RAYPA

Vertical autoclaves with prevacuums and drying

AE-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 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.

Vertical autoclaves with prevacuums and drying

AE-B Series vertical floor-standing autoclaves with top-loading access cover all laboratory sterilization needs in many industries and research facilities with the aim of increasing the productivity of the laboratory. A great chamber capacity, the independent integrated steam generator, the touchscreen display, the independent clean water tank, the initial prevacuum pulses, the vacuum drying and the direct water discharge results in an excellent autoclave to perform from the most simple to the most demanding applications.

RECOMMENDED APPLICATIONS

- Porous solids and wrapped objects
- Objects with complex geometries
- Plastics and metal objects
- Glassware
- Laboratory waste bags
- Culture media and liquids

Operation of the AE-75-B autoclave in conjunction with the MOB-LIFT mobile basket lift system.

AE-B Series

MAIN FEATURES

EXCELLENT PERFORMANCE

AE-B Series autoclaves offer excellent performance for several sterilization procedures. They are equipped with an integrated steam generator, a vacuum pump and a heating jacket to guarantee proper steam penetration on all types of loads and completely dry solid loads.

MULTIPLE TYPES OF STERILIZATION

A wide variety of options are available for sterilizing solids or liquids. Programmable parameters include automatic preheating, automatic start, number of initial prevacuum pulses, duration of vacuum drying, and the optional use of a flexible temperature probe for precise liquid sterilization.

GREAT EASE OF USE

AE-B Series autoclaves are equipped with a 5" color touchscreen and include an independent clean water tank that automatically supplies the steam generator. For added convenience, an optional upgrade allows full automation of water supply directly from a water network. Discharge is always directly sent to the drain.

SAFETY FIRST

AE-B Series autoclaves are designed with several features to ensure the safety of the operators. These include overpressure safety valve, overtemperature safety thermostats, water level detectors, an open door detection system and an independent safety pneumatic system that locks the main door while positive pressure is present in the sterilization chamber.

ADVANTAGES

- Immediate injection of steam thanks to the powerful integrated steam generator.
- Adjustable number of initial prevacuum pulses to ensure optimal steam penetration into complex geometries, as well as porous or bulky objects, ensuring effective sterilization.
- Equipped with heating jacket and vacuum pump, the system ensures complete drying of solid loads at the end of a sterilization cycle.
- The sterilization chamber and door are made of high-quality AISI-316L stainless steel, providing exceptional resistance to corrosion.
- Autoclaves manufactured in full compliance with all applicable European Union quality, regulatory and safety standards.
- Control by a PID microprocessor and a 5" touchscreen. It includes 50 customizable programs adjustable by time, temperature, number of prevacuums, drying time and type of load (solids or liquids). Flexible probe control is optional.
- Compatible with both the vacuum test and the Bowie-Dick test, featuring dedicated programs for each.
- Suitable to sterilize all types of loads, including wrapped objects, porous objects, textiles, objects with complex geometries and bulky loads.
- Automatic purified water supply to the integrated steam generator from the independent water tank, with water level sensors at both locations. Optional upgrade for automatic supply from a water network.
- The discharge from each cycle is directly routed to the drain to minimize long-term corrosion and calcification of the sterilization chamber and water tank. An optional adaptation is available for using an external tank for discharge.
- Automatic start-up and sterilization chamber preheating programmable by date and time.
- User management with administrator hierarchy.
- Optional software for sterilization data management.
- Optional embedded printer.
- Seamless mobility, all models include casters.

WORKING PRINCIPLE

AE-B Series autoclaves meet the diverse sterilization needs of most laboratories, efficiently processing wrapped and unwrapped solids, fabric loads, porous and hollow items, plastics, metal instruments, laboratory waste bags, liquids, culture media, glassware, and other essential lab materials.

The load has to be placed in baskets inside the chamber, and after manually filling the independent clean water tank with purified water, the equipment starts to create the initial prevacuum, automatically supplies water to the integrated steam generator, producing saturated steam that is directly injected into the sterilization chamber until the set combination of sterilization time and sterilization temperature is reached.

AE-B Series

OPERATION OF A STERILIZATION CYCLE FOR SOLID LOADS

PREHEATING PHASE

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

PREVACUUM PHASE

- In this phase the equipment's vacuum pump mechanically removes air from the chamber and load through a single or multiple vacuum pulses of -0,75 Bargs. This process ensures steam can penetrate objects with complex geometries. Simultaneously, the steam generator is activated to inject steam into the sterilization chamber.

HEATING PHASE

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

STERILIZATION PHASE

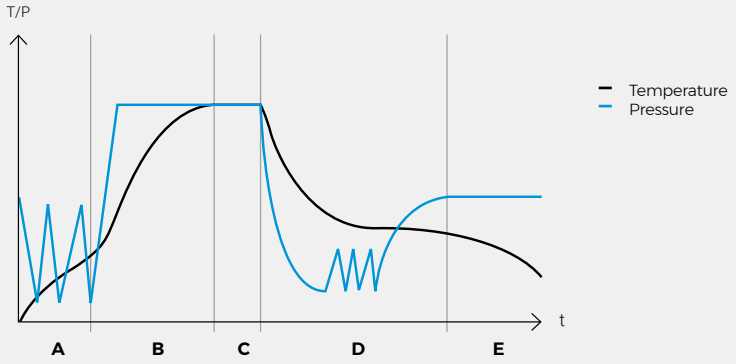
- Upon reaching the preprogrammed sterilization temperature inside the chamber, the sterilization phase begins, maintaining the temperature precisely for the programmed duration.
- This crucial step is controlled by a PT-100 Class A temperature probe located within the chamber. As an option for liquids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

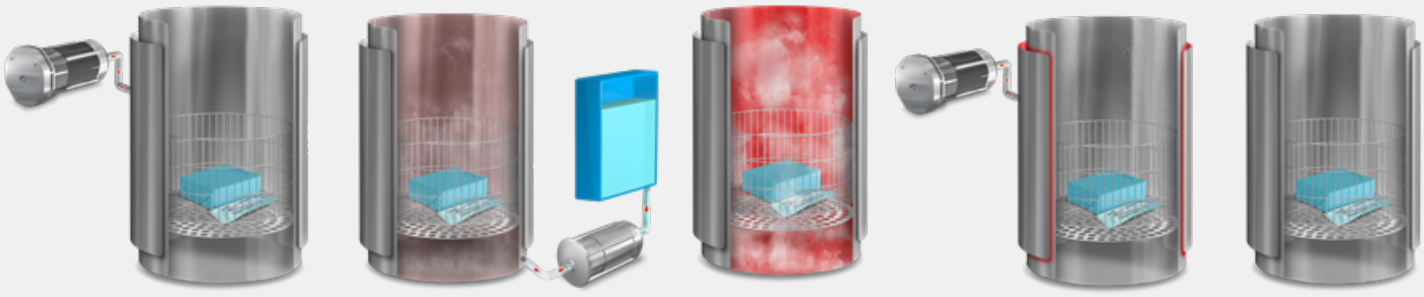
VACUUM DRYING PHASE

- After the sterilization phase finishes, in solid programs only, a vacuum drying phase begins, using a vacuum pump and a heating jacket to completely dry the load.

COOLING PHASE

- Finally, a natural cooling phase starts. A beep will sound upon reaching a safe temperature 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	Regulation by flexible probe
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	Poroso-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	Liquids	1	121	30'	-	Liquids	-
P14	Liquid probe	1	121	15'	-	Liquids	Yes

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

The remaining programs, P15 to P50, can be edited by setting the following parameters:

- Number of prevacuum pulses.
- Sterilization temperature.
- Sterilization time.
- Final drying time.
- Sterilization mode (Solids or Liquids).
- Temperature control of the sterilization cycle can be performed by the chamber temperature probe or by 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 programming and parameters selection.

Sterilization parameters such as temperature and pressure, graphs, alerts and errors are displayed on the screen.

AE-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	
				A	B			A	B			A	B			A	B
AE-50-B	50	3	7	**21**	28	1	4	**4**	12	1	1	**1**	3	1	1	**1**	2
AE-75-B	75	3	12	**36**	48	2	8	**16**	24	2	5	**10**	=	1	3	**3**	6
AE-110-B	110	4	12	**48**	60	3	8	**24**	32	3	5	**15**	=	1	3	**3**	9
AE-150-B	153	4	21	**84**	105	4	14	**56**	=	3	8	**24**	=	1	5	**5**	10

A: Number of units using standard baskets.
B: Number of units using specially designed baskets for the specific combination of autoclave model and container.

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	
				A	B			A	B			A	B			A	B
AE-50-B	50	3	9	**27**	36	1	7	**7**	21	1	4	**4**	=	1	1	**1**	2
AE-75-B	75	3	20	**60**	80	2	14	**28**	42	2	8	**16**	=	1	4	**4**	8
AE-110-B	110	4	20	**80**	100	3	14	**42**	56	3	8	**24**	=	1	4	**4**	12
AE-150-B	153	4	33	**132**	165	4	24	**96**	=	3	15	**45**	=	1	8	**8**	24

A: Number of units using standard baskets.
B: Number of units using specially designed baskets for the specific combination of autoclave model and container.

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.

ACCESSORIES

INTEGRATED BASKET LIFT SYSTEM

References		CLASSIC-LIFT	CLASSIC-LIFT-R
Dimensions L x D x H mm		800 x 300 x 2100	800 x 300 x 2600
Power W		480	480
Voltage V		230	230
Frequency Hz		50/60	50/60
Weight Kg		40	45
Maximum load Kg		30	40
For autoclaves with the following chamber volumes	79 L	✔	-
	115 L	✔	✔
	175 L	-	✔

- Stainless steel electric lift system built into the side of the autoclave with swivel arm to help load and unload heavy items. Push-button operation with opening up to 200°
- Motor with auto brake system in the event of obstacles or overload.
- Available in two models: the standard lift system and reinforced lift system.
- It can be factory fitted or retrofitted.

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MOBILE BASKET LIFT SYSTEM

Reference	MOB-LIFT
Dimensions L x D x H mm	420 x 800 x 2200
Power W	200
Voltage V	115 - 230
Frequency Hz	50/60
Weight Kg	85
Maximum load Kg	30

- Stainless steel electric lift system with casters to help load and unload heavy items up to 30Kg.
- Equipped with long-life battery for cordless use.
- Push-button operation.
- Motor with auto brake system in the event of obstacles or overload.
- Compatible with any autoclave model.

