Report creation





Pre-created report templates are installed. Templates are editable depending on purposes. The report result output is also available in PDF and text formats.
By specifying the processing method in advance, reports can be automatically created at the end of analysis.

Maintenance information



Mentenance Information

Maintenance information (parts for periodical maintenance) recorded on the instrument can be checked.
The number of use, resetting date, and standard life are indicated.
Those are indexes for maintenance to confirm the usage of parts.

■ Specifications

System performance (by protein hydrolyzate analysis method)	
Analysis time	30 min (Net)
Resolution (JP)	1.2 (Thr-Ser, Gly-Ala, Ile-Leu)
Reproducibility of peak retention time	RSD 0.3 % (Arg), 0.5 % (Ala)
Reproducibility of peak area	RSD 1.0 % (Gly, His)
Detection limit	2.5 pmol (S/N=2, Asp)

Analyzer	
Column	Size: 4.6 mm ID × 60 mm ※
	Resin: Hitachi custom ion exchange resin
Pump	Flow rate setting: 0.001 – 1.000 mL/min
	Discharge pressure: 0 – 34 MPa
	Gradient elution method with 6 solutions
Autosampler	Injection method: Direct injection method
	Sample vial capacity: 1,500 µL
	No. of vials accommodated: 120 (with optional cooling unit installed: 100)
	Sample injection volume: 0.5 – 100 µL
Column oven	System: Peltier
	Temperature setting: 20 - 90 ℃ (in 1 ℃ steps)
Reaction unit	System: Electronic heating
	Temperature setting: 50 - 140 ℃ (in 1 ℃ steps)
Detector	Spectrophotometer: Aberration-corrected concave diffraction grating
	Wavelength: 570 nm, 440 nm

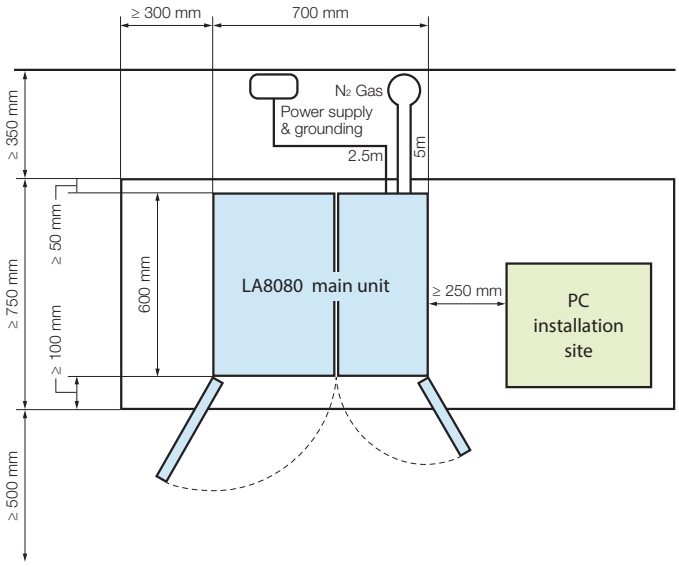
Chromatographic data system	
Software	Agilent OpenLAB CDS Version 2

Others	
Dimensions (excluding PC)	700 (W) × 600 (D) × 850 (H) mm
Weight (excluding PC)	Approx. 130 kg
Temperature range	15 - 35 ℃
Power supply	100, 115, 220, 240 V ± 10 V, 800 VA, 50 or 60 Hz
Nitrogen gas	Nitrogen gas source must be prepared.

※ Standard column

■ Setup Sample

Height of Installation rack: ≥ 600 mm
Withstanding load of Installation rack: ≥ 150 kg



Ordering Information

Description	Hitachi P/N	VWR Cat. No.
Amino Acid Analyzer		
LA8080 without Cooling	8L0-0016-A	**76493-296**
LA8080 without Cooling (Workstation Plus)	8L0-0016-B	**76493-298**
LA8080 with Cooling	8L0-0016-C	**76493-300**
LA8080 with Cooling (Workstation Plus)	8L0-0016-D	**76493-302**
Options at Time of Sale		
2L Bottle Kit	8L0-0130	**76493-304**
Columns		
Standard PH Analysis Column	855-4506	**76493-012**
High Resolution PH Analysis Column	855-4508	**76493-014**
PF Analysis Column	855-4515	**76493-016**
PH Special Analysis Column for Norleucine 2620 MSC	855-4516	**76493-018**

For sales, service and support, visit:

https://vwr.com

* Hitachi is a registered trademark of Hitachi, Ltd.
* AminoSAAYA is a trademark of Hitachi High-Tech Science Corporation.

CAUTION: For correct operation, follow the instruction manual when using the instrument.

Specifications in this catalog are subject to change with or without notice, as Hitachi High-Tech continues to develop the latest technologies and products for its customers.

NOTICE: The system is For Research Use Only, and is not intended for any animal or human therapeutic or diagnostic use. These data are an example of measurement; the individual values cannot be guaranteed.

Manufactured by:

Hitachi High-Tech

Visit VWR.com for sales, service, and support.

1221 Lit. No. 080086W