RAYPA

Benchtop autoclaves with drying

AHS-DRY Series CLASSIC LINE

Technical information

Why choose RAYPA?

Expert manufacturer, original design, global brand

GLOBAL REACH

With half a century of experience, we have a long list of satisfied customers around the world. Currently, we export 85% of our annual turnover and have a stable network of distributors with presence in over 100 countries.

EFFICIENT TECHNICAL SERVICE

Our team of highly qualified technicians and engineers is expert in our products. If you experience a technical issue, it will be our priority to rectify it. When you purchase a RAYPA unit, you're guaranteed top-level support and technical assistance.

EXPERT MANUFACTURER

After more than 50 years in the industry, RAYPA is a global leader in the manufacture of laboratory autoclaves. Each of our autoclaves is designed and manufactured entirely within our modern facility equipped with the latest technology

FULL AND CUSTOMIZABLE RANGE

We offer an extensive portfolio of laboratory autoclaves to cover multiple applications and market segments. Discover the combination of autoclave model and accessories that best fits your needs within our 11 series and 35 available models.

INNOVATION AND QUALITY

Our products feature advanced technology, ongoing innovation, superior construction quality, and are designed for a long service life. Our technical and engineering staff works tirelessly every day to optimize our products and exceed our customers' expectations.

COMPREHENSIVE CONSULTANCY

Our team of specialists assesses each project and provides guidance to clients on the option that best suits their requirements. After the sale, we offer training on the use and recommended maintenance of each unit to ensure its optimal operation and extend its lifespan.

Benchtop autoclaves with drying

The AHS-DRY Series benchtop autoclaves with front-loading access cover most laboratory sterilization needs in many industries, educational institutions and research facilities with the aim of increasing the productivity of the laboratory. A great chamber capacity, the final drying feature and the independent water tank, together with the optimization of resources such as water, power and operating time, results in a cost-efficient solution to manage laboratory workload.

RECOMMENDED APPLICATIONS

- Glassware
- Plastics and metal objects
- Laboratory waste bags
- Liquids and culture media
- Porous solids and wrapped objects*

*For this application, the sterilization time should be extended, the chamber should not be fully loaded and chemical and/or biological tests should be used to validate the correct sterilization of the load.

AHS-DRY Series

MAIN FEATURES

COST-EFFECTIVE SOLUTION

AHS-DRY Series autoclaves are robust autoclaves with excellent performance for liquids and solids sterilization procedures. The vacuum drying feature by a heating jacket and vacuum pump at the end of the sterilization cycle eliminates the need of an external equipment to dry the load, significantly reducing the duration of each sterilization rotation and saving the operator time.

EASY INSTALLATION AND MAINTENANCE

Every AHS-DRY Series autoclave is a plug and play equipment that does not need dedicated installation connections. They simply need a power source and can work even without a connection to the drainage. They include a manually fed independent water tank that automatically feeds the sterilization chamber. Optional upgrade to fully automatic water feed directly from water network.

MULTIPLE TYPES OF STERILIZATION CYCLES

Several options available to perform solids or liquids sterilization. Programmable final vacuum drying for the sterilization of solids, initial prevacuum for the sterilization of objects of complex geometries and programmable temperature holding at the end of the cycle for the sterilization of culture media. Optional flexible probe for liquids sterilization.

SAFETY FIRST

AHS-DRY Series autoclaves are equipped with several features to ensure the safety of the operators. These include an overpressure safety valve, a thermally insulated door, a safety thermostat, an open door detection system, and independent pneumatic safety system that locks the main door while positive pressure exists inside the sterilization chamber.

ADVANTAGES

- Final vacuum drying feature by a heating jacket and vacuum pump to completely dry solid loads.
- Sterilization chamber and door made of high quality stainless steel grade AISI-316L extremely resistant to corrosion.
- Equipment built following all applicable European Union quality, regulatory and safety standards.
- Heating by powerful electric elements made of Incoloy® 825 assembled inside the sterilization chamber and shielded by a protective grid.
- Control by a PID microprocessor with 4 predefined and 6 editable programs, adjustable by time, temperature, drying time and type of sterilization cycle (solids or liquids, with optional agar mode and/or core probe control).
- Adjustable temperature holding at the end of the sterilization cycle between 40-80°C (agar mode).
- Suitable to sterilize wrapped and unwrapped loads, small porous and hollow objects and items of complex geometries with cavities* thanks to the initial standard prevacuum phase.
- Automatic water feed to the sterilization chamber from the independent water tank, with water level sensors included in both locations. Optional upgrade to fully automatic water feed directly from water network.
- Programmable auto-start for up to 24 h.
- Optional software for sterilization data management.
- Plug and play equipment, no plumbing required.
- Optional integrated or external printer.

*For this application, the sterilization time should be extended, the chamber should not be fully loaded and chemical and/or biological tests should be used to validate the correct sterilization of the load.

OPERATING PRINCIPLE

AHS-DRY Series autoclaves provide a solution for the multiple sterilization needs of general laboratories, including glassware, plastics, metal utensils, laboratory waste bags, wrapped and unwrapped solids, small porous and hollow objects, liquids, culture media and other laboratory items.

The load has to be placed into the vessel's trays or basket and, after manually filling the independent water tank with purified water, the equipment starts to create the initial prevacuum, automatically feeds water to the sterilization chamber, heats up and purges until the set combination of sterilization time and temperature is reached.

AHS-DRY Series

OPERATION OF A STERILIZATION CYCLE FOR SOLIDS

PREVACUUM PHASE

- In this initial step, the equipment's vacuum pump mechanically removes air from the chamber and load through a single vacuum pulse of -0,75 Bargs. This allows the steam to penetrate load objects of complex geometries that couldn't otherwise be reached with a simple displacement of the air by gravity.
- Afterwards, the independent water tank starts to supply water to the sterilization chamber and the heating jacket turns on, preheating the load.

HEATING PHASE

- After completing the prevacuum phase and once the bottom of the sterilization chamber has been filled with water, the powerful heating elements assembled at the bottom of the sterilization chamber heat up dramatically, transferring energy to the water to produce saturated steam throughout the chamber.

STERILIZATION PHASE

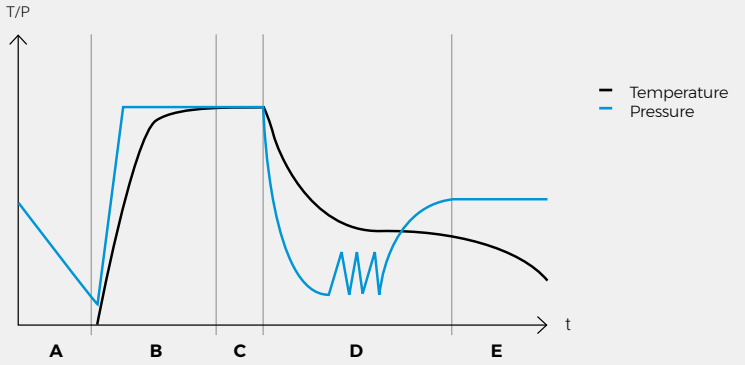
- Upon reaching the set sterilization temperature inside the chamber, the sterilization phase begins, accurately sustaining the temperature throughout the duration of this phase.
- This crucial step is controlled by a PT-100 Class A temperature probe located within the chamber. As an option for liquids sterilization processes, this phase can be regulated by a PT-100 Class A flexible temperature probe located inside a sample.

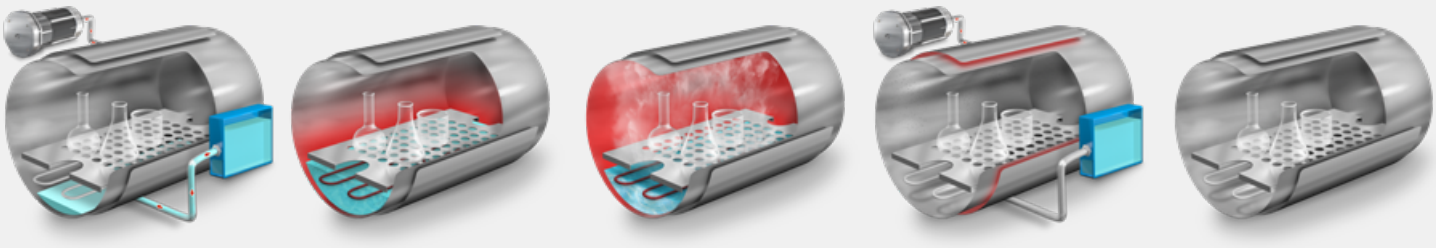
VACUUM DRYING PHASE

- Once the sterilization phase is finished, only for solids programs, vacuum drying starts, where multiple vacuum pulses occur while the heating jacket is turned on, completely drying the load and automatically returning the water to the independent water tank.

COOLING PHASE

- Once the vacuum drying phase is completed, natural cooling begins and an acoustic beep will sound when a safe temperature is reached that allows the chamber to be opened.
- In liquid programs with agar mode activated, the equipment will hold the preprogrammed temperature indefinitely, selectable between 40 and 80°C.





A. Prevacuum phase

B. Heating phase

C. Sterilization phase

D. Vacuum drying phase

E. Cooling phase

PREDEFINED PROGRAMS

Program No.	Sterilization temperature °C	Sterilization time min	Drying time min	Program mode
P0	115	60	12	Solids
P1	121	30	25	Solids
P2	133	20	30	Solids
P3	121	20	-	Liquids

AHS-DRY Series autoclaves have 10 programs, from P0 to P9, and the first four are predefined and protected.

The rest of the programs, from P4 to P9, can be edited by adjusting the following parameters:

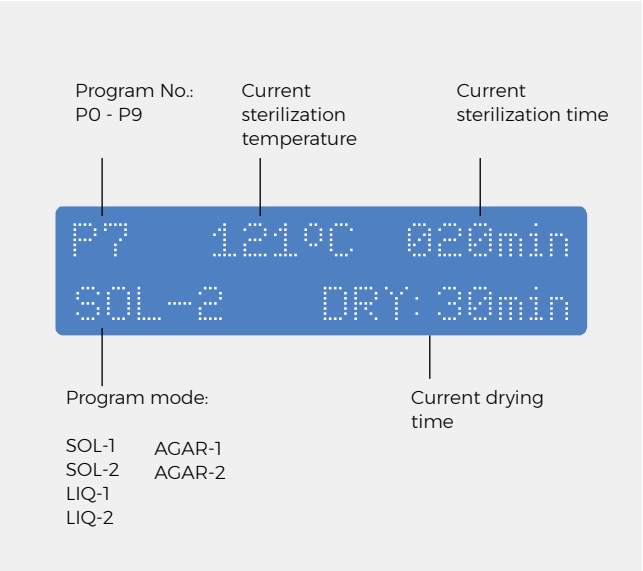
- Sterilization temperature.
- Sterilization time.
- Final drying time.
- Sterilization mode (solids or liquids).
- Sterilization with temperature holding at the end of the cycle (agar mode).
- Temperature regulation of the sterilization cycle can be done through the chamber temperature probe or through the combined use of the chamber probe and the flexible probe.

DIGITAL MICROPROCESSOR

Digital PID microprocessor with 6 push-buttons for an easy programming and parameters selection.

SCREEN FUNCTIONS

The alphanumeric screen, apart from showing the standard sterilization parameters, also displays the current sterilization phase and several visual alerts, including warning or error messages. The available languages include English, Spanish, French and Catalan. For other languages please contact us.



AHS-DRY Series

LOADING CAPACITIES

ISO ERLENMEYER FLASKS

Autoclave model	Usable volume L	250mL (Ø85 x 143mm)			500mL (Ø105 x 183mm)			1000mL (Ø131 x 230mm)			2000mL (Ø166 x 280mm)		
		Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units
AH-21-L	21	1	8	**8**	1	4	**4**	0	0	**0**	0	0	**0**
AHS-50-DRY	50	1	14	**14**	1	8	**8**	1	5	**5**	1	2	**2**
AHS-75-DRY	75	1	26	**26**	1	15	**15**	1	8	**8**	1	3	**3**

ISO BOTTLES

Autoclave model	Usable volume L	250mL (Ø70 x 143mm)			500mL (Ø80 x 185mm)			1000mL (Ø101 x 230mm)			2000mL (Ø136 x 260mm)		
		Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units
AH-21-L	21	1	8	**8**	1	8	**8**	0	0	**0**	0	0	**0**
AHS-50-DRY	50	2	20	**40**	1	14	**14**	1	8	**8**	1	5	**5**
AHS-75-DRY	75	2	32	**64**	1	26	**26**	1	15	**15**	1	8	**8**

The data contained within these tables, regarding load capacities, serves as a non-binding guide to assist you in the selection of the most appropriate autoclave model.

COMPONENTS SUPPLIED

AH-21-L

A. Stainless steel tray support for 4 trays*.

B. 3 stainless steel wire trays.

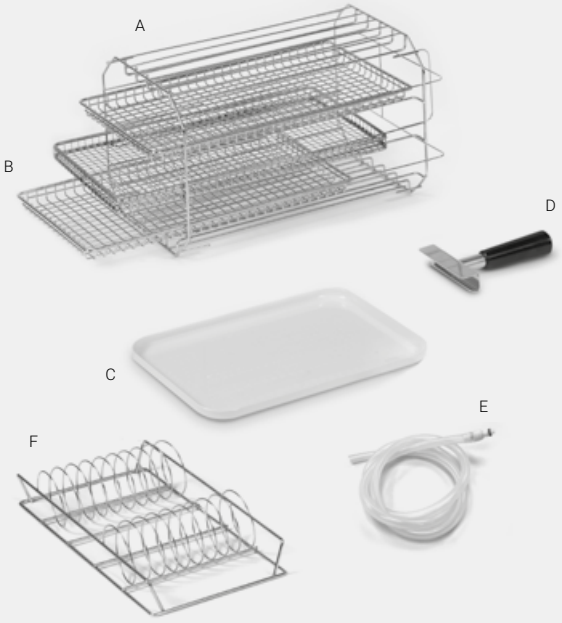
C. Auxiliary plastic tray for collecting condensed water after opening the door in cycles without final drying.

D. Holding clamp to move the trays.

E. Silicone tube of 1m with quick connection to drain the independent water tank.

F. Stainless steel bag support.

Stainless steel protecting grid for the heating elements.



*Special tray support compatible with up to 5 trays available under request.

AHS-50-DRY and AHS-75-DRY

A. Stainless steel tray support for 5 trays.

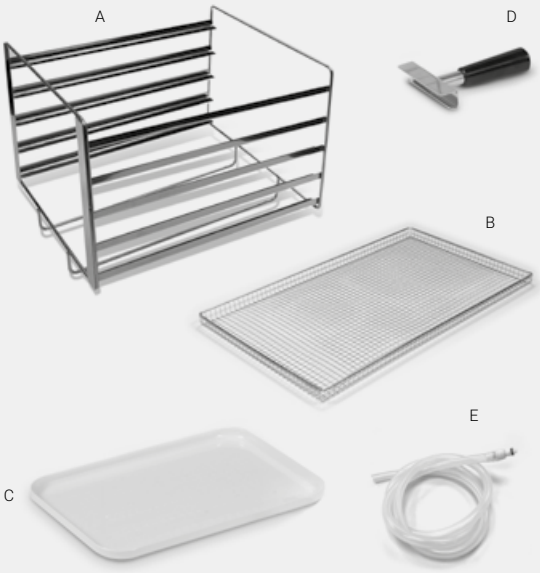
B. 2 stainless steel wire trays.

C. Auxiliary plastic tray for collecting condensed water after opening the door in cycles without final drying.

D. Holding clamp to move the trays.

E. Silicone tube of 1m with quick connection to drain the independent water tank.

Stainless steel protecting grid for the heating elements.

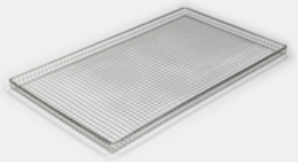


ACCESSORIES

STAINLESS STEEL WIRE TRAYS

References		BAH-21	BAH-50 B	BAH-75 B
External dimensions L x D mm		190 x 350	315 x 330	315 x 530
Maximum capacity for autoclaves with the following chamber volumes	22 L	4 or 5	-	-
	55 L	-	5	-
	79 L	-	-	5

*Special tray support compatible with up to 5 trays available under request.



STAINLESS STEEL WIRE HORIZONTAL BASKET

References		RB-AH-21	RB-AHS-50	RB-AHS-75
Dimensions	Exterior L x D x H mm	170 x 340 x 180	324 x 360 x 235	324 x 560 x 235
	Interior L x D x H mm	160 x 330 x 170	314 x 350 x 225	314 x 550 x 225
Maximum capacity for autoclaves with the following chamber volumes	22 L	1	-	-
	55 L	-	1	-
	79 L	-	-	1

STAINLESS STEEL BAG HOLDER SUPPORT*

References		BAP-21	BAP-75
External dimensions L x D x H mm		400 x 180 x 80	300 x 180 x 95
Positions / support		20	20
Maximum capacity for autoclaves with the following chamber volumes	22 L	1	-
	55 L	-	4
	79 L	-	6

*Possibility of adapting the size of this accessory according to the needs of each customer. For more information, please contact us.