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AE-B Series

ACCESSORIES

STAINLESS STEEL WIRE BASKETS FOR STERILIZING CLEAN LOADS OR HEAVY ITEMS

References		CV-28	CV-75-130	CV-75S	CV-75	CV-150-130	CV-150S	CV-150M
Dimensions	External Ø x H mm	270 x 185	370 x 130	370 x 180	370 x 265	470 x 130	470 x 190	470 x 235
	Internal Ø x H mm	260 x 180	360 x 125	360 x 175	360 x 260	460 x 125	460 x 185	460 x 230
Maximum capacity for autoclaves with the following chamber volumes	33 L	2	-	-	-	-	-	-
	55 L	3	-	-	-	-	-	-
	79 L	-	4	3	2	-	-	-
	115 L	-	6	4	3	-	-	-
	175 L	-	-	-	-	6	4	3

STAINLESS STEEL LIQUIDS COLLECTOR TRAY FOR WIRE BASKETS

References		TR-270	TR-370	TR-470
Dimensions	External Ø x H mm	240 x 50	320 x 50	420 x 50
	Internal Ø x H mm	238 x 48	318 x 48	418 x 48
For the following wire baskets models	CV-28	✔	-	-
	CV-75S & CV-75	-	✔	-
	CV-150S & CV-150M	-	-	✔

UNPERFORATED STAINLESS STEEL BASKETS FOR STERILIZING DIRTY LOADS OR OBJECTS WITH RISK OF SPILLAGE

References		CCI-28	CCI-75S	CCI-75	CCI-150S	CCI-150M
Dimensions	External Ø x H mm	270 x 185	370 x 180	370 x 265	470 x 190	470 x 235
	Internal Ø x H mm	260 x 180	360 x 175	360 x 260	460 x 185	460 x 230
Maximum capacity for autoclaves with the following chamber volumes	33 L	2	-	-	-	-
	55 L	3	-	-	-	-
	79 L	-	3	2	-	-
	115 L	-	4	3	-	-
	175 L	-	-	-	4	3

STAINLESS STEEL "SCHIMMELBUSCH" DRUM FOR STERILIZING INSTRUMENTS AND BIOHAZARDOUS LOADS

References		TBE-24x16	TBE-34x24	TBE-48x24
Dimensions	External Ø x H mm	240 x 165	340 x 240	480 x 240
	Internal Ø x H mm	230 x 155	330 x 230	470 x 230
Maximum capacity for autoclaves with the following chamber volumes	33 L	2	-	-
	55 L	4	-	-
	79 L	-	2	-
	115 L	-	3	-
	175 L	-	-	3

ACCESSORIES

STAINLESS STEEL CYLINDERS FOR STERILIZING PETRI DISHES

References		CEP-1027	CEP-1041	CEP-1427	CEP-1441
Dimensions	External Ø x H mm	100 x 270	100 x 410	140 x 270	140 x 410
Petri dishes	Maximum number dishes / cylinder	10	18	10	18
	Diameter Ø mm	80	80	120	120
Maximum capacity for autoclaves with the following chamber volumes	33 L	4	4	2	2
	55 L	8	4	4	2
	79 L	16	8	10	5
	115 L	24	16	15	10
	175 L	28	14	16	8

STAINLESS STEEL CYLINDERS FOR STERILIZING PIPETTES

References		CEPP-726	CEPP-740	CEPP-1025	CEPP-1435
Dimensions	External Ø x H mm	70 x 260	70 x 400	100 x 250	140 x 350
	Internal Ø x H mm	60 x 250	60 x 390	90 x 240	130 x 340
Maximum capacity for autoclaves with the following chamber volumes	33 L	11	11	6	6
	55 L	22	11	12	12
	79 L	42	21	20	10
	115 L	63	42	30	20
	175 L	90	30	51	34

STAINLESS STEEL WIRE BASKET WITH HEIGHT ADJUSTABLE TRAYS

References			SRA-R-300	SRA-R-400	SRA-R-500
External dimensions Ø x H mm			250 x 190	350 x 180	450 x 180
Trays	References		TRAY-SRA-R-300	TRAY-SRA-R-400	TRAY-SRA-R-500
	Dimensions Ø x H mm		240 x 20	340 x 20	440 x 20
Maximum capacity for autoclaves with the following chamber volumes		33 L	2	-	-
		55 L	3	-	-
		79 L	-	3	-
		115 L	-	4	-
		175 L	-	-	4

*The purchase of a tray support comes with a set of two trays and six fastening clips. Likewise, the purchase of a tray includes a set of three fastening clips.

- For sterilization of instruments, small bags and other small objects that must be placed straight up.
- Material: AISI-304 stainless steel.

AE-B Series

ACCESSORIES

FLEXIBLE 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 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 in our facilities.

Ref. PT-2-B

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EXTERNAL DOT MATRIX PRINTER

Prints program number, cycle number, temperature, pressure, date and hour of the run and error messages.

Selectable print frequency between 10 and 240 seconds.

Connection: RS-232.

Requires a special factory adaptation.

Ref. ITS

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

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EMBEDDED THERMAL PRINTER

Prints program number, cycle number, temperature, pressure, date and hour of the run 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

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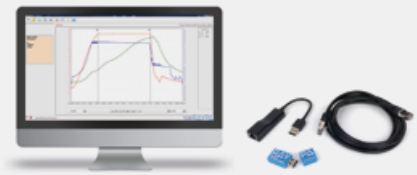

SW8000 SOFTWARE

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

PC connection via Ethernet. Data can also be exported directly to a USB memory stick.

Ref. SW8000

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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 & CG4MM

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ACCESSORIES

EXTERNAL TEMPERATURE PROBE ADAPTER

External adapter for continuous validation processes that provides access to an external probe (Ø3-6mm) to take temperature readings that are independent of the equipment microprocessor.

It is located on the autoclave door.

Must be installed at our factory.

Ref. EXT-TP

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.

Equipped with rubber casters to reduce noise and prevent floor wear.

Dimensions (LxDxH): 730x490x700mm

Ref. TR-TR

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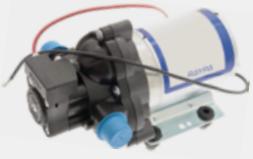

AUTOMATIC WATER FILLING

Water pump for automating the supply of purified water to the tank.

Compatible with installations with a purified water network or 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-B

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ECO-EFFICIENT WATER PURIFIER

Eco-efficient direct-flow water purifier with LED display and no accumulation of water. Capable of filtering 1,3L/min.

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

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

DISCHARGE TANK

Discharge tank with a maximum capacity of 25L to collect autoclave drain water during the purge and cooling phases in the absence of a drain.

Ref. TANK-B

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AE-B Series

ACCESSORIES

TEMPERATURE DATA LOGGER

AISI-316L stainless steel disk temperature recorder with connection base and software.

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

Available in different sizes.

Ref. BDL-DISK3618_CL

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STERILIZATION CONTROL TAPE

Class 1 indicator for steam sterilization. The color change indicates that the materials have been processed; however, this does not guarantee adequate sterilization. Additional methods, such as biological indicators (EN ISO 11138), are required.

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

Ref. TEST-CT

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PACK OF BOWIE & DICK TESTS

Class B indicator printed with non-toxic inks and laminated to verify the complete steam penetration in porous loads.

Box with 20 tests.

Ref. TEST-BD

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INTERNAL RADIAL FAN

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

Must be installed in our facilities.

Ref. AIRCOOL-V

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HEAT EXCHANGER

Keeps wastewater below 60°C, preventing damage to pipes and components not suitable for temperatures above 80°C.

Ref. HX-TEMP-2

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SPECIFIC SERVICES

IQ-OQ DOCUMENTATION

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

Ref. IQ-OQ DOC

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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

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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

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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. INSTAEB-REM

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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-1.2 and MANT-1.3

EXTENDED WARRANTY

Extended warranty up to a total of 3 years.

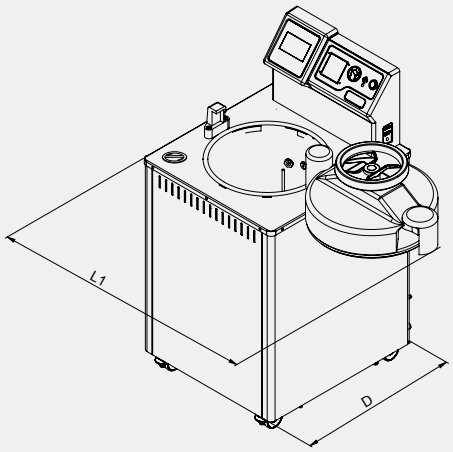
Ref. WE-CL

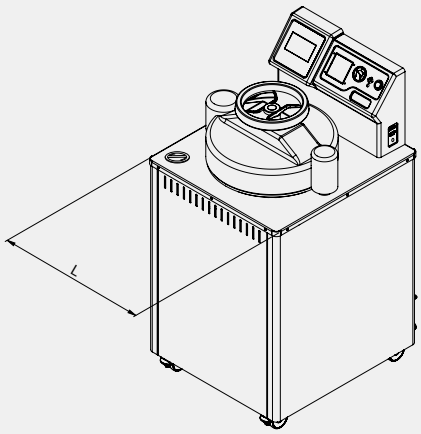
SET OF CONSUMABLES, SPARE PARTS AND ESSENTIAL COMPONENTS

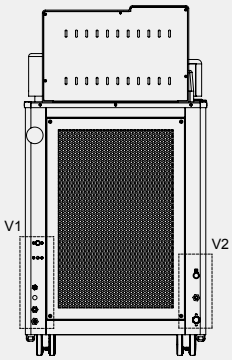
Set of original spare parts, consumables and components, chosen specifically to adhere to each model's maintenance plan, intended to maximize equipment longevity and minimize downtime in the event of a malfunction.

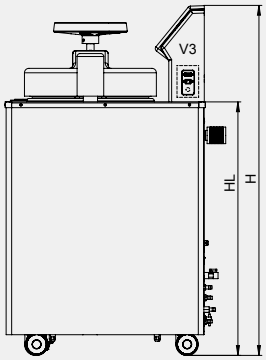
AE-B Series

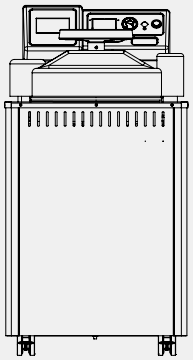
TECHNICAL DRAWINGS OF THE AUTOCLAVE

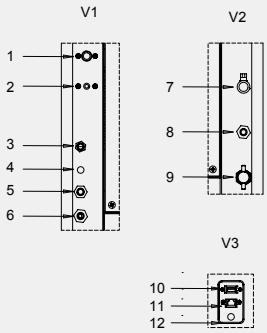










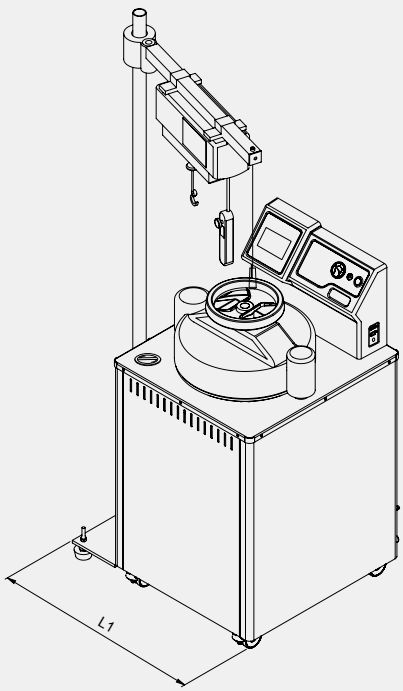


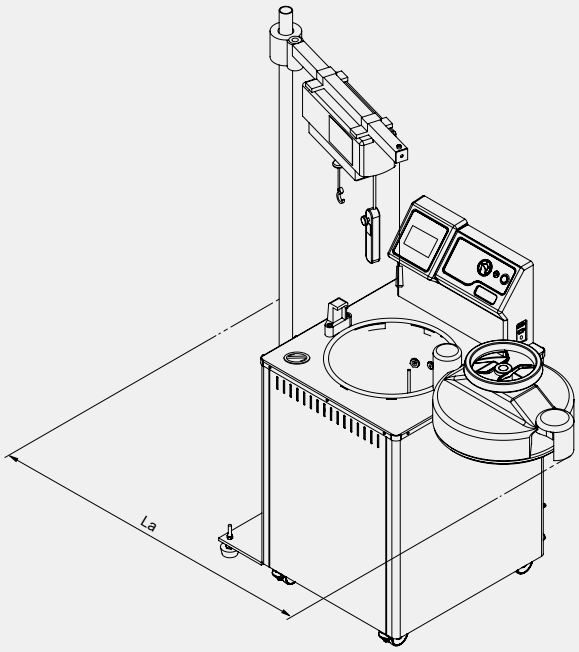
MODELS	L LENGTH with closed door	L1 LENGTH with maximum door opening	D DEPTH	H HEIGHT	HL LOAD HEIGHT	HD DIRECT DISCHARGE CONNECTION HEIGHT
AE-50-B	505 mm	900 mm	580 mm	1290 mm	939 mm	125 mm
AE-75-B	610 mm	1100 mm	700 mm	1185 mm	834 mm	125 mm
AE-110-B	610 mm	1100 mm	700 mm	1435 mm	1084 mm	125 mm
AE-150-B	750 mm	1380 mm	820 mm	1400 mm	1043 mm	125 mm

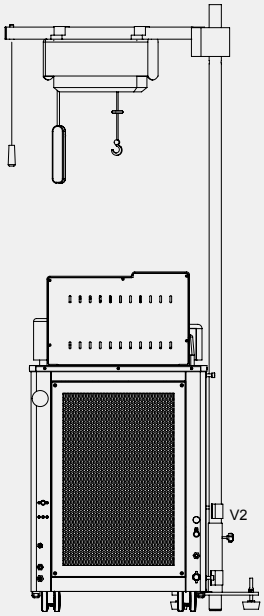
CONNECTIONS

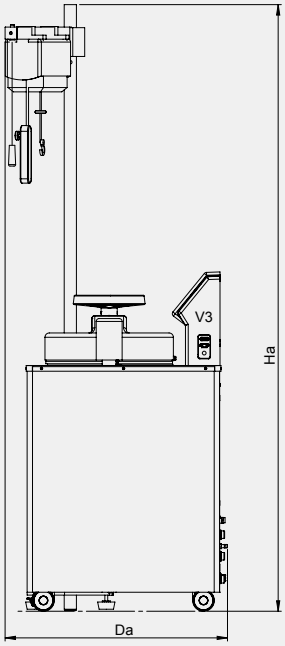
1	Heating jacket safety thermostat
2	Steam generator safety thermostat
3	Power supply cable (AE-110-B and AE-150-B models)
4	Safety valve outlet
5	Automatic water supply inlet
6	Direct discharge outlet
7	Independent clean water tank drain outlet
8	Independent clean water tank overflow outlet
9	Access to the drain filter of the sterilization chamber
10	USB Port
11	Ethernet Port
12	Power supply cable (AE-50-B and AE-75-B models)

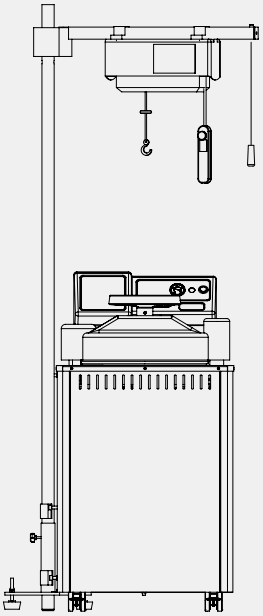
TECHNICAL DRAWINGS OF THE AUTOCLAVE + CLASSIC-LIFT











MODEL OF BASKET LIFT SYSTEM	DIMENSIONS OF BASKET LIFT SYSTEM L x D x H	AUTOCLAVE MODELS	DIMENSIONS OF BASKET LIFT SYSTEM + AUTOCLAVE La x Da x Ha
CLASSIC-LIFT	800 x 300 x 2100 mm	AE-75-B	1276 x 1296 x 2100 mm
		AE-110-B	
CLASSIC-LIFT-R	800 x 300 x 2600 mm	AE-110-B	1276 x 1296 x 2600 mm
		AE-150-B	1543 x 1536 x 2600 mm

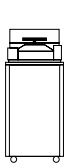
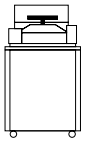
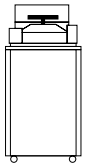
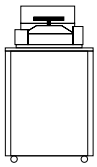
AE-B Series

TECHNICAL SUMMARY

General classification	Recommended setting	Industry and research laboratories
	Equipment placement	Floor-standing
	Load direction	Top-loading
	Chamber profile	Round
Recommended type of load	Porous solids and wrapped loads	++
	Objects with complex geometries	++
	Plastic and metal objects	++
	Glassware	
	Laboratory waste bags	
	Culture media and liquids	++
Sterilization technology	Method to generate steam	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	55 - 175 L
	External building material	AISI-304
	Sterilization chamber material	AISI-316L
	Vacuum pump	Membrane
	Gasket material	Silicone rubber
	Min.- max. sterilization temperature	105 - 134 °C
	Maximum pressure (above atmospheric pressure)	2,1 Barg
	Mechanism to open the door	Manual wheel
	Direction in which the door opens	Lateral
	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	✔
	Auto-preheating	✔
	Vacuum leak test	✔
	Bowie Dick test	✔
	Final postvacuum drying (to completely dry solid loads)	✔
	Temperature regulation by flexible probe	0
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 regulation by flexible probe	On/Off
	Sterilization mode (solids or liquids)	✔
Other specifications	Air intake with bacteriological filter	✔
	Independent clean water tank capacity	9 - 20 L
	Flexible probe	0
	Premium casters with brakes	✔
	Pressure gauge	✔
	Electric customization (115-230M V/230-400T V)	0
Services	Third-party qualification (IQ-OQ-PQ)	0

+: Recommended ✔: Standard 0: Optional

TECHNICAL DATA

Specifications

References	AE-50-B	AE-75-B	AE-110-B	AE-150-B
Usable dimensions of the chamber L	55/50	79/75	115/110	175/153
Usable dimensions of the chamber Ø x H mm	300 x 710	400 x 600	400 x 850	500 x 780
External dimensions L x D x H mm	505 x 580 x 1290	610 x 700 x 1185	610 x 700 x 1435	750 x 820 x 1400
Loading height mm	975	870	1120	1085
Net weight Kg	99	135	165	245
Available heating capacities W	3600	3600 or 6000	6000 or 9000	6000 or 9000
Standard voltage* V	230	230	400	400
Frequency Hz	50/60	50/60	50/60	50/60

*Other voltages and electrical configurations available on request. Special models with increased power may operate with other voltages.

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 integrated steam generator.
- Water level detector (min./max.) in the independent clean water tank.
- Bacteriological filter for inlet air.
- Several visual and acoustic safety and warning alarms.

Regulations

All our AE-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/UE** Low voltage.
- **2014/30/UE** Electromagnetic compatibility.
- **2014/68/UE** 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
Maximum pressure	2,1 Barg
Sterilization control system	Fully automatic microprocessor control using either a 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
External building material	AISI-314 stainless steel
Sterilization chamber material	AISI-316L stainless steel
Gasket material	Silicone rubber
Connection to PC	Ethernet
Connection to printer	Embedded
Number of programs	50 (14 preset and 36 user free)
Programmable auto-start	Unlimited range
Screen type	5" TFT touchscreen
Opening door mode	Horizontal swiveling door with blocking wheel
Monitoring of sterilization parameters	Self-control of obtained values (T°, P & t) vs programmed values. Cycle is automatically interrupted if obtained values differ from programmed values
Pressure display	Pressure gauge on control panel, digital display on screen, registry on software and printed tickets
Water management	Independent manually fed clean water tank that automatically supplies the independent integrated steam generator. Optional upgrade for full automation of water supply directly from a water network
Drainage system	Drainage connections for the direct discharge, to drain the independent clean water tank and for the overflow of the independent clean water tank
Casters	Medical grade casters with brakes

MORE INFORMATION

Watch video

Download the installation guide

RAYPA

www.raypa.com

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REV 10.2025

RAYPA

Vertical autoclaves with drying

AE-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.

Vertical autoclaves with drying

AE-DRY Series vertical floor-standing autoclaves with top-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. With a spacious chamber, the vacuum drying function and the integrated water tank, along an optimized use of resources like water, energy, and time, these autoclaves provide an efficient and cost-effective solution to handle laboratory workloads effectively.

RECOMMENDED APPLICATIONS

- Culture media and liquids
- Glassware
- Plastics and metal objects
- Laboratory waste bags
- Porous solids and wrapped objects*

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

AE-DRY Series

MAIN FEATURES

COST-EFFECTIVE SOLUTION

AE-DRY Series autoclaves are robust and offer excellent performance for liquids and solids sterilization procedures. The final vacuum drying feature by a heating jacket and a 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 procedure rotation and saving operator time.

MULTIPLE TYPES OF STERILIZATION

Several options available to perform sterilization of solids or liquids. Programmable final vacuum drying for the sterilization of solids, initial prevacuum for the sterilization of items of complex geometries and programmable temperature holding at the end of the cycle for the sterilization of culture media. Additionally, an optional flexible temperature probe is available for precise liquid sterilization.

EASY INSTALLATION AND MAINTENANCE

AE-DRY Series autoclaves are plug and play devices, requiring no special installation connections. They operate with just an electrical connection and can function without a drain. Each unit features an integrated water tank that automatically supplies the sterilization chamber, which is manually filled. For added convenience, an optional upgrade allows full automation of water supply directly from a water network. All models are equipped with casters, enabling easy mobility and use in different locations.

SAFETY FIRST

AE-DRY Series autoclaves are designed with several features to ensure the safety of the operators. These include an overpressure safety valve, a thermally insulated door, an overtemperature safety thermostat, a water level sensor,, an open door detection system and an independent safety pneumatic system that locks the main door while positive pressure is present in the sterilization chamber.

ADVANTAGES

- Equipped with heating jacket and vacuum pump to obtain a completely dry load at the end of a solids program.
- The sterilization chamber and door are made of high-quality AISI-316L stainless steel, providing exceptional resistance to corrosion.
- Autoclaves manufactured in full compliance with all applicable European Union quality, regulatory and safety standards.
- Steam generation by powerful Incoloy® 825 electric heating elements 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 flexible temperature probe control).
- Available special models with increased heating capacity to achieve faster heating and sterilization phases.
- Suitable to sterilize wrapped and unwrapped loads, small porous and hollow objects and items of complex geometries with cavities thanks to the standard initial prevacuum phase.
- Automatic water supply from the integrated water tank to the sterilization chamber, with water level sensors at both locations. Optional upgrade for automatic supply from a water network.
- Adjustable temperature holding at the end of the sterilization cycle between 40-80ºC (agar mode).
- Programmable auto-start for up to 24h.
- Plug and play equipment, no plumbing required.
- Seamless mobility, all models include casters.
- Optional software for sterilization data management.
- Optional embedded or external printer.

WORKING PRINCIPLE

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

The load has to be placed in baskets inside the chamber, and after manually filling the independent clean water tank with purified water, the equipment starts to create the initial prevacuum, automatically supplies water to the sterilization chamber, heats up and purges until the pre-programmed combination of sterilization time and temperature is reached.

*Standard casters included. Optional: medical-grade casters with brakes (Ref. 4WHBR).

AE-DRY Series

OPERATION OF A STERILIZATION CYCLE FOR SOLID LOADS

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 difficult geometries.
- Afterwards, the independent water tank starts to supply water to the sterilization chamber.