STAINLESS STEEL CONTAINERS WITH FILTER ON THE LID

References		FC-215	FC-331	FC-338
Dimensions	Exterior L x D x H mm	285 x 185 x 65	300 x 300 x 110	300 x 300 x 85
	Interior L x D x H mm	275 x 175 x 55	290 x 290 x 100	290 x 290 x 75
Maximum capacity for autoclaves with the following chamber volumes	22 L	2	-	-
	55 L	6	2	2
	79 L	9	2	2

ACCESSORIES

FLEXIBLE TEMPERATURE PROBE PT-100 CLASS A

After installing this accessory, the temperature regulation of the sterilization cycle can be controlled by the main chamber temperature probe or both the main chamber temperature probe and the flexible temperature probe.

The temperature control by the flexible temperature probe is especially advantageous for processes involving the sterilization of large volumes of liquids, where the sterilization process is regulated by both the temperature achieved in the center of the liquid sample as well as the temperature achieved in the sterilization chamber. Furthermore, should the autoclave be opened at chamber temperatures higher than 80°C there is a risk of liquids boiling over which can be avoided if the temperature of the sample is controlled throughout the sterilization procedure.

Must be installed at our factory.

Ref. PT-2-AH

Download technical data sheet

EXTERNAL MATRIX PRINTER

Prints program number, cycle number, temperature, time, date and hour and error messages.

Selectable print frequency between 10 and 240 seconds.

Connection: RS-232.

Requires factory adaptation.

Ref. ITS

Consumables: PAPER-ITS for paper and 70945 for ink ribbon

Download technical data sheet

EMBEDDED THERMAL PRINTER

Prints program number, cycle number, temperature, time, date and hour and error messages.

Selectable print frequency between 10 and 240 seconds.

Must be installed at our factory.

Ref. IT

Consumable: PAPER-IT for paper

Download technical data sheet

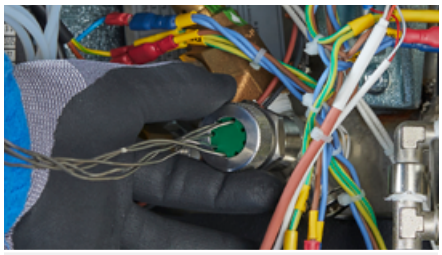
SW7000 SOFTWARE

Communication software between the equipment and the PC that allows the visualization and recording in real time or after each cycle. Cycles can also be exported to Excel or printed.

Connection to PC via RS-232.

It is supplied with a RS-232 cable, a USB stick that includes the software and installation drivers, and a RS-232 to USB adapter.

Ref. SW7000



CABLE GLAND

Installation of a Ø2mm or Ø4mm cable gland to provide access to as many as eight external temperature probes for calibration and validation procedures.

Ref. CG2MM and CG4MM

Download technical data sheet

ACCESSORIES

BENCHTOP AUTOCLAVE TABLE

Stainless steel table with casters (with brakes on two of them).

Designed to accommodate any model of benchtop autoclave, including larger models.

Dimensions (LxDxH): 800x900x800mm.

Ref. TABLE-AHS

Download technical data sheet

TRANSPORT TROLLEY

Auxiliary trolley to aid in the loading and unloading of the autoclave.

Made of chrome iron and plastic.

The surface of each shelf is textured to prevent the load from moving.

Rubber-coated casters to reduce noise and prevent floor wear.

Dimensions (LxDxH): 730x490x700mm

Ref. TR-TR

Download technical data sheet

AUTOMATIC WATER FILLING KIT

Water pump to automate the supply of the tank with purified water. Compatible with installations that have a purified water network, a purified water tank or installations with a non-purified water network; in the latter case a water purifier (ECOPUR-500) and a purified water tank (TANK-KLL) will be required.

Must be installed at our factory.

Ref. KLL-21 and KLL-AHS

Download technical data sheet

ECO-EFFICIENT WATER PURIFIER

Direct flow eco-efficient water purifier without water accumulation capable of filtering 1,3L/min with LED display.

The installation of this accessory requires the joint installation of the external tank (TANK-KLL) and the automatic water filling system (KLL-AHS or KLL-21).

Ref. ECOPUR-500

Download technical data sheet

PURIFIED WATER TANK

Alternative solution for the storage of up to 25L of purified water in the absence of a water network.

Ref. TANK-KLL

Download technical data sheet

INTERNAL RADIAL FAN

Optimize and reduce cooling time, ensuring greater efficiency in sterilization processes.

Must be installed in our facilities.

Not compatible with model AH-21-L.

Ref. AIRCOOL-H

Download technical data sheet

AHS-DRY Series

ACCESSORIES

Temperature data logger

Temperature recorder in AISI-316L stainless steel disk format with connection base and software.

Recommended for autoclave validation and for monitoring the internal temperature of vessels.

Available in various sizes.

Ref. BDL-DISK3618_CL

Download technical data sheet

PACK OF STERILIZATION TAPE

Class 1 indicator for steam sterilization. The color change indicates that the materials have been processed, but this is not a guarantee of a correct sterilization. Additional methods such as biological indicators are required (EN ISO 11138).

Pack of 5 rolls of 50m x 19mm tape.

Ref. TEST-CT

Download technical data sheet

SPECIFIC SERVICES

IQ-OQ DOCUMENTATION

Delivery of documentation and protocols for autoclave qualification through a third party.

Ref. IQ-OQ DOC

Download technical data sheet

IQ-OQ-PQ QUALIFICATION

Autoclave qualification service performed by RAYPA technicians or authorized entities. It covers the startup of the equipment and the comprehensive qualification of its performance.

Ref. IQ-OQ-PQ

Download technical data sheet

CALIBRATION CERTIFICATE FOLLOWING ENAC TRACEABILITY STANDARDS

Unitary certification of proper equipment calibration and performance in compliance with international standards.

Ref. MAPEO-ENAC

MAPPING OF STABILITY AND HOMOGENEITY

Generation of documentary evidence certifying that the temperature and pressure distribution within the autoclave is uniform and stable, in accordance with the manufacturer's design specifications.

Ref. MAP-3, MAP-7 and MAP-9

ON-SITE COMMISSIONING & TRAINING

On-site commissioning, which includes verification of the correct operation and installation of the equipment and a training session for users on the use and maintenance of the equipment.

Ref. INSAE

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REMOTE COMMISSIONING & TRAINING

Guided remote startup including a training session for users on the operation and maintenance of the equipment.

Ref. INSAE-REM

Download technical data sheet

MAINTENANCE CONTRACT

Regular inspection plan that includes technical inspection, probe calibration and compliance with the preventive maintenance plan, in addition to tariff discounts.

Ref. MANT-1.4 and MANT-1.5

EXTENDED WARRANTY

Extended warranty up to a total of 3 years.

Ref. WE-CL

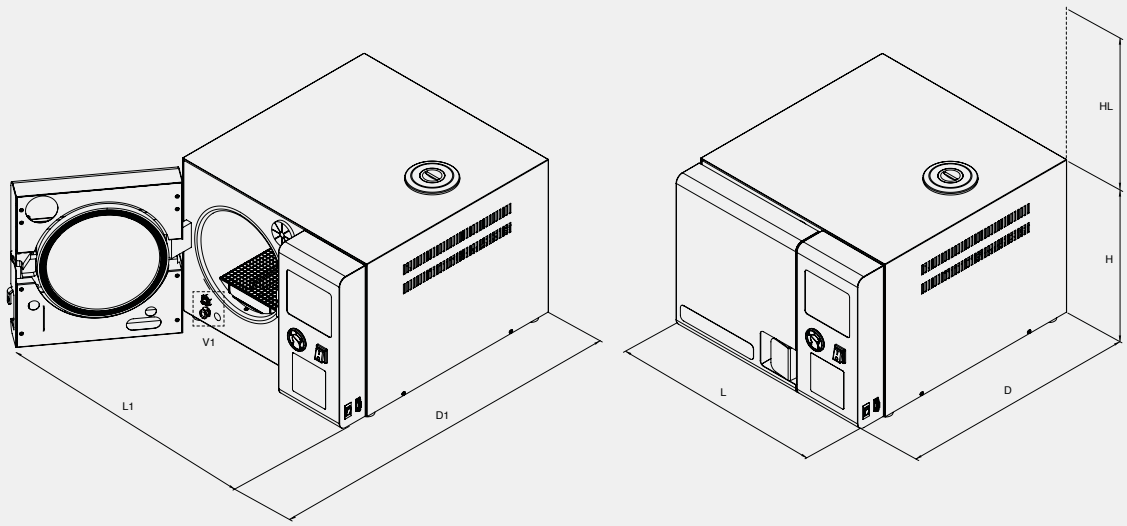
SET OF CONSUMABLES, SPARE PARTS AND ESSENTIAL COMPONENTS

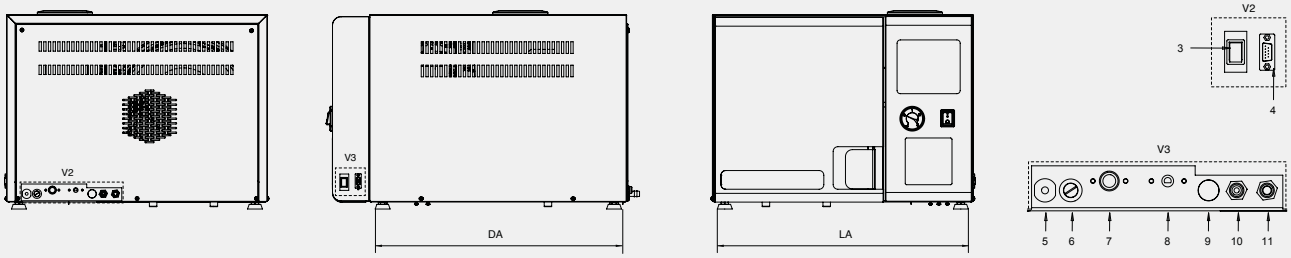
Set of spare parts, consumables and original components selected to meet the maintenance plan of each model with the aim of maximizing the lifespan of the equipment and minimizing downtime in the event of a breakdown.

AHS-DRY Series

TECHNICAL DRAWINGS

AH-21-L





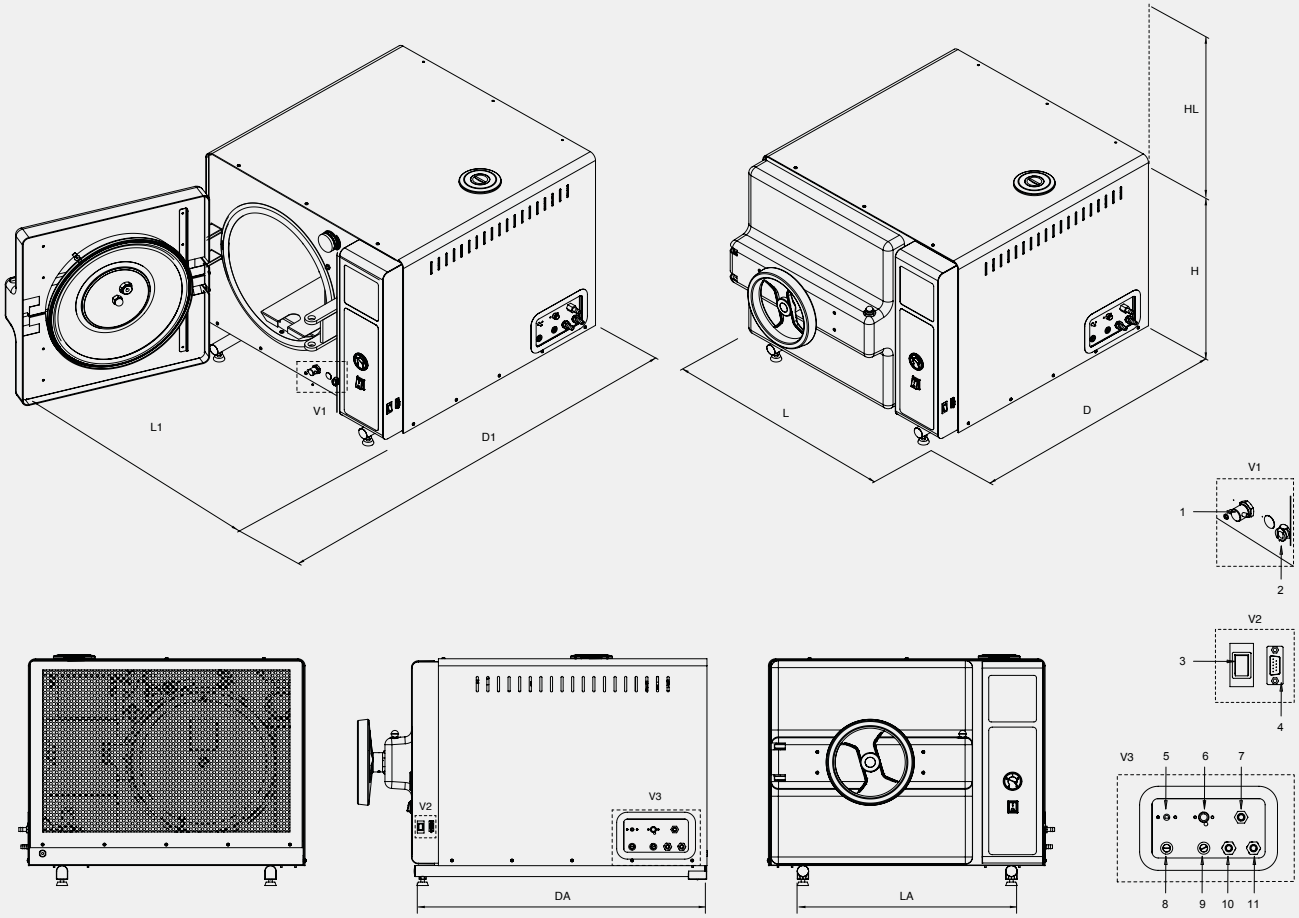
MODEL	L LENGTH with closed door	L1 LENGTH with maximum door opening	D DEPTH	D1 DEPTH with maximum door opening	H HEIGHT	LA x DA SUPPORT AREA	HL FREE HEIGHT for filling the independent water tank
AH-21-L	560 mm	740 mm	660 mm	970 mm	425 mm	537 x 527 mm	400 mm

CONNECTIONS

1	Access to the drain filter and sterilization chamber drain outlet
2	Independent water tank drain outlet
3	PC/Printer selector
4	RS-232 Port
5	Power cable
6	Mains fuse
7	Safety thermostat for the heating elements of the sterilization chamber
8	Heating jacket safety thermostat
9	Automatic water feed inlet (optional)
10	Independent water tank overflow outlet
11	Safety valve outlet

TECHNICAL DRAWINGS

AHS-50-DRY and AHS-75-DRY



MODELS	L LENGTH with closed door	L1 LENGTH with maximum door opening	D DEPTH	D1 DEPTH with maximum door opening	H HEIGHT	LA x DA SUPPORT AREA	HL FREE HEIGHT for filling the independent water tank
AHS-50-DRY	805 mm	1240 mm	805 mm	1230 mm	650 mm	622 x 670 mm	400 mm
AHS-75-DRY	805 mm	1240 mm	1005 mm	1430 mm	650 mm	622 x 830 mm	400 mm

CONNECTIONS

1	Access to the drain filter and sterilization chamber drain outlet
2	Independent water tank drain outlet
3	PC/Printer selector
4	RS-232 Port
5	Heating jacket safety thermostat
6	Safety thermostat for the heating elements of the sterilization chamber
7	Automatic water feed inlet (optional)
8	Mains fuse
9	Mains fuse
10	Independent water tank overflow outlet
11	Safety valve outlet

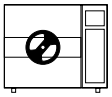
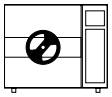
AHS-DRY Series

TECHNICAL BRIEF

Available models			AH-21-L	AHS-50-DRY and AHS-75-DRY
	General classification	Recommended setting	General laboratory	
		Equipment placement	Benchtop	
		Load direction	Frontal	
		Chamber profile	Round	
	Recommended type of load	Glassware	++	
		Plastics and metal objects	++	
		Laboratory waste bags	++	
		Liquids and culture media	++	
		Porous solids and wrapped loads	+	
	Sterilization technology features	Steam generation method	Heating elements	
		Type of purge	Vacuum	
		Vacuum drying by heating jacket and vacuum pump	✔	
	Transfer of data	RS-232	✔	
	Batch printers	Integrated printer	0	
		External printer	0	
	Sterilization chamber and door specifications	Sterilization chamber volume	22 L	55 - 79 L
		External building materials	Metallic & AISI-304	
		Sterilization chamber material	AISI-316L	
		Heating elements material	Incoloy® 825	
		Gasket material	Silicone rubber	
		Sterilization temperature min.- max.	100 - 134°C	
		Maximum pressure (above atmospheric pressure)	2,1 Barg	
		Mechanism to open the door	Handle	Wheel
		Direction in which the door opens	Frontal	
		Automatic locking with pressure	✔	
		Thermally insulated door	✔	
	User interface and microprocessor	Screen display	Digital LCD	
		Screen size	2 lines x 16 digits	
		Total number of available programs	10	
		Automatic microprocessor control	✔	
		Timer start	✔	
	Special cycles and process optimization	Agar mode (temperature holding after cycle ends 40-80ºC)	✔	
		Final vacuum drying (to completely dry solid loads)	✔	
		Temperature control by flexible probe	0	
	Adjustable cycle parameters	Agar mode	40 - 80°C	
		Temperature of sterilization phase	100 - 134°C	
		Duration of sterilization phase	1 - 250 min	
		Duration of drying phase	3 - 99 min	
		Temperature control by flexible probe	On/Off	
		Sterilization mode (solids or liquids).	✔	
	Other specifications	Air inlet with bacteriological filter	✔	
		Independent water tank capacity	6 L	10 L
		Flexible temperature probe	0	
		Rubber feet	✔	
		Pressure gauge	✔	
		Custom electrical features (115-230M V / 230-400T V)	0	
	Services	Third-party qualification (IQ-OQ-PQ)	0	

+: Recommended ✔: Included 0: Optional

TECHNICAL DATA

Specifications

References	AH-21-L	AHS-50-DRY	AHS-75-DRY
Total/usable volume of the chamber L	22/21	55/50	79/75
Usable dimensions of the chamber Ø max. x D mm	210 x 430	360 x 400	360 x 600
Volume of the built-in water tank L	6	10	10
External dimensions L x D x H mm	560 x 660 x 425	805 x 805 x 650	805 x 1005 x 650
Maximum number of trays	4 or 5	5	5
Tray size L x D mm	190 x 350	315 x 330	315 x 530
Net weight Kg	49	109	126
Power W	2000	2800	3200
Standard voltage* V	230	230	230
Frequency Hz	50/60	50/60	50/60

*Other voltages and electrical configurations available on request.