HEATING PHASE

- After completing the prevacuum phase and once the sterilization chamber bottom is filled with water, 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.
- To shorten the duration of this step, RAYPA offers special models with increased heating capacity, a feature of particular interest for autoclaves operating in laboratories with high workloads.

STERILIZATION PHASE

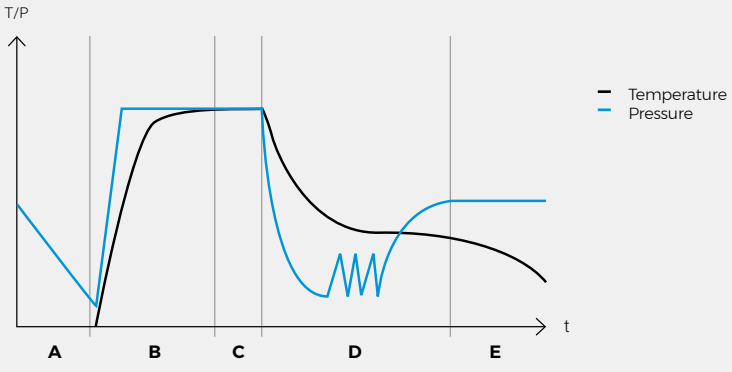
- Upon reaching the set sterilization temperature inside the chamber, the sterilization phase begins accurately sustaining the temperature throughout the duration of this phase.
- This crucial step is controlled by a PT-100 Class A temperature probe located within the chamber. As an option for liquids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

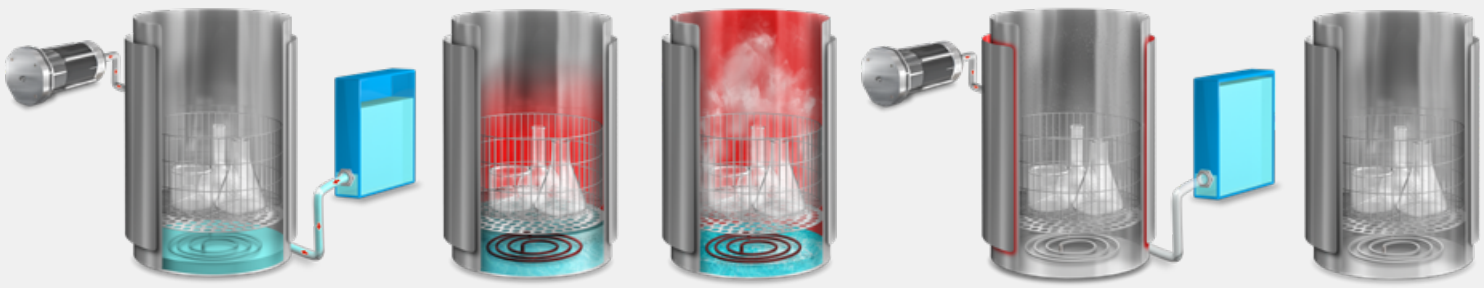
VACUUM DRYING PHASE

- Once the sterilization phase is completed, only in solids programs, a vacuum drying phase begins, in which multiple vacuum pulses are produced by means of a vacuum pump and heating jacket to completely dry the load. The water is automatically returned to the integrated water tank.

COOLING PHASE

- Finally, a natural cooling phase begins. A beep will sound when a safe temperature is reached allowing the chamber to be opened.
- In liquid programs with agar mode, the preprogrammed temperature (selectable between 40°C and 80°C) will be maintained indefinitely.





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

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

The remaining programs from P4 to P9, can be edited by setting the following parameters:

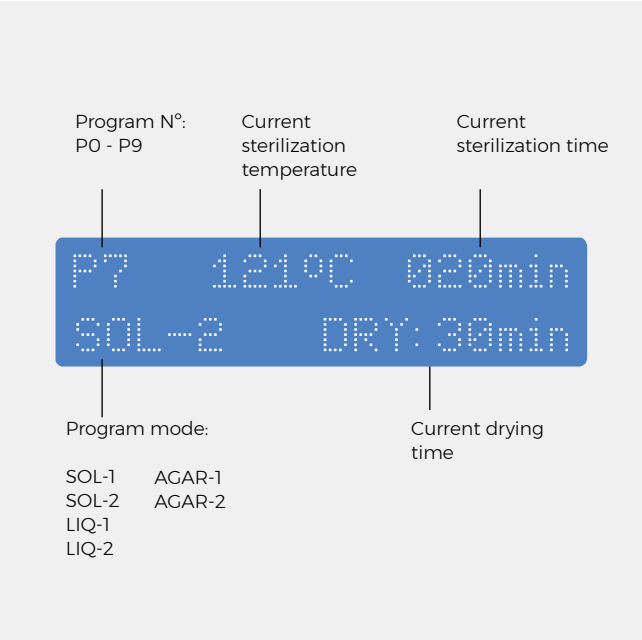
- Sterilization temperature.
- Sterilization time.
- Final drying time.
- Sterilization mode (solids or liquids)
- Sterilization with temperature maintenance at the end of the cycle (agar mode).
- Temperature control of the sterilization cycle can be performed by the chamber temperature probe or by the combined use of the chamber probe and the flexible probe.

DIGITAL MICROPROCESSOR

Digital PID microprocessor with 6 push-buttons for simple programming and parameter selection.

FUNCTIONS OF THE DISPLAY

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



AE-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	
				A	B			A	B			A	B			A	B
AE-28-DRY	31	2	7	**14**	=	1	4	**4**	8	1	1	**1**	=	1	1	**1**	=
AE-50-DRY	50	3	7	**21**	28	1	4	**4**	12	1	1	**1**	=	1	1	**1**	2
AE-75-DRY	75	3	12	**36**	=	2	8	**16**	24	2	5	**10**	=	1	3	**3**	6
AE-110-DRY	110	4	12	**48**	60	3	8	**24**	32	3	5	**15**	=	1	3	**3**	6
AE-150-DRY	153	4	21	**84**	105	4	14	**56**	=	3	8	**24**	=	1	5	**5**	10

A: Number of units using standard baskets.
B: Number of units using specially designed baskets for the specific combination of autoclave model and container.

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	
				A	B			A	B			A	B			A	B
AE-28-DRY	31	2	9	**18**	=	1	7	**7**	14	1	4	**4**	=	1	1	**1**	=
AE-50-DRY	50	3	9	**27**	36	1	7	**7**	21	1	4	**4**	=	1	1	**1**	2
AE-75-DRY	75	3	20	**60**	=	2	14	**28**	42	2	8	**16**	=	1	4	**4**	8
AE-110-DRY	110	4	20	**80**	100	3	14	**42**	56	3	8	**24**	=	1	4	**4**	12
AE-150-DRY	153	4	33	**132**	165	4	24	**96**	=	3	15	**45**	=	1	8	**8**	16

A: Number of units using standard baskets.
B: Number of units using specially designed baskets for the specific combination of autoclave model and container.

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.

ACCESSORIES

INTEGRATED BASKET LIFT SYSTEM

References		CLASSIC-LIFT	CLASSIC-LIFT-R
Dimensions L x D x H mm		800 x 300 x 2100	800 x 300 x 2600
Power W		480	480
Voltage V		230	230
Frequency Hz		50/60	50/60
Weight Kg		40	45
Maximum load Kg		30	40
For autoclaves with the following chamber volumes	79 L	✔	-
	115 L	✔	✔
	175 L	-	✔

- Stainless steel electric lift system built into the side of the autoclave with swivel arm to help load and unload heavy items. Push-button operation with opening up to 200°
- Motor with auto brake system in the event of obstacles or overload.
- Available in two models: the standard lift system and reinforced lift system.
- It can be factory fitted or retrofitted.

Download technical data sheet

MOBILE BASKET LIFT SYSTEM

Reference	MOB-LIFT
Dimensions L x D x H mm	420 x 800 x 2200
Power W	200
Voltage V	115 - 230
Frequency Hz	50/60
Weight Kg	85
Maximum load Kg	30

- Stainless steel electric lift system with casters to help load and unload heavy items up to 30Kg.
- Equipped with long-life battery for cordless use.
- Push-button operation.
- Motor with auto brake system in the event of obstacles or overload.
- Compatible with any autoclave model.

Download technical data sheet

AE-DRY Series

ACCESSORIES

STAINLESS STEEL WIRE BASKETS FOR STERILIZING CLEAN LOADS OR HEAVY ITEMS

References		CV-28	CV-75-130	CV-75S	CV-75	CV-150-130	CV-150S	CV-150M
Dimensions	External Ø x H mm	270 x 185	370 x 130	370 x 180	370 x 265	470 x 130	470 x 190	470 x 235
	Internal Ø x H mm	260 x 180	360 x 125	360 x 175	360 x 260	460 x 125	460 x 185	460 x 230
Maximum capacity for autoclaves with the following chamber volumes	33 L	2	-	-	-	-	-	-
	55 L	3	-	-	-	-	-	-
	79 L	-	4	3	2	-	-	-
	115 L	-	6	4	3	-	-	-
	175 L	-	-	-	-	6	4	3

STAINLESS STEEL LIQUIDS COLLECTOR TRAY FOR WIRE BASKETS

References		TR-270	TR-370	TR-470
Dimensions	External Ø x H mm	240 x 50	320 x 50	420 x 50
	Internal Ø x H mm	238 x 48	318 x 48	418 x 48
For the following wire baskets models	CV-28	✔	-	-
	CV-75S & CV-75	-	✔	-
	CV-150S & CV-150M	-	-	✔

UNPERFORATED STAINLESS STEEL BASKETS FOR STERILIZING DIRTY LOADS OR OBJECTS WITH RISK OF SPILLAGE

References		CCI-28	CCI-75S	CCI-75	CCI-150S	CCI-150M
Dimensions	External Ø x H mm	270 x 185	370 x 180	370 x 265	470 x 190	470 x 235
	Internal Ø x H mm	260 x 180	360 x 175	360 x 260	460 x 185	460 x 230
Maximum capacity for autoclaves with the following chamber volumes	33 L	2	-	-	-	-
	55 L	3	-	-	-	-
	79 L	-	3	2	-	-
	115 L	-	4	3	-	-
	175 L	-	-	-	4	3

STAINLESS STEEL "SCHIMMELBUSCH" DRUM FOR STERILIZING INSTRUMENTS AND BIOHAZARDOUS LOADS

References		TBE-24x16	TBE-34x24	TBE-48x24
Dimensions	External Ø x H mm	240 x 165	340 x 240	480 x 240
	Internal Ø x H mm	230 x 155	330 x 230	470 x 230
Maximum capacity for autoclaves with the following chamber volumes	33 L	2	-	-
	55 L	4	-	-
	79 L	-	2	-
	115 L	-	3	-
	175 L	-	-	3

ACCESSORIES

STAINLESS STEEL CYLINDERS FOR STERILIZING PETRI DISHES

References		CEP-1027	CEP-1041	CEP-1427	CEP-1441
Dimensions	External Ø x H mm	100 x 270	100 x 410	140 x 270	140 x 410
Petri dishes	Maximum number dishes / cylinder	10	18	10	18
	Diameter Ø mm	80	80	120	120
Maximum capacity for autoclaves with the following chamber volumes	33 L	4	4	2	2
	55 L	8	4	4	2
	79 L	16	8	10	5
	115 L	24	16	15	10
	175 L	28	14	16	8

STAINLESS STEEL CYLINDERS FOR STERILIZING PIPETTES

References		CEPP-726	CEPP-740	CEPP-1025	CEPP-1435
Dimensions	External Ø x H mm	70 x 260	70 x 400	100 x 250	140 x 350
	Internal Ø x H mm	60 x 250	60 x 390	90 x 240	130 x 340
Maximum capacity for autoclaves with the following chamber volumes	33 L	11	11	6	6
	55 L	22	11	12	12
	79 L	42	21	20	10
	115 L	63	42	30	20
	175 L	90	30	51	34

STAINLESS STEEL WIRE BASKET WITH HEIGHT ADJUSTABLE TRAYS

References			SRA-R-300	SRA-R-400	SRA-R-500
External dimensions Ø x H mm			250 x 190	350 x 180	450 x 180
Trays	References		TRAY-SRA-R-300	TRAY-SRA-R-400	TRAY-SRA-R-500
	Dimensions Ø x H mm		240 x 20	340 x 20	440 x 20
Maximum capacity for autoclaves with the following chamber volumes		33 L	2	-	-
		55 L	3	-	-
		79 L	-	3	-
		115 L	-	4	-
		175 L	-	-	4

*The purchase of a tray support comes with a set of two trays and six fastening clips. Likewise, the purchase of a tray includes a set of three fastening clips.

- For sterilization of instruments, small bags and other small objects that must be placed straight up.
- Material: AISI-304 stainless steel.

AE-DRY Series

ACCESSORIES

FLEXIBLE 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 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 in our facilities.

Ref. PT-2

Download technical data sheet

EXTERNAL DOT MATRIX PRINTER

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

Selectable print frequency between 10 and 240 seconds.

Connection: RS-232.

Ref. ITS

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

Download technical data sheet

EMBEDDED THERMAL PRINTER

rints program number, cycle number, temperature, pressure, date and hour of the run 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

SOFTWARE SW7000

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

PC connection via RS-232.

It is supplied with an RS-232 cable, a USB memory stick including installation software and drivers, and an RS-232 to USB adapter.

Ref. SW7000

CABLE GLAND

Installation of a Ø2mm or Ø4mm cable gland to provide access to as many as 8 external temperature probes for calibration and validation procedures.

Ref. CG2MM & CG4MM

Download technical data sheet

ACCESSORIES

EXTERNAL TEMPERATURE PROBE ADAPTER

External adapter for continuous validation processes that provides access to an external probe (Ø3-6mm) to take temperature readings that are independent of the equipment microprocessor.

It is located on the autoclave door.

Must be installed at our factory.

Ref. EXT-TP

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.

Equipped with rubber casters to reduce noise and prevent floor wear.

Dimensions (LxDxH): 730x490x700mm

Ref. TR-TR

Download technical data sheet

PREMIUM CASTERS

Although all AE-DRY Series autoclaves include casters, this accessory offers the option of upgrading to stronger, medical grade casters that include brakes.

This enhances the mobility of the equipment.

Must be installed at our factory.

Ref: 4WHBR

ECO-EFFICIENT WATER PURIFIER

Eco-efficient direct-flow water purifier with LED display and no accumulation of water. Capable of filtering 1,3L/min.

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

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

AUTOMATIC WATER FILLING KIT

Water pump for automating the supply of purified water to the integrated water tank.

Compatible with installations with a purified water network or 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

Download technical data sheet

AE-DRY Series

ACCESSORIES

TEMPERATURE DATA LOGGER

AISI-316L stainless steel disk temperature recorder with connection base and software.

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

Available in different sizes.

Ref. BDL-DISK3618_CL

Download technical data sheet

STERILIZATION CONTROL TAPE

Class 1 indicator for steam sterilization. The color change indicates that the materials have been processed; however, this does not guarantee adequate sterilization. Additional methods, such as biological indicators (EN ISO 11138), are required.

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.

Ref. AIRCOOL-V

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-1.2 and MANT-1.3

EXTENDED WARRANTY

Extended warranty up to a total of 3 years.

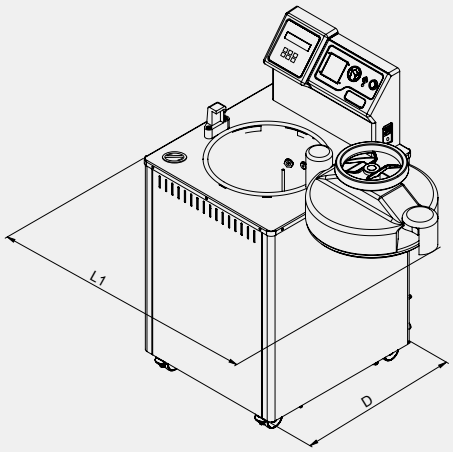
Ref. WE-CL

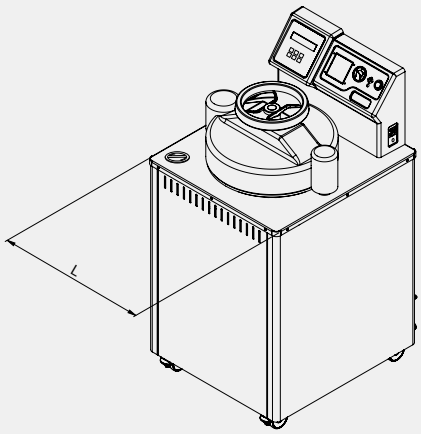
SET OF CONSUMABLES, SPARE PARTS AND ESSENTIAL COMPONENTS

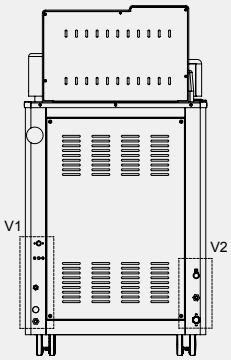
Set of original spare parts, consumables and components, chosen specifically to adhere to each model's maintenance plan, intended to maximize equipment longevity and minimize downtime in the event of a malfunction.

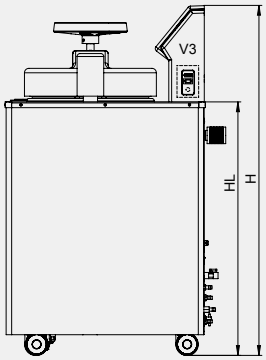
AE-DRY Series

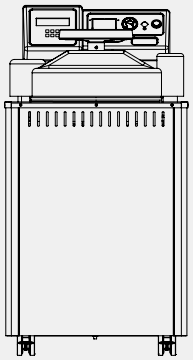
TECHNICAL DRAWINGS OF THE AUTOCLAVE

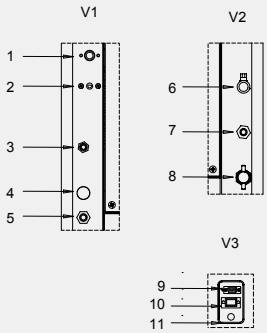










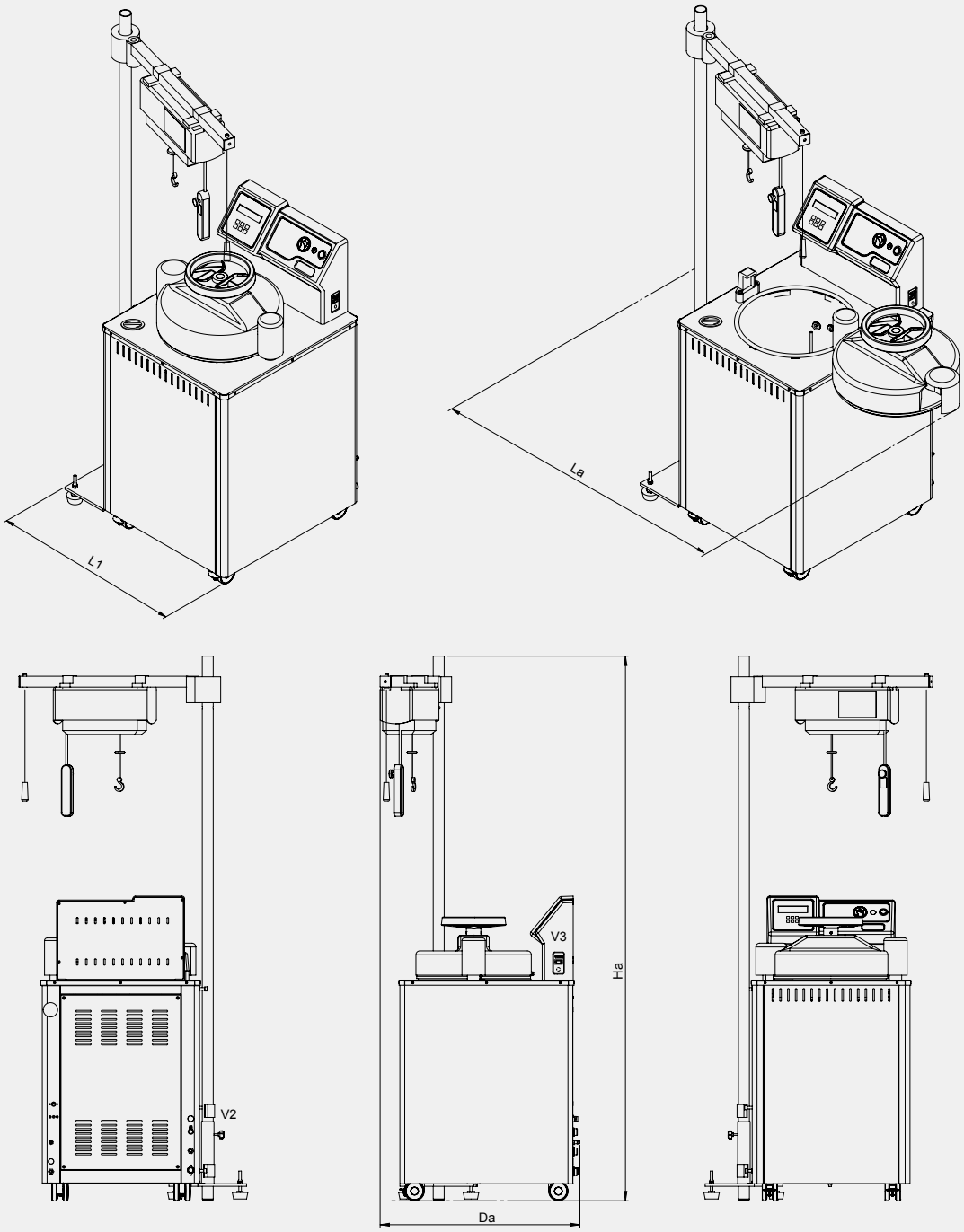


MODELS	L LENGTH with closed door	L1 LENGTH with maximum door opening	D DEPTH	H HEIGHT	HL LOAD HEIGHT
AE-28-DRY	505 mm	900 mm	580 mm	1110 mm	788 mm
AE-50-DRY	505 mm	900 mm	580 mm	1290 mm	967 mm
AE-75-DRY	610 mm	1100 mm	700 mm	1185 mm	862 mm
AE-110-DRY	610 mm	1100 mm	700 mm	1435 mm	1112 mm
AE-150-DRY	750 mm	1380 mm	820 mm	1400 mm	1073 mm

CONNECTIONS

1	Sterilization chamber electrical heating elements safety thermostat
2	Heating jacket safety thermostat
3	Power supply cable (AE-110-DRY and AE-150-DRY models)
4	Safety valve outlet
5	Automatic water supply inlet
6	Independent clean water tank drain outlet
7	Independent clean water tank overflow outlet
8	Access to the drain filter and sterilization chamber drain outlet
9	RS-232 Port
10	Ethernet Port
11	Power supply cable (AE-28-DRY, AE-50-DRY y AE-75-DRY models)