Safety features

- Safety valve.
- Safety thermostats with manual rearm for the heating jacket and the heating elements.
- Pneumatic door blocking system while positive pressure exists inside the sterilization chamber.
- Open door sensor.
- Thermally insulated door.
- Water level detector in the sterilization chamber.
- Water level detector (min.- max.) in the independent water tank with overflow drainage.
- Bacteriological filter for air inlet.
- Heating elements cover.
- Several visual and acoustic safety and warning alarms.

Regulations

All our AHS-DRY Series autoclaves are designed to comply with the strictest international directives and standards, including the following regulations:

- **EN-61010-1** Safety requirements for electrical equipment for measurement, control and laboratory use. **Part 1:** General requirements.
- **EN-61010-2-040** Part 2-040: Requirements for laboratory autoclaves.
- **EN-61326** Electrical equipment for measurement, control and laboratory use. EMC requirements.
- **AD 2000 Merkblatt** Pressure vessels.
- **2014/35/EU** Low voltage.
- **2014/30/EU** Electromagnetic compatibility.
- **2014/68/EU** Pressure equipment.

General features

Adjustable sterilization temperature	100 - 134 ºC
Adjustable sterilization time	1 - 250 min
Adjustable drying time	3 - 99 min
Max. pressure	2,1 Barg
Sterilization control system	Fully automatic microprocessor control by chamber temperature probe or flexible temperature probe
Air purge system	Mechanical displacement by vacuum pump
Vacuum drying system	Vacuum pump plus heating jacket
Single prevacuum pulse system	Vacuum pump
Sterilization chamber material	AISI-316L stainless steel
Heating elements material	Incoloy® 825
Gasket material	Silicone rubber
Connection to PC	RS-232
Connection to printer	RS-232 or integrated
Number of programs	10 (4 preset and 6 user free)
Programmable auto-start	Up to 24 h
Screen type	LCD display
Opening door mode	Front-loading swiveling door
Monitoring of sterilization parameters	Self-control of obtained values (Tº & t) vs programmed values. Cycle is automatically interrupted if obtained values differ from programmed values
Pressure display	Pressure gauge on control panel
Water management	Independent manually filled water tank that automatically feeds the sterilization chamber. Water automatically returns to the independent water tank after the cycle is completed. Optional upgrade to fully automatic water feed directly from water network.
Drainage system	Drainage connections for both drainage and overflow of the independent water tank and a screw to manually clean the drainage filter and drain the sterilization chamber
Feet	Feet with resistant rubber

MORE INFORMATION

Watch video

Download the installation guide

RAYPA

www.raypa.com

Avinguda del Vallès, 322
08227 Terrassa (Barcelona) Spain

REV 10.2025

RAYPA

Benchtop autoclaves with prevacuums and drying

AHS-B Series CLASSIC LINE

Technical information

Why choose RAYPA?

Expert manufacturer, original design, global brand

GLOBAL REACH

With half a century of experience, we have a long list of satisfied customers around the world. Currently, we export 85% of our annual turnover and have a stable network of distributors with presence in over 100 countries.

EFFICIENT TECHNICAL SERVICE

Our team of highly qualified technicians and engineers is expert in our products. If you experience a technical issue, it will be our priority to rectify it. When you purchase a RAYPA unit, you're guaranteed top-level support and technical assistance.

EXPERT MANUFACTURER

After more than 45 years in the industry, RAYPA is a global leader in the manufacture of laboratory autoclaves. Each of our autoclaves is designed and manufactured entirely within our modern facility equipped with the latest technology.

FULL AND CUSTOMIZABLE RANGE

We offer an extensive portfolio of laboratory autoclaves to cover multiple applications and market segments. Discover the combination of autoclave model and accessories that best fits your needs within our 11 series and 35 available models.

INNOVATION AND QUALITY

Our products feature advanced technology, ongoing innovation, superior construction quality, and are designed for a long service life. Our technical and engineering staff works tirelessly every day to optimize our products and exceed our customers' expectations.

COMPREHENSIVE CONSULTANCY

Our team of specialists assesses each project and provides guidance to clients on the option that best suits their requirements. After the sale, we offer training on the use and recommended maintenance of each unit to ensure its optimal operation and extend its lifespan.

Benchtop autoclaves with prevacuums and drying

The AHS-B Series benchtop autoclaves with front-loading access cover all laboratory sterilization needs in many industries and research facilities with the aim of increasing the productivity of the laboratory. The great chamber capacity, the integrated independent steam generator, the touchscreen display, the independent clean water tank and waste water tank, the initial prevacuum pulses and the final vacuum drying result in an excellent autoclave to perform from the simplest to the most demanding applications.

RECOMMENDED APPLICATIONS

- Porous solids and wrapped objects
- Objects of complex geometries
- Plastics and metal objects
- Glassware
- Laboratory waste bags
- Liquids and culture media

AHS-B Series

MAIN FEATURES

EXCELLENT PERFORMANCE

AHS-B Series autoclaves offer excellent performance for various sterilization procedures. They are equipped with an independent integrated steam generator, a vacuum pump and a heating jacket to guarantee the correct penetration of steam in all types of loads and completely dry solid objects.

EASY INSTALLATION AND USE

Every AHS-B Series autoclave is a plug and play equipment that does not need dedicated installation connections. They are equipped with a 5" color touchscreen and 50 programs, include an independent clean water tank that automatically feeds the steam generator and optional upgrade for water feeding directly from the mains. The discharge is sent to a manually drained waste water tank.

MULTIPLE TYPES OF STERILIZATION CYCLES

Several options available to perform solids or liquids sterilizations. Programmable parameters: automatic preheating, programmed start, initial pre-vacuum pulses, final vacuum drying duration and optional flexible temperature probe for liquids sterilization.

SAFETY FIRST

AHS-B Series autoclaves are equipped with several features to ensure the safety of the operators. These include safety thermostats, water level detectors, an open door detection system and an independent pneumatic safety system that locks the main door while there is positive pressure inside the sterilization chamber.

ADVANTAGES

- Heating by an independent integrated powerful steam generator.
- Adjustable number of initial prevacuum pulses to guarantee proper steam penetration on items of complex geometries and large loads.
- Final vacuum drying feature by a heating jacket and a vacuum pump to completely dry solid loads.
- Sterilization chamber and door made of high quality stainless steel grade AISI-316L extremely resistant to corrosion.
- Equipment built following all applicable European Union quality, regulatory and safety standards.
- Control by a PID microprocessor and a 5" touchscreen, with 50 available programs, adjustable by time, temperature, number of prevacuum pulses, drying time and type of sterilization cycle (solids or liquids, with optional flexible probe control).
- Surpasses Vacuum Leak and Bowie Dick test cycles.
- Suitable to sterilize all types of loads, including wrapped goods, fabric loads, porous and hollow objects and items of complex geometries with cavities thanks to the standard initial prevacuum phase.
- Automatic clean water feed to the integrated steam generator from the independent water tank, with water level sensors included in both locations. Optional upgrade to fully automatic water feed directly from water network.
- The discharge of each cycle is always directly sent to the independent waste water tank to minimize long term sterilization chamber and clean water tank corrosion and calcification processes.
- Programmable auto-preheating and auto-start.
- Optional software for sterilization data management.
- Plug and play equipment, no plumbing required.
- User management with administrator hierarchy.

OPERATING PRINCIPLE

AHS-B Series autoclaves provide a solution for the multiple sterilization needs of any laboratory, including wrapped and unwrapped solids, textile loads, porous and hollow objects, plastics, metal utensils, laboratory waste bags, liquids, culture media, glassware and other laboratory items.

The load has to be placed into the vessel's trays or basket and, after manually filling the independent clean water tank with purified water, the equipment starts to create the initial prevacuum, automatically feeds water to the independent integrated steam generator, generating saturated steam that is directly injected into the sterilization chamber until the set combination of sterilization time and sterilization temperature is reached.

AHS-B Series

OPERATION OF A STERILIZATION CYCLE FOR SOLIDS

PREHEATING PHASE

- In this initial step, the user has the option to set a preheating temperature of up to 70°C to shorten the duration of the sterilization cycle.

PREVACUUM PHASE

- In this phase, the vacuum pump of the equipment mechanically removes air from the chamber and through a single or multiple vacuum pulses of -0.75 Bargs. This allows the steam to penetrate load objects of complex geometries that couldn't otherwise be reached with a simple displacement of the air by gravity.

HEATING PHASE

- After completing the prevacuum phase, the powerful independent steam generator assembled outside the sterilization chamber heats up dramatically and injects saturated steam throughout the chamber.

STERILIZATION PHASE

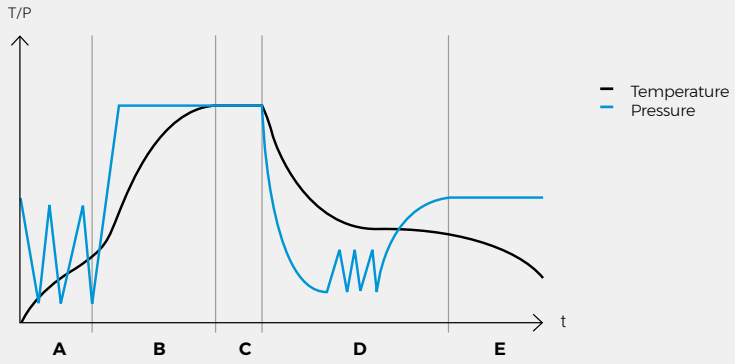
- Upon reaching the set sterilization temperature inside the chamber, the sterilization phase begins, accurately sustaining the temperature throughout the duration of this phase.
- This crucial step is controlled by a PT-100 Class A temperature probe located within the chamber. As an option for liquids sterilization processes, this phase can be regulated by a PT-100 Class A flexible temperature probe located inside a sample.

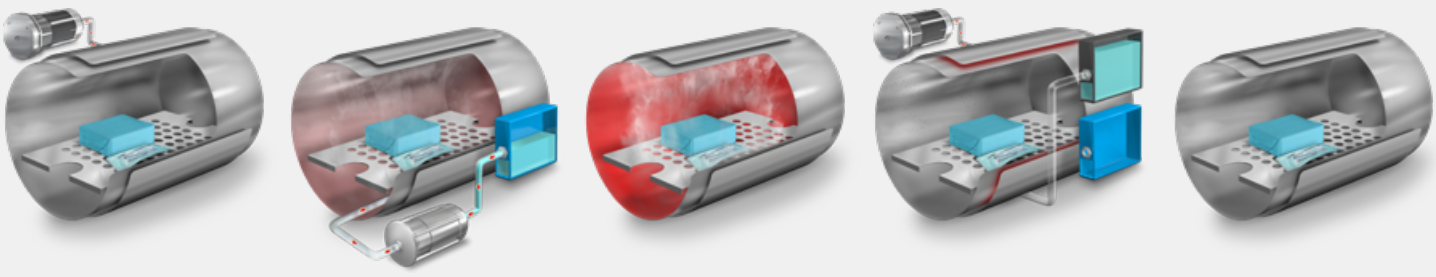
VACUUM DRYING PHASE

- Once the sterilization phase is finished, only for the solids programs, vacuum drying starts, where multiple vacuum pulses occur while the heating jacket is turned on, completely drying the load.

COOLING PHASE

- Once the vacuum drying phase is completed, natural cooling begins and an acoustic beep will sound when a safe temperature is reached that allows the chamber to be opened.





A. Prevacuum phase

B. Heating phase

C. Sterilization phase

D. Vacuum drying phase

E. Cooling phase

PREDEFINED PROGRAMS

Program No.	Program name	Prevacuum pulses	Sterilization temperature ºC	Sterilization time min	Drying time min	Program mode	Flexible probe regulation
P1	BD	3	134	4'	4'	Solids	-
P2	Vacuum	1	-	-	-	Solids	-
P3	Porous-134	3	134	4'	15'	Solids	-
P4	Prion-134	3	134	18'	20'	Solids	-
P5	Porous-121	3	121	20'	15'	Solids	-
P6	Hollow-134	3	134	4'	10'	Solids	-
P7	Hollow-121	3	121	20´	10'	Solids	-
P8	Wrapped-134	1	134	7'	20'	Solids	-
P9	Wrapped-121	1	121	20´	20'	Solids	-
P10	Solids-134	1	134	4'	10'	Solids	-
P11	Solids-121	1	121	20´	10'	Solids	-
P12	Flash-134	1	134	3'	1'	Solids	-
P13	Liquid	1	121	30'	-	Liquids	-
P14	Liquid probe	1	121	15'	-	Liquids	Yes

The AHS-B Series autoclaves have 50 programs, from P1 to P50, and the first fourteen are predefined and protected.

The rest of the programs, from P4 to P9, can be edited by adjusting the following parameters:

- Number of prevacuum pulses.
- Sterilization temperature.
- Sterilization time.
- Final drying time.
- Sterilization mode (solids or liquids).
- Temperature regulation of the sterilization cycle can be done through the chamber temperature probe or through the combined use of the chamber probe and the flexible probe.

DIGITAL MICROPROCESSOR WITH TOUCHSCREEN

Digital microprocessor with a 5" TFT - LCD touchscreen for an easy parameters selection.

During the execution of a sterilization cycle, key parameters such as phase, temperature, pressure, alerts and errors are displayed. At the end of the cycle, the graphical results can be displayed.

AHS-B Series

LOADING CAPACITIES

ISO ERLENMEYER FLASKS

Autoclave model	Usable volume L	250mL (Ø85 x 143mm)			500mL (Ø105 x 183mm)			1000mL (Ø131 x 230mm)			2000mL (Ø166 x 280mm)		
		Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units
AH-21-B	21	1	8	**8**	1	4	**4**	0	0	**0**	0	0	**0**
AHS-50-B	50	1	14	**14**	1	8	**8**	1	5	**5**	1	2	**2**
AHS-75-B	75	1	26	**26**	1	15	**15**	1	8	**8**	1	3	**3**

ISO BOTTLES

Autoclave model	Usable volume L	250mL (Ø70 x 143mm)			500mL (Ø80 x 185mm)			1000mL (Ø101 x 230mm)			2000mL (Ø136 x 260mm)		
		Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units
AH-21-B	21	1	8	**8**	1	8	**8**	0	0	**0**	0	0	**0**
AHS-50-B	50	2	20	**40**	1	14	**14**	1	8	**8**	1	5	**5**
AHS-75-B	75	2	32	**64**	1	26	**26**	1	15	**15**	1	8	**8**

The data contained within these tables, regarding load capacities, serves as a non-binding guide to assist you in the selection of the most appropriate autoclave model.

COMPONENTS SUPPLIED

AH-21-B

A. Stainless steel tray support for 5 trays.

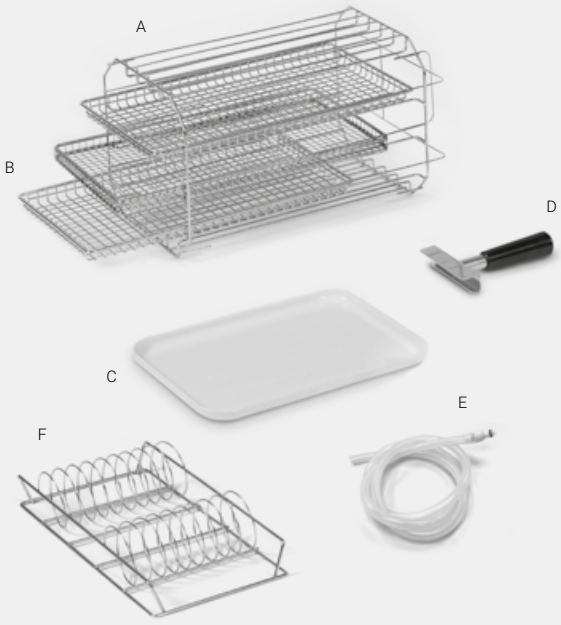
B. 3 stainless steel wire trays.