TECHNICAL DRAWINGS OF THE AUTOCLAVE + CLASSIC-LIFT



MODEL OF BASKET LIFT SYSTEM	DIMENSIONS OF BASKET LIFT SYSTEM L x D x H	AUTOCLAVE MODELS	DIMENSIONS OF BASKET LIFT SYSTEM + AUTOCLAVE La x Da x Ha
CLASSIC-LIFT	800 x 300 x 2100 mm	AE-75-DRY	1276 x 1296 x 2100 mm
		AE-110-DRY	
CLASSIC-LIFT-R	800 x 300 x 2600 mm	AE-110-DRY	1276 x 1296 x 2600 mm
		AE-150-DRY	1543 x 1536 x 2600 mm

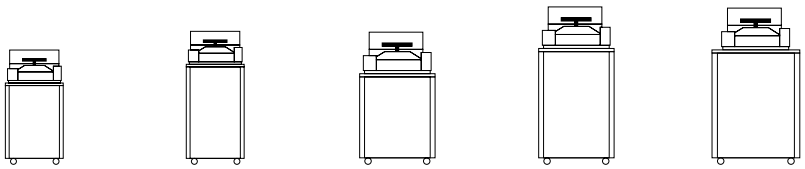
AE-DRY Series

TECHNICAL SUMMARY

General classification	Recommended setting	General laboratory
	Equipment placement	Floor-standing
	Load direction	Top-loading
	Chamber profile	Round
Recommended type of load	Glassware	+ +
	Culture media and liquids	++
	Laboratory waste bags	+ +
	Porous solids and wrapped loads	+
Sterilization technology	Method to generate steam	Heating elements
	Type of purge	Vacuum
	Vacuum drying by heating jacket and vacuum pump	✔
Transfer of data	RS-232	✔
Batch printers	Embedded printer	0
	External printer	0
Sterilization chamber and door specifications	Sterilization chamber volume	33 - 175 L
	External building material	AISI-304
	Sterilization chamber material	AISI-316L
	Heating elements material	Incoloy® 825
	Gasket material	Silicone rubber
	Min.- max. sterilization temperature	100 - 134 °C
	Maximum pressure (above atmospheric pressure)	2,1 Barg
	Mechanism to open the door	Manual wheel
	Direction in which the door opens	Lateral
	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 postvacuum drying (to completely dry solid loads)	✔
	Temperature regulation by flexible probe	0
Adjustable cycle parameters	Agar mode	40 - 80 °C
	Sterilization phase temperature	100 - 134 °C
	Duration of sterilization phase	1 - 250 min
	Duration of drying phase	3 - 99 min
	Temperature regulation by flexible probe	On/Off
	Sterilization mode (solids or liquids)	✔
Other specifications	Air intake with bacteriological filter	✔
	Independent water tank capacity	9 - 20 L
	Flexible temperature probe	0
	Standard casters	✔
	Premium casters with brakes	0
	Pressure gauge	✔
	Electric customization (115-230M V / 230-400T V)	0
	Special models with increased heating capacity	0
Services	Third-party qualification (IQ-OQ-PQ)	0

+: Recommended ✔: Standard 0: Optional

TECHNICAL DATA



Specifications

References	AE-28-DRY	AE-50-DRY	AE-75-DRY	AE-110-DRY	AE-150-DRY
Total/usable volume of the chamber L	33/31	55/50	79/75	115/110	175/153
Usable dimensions of the chamber Ø x H mm	300 x 440	300 x 710	400 x 600	400 x 850	500 x 760
External dimensions L x D x H mm	505 x 580 x 1110	505 x 580 x 1290	610 x 700 x 1185	610 x 700 x 1435	750 x 820 x 1400
Loading height mm	795	975	870	1120	1085
Net weight Kg	75	95	123	150	235
Available heating capacities W	2000 or 2800	2800 or 5000	3200 or 6000	4500, 6000 or 9000	6000 or 9000
Standard voltage* V	230	230	230	400	400
Frequency Hz	50/60	50/60	50/60	50/60	50/60

*Other voltages and electrical configurations available on request. Special models with increased heating capacity may operate with other voltages.

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.
- Bacteriological filter for inlet air.
- Heating elements cover.
- Several visual and acoustic safety and warning alarms.

Regulations

All our AE-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/UE** Low voltage.
- **2014/30/UE** Electromagnetic compatibility.
- **2014/68/UE** 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 either chamber temperature probe or flexible temperature probe
Air purge system	Mechanical displacement by vacuum pump
Vacuum drying system	Vacuum pump plus heating jacket
External building material	AISI-304 stainless steel
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 embedded
Number of programs	10 (4 preset and 6 user free)
Programmable auto-start	Up to 24h
Screen type	LCD display
Opening door mode	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	Independent manually fed water tank that automatically supplies the sterilization chamber. Water returns automatically to the independent water tank after completing the sterilization phase. Optional upgrade for full automation of water supply directly from a water network
Drainage system	A drainage connection and a manual valve for overflow and drainage of the independent water tank and a screw to manually clean the drainage filter and drain the sterilization chamber
Casters	Included standard casters. Optional upgrade to medical grade casters with brakes

MORE INFORMATION

Watch video

Download the installation guide

RAYPA

www.raypa.com

Avinguda del Vallès, 322
08227 Terrassa (Barcelona) Spain

REV 10.2025

RAYPA

Vertical autoclaves without drying

AES 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.

Vertical autoclaves without drying

AES Series vertical floor-standing autoclaves with top-loading access are designed to meet the essential needs of general labware sterilization across various educational institutions and research facilities, all while boosting laboratory productivity. With a spacious chamber and optimized use of resources like water, energy, and time, these autoclaves provide an efficient and cost-effective solution to handle laboratory workloads effectively.

RECOMMENDED APPLICATIONS

- Culture media and liquids
- Glassware
- Plastics and metal objects
- Laboratory waste bags*

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

AES Series

MAIN FEATURES

ECONOMIC AND DURABLE

AES Series autoclaves are economic, robust and offer excellent performance for general laboratory sterilization procedures. They can be used either for solids and liquids sterilization procedures and they consume limited valuable laboratory resources such as water, power or operator time.

EFFORTLESS INSTALLATION AND MAINTENANCE

Designed for simplicity, AES Series autoclaves are plug and play, requiring only an electrical connection. They can operate without a dedicated drain and feature casters for seamless mobility across your laboratory space, making them as versatile as they are easy to use.

MULTIPLE TYPES OF STERILIZATION CYCLES

Multiple options available to perform solids or liquids sterilization. Optional core probe for liquid sterilization, temperature holding at the end of the sterilization cycle for culture media, and manual unsteaming push-button for a faster cooling phase of solids

SAFETY FIRST

AES Series autoclaves are designed with several features to ensure the safety of the operators. These include an overpressure safety valve, a thermally insulated door, an overtemperature safety thermostat, an open door detection system and an independent safety pneumatic system that locks the main door while positive pressure is present in the sterilization chamber.

ADVANTAGES

- The sterilization chamber and door are made of high-quality AISI-316L stainless steel, providing exceptional resistance to corrosion.
- Autoclaves manufactured in full compliance with all applicable European Union quality, regulatory and safety standards.
- Steam generation by powerful Incoloy® 825 electric heating elements 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).
- Manual steam release push-button for a faster cooling phase in solids sterilization cycles.
- Available special models with increased heating capacity to achieve faster heating and sterilization phases.
- Adjustable temperature holding at the end of the sterilization cycle between 40-80ºC (agar mode).
- Programmable auto-start for up to 24h.
- Optional software for sterilization data management.
- Plug and play equipment, no plumbing required.
- Seamless mobility, all models include casters.
- Optional embedded or external printer.

WORKING PRINCIPLE

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

The load has to be placed in baskets inside the chamber, 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.

Quick steam release push-button

PID microprocessor

2 position drain tap

Sterilization chamber made of AISI-316L stainless steel

Powerful heating elements to generate steam

Optional medical-grade casters with brakes*

*Standard casters included. Optional: medical-grade casters with brakes (Ref. 4WHBR).

OPERATION OF A STERILIZATION CYCLE

HEATING PHASE

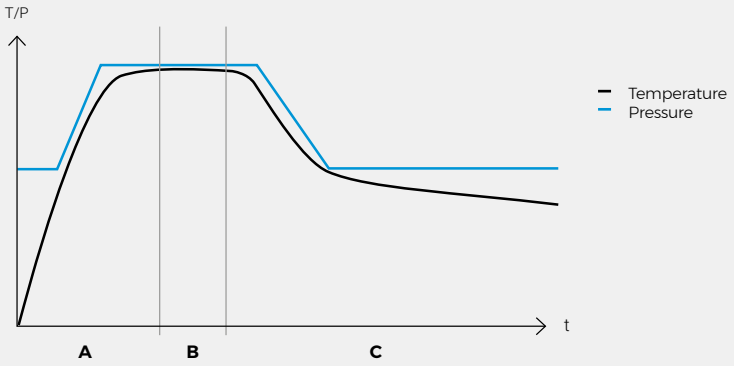
- In this initial step, the powerful heating elements assembled at the bottom of the sterilization chamber heat up dramatically, transferring energy to water to produce saturated steam throughout the chamber.
- To shorten the duration of this step, RAYPA offers special models with increased heating capacity, a feature of particular interest for autoclaves operating in laboratories with high workloads.

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 flexible PT-100 Class A temperature probe located inside a sample.

COOLING PHASE

- At the end of the sterilization phase, a natural cooling phase begins. A beep will sound when a safe temperature is reached allowing the chamber to be opened.
- In solid programs, discharge can be manually forced through a push-button to reduce the duration of the cooling phase.
- In programs with agar mode, the preprogrammed temperature (selectable between 40°C and 80°C) will be maintained indefinitely.



A. Heating phase

B. Sterilization phase

C. Cooling phase

PREDEFINED PROGRAMS

Program Nº	Sterilization temperature ºC	Sterilization time min	Program mode
P0	115	60	SOL/LIQ-1
P1	121	30	SOL/LIQ-1
P2	133	20	SOL/LIQ-1
P3	121	20	SOL/LIQ-1

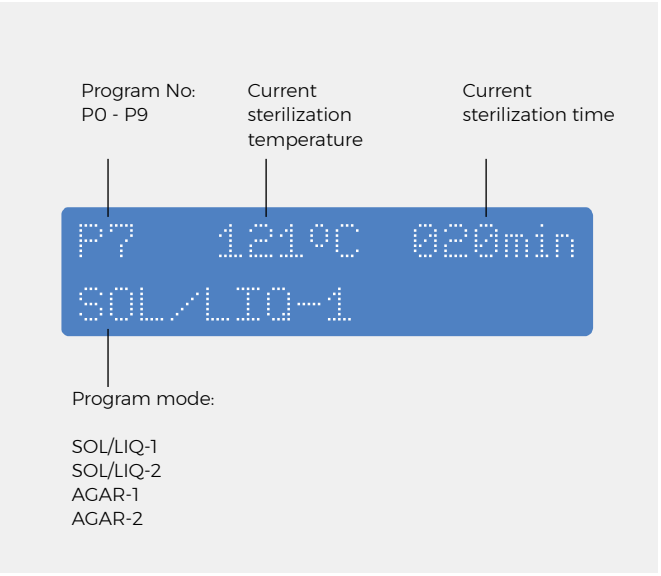
AES Series autoclaves have a total of 10 programs, from P0 to P9, and the first four are predefined and protected.