C. Auxiliary plastic tray for collecting condensed water after opening the door in cycles without final drying.

D. Holding clamp to move the trays.

E. 1m silicone tubing with quick connection to drain the independent clean water tank and the independent waste water tank.

F. Stainless steel bag support.



AHS-50-B and AHS-75-B

A. Stainless steel tray support for 5 trays.

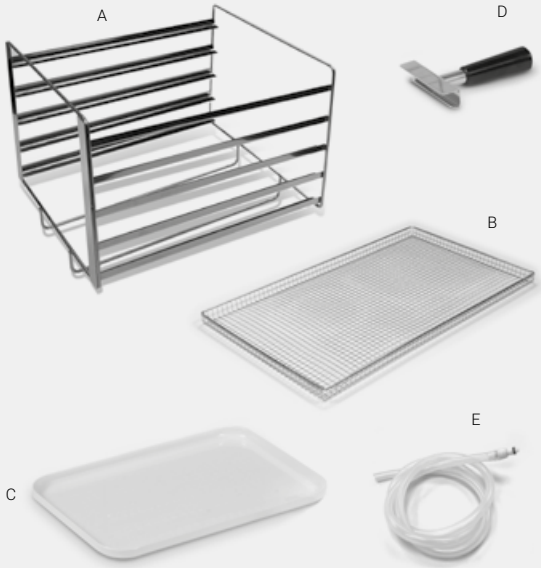
B. 2 stainless steel wire trays.

C. Auxiliary plastic tray for collecting condensed water after opening the door in cycles without final drying.

D. Holding clamp to move the trays.

E. 1m silicone tubing with quick connection to drain the independent clean water tank and the independent waste water tank.

Stainless steel protecting grid for the heating elements.

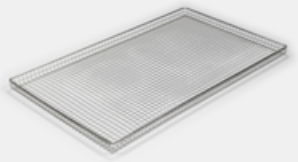



P8 - Hollow-134
35.2 °C
0.03 bar
RAYPA
RAYPA

ACCESSORIES

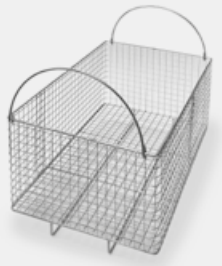
STAINLESS STEEL WIRE TRAYS

References		BAH-21	BAH-50 B	BAH-75 B
External dimensions L x D mm		190 x 350	315 x 330	315 x 530
Maximum capacity for autoclaves with the following chamber volumes	22 L	5	-	-
	55 L	-	5	-
	79 L	-	-	5



STAINLESS STEEL WIRE HORIZONTAL BASKET

References		RB-AH-21	RB-AHS-50	RB-AHS-75
Dimensions	Exterior L x D x H mm	170 x 340 x 180	324 x 360 x 235	324 x 560 x 235
	Interior L x D x H mm	160 x 330 x 170	314 x 350 x 225	314 x 550 x 225
Maximum capacity for autoclaves with the following chamber volumes	22 L	1	-	-
	55 L	-	1	-
	79 L	-	-	1



STAINLESS STEEL BAG HOLDER SUPPORT*

References		BAP-21	BAP-75
External dimensions L x D x H mm		400 x 180 x 80	300 x 180 x 95
Positions / support		20	20
Maximum capacity for autoclaves with the following chamber volumes	22 L	1	-
	55 L	-	4
	79 L	-	6

*Possibility of adapting the size of this accessory according to the needs of each customer. For more information, please contact us.

STAINLESS STEEL CONTAINERS WITH FILTER ON THE LID

References		FC-215	FC-331	FC-338
Dimensions	Exterior L x D x H mm	285 x 185 x 65	300 x 300 x 110	300 x 300 x 85
	Interior L x D x H mm	275 x 175 x 55	290 x 290 x 100	290 x 290 x 75
Maximum capacity for autoclaves with the following chamber volumes	22 L	2	-	-
	55 L	6	2	2
	79 L	9	2	2

AHS-B Series

ACCESSORIES

FLEXIBLE TEMPERATURE PROBE PT-100 CLASS A

After installing this accessory, the temperature regulation of the sterilization cycle can be controlled by the main chamber temperature probe or both the main chamber temperature probe and the flexible temperature probe.

The temperature control by the flexible temperature probe is especially advantageous for processes involving the sterilization of large volumes of liquids, where the sterilization process is regulated by both the temperature achieved in the center of the liquid sample as well as the temperature achieved in the sterilization chamber. Furthermore, should the autoclave be opened at chamber temperatures higher than 80°C there is a risk of liquids boiling over which can be avoided if the temperature of the sample is controlled throughout the sterilization procedure.

Must be installed at our factory.

Ref. PT-2-B-AH

Download technical data sheet

EXTERNAL MATRIX PRINTER

Prints program number, cycle number, temperature, time, date and hour and error messages.

Selectable print frequency between 10 and 240 seconds.

Connection: RS-232.

Requires factory adaptation.

Ref. ITS

Consumables: PAPER-ITS for paper and 70945 for ink ribbon

Download technical data sheet

EMBEDDED THERMAL PRINTER

Prints program number, cycle number, temperature, time, date and hour and error messages.

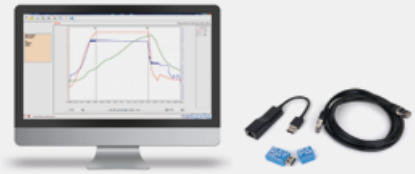
Selectable print frequency between 10 and 240 seconds.

Must be installed at our factory.

Ref. IT/TS

Consumable: PAPER-IT for paper

Download technical data sheet



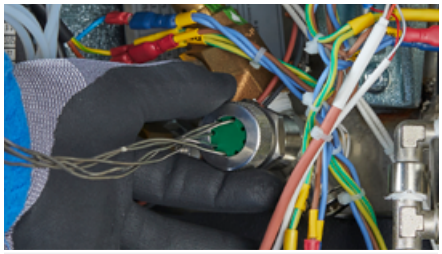
SW8000 SOFTWARE

Communication software between the equipment and the PC that allows the visualization and recording in real time or after each cycle. Cycles can also be exported to Excel or printed.

Connection to PC via Ethernet connection, data can also be exported directly with a USB stick.

Ref. SW8000

Download technical data sheet



CABLE GLAND

Installation of a Ø2mm or Ø4mm cable gland to provide access to as many as eight external temperature probes for calibration and validation procedures.

Ref. CG2MM and CG4MM

Download technical data sheet

ACCESSORIES

BENCHTOP AUTOCLAVE TABLE

Stainless steel table with casters (with brakes on two of them).

Designed to accommodate any model of benchtop autoclave, including larger models.

Dimensions (LxDxH): 800x900x800mm.

Ref. TABLE-AHS

Download technical data sheet

TRANSPORT TROLLEY

Auxiliary trolley to aid in the loading and unloading of the autoclave.

Made of chrome iron and plastic.

The surface of each shelf is textured to prevent the load from moving.

Rubber-coated casters to reduce noise and prevent floor wear.

Dimensions (LxDxH): 730x490x700mm

Ref. TR-TR

Download technical data sheet

AUTOMATIC WATER FILLING KIT

Water pump to automate the supply of the tank with purified water. Compatible with installations that have a purified water network, a purified water tank or installations with a non-purified water network; in the latter case a water purifier (ECOPUR-500) and a purified water tank (TANK-KLL) will be required.

Must be installed at our factory.

Ref. KLL-21 and KLL-AHS

Download technical data sheet

ECO-EFFICIENT WATER PURIFIER

Direct flow eco-efficient water purifier without water accumulation capable of filtering 1,3L/min with LED display.

The installation of this accessory requires the joint installation of the external tank (TANK-KLL) and the automatic water filling system (KLL-AHS or KLL-21).

Ref. ECOPUR-500

Download technical data sheet

PURIFIED WATER TANK

Alternative solution for the storage of up to 25L of purified water in the absence of a water network.

Ref. TANK-KLL

Download technical data sheet

AHS-B Series

ACCESSORIES

TEMPERATURE DATA LOGGER

Temperature recorder in AISI-316L stainless steel disk format with connection base and software.

Recommended for autoclave validation and for monitoring the internal temperature of vessels.

Available in various sizes.

Ref. BDL-DISK3618_CL

Download technical data sheet

PACK OF STERILIZATION TAPE

Class 1 indicator for steam sterilization. The color change indicates that the materials have been processed, but this is not a guarantee of a correct sterilization. Additional methods such as biological indicators are required (EN ISO 11138).

Pack of 5 rolls of 50m x 19mm tape.

Ref. TEST-CT

Download technical data sheet

BOWIE DICK TEST PACK

Class B indicator printed with non-toxic and plasticized inks that checks the correct penetration of steam in porous loads.

Box of 20 tests.

Ref. TEST-BD

Download technical data sheet

SPECIFIC SERVICES

IQ-OQ DOCUMENTATION

Delivery of IQ/OQ documentation and protocols for autoclave qualification through a third party.

Ref. IQ-OQ DOC

Download technical data sheet

IQ-OQ-PQ QUALIFICATION

Autoclave qualification service performed by RAYPA technicians or authorized entities. It covers the startup of the equipment and the comprehensive qualification of its performance.

Ref. IQ-OQ-PQ

Download technical data sheet

CALIBRATION CERTIFICATE FOLLOWING ENAC TRACEABILITY STANDARDS

Unitary certification of proper equipment calibration and performance in compliance with international standards.

Ref. MAPEO-ENAC

MAPPING OF STABILITY AND HOMOGENEITY

Generation of documentary evidence certifying that the temperature and pressure distribution within the autoclave is uniform and stable, in accordance with the manufacturer's design specifications.

Ref. MAP-3, MAP-7 and MAP-9

ON-SITE COMMISSIONING & TRAINING

On-site commissioning, which includes verification of the correct operation and installation of the equipment and a training session for users on the use and maintenance of the equipment.

Ref. INSTAEB

Download technical data sheet

REMOTE COMMISSIONING & TRAINING

Guided remote startup including a training session for users on the operation and maintenance of the equipment.

Ref. INSTAEB-REM

Download technical data sheet

MAINTENANCE CONTRACT

Regular inspection plan that includes technical inspection, probe calibration and compliance with the preventive maintenance plan, in addition to tariff discounts.

Ref. MANT-1.4 and MANT-1.5

EXTENDED WARRANTY

Extended warranty up to a total of 3 years.

Ref. WE-CL

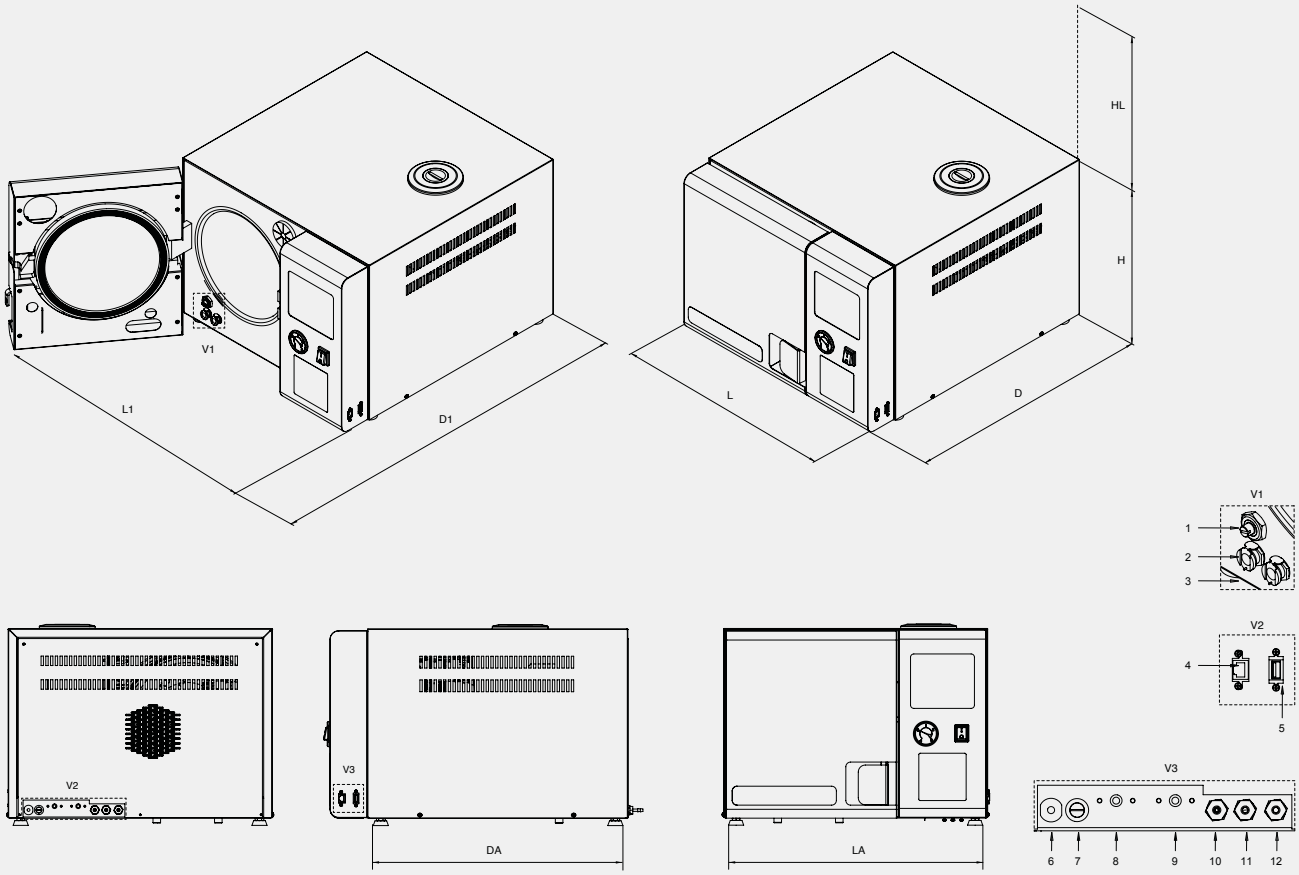
SET OF CONSUMABLES, SPARE PARTS AND ESSENTIAL COMPONENTS

Set of original spare parts, consumables and components, chosen specifically to adhere to each model's maintenance plan, intended to maximize equipment longevity and minimize downtime in the event of a malfunction.

AHS-B Series

TECHNICAL DRAWINGS

AH-21-B



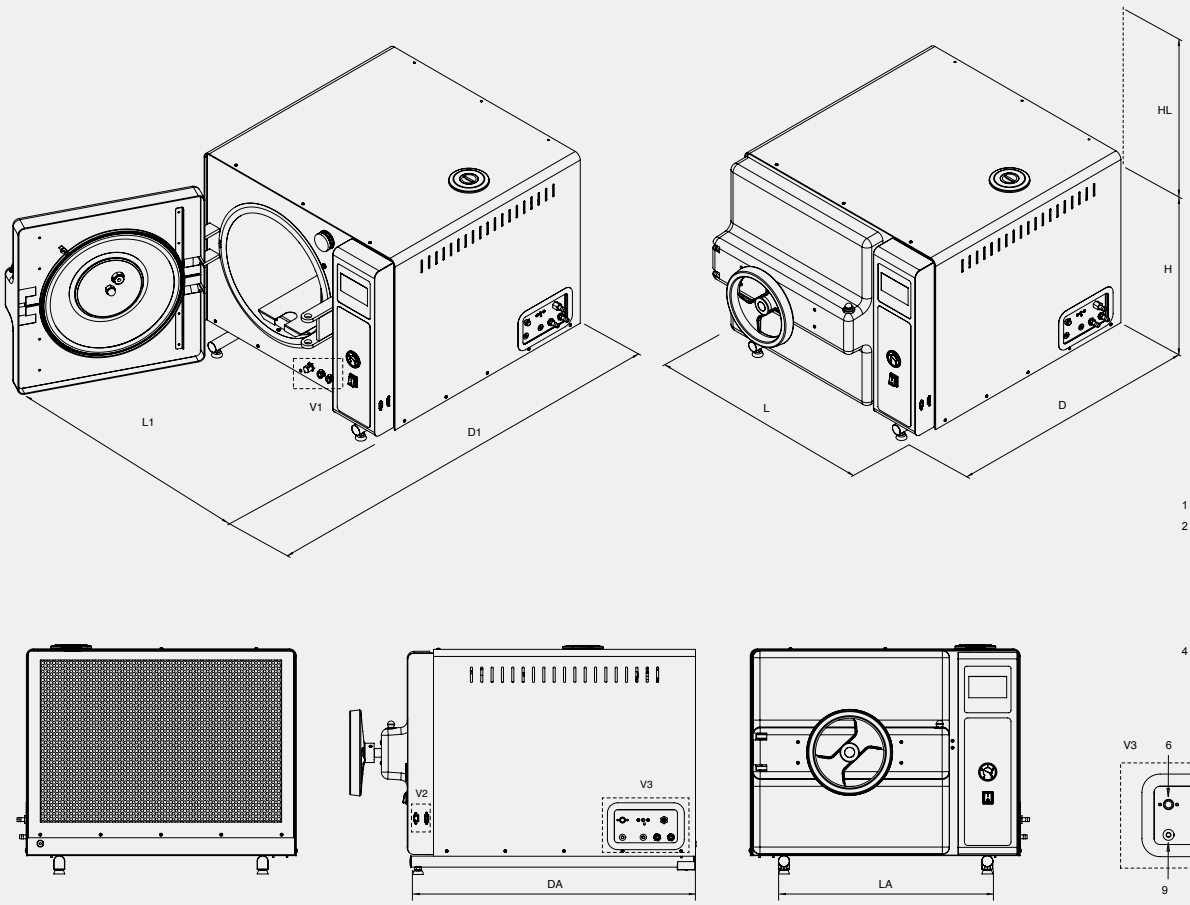
MODEL	L LENGTH with closed door	L1 LENGTH with maximum door opening	D DEPTH	D1 DEPTH with maximum door opening	H HEIGHT	LA x DA SUPPORT AREA	HL FREE HEIGHT for filling the independent water tank
AH-21-B	560 mm	740 mm	660 mm	970 mm	425 mm	537 x 527 mm	400 mm

CONNECTIONS

1	Access to the drain filter and sterilization chamber drain outlet
2	Independent water tank drain outlet
3	Independent water tank drain outlet
4	Ethernet port
5	USB port
6	Power cable
7	Mains fuse
8	Steam generator safety thermostat
9	Heating jacket safety thermostat
10	Automatic water feed inlet (optional)
11	Independent water tank overflow outlet
12	Safety valve outlet

TECHNICAL DRAWINGS

AHS-50-B and AHS-75-B



MODELS	L LENGTH with closed door	L1 LENGTH with maximum door opening	D DEPTH	D1 DEPTH with maximum door opening	H HEIGHT	LA x DA SUPPORT AREA	HL FREE HEIGHT for filling the independent water tank
AHS-50-B	805 mm	1240 mm	805 mm	1230 mm	650 mm	622 x 670 mm	400 mm
AHS-75-B	805 mm	1240 mm	1005 mm	1430 mm	650 mm	622 x 830 mm	400 mm

CONNECTIONS

1	Access to the drain filter and sterilization chamber drain outlet
2	Independent water tank drain outlet
3	Independent waste water tank drain outlet
4	Ethernet port
5	USB port
6	Heating jacket safety thermostat
7	Steam generator safety thermostat
8	Power cable
9	Mains fuse
10	Mains fuse
11	Independent water tank overflow outlet
12	Safety valve outlet

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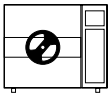
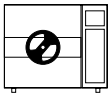
AHS-B Series

TECHNICAL BRIEF

Available models		AH-21-B	AHS-50-B and AHS-75-B
General classification	Recommended setting	Healthcare, research and industry laboratories	
	Equipment placement	Benchtop	
	Load direction	Frontal	
	Chamber profile	Round	
Recommended type of load	Objects of complex geometries	++	
	Porous solids and wrapped loads	++	
	Plastics and metal objects	++	
	Glassware	++	
	Laboratory waste bags	++	
	Liquids and culture media	++	
Sterilization technology features	Steam generation method	Independent integrated steam generator	
	Type of purge	Vacuum	
	Prevacuum pulses by vacuum pump	✔	
	Vacuum drying by heating jacket and vacuum pump	✔	
Transfer of data	Ethernet & USB	✔	
Batch printers	Integrated printer	0	
Sterilization chamber and door specifications	Sterilization chamber volume	22 L	55 - 79 L
	External building materials	Metallic & AISI-304	
	Sterilization chamber material	AISI-316L	
	Vacuum pump	Membrane	
	Gasket material	Silicone rubber	
	Sterilization temperature min.- max.	105 - 134 °C	
	Maximum pressure (above atmospheric pressure)	2,1 Barg	
	Mechanism to open the door	Handle	Wheel
	Direction in which the door opens	Frontal	
	Automatic locking with pressure	✔	
	Thermally insulated door	✔	
User interface and microprocessor	Screen display	TFT touchscreen	
	Screen size	5"	
	Total number of available programs	50	
	User management with administrator hierarchy	✔	
	Automatic microprocessor control	✔	
Special cycles and process optimization	Timer start	✔	
	Vacuum test	✔	
	Bowie-Dick test	✔	
	Final vacuum drying (to completely dry solid loads)	✔	
	Temperature regulation by flexible probe	0	
	Auto-preheating	✔	
Adjustable cycle parameters	Number of prevacuum pulses	1 - 3	
	Temperature of sterilization phase	105 - 134 °C	
	Duration of sterilization phase	1 - 250 min	
	Duration of drying phase	1 - 360 min	
	Temperature control by flexible probe	On/Off	
	Sterilization mode (solids or liquids)	✔	
Other specifications	Air inlet with bacteriological filter	✔	
	Independent clean water tank capacity	6 L	10 L
	Independent waste water tank capacity	2,6 L	6 L
	Flexible temperature probe	0	
	Rubber feet	✔	
	Pressure gauge	✔	
	Custom electrical features (115-230M V / 230-400T V)	0	
Services	Third-party qualification (IQ-OQ-PQ)	0	

+: Recommended ✔: Included 0 : Optional

TECHNICAL DATA

Specifications

References	AH-21-B	AHS-50-B	AHS-75-B
Total/usable volume of the chamber L	22/21	55/50	79/75
Usable dimensions of the chamber Ø max. x D mm	210 x 430	360 x 400	360 x 600
Volume of the built-in clean water tank L	6	10	10
Volume of the built-in waste water tank L	2,6	6	6
External dimensions L x D x H mm	560 x 660 x 425	805 x 805 x 650	805 x 1005 x 650
Maximum number of trays	5	5	5
Tray size L x D mm	190 x 350	315 x 330	315 x 530
Net weight Kg	65	114	132
Power W	2000	3600	3600
Standard voltage* V	230	230	230
Frequency Hz	50/60	50/60	50/60

*Other voltages and electrical configurations available on request.

Safety features

- Safety valve.
- Safety thermostats with manual rearm for the heating jacket and the steam generator.
- Pneumatic door blocking system while positive pressure exists inside the sterilization chamber.
- Open door sensor.
- Thermally insulated door.
- Water level detector in the independent integrated steam generator.
- Water level detector (min.- max.) in the independent clean water tank with overflow drainage.
- Water level detector (max.) in the independent waste water tank.
- Bacteriological filter for air inlet.
- Several visual and acoustic safety and warning alarms.

Regulations

All our AHS-B Series autoclaves are designed to comply with the strictest international directives and standards, including the following regulations:

- **EN-61010-1** Safety requirements for electrical equipment for measurement, control and laboratory use. **Part 1:** General requirements.
- **EN-61010-2-040** Part 2-040: Requirements for laboratory autoclaves.
- **EN-61326** Electrical equipment for measurement, control and laboratory use. EMC requirements.
- **AD 2000 Merkblatt** Pressure vessels.
- **2014/35/EU** Low voltage.
- **2014/30/EU** Electromagnetic compatibility.
- **2014/68/EU** Pressure equipment.

General features

Adjustable sterilization temperature	105 - 134 ºC
Adjustable sterilization time	1 - 250 min
Adjustable prevacuum pulses	1 - 3
Adjustable drying time	1 - 360 min
Max. pressure	2,1 Barg
Sterilization control system	Fully automatic microprocessor control by chamber temperature probe or flexible temperature probe
Air purge system	Mechanical displacement by vacuum pump
Heating system	Independent integrated steam generator
Vacuum drying system	Vacuum pump plus heating jacket
Prevacuum system	Vacuum pump
Sterilization chamber material	AISI-316L stainless steel
Gasket material	Silicone rubber
Connection to PC	Ethernet
Connection to printer	Integrated
Number of programs	50 (14 preset and 36 user free)
Programmable auto-start	Unlimited range
Screen type	5" TFT Touchscreen
Opening door mode	Front-loading swiveling door
Monitoring of sterilization parameters	Self-control of obtained values (Tº, P & t) vs programmed values. Cycle is automatically interrupted if obtained values differ from programmed values
Pressure display	Pressure gauge on the control panel, digital display on screen, registry on software and printer tickets
Water management	Manual feed independent clean water tank that automatically feeds the independent integrated steam generator. Optional upgrade to fully automatic water feed directly from water network
Drainage system	Drainage connections for both drainage and overflow of the independent clean water tank, to drain the independent waste water tank and a screw to manually clean the drainage filter and drain the sterilization chamber
Feet	Feet with resistant rubber

MORE INFORMATION

Watch video

Download the installation guide

RAYPA

www.raypa.com

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REV 04.2025

RAYPA

Benchtop autoclaves without drying

AHS-N Series CLASSIC LINE

Technical information

Why choose RAYPA?

Expert manufacturer, original design, global brand

GLOBAL REACH

With half a century of experience, we have a long list of satisfied customers around the world. Currently, we export 85% of our annual turnover and have a stable network of distributors with presence in over 100 countries.

EFFICIENT TECHNICAL SERVICE

Our team of highly qualified technicians and engineers is expert in our products. If you experience a technical issue, it will be our priority to rectify it. When you purchase a RAYPA unit, you're guaranteed top-level support and technical assistance.

EXPERT MANUFACTURER

After more than 50 years in the industry, RAYPA is a global leader in the manufacture of laboratory autoclaves. Each of our autoclaves is designed and manufactured entirely within our modern facility equipped with the latest technology.

FULL AND CUSTOMIZABLE RANGE

We offer an extensive portfolio of laboratory autoclaves to cover multiple applications and market segments. Discover the combination of autoclave model and accessories that best fits your needs within our 11 series and 35 available models.

INNOVATION AND QUALITY

Our products feature advanced technology, ongoing innovation, superior construction quality, and are designed for a long service life. Our technical and engineering staff works tirelessly every day to optimize our products and exceed our customers' expectations.

COMPREHENSIVE CONSULTANCY

Our team of specialists assesses each project and provides guidance to clients on the option that best suits their requirements. After the sale, we offer training on the use and recommended maintenance of each unit to ensure its optimal operation and extend its lifespan.

Benchtop autoclaves without drying

The AHS-N Series benchtop autoclaves with front-loading access cover the fundamental sterilization needs of general laboratories in many industries, educational institutions and research facilities with the aim of increasing the productivity of the laboratory.

A compact footprint together with the optimization of resources such as water, power and operating time results in an affordable and efficient solution to manage laboratory workload.

RECOMMENDED APPLICATIONS

- Liquids and culture media
- Glassware
- Plastics and metal objects
- Laboratory waste bags*

*For this application, the sterilization time should be extended, the chamber should not be fully loaded and chemical and/or biological tests should be used to validate the correct sterilization of the load.

AHS-N Series

MAIN FEATURES

ECONOMICAL AND ROBUST

AHS-N Series autoclaves are economical and robust autoclaves with excellent performance for general laboratory sterilization procedures. They can be used for both solid and liquid sterilization procedures. They also have limited consumption of valuable laboratory resources such as water, power or operator time.

A COMPACT FOOTPRINT THAT FITS ANYWHERE

AHS-N Series autoclaves, with chamber sizes from 22L to 79L, offer the same performance and manufacturing quality as a full-size vertical autoclave, all in a compact design that fits any workspace.

EASY INSTALLATION AND MAINTENANCE

Every AHS-N Series autoclave is a plug and play equipment that does not need dedicated installation connections. They simply need a power source and can work even without a connection to the drainage. All models include a manually fed independent water tank that feeds the sterilization chamber.

SAFETY FIRST

AHS-N Series autoclaves are equipped with several features to ensure the safety of the operators. These include an overpressure safety valve, a thermally insulated door, a safety thermostat, an open door detection system, and an independent pneumatic safety system that locks the main door while positive pressure exists inside the sterilization chamber.

ADVANTAGES

- Sterilization chamber and door made of high quality stainless steel grade AISI-316L extremely resistant to corrosion.
- Equipment built following all applicable European Union quality, regulatory and safety standards.
- Heating by powerful electric elements made of Incoloy® 825 assembled inside the sterilization chamber and shielded by a protective grid.
- Control by a PID microprocessor with 4 predefined and 6 editable programs, adjustable by time, temperature and type of sterilization cycle (agar mode and/or core probe control)*.
- Programmable auto-start.
- Temperature control by a PT-100 Class A temperature probe located within the sterilization chamber.
- Faster cooling phase in solids sterilization cycles through a steam release function at the end of the sterilization.
- Adjustable temperature holding at the end of the sterilization cycle between 40-80ºC (agar mode)*.
- Optional software for sterilization data management.
- Optional integrated or external printer *.
- Plug and play equipment, no plumbing required.

*These features are only offered with AHS-50-N and AHS-75-N models.

OPERATING PRINCIPLE

AHS-N Series autoclaves provide a solution for the multiple sterilization needs of general laboratories, including liquids, culture media, biological waste, contaminated media, instruments, glassware and other laboratory items.

The load has to be placed into the vessel's trays or basket and, after manually filling the independent water tank and the sterilization chamber with purified water, the equipment begins to heat up and purge until the set combination of sterilization time and sterilization temperature is reached.

AHS-N Series

OPERATION OF A STERILIZATION CYCLE FOR SOLIDS

HEATING PHASE

- In this initial step, the powerful heating elements assembled at the bottom of the sterilization chamber heat up dramatically, transferring energy to water to produce saturated steam throughout the chamber.

STERILIZATION PHASE

- Upon reaching the set sterilization temperature inside the chamber, the sterilization phase begins, accurately sustaining the temperature throughout the duration of this phase.
- This crucial step is controlled by a PT-100 Class A temperature probe located within the chamber.

AHS-50-N and AHS-75-N

As an option for liquids sterilization processes, this phase can be regulated by a PT-100 Class A flexible temperature probe located inside a sample.

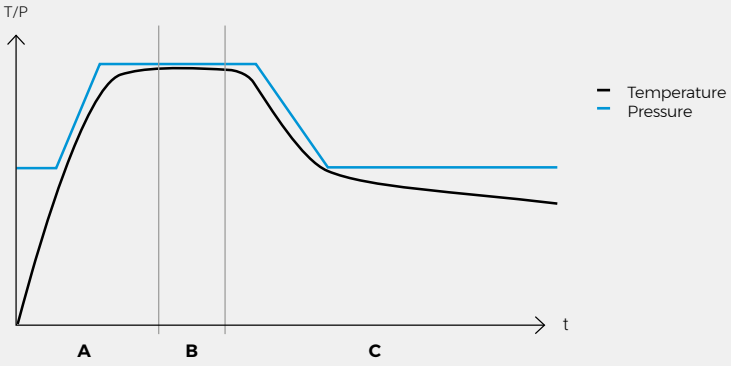
COOLING PHASE

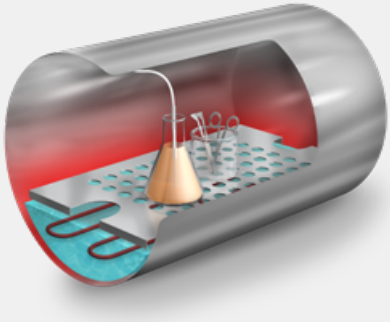
- Once the sterilization phase is complete, natural cooling begins, and the steam and water located inside the chamber around the electric heating elements will automatically return to the independent water tank. An acoustic beep will sound when a safe temperature is reached, allowing the chamber to be opened.

AHS-50-N and AHS-75-N

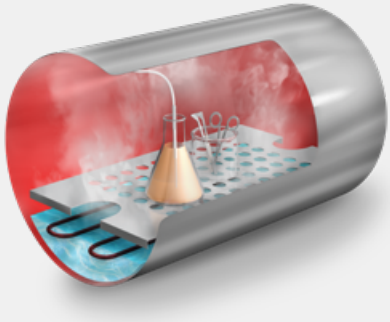
In solids programs, the discharge can be manually forced through a push-button to reduce the duration of the cooling phase.

If agar mode is on, the equipment will hold the preprogrammed temperature indefinitely, selectable between 40 and 80°C.

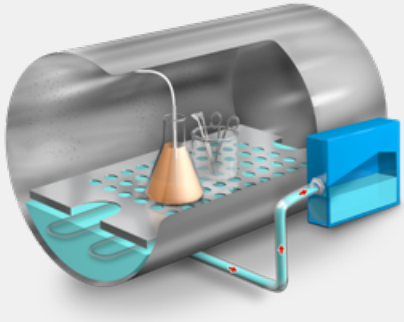




A. Heating phase



B. Sterilization phase



C. Cooling phase

CONTROL PANELS

AH-21-N2

MULTIPLE PILOT LIGHTS

- Sterilization cycle is ongoing.
- Delay start function is ongoing.
- Preprogrammed sterilization time is ongoing.
- Door is open.
- Safety thermostat is activated.

4 MODES TO REGULATE THE STERILIZATION CYCLE

- Indefinitely at a set temperature.
- Indefinitely at a set temperature after an initial delay.
- During a finite period of time at a set temperature.
- During a finite period of time at a set temperature after an initial delay.