The remaining programs, from P4 to P9, can be edited by setting the following parameters:

- Sterilization temperature.
- Sterilization time.
- Temperature control of the sterilization cycle can be performed by the chamber temperature probe or by the combined use of the chamber probe and the core probe.
- Sterilization with temperature maintenance at the end of the cycle (agar mode).

FUNCTIONS OF THE DISPLAY

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



DIGITAL MICROPROCESSOR

Digital PID microprocessor with 6 push-buttons for simple programming and parameter selection.

AES 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	
				A	B			A	B			A	B			A	B
AES-28	31	2	7	**14**	=	1	4	**4**	8	1	1	**1**	=	1	1	**1**	=
AES-50	50	3	7	**21**	28	1	4	**4**	12	1	1	**1**	3	1	1	**1**	2
AES-75	75	3	12	**36**	48	2	8	**16**	24	2	5	**10**	=	1	3	**3**	6
AES-110	110	4	12	**48**	60	3	8	**24**	32	3	5	**15**	=	1	3	**3**	9
AES-150	153	4	21	**84**	105	4	14	**56**	=	3	8	**24**	=	1	5	**5**	=

A: Number of units using standard baskets.
B: Number of units using specially designed baskets for the specific combination of autoclave model and container.

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	
				A	B			A	B			A	B			A	B
AES-28	31	2	9	**18**	=	1	7	**7**	14	1	4	**4**	=	1	1	**1**	=
AES-50	50	3	9	**27**	36	1	7	**7**	21	1	4	**4**	12	1	1	**1**	2
AES-75	75	3	20	**60**	80	2	14	**28**	42	2	8	**16**	=	1	4	**4**	8
AES-110	110	4	20	**80**	100	3	14	**42**	56	3	8	**24**	=	1	4	**4**	12
AES-150	153	4	33	**132**	165	4	24	**96**	=	3	15	**45**	=	1	8	**8**	24

A: Number of units using standard baskets.
B: Number of units using specially designed baskets for the specific combination of autoclave model and container.

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.

ACCESSORIES

INTEGRATED BASKET LIFT SYSTEM

References		CLASSIC-LIFT	CLASSIC-LIFT-R
Dimensions L x D x H mm		800 x 300 x 2100	800 x 300 x 2600
Power W		480	480
Voltage V		230	230
Frequency Hz		50/60	50/60
Weight Kg		40	45
Maximum load Kg		30	40
For autoclaves with the following chamber volumes	79 L	✔	-
	115 L	✔	✔
	175 L	-	✔

- Stainless steel electric lift system built into the side of the autoclave with swivel arm to help load and unload heavy items. Push-button operation with opening up to 200°.
- Motor with auto brake system in the event of obstacles or overload.
- Available in two models: the standard lift system and reinforced lift system.
- It can be factory fitted or retrofitted.

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MOBILE BASKET LIFT SYSTEM

Reference	MOB-LIFT
Dimensions L x D x H mm	420 x 800 x 2200
Power W	200
Voltage V	115 - 230
Frequency Hz	50/60
Weight Kg	85
Maximum load Kg	30

- Stainless steel electric lift system with casters to help load and unload heavy items up to 30Kg.
- Equipped with long-life battery for cordless use.
- Push-button operation.
- Motor with auto brake system in the event of obstacles or overload.
- Compatible with any autoclave model.

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AES Series

ACCESSORIES

STAINLESS STEEL WIRE BASKETS FOR STERILIZING CLEAN LOADS OR HEAVY ITEMS

References		CV-28	CV-75-130	CV-75S	CV-75	CV-150-130	CV-150S	CV-150M
Dimensions	External Ø x H mm	270 x 185	370 x 130	370 x 180	370 x 265	470 x 130	470 x 190	470 x 235
	Internal Ø x H mm	260 x 180	360 x 125	360 x 175	360 x 260	460 x 125	460 x 185	460 x 230
Maximum capacity for autoclaves with the following chamber volumes	33 L	2	-	-	-	-	-	-
	55 L	3	-	-	-	-	-	-
	79 L	-	4	3	2	-	-	-
	115 L	-	6	4	3	-	-	-
	175 L	-	-	-	-	6	4	3

STAINLESS STEEL LIQUIDS COLLECTOR TRAY FOR WIRE BASKETS

References		TR-270	TR-370	TR-470
Dimensions	External Ø x H mm	240 x 50	320 x 50	420 x 50
	Internal Ø x H mm	238 x 48	318 x 48	418 x 48
For the following wire baskets models	CV-28	✔	-	-
	CV-75S & CV-75	-	✔	-
	CV-150S & CV-150M	-	-	✔

UNPERFORATED STAINLESS STEEL BASKETS FOR STERILIZING DIRTY LOADS OR OBJECTS WITH RISK OF SPILLAGE

References		CCI-28	CCI-75S	CCI-75	CCI-150S	CCI-150M
Dimensions	External Ø x H mm	270 x 185	370 x 180	370 x 265	470 x 190	470 x 235
	Internal Ø x H mm	260 x 180	360 x 175	360 x 260	460 x 185	460 x 230
Maximum capacity for autoclaves with the following chamber volumes	33 L	2	-	-	-	-
	55 L	3	-	-	-	-
	79 L	-	3	2	-	-
	115 L	-	4	3	-	-
	175 L	-	-	-	4	3

STAINLESS STEEL "SCHIMMELBUSCH" DRUM FOR STERILIZING INSTRUMENTS AND BIOHAZARDOUS LOADS

References		TBE-24x16	TBE-34x24	TBE-48x24
Dimensions	External Ø x H mm	240 x 165	340 x 240	480 x 240
	Internal Ø x H mm	230 x 155	330 x 230	470 x 230
Maximum capacity for autoclaves with the following chamber volumes	33 L	2	-	-
	55 L	4	-	-
	79 L	-	2	-
	115 L	-	3	-
	175 L	-	-	3

ACCESSORIES

STAINLESS STEEL CYLINDERS FOR STERILIZING PETRI DISHES

References		CEP-1027	CEP-1041	CEP-1427	CEP-1441
Dimensions	External Ø x H mm	100 x 270	100 x 410	140 x 270	140 x 410
Petri dishes	Maximum number dishes / cylinder	10	18	10	18
	Diameter Ø mm	80	80	120	120
Maximum capacity for autoclaves with the following chamber volumes	33 L	4	4	2	2
	55 L	8	4	4	2
	79 L	16	8	10	5
	115 L	24	16	15	10
	175 L	28	14	16	8

STAINLESS STEEL CYLINDERS FOR STERILIZING PIPETTES

References		CEPP-726	CEPP-740	CEPP-1025	CEPP-1435
Dimensions	External Ø x H mm	70 x 260	70 x 400	100 x 250	140 x 350
	Internal Ø x H mm	60 x 250	60 x 390	90 x 240	130 x 340
Maximum capacity for autoclaves with the following chamber volumes	33 L	11	11	6	6
	55 L	22	11	12	12
	79 L	42	21	20	10
	115 L	63	42	30	20
	175 L	90	30	51	34

STAINLESS STEEL WIRE BASKET WITH HEIGHT ADJUSTABLE TRAYS

References			SRA-R-300	SRA-R-400	SRA-R-500
External dimensions Ø x H mm			250 x 190	350 x 180	450 x 180
Trays	References		TRAY-SRA-R-300	TRAY-SRA-R-400	TRAY-SRA-R-500
	Dimensions Ø x H mm		240 x 20	340 x 20	440 x 20
Maximum capacity for autoclaves with the following chamber volumes		33 L	2	-	-
		55 L	3	-	-
		79 L	-	3	-
		115 L	-	4	-
		175 L	-	-	4

*The purchase of a tray support comes with a set of two trays and six fastening clips. Likewise, the purchase of a tray includes a set of three fastening clips.

- For sterilization of instruments, small bags and other small objects that must be placed straight up.
- Material: AISI-304 stainless steel.

ACCESSORIES

FLEXIBLE 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 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 in our facilities.

Ref. PT-2

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EXTERNAL DOT MATRIX PRINTER

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

Selectable print frequency between 10 and 240 seconds.

Connection: RS-232.

Ref. ITS

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

Download technical data sheet

EMBEDDED THERMAL PRINTER

Prints program number, cycle number, temperature, pressure, date and hour of the run and error messages.

Selectable print frequency between 10 and 240 seconds.

Must be installed at our factory.

Ref. IT

Consumable: PAPER-IT for paper

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SOFTWARE SW7000

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

PC connection via RS-232.

It is supplied with an RS-232 cable, a USB memory stick including installation software and drivers, and an RS-232 to USB adapter.

Ref. SW7000

CABLE GLAND

Installation of a Ø2mm or Ø4mm cable gland to provide access to as many as 8 external temperature probes for calibration and validation procedures.

Ref. CG2MM & CG4MM

Download technical data sheet

INTERNAL RADIAL FAN

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

Must be installed in our facilities.

Ref. AIRCOOL-V

Download technical data sheet

ACCESSORIES

EXTERNAL TEMPERATURE PROBE ADAPTER

External adapter for continuous validation processes that provides access to an external probe (Ø3-6mm) to take temperature readings that are independent of the equipment microprocessor.

It is located on the autoclave door.

Must be installed at our factory.

Ref. EXT-TP

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.

Equipped with rubber casters to reduce noise and prevent floor wear.

Dimensions (LxDxH): 730x490x700mm

Ref. TR-TR

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PREMIUM CASTERS

Although all AES Series autoclaves include casters, this accessory offers the option of upgrading to stronger, medical grade casters that include brakes.

This enhances the mobility of the equipment.

Must be installed at our factory.

Ref: 4WHBR

CONDENSATE TANK

Water tank with a maximum capacity of 12L to capture the moisture of the condensate produced during the purging phase and to collect dirty water during cleaning operations.

Ref. TANK-AE

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TEMPERATURE DATA LOGGER

AISI-316L stainless steel disk temperature recorder with connection base and software.

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

Available in different sizes.

Ref. BDL-DISK3618_CL

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STERILIZATION CONTROL TAPE

Class 1 indicator for steam sterilization. The color change indicates that the materials have been processed; however, this does not guarantee adequate sterilization. Additional methods, such as biological indicators (EN ISO 11138), are required.

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

Ref. TEST-CT

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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

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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-1.2 and MANT-1.3

EXTENDED WARRANTY

Extended warranty up to a total of 3 years.