DIGITAL MICROPROCESSOR AND COMPACT SCREEN

- The screen shows current chamber temperature, sterilization parameters and error messages.
- Digital microprocessor and several intuitive push-buttons to set up the sterilization cycle parameters.

STERILIZATION WATER MANAGEMENT

- A manual valve is used to supply water to the sterilization chamber from the independent 6L water tank.

AHS-50-N AND AHS-75-N

PROGRAM SET UP

- These autoclaves have 10 programs and the first four are predetermined and protected. The rest of the programs, from P4 to P9, can be edited by adjusting the following parameters: sterilization temperature, sterilization time, sterilization controlled by the main chamber temperature probe or the main chamber temperature probe plus the flexible temperature probe and sterilization with temperature maintenance at the end of the cycle (agar mode).
- The alphanumeric screen apart from showing the sterilization parameters, also displays several visual alerts, including warning or failure messages. The available languages include English, Spanish, French and Catalan. For other languages please contact us.

FASTER COOLING PHASE

- Manual steam release push-button for faster cooling phase in solids sterilization cycles.

ADVANTAGES FOR LIQUIDS STERILIZATION CYCLES

- Adjustable temperature holding at the end of the sterilization cycle between 40-80°C (agar mode).
- Optional flexible temperature probe to regulate the sterilization process by the actual temperature inside the load instead of the chamber temperature and prevent liquids from spilling out after opening the chamber door due to the boilover effect.

STERILIZATION WATER MANAGEMENT

- A manual valve is used to supply water to the sterilization chamber tank from the independent 10L water tank.

LARGER SCREEN WITH MORE INFORMATION

- Digital alphanumeric LCD screen with a size of 2 lines x 16 digits that displays multiple parameters, including the following:

1. Program mode
2. Program No.
3. Current sterilization temperature.
4. Current sterilization time.

AHS-N Series

LOADING CAPACITIES

ISO ERLENMEYER FLASKS

Autoclave model	Usable volume L	250mL (Ø85 x 143mm)			500mL (Ø105 x 183mm)			1000mL (Ø131 x 230mm)			2000mL (Ø166 x 280mm)		
		Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units
AH-21-N2	21	1	8	**8**	1	4	**4**	0	0	**0**	0	0	**0**
AHS-50-N	50	1	14	**14**	1	8	**8**	1	5	**5**	1	2	**2**
AHS-75-N	75	1	26	**26**	1	15	**15**	1	8	**8**	1	3	**3**

ISO BOTTLES

Autoclave model	Usable volume L	250mL (Ø70 x 143mm)			500mL (Ø80 x 185mm)			1000mL (Ø101 x 230mm)			2000mL (Ø136 x 260mm)		
		Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units	Total baskets	Units / basket	Total units
AH-21-N2	21	1	8	**8**	1	8	**8**	0	0	**0**	0	0	**0**
AHS-50-N	50	2	20	**40**	1	14	**14**	1	8	**8**	1	5	**5**
AHS-75-N	75	2	32	**64**	1	26	**26**	1	15	**15**	1	8	**8**

The data contained within these tables, regarding load capacities, serves as a non-binding guide to assist you in the selection of the most appropriate autoclave model.

COMPONENTS SUPPLIED

AH-21-N2

A. Stainless steel tray support compatible with up to 4 trays*.

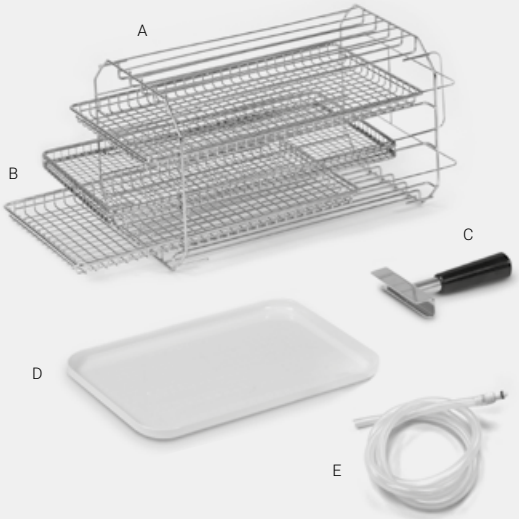
B. 3 stainless steel wire trays.

C. Holding clamp to move the trays.

D. Auxiliary plastic tray for collecting condensed water after opening the door.

E. Silicone tube of 1m with quick connection to drain the independent water tank.

Stainless steel protecting grid for the heating elements.



*Special tray support compatible with up to 5 trays available under request.

AHS-50-N AND AHS-75-N

A. Stainless steel tray support compatible with up to 5 trays.

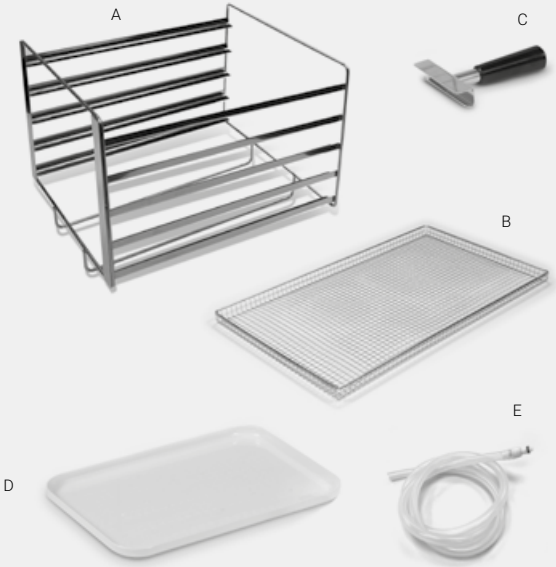
B. 2 stainless steel wire trays.

C. Holding clamp to move the trays.

D. Auxiliary plastic tray for collecting condensed water after opening the door.

E. Silicone tube of 1m with quick connection to drain the independent water tank.

Stainless steel protecting grid for the heating elements.



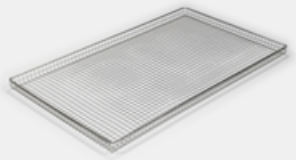
AHS-N Series

ACCESSORIES

STAINLESS STEEL WIRE TRAYS

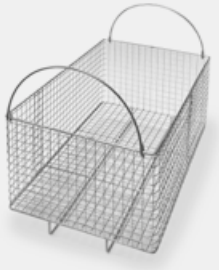
References		BAH-21	BAH-50 B	BAH-75 B
External dimensions L x D mm		190 x 350	315 x 330	315 x 530
Maximum capacity for autoclaves with the following chamber volumes	22 L	4 or 5	-	-
	55 L	-	5	-
	79 L	-	-	5

*Special tray support compatible with up to 5 trays available under request.



STAINLESS STEEL WIRE HORIZONTAL BASKET

References		RB-AH-21	RB-AHS-50	RB-AHS-75
Dimensions	Exterior L x D x H mm	170 x 340 x 180	324 x 360 x 235	324 x 560 x 235
	Interior L x D x H mm	160 x 330 x 170	314 x 350 x 225	314 x 550 x 225
Maximum capacity for autoclaves with the following chamber volumes	22 L	1	-	-
	55 L	-	1	-
	79 L	-	-	1



STAINLESS STEEL BAG HOLDER SUPPORT*

References		BAP-21	BAP-75
External dimensions L x D x H mm		400 x 180 x 80	300 x 180 x 95
Positions / support		20	20
Maximum capacity for autoclaves with the following chamber volumes	22 L	1	-
	55 L	-	4
	79 L	-	6

*Possibility of adapting the size of this accessory according to the needs of each customer. For more information, please contact us.

STAINLESS STEEL CONTAINERS WITH FILTER ON THE LID

References		FC-215	FC-331	FC-338
Dimensions	Exterior L x D x H mm	285 x 185 x 65	300 x 300 x 110	300 x 300 x 85
	Interior L x D x H mm	275 x 175 x 55	290 x 290 x 100	290 x 290 x 75
Maximum capacity for autoclaves with the following chamber volumes	22 L	2	-	-
	55 L	6	2	2
	79 L	9	2	2

ACCESSORIES

FLEXIBLE TEMPERATURE PROBE PT-100 CLASS A

After installing this accessory, the temperature regulation of the sterilization cycle can be controlled by the main chamber temperature probe or both the main chamber temperature probe and the flexible temperature probe.

The temperature control by the flexible temperature probe is especially advantageous for processes involving the sterilization of large volumes of liquids, where the sterilization process is regulated by both the temperature achieved in the center of the liquid sample as well as the temperature achieved in the sterilization chamber. Furthermore, should the autoclave be opened at chamber temperatures higher than 80°C there is a risk of liquids boiling over which can be avoided if the temperature of the sample is controlled throughout the sterilization procedure.

Must be installed at our factory.

This accessory is not compatible with AH-21-N2 models.

Ref. PT-2-AH

Download technical data sheet

EXTERNAL MATRIX PRINTER

Prints program number, cycle number, temperature, time, date and hour and error messages.

Selectable print frequency between 10 and 240 seconds.

Connection: RS-232.

Requires factory adaptation.

This accessory is not compatible with AH-21-N2 models.

Ref. ITS

Consumables: PAPER-ITS for paper and 70945 for ink ribbon

Download technical data sheet

EMBEDDED THERMAL PRINTER

Prints program number, cycle number, temperature, time, date and hour and error messages.

Selectable print frequency between 10 and 240 seconds.

Must be installed at our factory.

This accessory is not compatible with AH-21-N2 models.

Ref. IT

Consumable: PAPER-IT for paper

Download technical data sheet

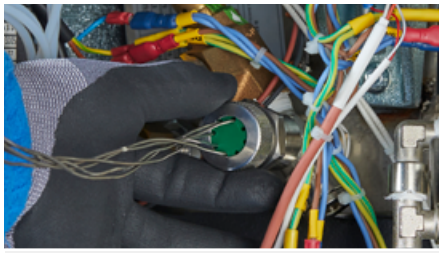
SW7000 SOFTWARE

Communication software between the equipment and the PC that allows the visualization and recording in real time or after each cycle. Cycles can also be exported to Excel or printed.

Connection to PC via RS-232.

It is supplied with a RS-232 cable, a USB stick that includes the software and installation drivers, and a RS-232 to USB adapter.

Ref. SW7000



CABLE GLAND

Installation of a Ø2mm or Ø4mm cable gland to provide access to as many as eight external temperature probes for calibration and validation procedures.

Ref. CG2MM and CG4MM

Download technical data sheet

AHS-N Series

ACCESSORIES

BENCHTOP AUTOCLAVE TABLE

Stainless steel table with casters (with brakes on two of them).

Designed to accommodate any model of benchtop autoclave, including larger models.

Dimensions (LxDxH): 800x900x800mm.

Ref. TABLE-AHS

Download technical data sheet

Transport trolley

Auxiliary trolley to aid in the loading and unloading of the autoclave.

Made of chrome iron and plastic.

The surface of each shelf is textured to prevent the load from moving.

Rubber-coated casters to reduce noise and prevent floor wear.

Dimensions (LxDxH): 730x490x700mm.

Ref. TR-TR

Download technical data sheet

WATER DISTILLER

Forced air water distiller with stainless steel interior, 4L capacity and 1,5L/h distillation volume.

Ref. DEM-4

Download technical data sheet

Temperature data logger

Temperature recorder in AISI 316L stainless steel disk format with connection base and software.

Recommended for autoclave validation and for monitoring the internal temperature of vessels.

Available in various sizes.

Ref. BDL-DISK3618_CL

Download technical data sheet

PACK OF STERILIZATION TAPE

Class 1 indicator for steam sterilization. The color change indicates that the materials have been processed, but this is not a guarantee of a correct sterilization. Additional methods such as biological indicators are required (EN ISO 11138).

Pack of 5 rolls of 50m x 19mm tape.

Ref. TEST-CT

Download technical data sheet

INTERNAL RADIAL FAN

Optimize and reduce cooling time, ensuring greater efficiency in sterilization processes.

Must be installed in our facilities.

Not compatible with model AH-21-N2.

Ref. AIRCOOL-H

Download technical data sheet

SPECIFIC SERVICES

IQ-OQ DOCUMENTATION

Delivery of documentation and protocols for autoclave qualification through a third party.

Ref. IQ-OQ DOC

Download technical data sheet

IQ-OQ-PQ QUALIFICATION

Autoclave qualification service performed by RAYPA technicians or authorized entities. It covers the startup of the equipment and the comprehensive qualification of its performance.

Ref. IQ-OQ-PQ

Download technical data sheet

CALIBRATION CERTIFICATE FOLLOWING ENAC TRACEABILITY STANDARDS

Unitary certification of proper equipment calibration and performance in compliance with international standards.

Ref. MAPEO-ENAC

MAPPING OF STABILITY AND HOMOGENEITY

Generation of documentary evidence certifying that the temperature and pressure distribution within the autoclave is uniform and stable, in accordance with the manufacturer's design specifications.

Ref. MAP-3, MAP-7 and MAP-9

ON-SITE COMMISSIONING & TRAINING

On-site commissioning, which includes verification of the correct operation and installation of the equipment and a training session for users on the use and maintenance of the equipment.

Ref. INSAE

Download technical data sheet

REMOTE COMMISSIONING & TRAINING

Guided remote startup including a training session for users on the operation and maintenance of the equipment.

Ref. INSAE-REM

Download technical data sheet

MAINTENANCE CONTRACT

Regular inspection plan that includes technical inspection, probe calibration and compliance with the preventive maintenance plan, in addition to tariff discounts.

Ref. MANT-1.4 and MANT-1.5

EXTENDED WARRANTY

Extended warranty up to a total of 3 years.

Ref. WE-CL

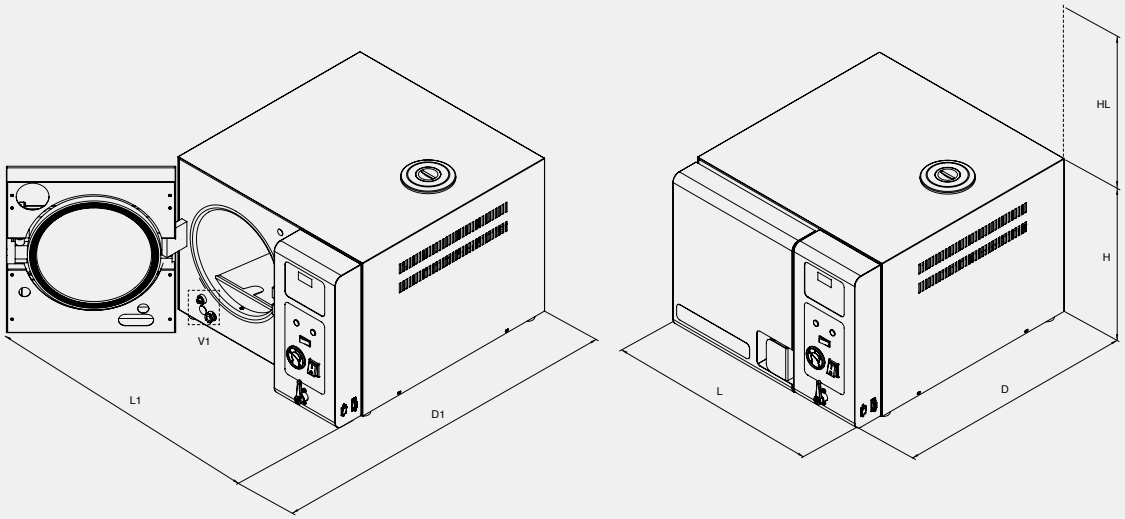
SET OF CONSUMABLES, SPARE PARTS AND ESSENTIAL COMPONENTS

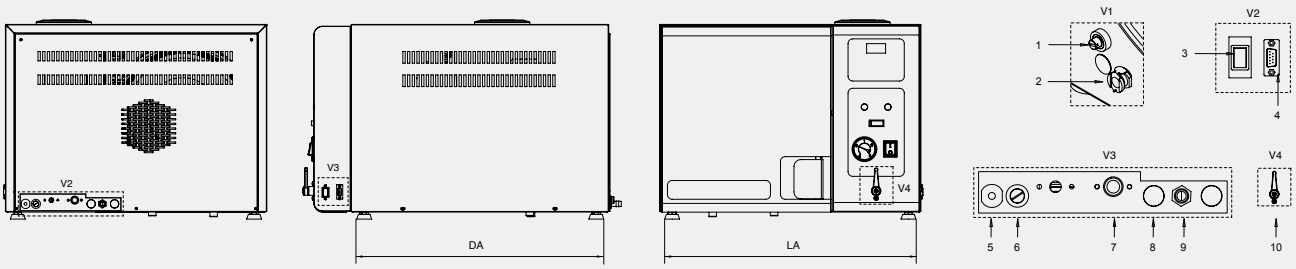
Set of spare parts, consumables and original components selected to meet the maintenance plan of each model with the aim of maximizing the lifespan of the equipment and minimizing downtime in the event of a breakdown.

AHS-N Series

TECHNICAL DRAWINGS

AH-21-N2





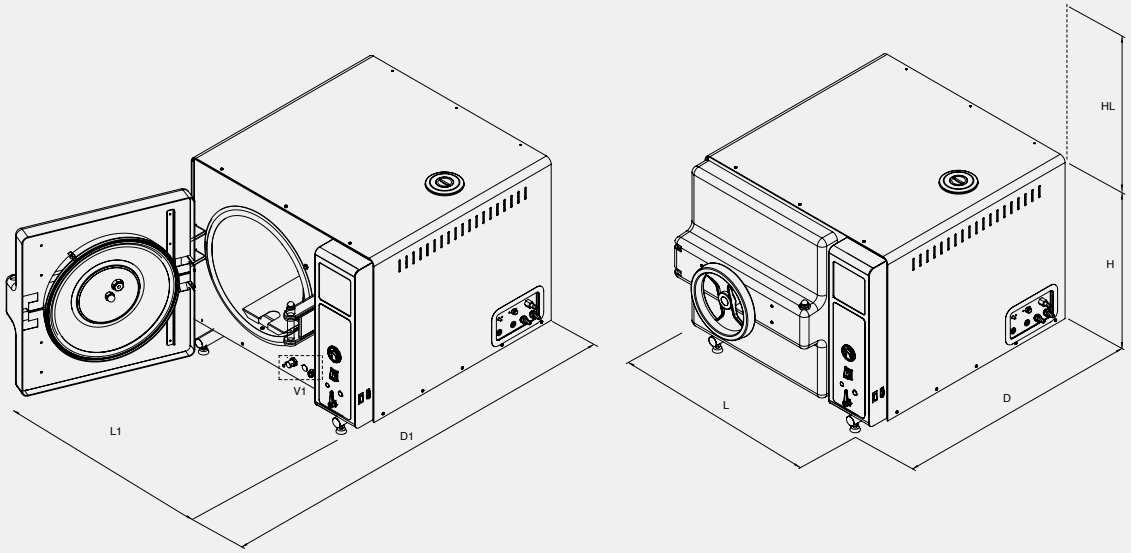
MODEL	L LENGTH with closed door	L1 LENGTH with maximum door opening	D DEPTH	D1 DEPTH with maximum door opening	H HEIGHT	LA x DA SUPPORT AREA	HL FREE HEIGHT for filling the independent water tank
AH-21-N2	560 mm	740mm	680 mm	970 mm	425 mm	537 x 527 mm	400 mm

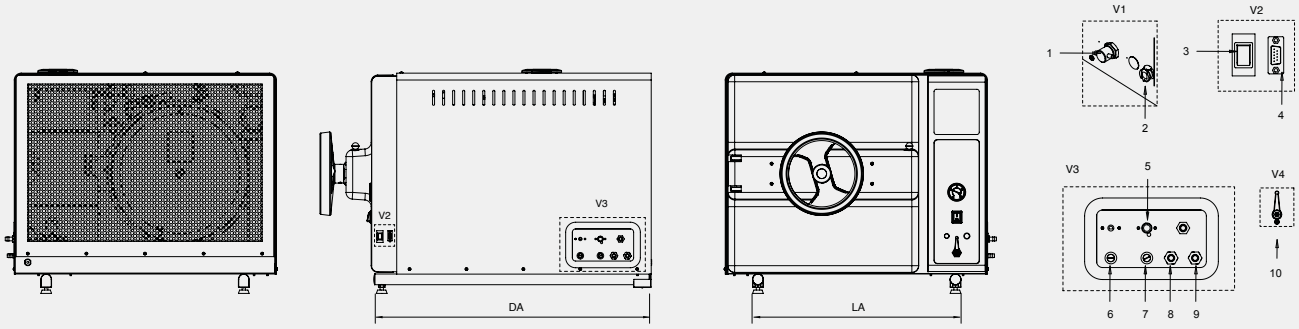
CONNECTIONS

1	Access to the drain filter and sterilization chamber drain outlet
2	Independent water tank drain outlet
3	PC/Printer Selector
4	RS-232 Port
5	Power cable
6	Mains fuse
7	Safety thermostat for the heating elements
8	Independent water tank overflow outlet
9	Safety valve outlet
10	2-position valve for dispensing water into the sterilization chamber

TECHNICAL DRAWINGS

AHS-50-N and AHS-75-N





MODELS	L LENGTH with closed door	L1 LENGTH with maximum door opening	D DEPTH	D1 DEPTH with maximum door opening	H HEIGHT	LA x DA SUPPORT AREA	HL FREE HEIGHT for filling the independent water tank
AHS-50-N	805 mm	1240 mm	805 mm	1230 mm	650 mm	622 x 670 mm	400 mm
AHS-75-N	805 mm	1240 mm	1005 mm	1430 mm	650 mm	622 x 830 mm	400 mm

CONNECTIONS

1	Access to the drain filter and sterilization chamber drain outlet
2	Independent water tank drain outlet
3	PC/Printer Selector
4	RS-232 Port
5	Safety thermostat for the heating elements
6	Mains fuse
7	Mains fuse
8	Independent water tank overflow outlet
9	Safety valve outlet
10	2-position valve for dispensing water into the sterilization chamber

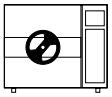
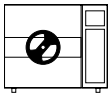
AHS-N Series

TECHNICAL BRIEF

Available models		AH-21-N2	AHS-50-N and AHS-75-N
General classification	Recommended setting	Small facilities	General laboratory
	Equipment placement	Benchtop	
	Load direction	Frontal	
	Chamber profile	Round	
Recommended type of load	Culture media and liquids	+	++
	Laboratory waste bags	+	
	Porous solids and wrapped loads	-	
	Glassware	++	
Sterilization technology features	Steam generation method	Heating elements	
	Type of purge	Gravity displacement	
Transfer of data	RS-232	✔	
Batch printers	Integrated printer	-	0
	External printer	-	0
Sterilization chamber and door specifications	Sterilization chamber volume	22 L	55 - 79 L
	External building materials	Metallic & AISI-304	
	Sterilization chamber material	AISI-316L	
	Heating elements material	Incoloy® 825	
	Gasket material	Silicone rubber	
	Maximum pressure (above atmospheric pressure)	2,1 Barg	
	Mechanism to open the door	Handle	Wheel
	Direction in which the door opens	Frontal	
	Thermally insulated door	✔	
	Automatic locking with pressure	✔	
Water management	Independent water tank capacity	6 L	10 L
User interface and microprocessor	Screen display	Digital LCD	
	Screen size	1 line x 3 digits	2 lines x 16 digits
	Total number of available programs	1	10
	Automatic microprocessor control	✔	
	Timer start	✔	
Special cycles and process optimization	Agar mode (temperature holding after cycle ends 40-80ºC)	-	✔
	Solids fast cooling	✔	
Adjustable cycle parameters	Solids mode	✔	-
	Agar mode	-	-40 - 80°C
	Temperature of sterilization phase	100 - 134°C	
	Duration of sterilization phase	1 - ∞ min	1 - 250 min
	Temperature control by flexible probe	-	On/Off
Other specifications	Flexible temperature probe	-	0
	Pressure gauge	✔	
	Custom electrical features (115-230M V / 230-400T V)	0	
Services	Third-party qualification (IQ-OQ-PQ)	0	

+: Recommended: Included 0: Optional

TECHNICAL DATA

Specifications

References	AH-21-N2	AHS-50-N	AHS-75-N
Total/usable volume of the chamber L	22 / 21	55/50	79/75
Usable dimensions of the chamber Ø max. x D mm	210 x 430	360 x 400	360 x 600
Volume of the built-in water tank L	6	10	10
External dimensions L x D x H mm	560 x 680 x 425	805 x 805 x 650	805 x 1005 x 650
Maximum number of trays	4 or 5	5	5
Tray size L x D mm	190 x 350	315 x 330	315 x 530
Net weight Kg	45	93	110
Power W	2000	2800	3200
Standard voltage* V	230	230	230
Frequency Hz	50/60	50/60	50/60

*Other voltages and electrical configurations available on request.

Safety features

- Safety valve.
- Safety thermostat with manual rearm for the heating elements.
- Pneumatic door blocking system while positive pressure exists inside the sterilization chamber.
- Open door sensor.
- Thermally insulated door.
- Heating elements cover.
- Several visual and acoustic safety and warning alarms.

Regulations

All of our AHS-N Series autoclaves are designed to comply with the strictest international directives and standards, including the following regulations:

- **EN-61010-1** Safety requirements for electrical equipment for measurement, control and laboratory use. **Part 1:** General requirements.
- **EN-61010-2-040** Part 2-040: Requirements for laboratory autoclaves.
- **EN-61326** Electrical equipment for measurement, control and laboratory use. EMC requirements.
- **AD 2000 Merkblatt** Pressure vessels.
- **2014/35/EU** Low voltage.
- **2014/30/EU** Electromagnetic compatibility.
- **2014/68/EU** Pressure equipment.

General features

Available models	AH-21-N2	AHS-50-N and AHS-75-N
Adjustable sterilization temperature	100 - 134 ºC	
Adjustable sterilization time	1 - ∞ min	1 - 250 min
Max. pressure	2,1 Barg	
Sterilization control system	Fully automatic by chamber temperature probe	Fully automatic by either chamber temperature probe or flexible temperature probe
Air purge system	Gravity displacement	
Sterilization chamber material	AISI-316L STAINLESS steel	
Heating elements material	Incoloy® 825	
Gasket material	Silicone rubber	
Connection to PC	RS-232	
Connection to printer	-	RS-232 or integrated
Number of programs	1	10 (4 preset and 6 user free)
Programmable auto-start	1 - ∞ min	Up to 24 h
Screen type	LCD display	
Opening door mode	Front-loading swiveling door	
Monitoring of sterilization parameters	Self-control of obtained values (Tº & t) vs programmed values. Cycle is automatically interrupted if obtained values differ from programmed values	
Pressure display	Pressure gauge on control panel	
Water management	Independent manually fed water tank with manual valve to feed water to the sterilization chamber	
Drainage system	Drainage connections for both drainage and overflow of the independent water tank and a screw to manually clean the drainage filter and drain the sterilization chamber	
Feet	Feet with resistant rubber	

MORE INFORMATION

Watch video

Download the installation guide

RAYPA

www.raypa.com

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REV 10.2025

RAYPA

Vertical benchtop autoclaves without drying

AVS-N Series CLASSIC LINE

Technical information

Vertical benchtop autoclaves without drying

The **AVS-N** Series vertical benchtop autoclaves with top-loading access cover the fundamental needs for general labware and metal utensils sterilization in many facilities with the aim of streamlining the sterilization workflow. A compact footprint together with the optimization of resources such as water, power and operating time results in an affordable and efficient solution to manage laboratory workload in small facilities.

INTENDED USE

+ **STERILIZATION OF LABORATORY WASTE BAGS, PLASTICS, GLASSWARE, LIQUIDS AND METAL UTENSILS**

AES-12
(with printer)

AES-8

MAIN FEATURES

ECONOMIC AND DURABLE

AVS-N Series autoclaves are economic and durable autoclaves for general laboratory sterilization procedures with limited resources consumption such as water, power or operator time.

A COMPACT FOOTPRINT THAT FITS ANYWHERE

AVS-N Series autoclaves with chamber sizes from 8 to 15L pack the quality construction of a full-size vertical autoclave into a compact footprint that fits any workspace.

EASY INSTALLATION AND MAINTENANCE

Every **AVS-N** Series autoclave is a plug and play equipment that does not need dedicated installation connections. They simply need a power source and can work even without a connection to the drainage.

SAFETY FIRST

AVS-N Series autoclaves are equipped with several features to ensure the safety of the operators. These include an overpressure safety valve, a thermally insulated lid, an overtemperature safety thermostat, an open lid detection system and an independent safety pneumatic system that locks the main door while positive pressure exists inside the sterilization chamber.

ADVANTAGES

- Sterilization chamber and door made of high quality stainless steel grade AISI-316L extremely resistant to corrosion*.
- Equipment built following all applicable European Union quality, regulatory and safety standards.
- Heating by powerful electric elements made of Incoloy® 825 assembled inside the sterilization chamber and shielded by a protective grid.
- Control by a PID microprocessor with 4 predefined and 6 editable programs, adjustable by time, temperature and type of sterilization cycle (agar mode and/or flexible temperature probe control)*.
- Programmable auto-start.
- Temperature control by a PT-100 Class A temperature probe located within the sterilization chamber.
- Faster cooling phase in solids sterilization cycles through a steam release manual valve at the end of the sterilization.
- Adjustable temperature holding at the end of the sterilization cycle between 40-80ºC (agar mode)*.
- Optional software for sterilization data management.
- Optional integrated or external printer*.
- Plug and play equipment, no plumbing required.

*These features are only offered with AES-12 model.

STERILIZATION APPLICATIONS

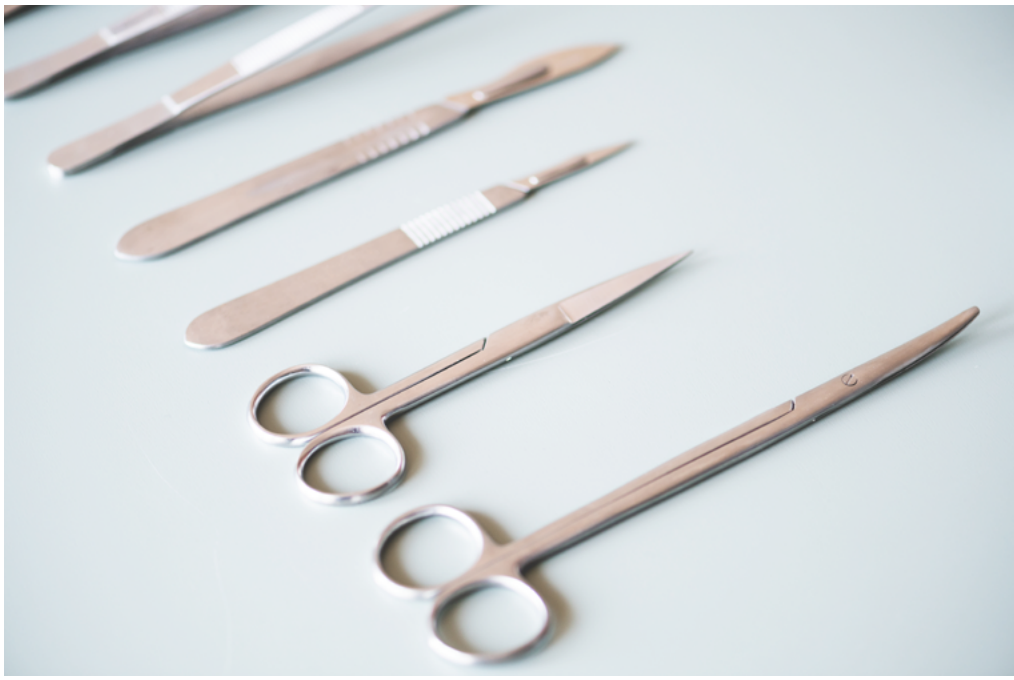
AVS-N Series autoclaves are intended for the sterilization of a wide range of liquids and solids such as culture media, glassware, plastics, metal utensils, waste bags and other laboratory items. They are designed for an easy operation and include many safety features to protect users in their daily routine.

Vertical benchtop autoclaves without drying

WORKING PRINCIPLE

AVS-N Series autoclaves provide a simple and straightforward solution for the multiple sterilization needs of general laboratories including biological waste, contaminated media, small metal utensils, glassware and other laboratory items.

The load has to be placed into the pressure vessel basket and, after manually filling the tank with purified water, the equipment starts to heat up and purge until the set combination of sterilization time and sterilization temperature is reached.



STANDARD AVS-N SERIES STERILIZATION CYCLE

HEATING PHASE

- In this initial step, the powerful heating elements assembled at the bottom of the sterilization chamber heat up dramatically, transfering energy to water to produce saturated steam throughout the chamber.

STERILIZATION PHASE

- Upon reaching the set sterilization temperature inside the chamber the sterilization phase begins, accurately sustaining the temperature throughout the duration of this phase.
- This crucial step is controlled by a PT-100 Class A temperature probe located within the chamber.

AES-12

- As an option for liquids sterilization processes this phase can be regulated by a flexible PT-100 Class A temperature probe located inside a sample.

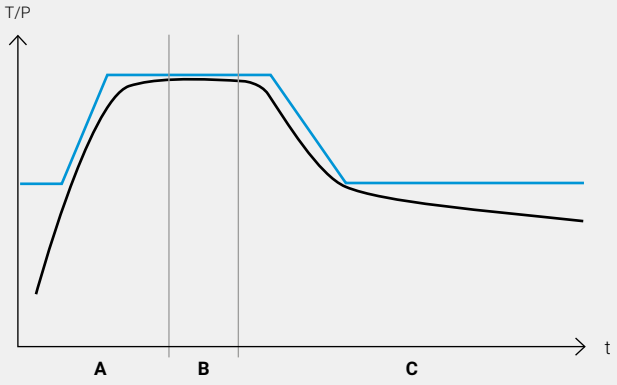
COOLING PHASE

- After sterilization phase finishes, natural cooling begins and an acoustic beep will sound when a safety temperature is reached and the door can be opened.
- While sterilizing solid loads, discharge can be manually forced through a valve to reduce the duration of the cooling phase.

AES-12

- If agar mode is on, the equipment will hold the preprogrammed temperature indefinitely, selectable between 40 and 80ºC.

Sterilization cycle graph



A Heating phase
B Sterilization phase
C Cooling phase

— Temperature
— Pressure

AES-8 CONTROL PANEL

Detail of AES-8 main control panel.

DIGITAL MICROPROCESSOR AND COMPACT SCREEN

- The screen shows current chamber temperature, sterilization parameters and error messages.

MULTIPLE PUSH-BUTTONS AND PILOT LIGHTS FOR YOUR COMFORT AND EASE OF USE

- To assist you while programming a sterilization cycle, the control panel has 2 pilot lights and 5 intuitive push-buttons.
- At the end of the sterilization cycle an acoustic alarm sounds.

4 MODES TO REGULATE THE STERILIZATION CYCLE

- Indefinitely at a set temperature.
- Indefinitely at a set temperature after an initial delay.
- During a finite period of time at a set temperature.
- During a finite period of time at a set temperature after an initial delay.

AES-12 CONTROL PANEL

Detail of AES-12 main control panel.

BIGGER SCREEN AND GREATER PROGRAM SET UP OPTIONS

- AES-12 autoclaves have 10 programs and the first four are predefined and protected. The rest of the programs are editable with the following parameters settings:
  - Sterilization temperature.
  - Sterilization time.
  - Sterilization controlled by main chamber temperature probe or both main chamber temperature probe plus flexible temperature probe.
  - Sterilization with temperature holding at the end of the cycle (agar mode).
- The alphanumeric screen apart from showing the sterilization parameters also shows several visual alerts, including warning or failure messages.
- The available languages include English, Spanish, French and Catalan. For other languages please contact us.

ADVANTAGES FOR LIQUIDS STERILIZATION CYCLES

- Adjustable temperature holding at the end of the sterilization cycle between 40-80ºC (agar mode).
- Optional flexible core temperature probe to sterilize liquids and avoid liquids boiling over.

AES-8 & AES-12 VALVE

3 POSITION MANUAL VALVE FOR A FAST UNSTEAMING AND FOR DRAINAGE

- For a faster cooling phase in solids sterilization cycles, a quick unsteaming can be carried out through a manual valve and thus shorten the duration of the cooling phase.
- With the same valve, the water located inside the sterilization chamber can be drained completely.

Detail of the 3 position manual valve installed in both AES-8 and AES-12.

Vertical benchtop autoclaves without drying

AES-8

THE PERFECT AUTOCLAVE FOR ENTRY LEVEL USERS OF SMALL FACILITIES LOOKING FOR AN ECONOMIC, RELIABLE AND EASY TO USE BENCHTOP AUTOCLAVE WITH A SMALL FOOTPRINT.

INTENDED USE

- Suitable to sterilize glassware, plastics, laboratory waste bags, small metal utensils and small volumes of liquids and culture media.

RECOMMENDED SETTINGS AND USERS

- Entry level users of small facilities such as small laboratories or small clinics looking for an economic benchtop autoclave with top-loading access.

FEATURES

- Sterilization chamber made of AISI-18/10 stainless steel.
- Equipment controlled by digital PID microprocessor, cycles adjustable by sterilization time and sterilization temperature.
- LCD screen that shows sterilization parameters, current chamber temperature and error messages.
- Sterilization control by a PT-100 Class A temperature probe located within the sterilization chamber.
- Automatic air purge controlled by the microprocessor.
- Heating by powerful heating elements made of Incoloy® 825 extremely resistant to corrosion.
- Manual feed of sterilization water directly inside the sterilization chamber.
- Manual valve to drain the sterilization chamber water tank and for a faster cooling of solid sterilization procedures.
- RS-232 port to connect to PC.
- Includes a sterilization chamber inlet for external validation probes.
- Lockable bayonet to open the main door and thermally insulated secondary door.
- Adjustable sterilization temperature: 100 - 127ºC.
- Adjustable sterilization time: 1 - ∞ min.
- Adjustable delayed start: 1 - ∞ min.

ADVANTAGES

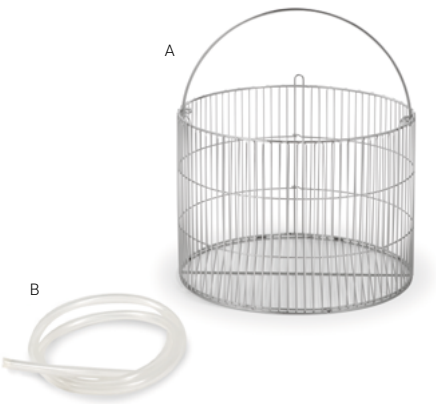
- Economic.
- Compact and small footprint.
- Optional faster cooling phase for solids sterilization cycles.
- Easy to use control panel with 5 different push-buttons with different intuitive symbols.
- PC connection to export and register sterilization cycle data.

SAFETY

- Safety valve.
- Safety thermostat with manual rearm.
- Pneumatic door blocking system while positive pressure exists in the sterilization chamber.
- Independent thermally insulated lid.
- Pilot light while sterilization cycle is ongoing.
- Pilot light while delay function is ongoing.

COMPONENTS SUPPLIED WITH THE EQUIPMENT

A. Stainless steel wire basket (CV-8).
B. Silicone tube of 1m to drain the sterilization chamber and also to collect condensates during purge phase.
Stainless steel protecting grid for the heater element.



AES-12

THE PERFECT AUTOCLAVE FOR SMALL CLINICS AND RESEARCH FACILITIES LOOKING FOR AN ECONOMIC, VERSATILE AND RELIABLE BENCHTOP AUTOCLAVE WITH A SMALL FOOTPRINT THAT IS COMPATIBLE WITH MULTIPLE APPLICATIONS.

INTENDED USE

- Suitable to sterilize plastics, small metal utensils, laboratory waste bags, culture media, glassware and liquids.

RECOMMENDED SETTINGS AND USERS

- Professional users of small and medium-sized facilities such as small laboratories or small clinics looking for an economic benchtop autoclave with top-loading access.

FEATURES

- Sterilization chamber made of AISI-316L stainless steel extremely resistant to corrosion and external housing made of AISI-304 stainless steel.
- Equipment controlled by digital PID microprocessor with 4 predefined and 6 editable programs, adjustable by sterilization time, sterilization temperature, agar mode or flexible temperature probe selection.
- Alphanumeric LCD screen that shows sterilization parameters and several alert and error messages. Furthermore, several languages are available and temperature display is compatible with ºC or ºF temperature scales.
- Sterilization control by a PT-100 Class A temperature probe located within the chamber. Optional installation of an additional flexible PT-100 Class A temperature probe for liquids sterilization procedures.
- Automatic air purge controlled by the microprocessor.
- Heating by powerful heating elements made of Incoloy® 825 extremely resistant to corrosion.
- Manual valve to drain the sterilization chamber water tank and for a faster cooling of solid sterilization procedures.
- RS-232 port to connect PC, integrated printer or external printer.
- Adjustable temperature holding at the end of the sterilization cycle (agar mode).
- Locking wheel to open the main door.
- Includes a sterilization chamber inlet for external validation probes.
- Adjustable sterilization temperature: 100 - 134ºC.
- Adjustable sterilization time: 0 - 250 min.
- Adjustable delayed start: 0 - 24 h.
- Adjustable agar mode: 40 - 80ºC.

ADVANTAGES

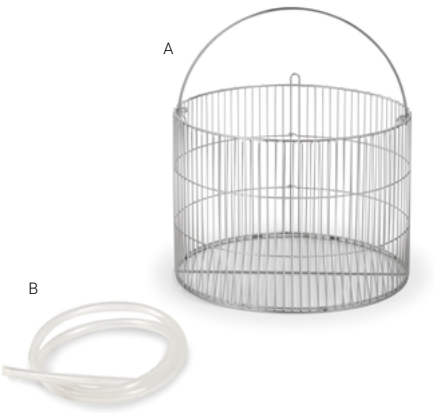
- Economic.
- Compact and small footprint.
- Advanced microprocessor with up to 10 different sterilization programs.
- Faster cooling phase for solids sterilization cycles.
- Agar mode.
- PC and printer connection.

SAFETY

- Safety valve.
- Safety thermostat with manual rearm.
- Pneumatic door blocking system while positive pressure exists in the chamber.
- Thermally insulated door.
- Open door sensor.
- Pilot light for overtemperature.
- Multiple error and alert messages displayed on screen.

COMPONENTS SUPPLIED WITH THE EQUIPMENT

A. Stainless steel wire basket (CV-12).
B. Silicone tube of 1m to drain the sterilization chamber and also to collect condensates during purge phase.
Stainless steel protecting grid for the heating elements.



Vertical benchtop autoclaves without drying

Accessories

STAINLESS STEEL WIRE BASKETS

Reference		CV-8	CV-12
Dimensions	Exterior Ø x H mm	200 x 150	220 x 200
	Interior Ø x H mm	190 x 145	210 x 195
For autoclaves with the following chamber volumes	8L	1	-
	15L	-	1

FLEXIBLE CORE TEMPERATURE PROBE PT-100 CLASS A

• After installing this accessory, the temperature regulation of the sterilization cycle can either be controlled by the main chamber temperature sensor or both the main chamber temperature sensor and the temperature sensor of the flexible core temperature probe.

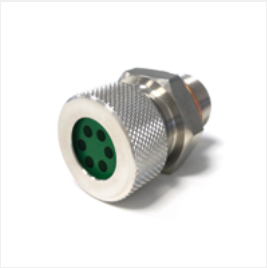
• The temperature control by the flexible core temperature probe is especially advantageous for processes involving the sterilization of large volumes of liquids, where the sterilization process is regulated by both the temperature achieved in the center of the liquid sample as well as the temperature achieved in the sterilization chamber. Furthermore, should the autoclave be opened at chamber temperatures higher than 80ºC there is a risk of liquids boiling over which can be avoided if the temperature of the sample is controlled throughout the sterilization procedure.

• Compatible only with **AES-12**.

• Must be installed in our facilities.

Reference: **PT-2-AH**

CABLE GLANDS



• Installation of a Ø2mm or Ø4mm cable gland to provide access to as many as eight external temperature probes for calibration and validation procedures.

• Must be installed at our factory.

Reference: **CG2MM** and **CG4MM**

TRANSPORT TROLLEY

• Auxiliary trolley to assist the loading and unloading of the autoclave.

• Built in chromed iron and plastic.

• The surface of each shelf is textured to prevent the load from shifting.

• Rubber coated wheels to reduce noise.

• Dimensions (LxDxH): 730 x 490 x 700 mm.

Reference: **TR-TR**

Accessories

WATER DISTILLER

- Forced air water distiller with stainless steel interior, a capacity of 4L and a distillation volume output of 1,5L/h.

Reference: **DEM-4**

INTEGRATED THERMAL PRINTER

- Prints program number, cycle number, temperature, date and hour of the run and error messages.
- Selectable printing cadence between 10 and 240 seconds.
- Compatible only with **AES-12**.
- Must be installed in our facilities.

Reference: **IT**

Consumable:
Paper: **PAPER-IT**

TABLE TOP DOT MATRIX PRINTER

- Prints program number, cycle number, temperature, date and hour of the run and error messages.
- Used with RS-232 connection.
- Selectable printing cadence between 10 and 240 seconds.
- Compatible only with **AES-12**.

Reference: **ITS**

Consumables:
Paper: **PAPER-ITS**, Ribbon: **70945**

SW7000 SOFTWARE

- Communication software between the equipment and the PC that allows the real-time and posterior visualization and registry of each cycle. Cycles can also be exported to Excel or printed.
- Connection to PC via RS-232.
- Supplied with a RS-232 cable, an USB stick that includes the software and installation drivers and a RS-232 to USB adapter.

Reference: **SW7000**

STERILIZATION CONTROL TAPE

- Class 1 indicator for steam sterilization. The change of color indicates that the materials have been processed, without being a guarantee of proper sterilization, additional methods are needed such as biological indicators (EN ISO 11138).
- Tape roll of 50 m x 19 mm.

Reference: **TEST-CT**

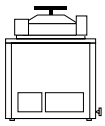
20 min 121ºC
Color change.

Vertical benchtop autoclaves without drying

TECHNICAL SUMMARY OF AVS-N SERIES AUTOCLAVES

Available models		AES-8	AES-12
General classification	Recommended setting	Small facilities	General laboratory
	Equipment placement	Benchtop	
	Load direction	Top-loading	
	Chamber profile	Round	
Recommended type of load	Culture media and liquids	+	++
	Laboratory waste bags	+	
	Porous solids and wrapped loads	-	
	Glassware	++	
Sterilization technology features	Method to generate steam	Heating elements	
	Type of purge	Gravity displacement	
Transfer of data	RS-232	✔	
Batch printers	Integrated printer	-	O
	External printer	-	O
Sterilization chamber and door specifications	Sterilization chamber volume	8 L	15 L
	External building material	AISI-304	
	Sterilization chamber material	AISI-18/10	AISI-316L
	Heating elements material	Incoloy® 825	
	Gasket material	Silicone rubber	
	Min.- max. sterilization temperature	100 - 127°C	100 - 134°C
	Maximum pressure (above atmospheric pressure)	1,5 Barg	2,1 Barg
	Mechanism to open the door	Bayonet	Wheel
	Direction in which the door opens	Vertical	
	Automatic locking with pressure	✔	
	Thermally insulated door	✔	
User interface and microprocessor	Screen display	Digital LCD	
	Screen size	1 line x 3 digits	2 lines x 16 digits
	Total number of available programs	1	10
	Automatic microprocessor control	✔	
	Timer start	✔	
Special cycles and process optimization	Agar mode (temperature holding after cycle ends 40-80ºC)	-	✔
	Solids fast cooling (manual valve for a faster cooling phase)	✔	
	Temperature regulation by flexible probe	-	O
Adjustable cycle parameters	Agar mode	-	40 - 80°C
	Temperature of sterilization phase	100 - 127°C	100 - 134°C
	Duration of sterilization phase	1 - ∞ min	1 - 250 min
	Temperature regulation by flexible probe	-	On/Off
Other specifications	Multiple-use water sterilization chamber capacity	1,3 L	2,2 L
	Flexible core temperature probe	-	O
	Height adjustable feet	✔	
	Pressure gauge	✔	
	Electric customization (115-230M V/230-400T V)	O	
Services	Third-party qualification (IQ/OQ/PQ)	O	

+: Recommended ✔: Included O: Optional



Specifications

References	AES-8	AES-12
Total/usable volume of the chamber L	8/6,8	15/13
Usable dimensions of the chamber Ø x H mm	220 x 180	250 x 280
External dimensions L x D x H mm	410 x 355 x 430	490 x 475 x 630
Loading height mm	320	435
Net weight Kg	12	38
Power W	1000	1000
Standard voltage* V	230	230
Frequency Hz	50/60	50/60

*Other voltages and electrical configurations available on request.

Safety features

- Safety valve.
- Safety thermostat with manual rearm for the heating elements.
- Pneumatic door blocking system while positive pressure exists inside the sterilization chamber.
- Open door sensor (Only AES-12 model).
- Thermally insulated door.
- Heating elements cover.
- Several visual and acoustic safety and warning alarms.

Regulations

All our AVS-N Series autoclaves are designed to comply with the strictest international directives and standards, including the following regulations:

- **EN-61010-1** Safety requirements for electrical equipment for measurement, control and laboratory use. Part 1: General requirements.
- **EN-61010-2-040** Part 2-040: Requirements for laboratory autoclaves.
- **EN-61326** Electrical equipment for measurement, control and laboratory use. EMC requirements.
- **AD 2000 Merkblatt** Pressure vessels.
- **2014/35/UE** Low voltage.
- **2014/30/UE** Electromagnetic compatibility.
- **2014/68/UE** Pressure equipment.

General features

Available models	AES-8	AES-12
Adjustable sterilization temperature	100 - 127ºC	100 - 134ºC
Adjustable sterilization time	1 - ∞ min	1 - 250 min
Max. pressure	1,5 Barg	2,1 Barg
Sterilization control system	Fully automatic by chamber temperature probe	Fully automatic by either chamber temperature probe or flexible core temperature probe
Air purge system	Gravity displacement	
External building material	AISI-304 stainless steel	
Sterilization chamber material	AISI-18/10	AISI-316L
Heating elements material	Incoloy® 825	
Gasket material	Silicone rubber	
Connection to PC	RS-232	
Connection to printer	-	RS-232 or integrated
Number of programs	1	10 (4 preset and 6 user free)
Programmable auto-start	1 - ∞ min	Up to 24 h
Screen type	LCD display	
Opening door mode	External vertical swiveling door plus internal blocking bayonet lid	Horizontal swiveling door with blocking wheel
Monitoring of sterilization parameters	Self-control of obtained values (Tº & t) vs programmed values. Cycle is automatically interrupted if obtained values differ from programmed values	
Pressure display	Pressure gauge on control panel	
Water management	Water is directly poured into the sterilization chamber	
Drainage system	Drainage connection operated by an independent drainage valve on control panel for manual release of sterilization chamber water tank	
Feet	Height adjustable feet with resistant rubber	

MORE INFORMATION

Download the installation guide

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