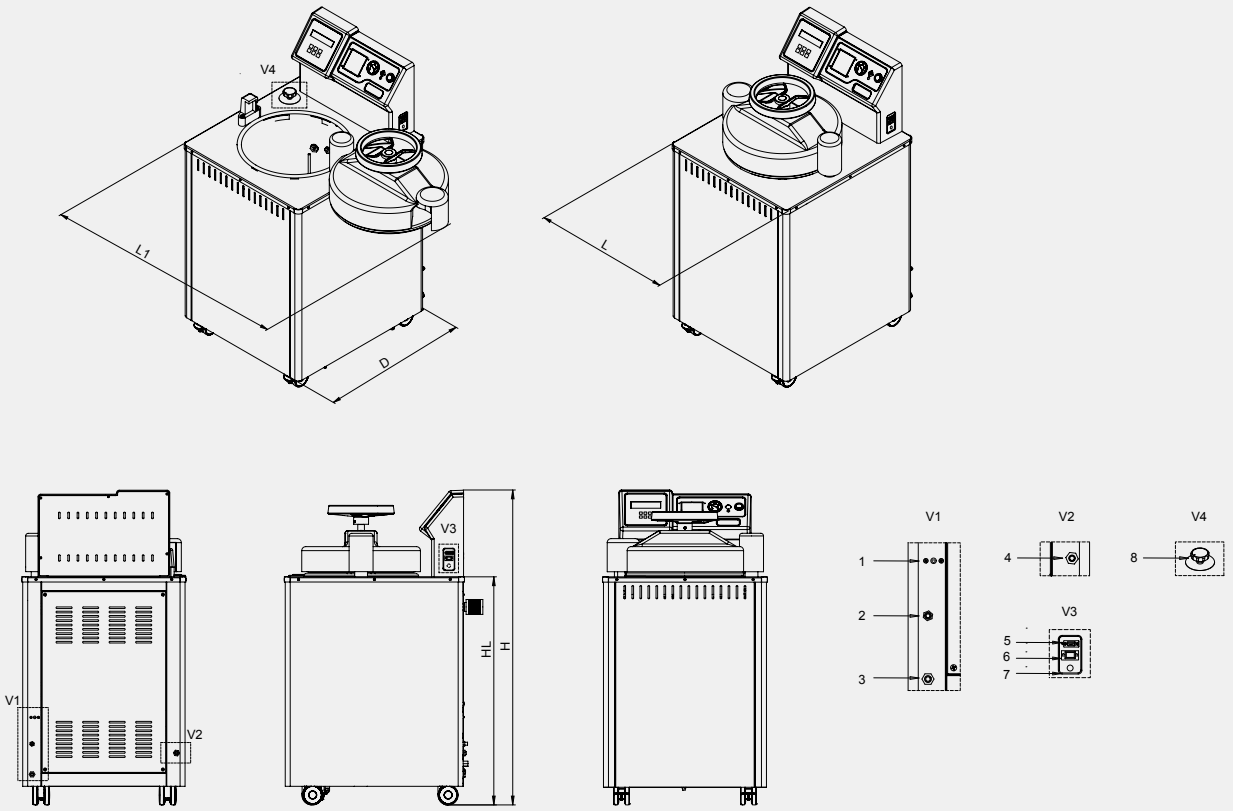
Ref. WE-CL

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.

AES Series

TECHNICAL DRAWINGS OF THE AUTOCLAVE

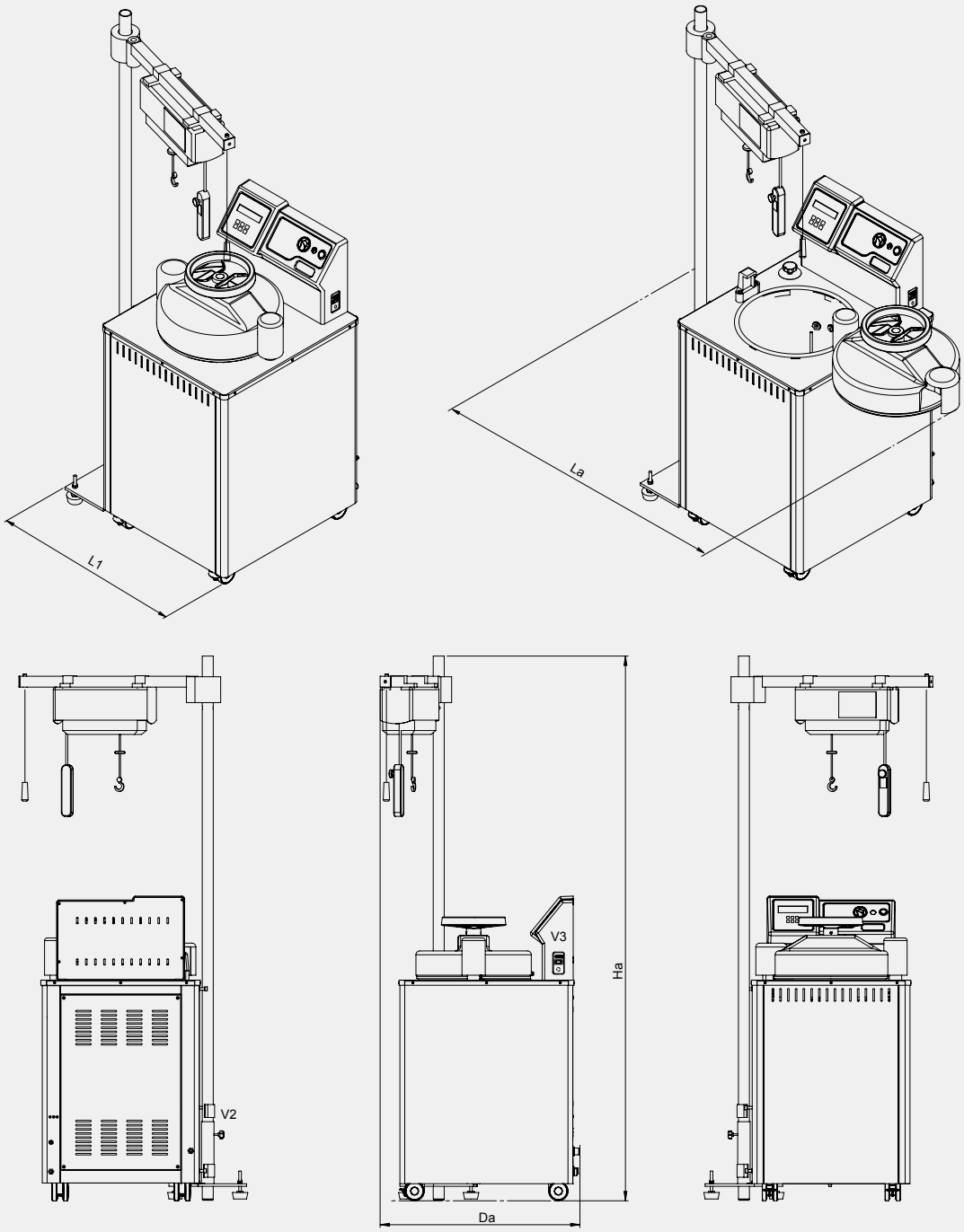


MODELS	L LENGTH with closed door	L1 LENGTH with maximum door opening	D DEPTH	H HEIGHT	HL LOAD HEIGHT	HD DRAIN HEIGHT sterilization chamber
AES-28	505 mm	900 mm	580 mm	1110 mm	788 mm	140 mm
AES-50	505 mm	900 mm	580 mm	1290 mm	967 mm	140 mm
AES-75	610 mm	1100 mm	700 mm	1185 mm	860 mm	140 mm
AES-110	610 mm	1100 mm	700 mm	1435 mm	1112 mm	140 mm
AES-150	750 mm	1380 mm	820 mm	1400 mm	1073 mm	140 mm

CONNECTIONS

1	Sterilization chamber electrical heating elements safety thermostat
2	Safety valve outlet
3	Sterilization chamber drain outlet and purge outlet
4	Power supply cable (AES-110 and AES-150 models)
5	RS-232 Port
6	Ethernet Port
7	Power supply cable (AES-28, AES-50 and AES-75 models)
8	Two position drain tap

TECHNICAL DRAWINGS OF THE AUTOCLAVE + CLASSIC-LIFT



MODEL OF BASKET LIFT SYSTEM	DIMENSIONS OF BASKET LIFT SYSTEM L x D x H	AUTOCLAVE MODELS	DIMENSIONS OF BASKET LIFT SYSTEM + AUTOCLAVE La x Da x Ha
CLASSIC-LIFT	800 x 300 x 2100 mm	AES-75	1276 x 1296 x 2100 mm
		AES-110	
CLASSIC-LIFT-R	800 x 300 x 2600 mm	AES-110	1276 x 1296 x 2600 mm
		AES-150	1543 x 1536 x 2600 mm

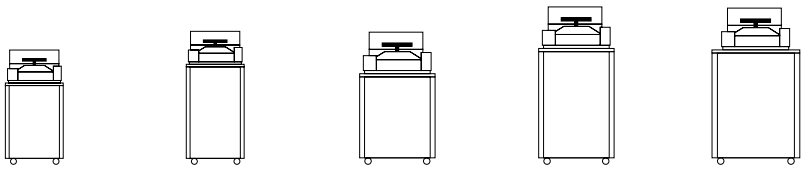
AES Series

TECHNICAL SUMMARY

General classification	Recommended setting	General laboratory
	Equipment placement	Floor-standing
	Load direction	Top-loading
	Chamber profile	Round
Recommended type of load	Culture media and liquids	+ +
	Glassware	+ +
	Plastics and metal objects	+ +
	Laboratory waste bags	+
Sterilization technology	Method to generate steam	Heating elements
	Type of purge	Gravity displacement
Transfer of data	RS-232	✔
Batch printers	Embbeded printer	0
	External printer	0
Sterilization chamber and door specifications	Sterilization chamber volume	33 - 175 L
	External building material	AISI-304
	Sterilization chamber material	AISI-316L
	Heating elements material	Incoloy® 825
	Gasket material	Silicone rubber
	Min.- max. sterilization temperature	100 - 134°C
	Maximum pressure (above atmospheric pressure)	2,1 Barg
	Mechanism to open the door	Manual wheel
	Direction in which the door opens	Lateral
	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)	✔
	Solids fast cooling (manual push-button for a faster cooling phase)	✔
	Temperature regulation by core probe	0
Adjustable cycle parameters	Agar mode	40 - 80ºC
	Temperature of sterilization phase	100 - 134ºC
	Duration of sterilization phase	1 - 250 min
	Temperature regulation by core probe	On/Off
Other specifications	Capacity of the sterilization chamber water tank	3 - 9,5 L
	Flexible temperature probe	0
	Standard casters	✔
	Premium casters with brakes	0
	Pressure gauge	✔
	Electric customization (115-230M V / 230-400T V)	0
	Special models with increased heating capacity	0
Services	Third-party qualification (IQ-OQ-PQ)	0

+: Recommended ✔: Standard 0: Optional

TECHNICAL DATA



Specifications

References	AES-28	AES-50	AES-75	AES-110	AES-150
Total/usable volume of the chamber L	33/31	55/50	79/75	115/110	175/153
Usable dimensions of the chamber Ø x H mm	300 x 440	300 x 710	400 x 600	400 x 850	500 x 780
External dimensions L x D x H mm	505 x 580 x 1110	505 x 580 x 1290	610 x 700 x 1185	610 x 700 x 1435	750 x 820 x 1400
Loading height mm	795	975	870	1120	1085
Net weight Kg	61	65	98	122	198
Available heating capacities W	2000 or 2800	2800 or 5000	3200 or 6000	4500, 6000 or 9000	6000 or 9000
Standard voltage* V	230	230	230	400	400
Frequency Hz	50/60	50/60	50/60	50/60	50/60

*Other voltages and electrical configurations available on request. Special models with increased heating capacity may operate with other voltages.

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.
- Heating elements cover.
- Several visual and acoustic safety and warning alarms.

Regulations

All our AES 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

Adjustable sterilization temperature	100 - 134 ºC
Adjustable sterilization time	1 - 250 min
Max. pressure	2,1 Barg
Sterilization control system	Fully automatic microprocessor control by either chamber temperature probe or flexible temperature probe
Air purge system	Gravity displacement
External building material	AISI-304 stainless steel
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 embbeded
Number of programs	10 (4 preset and 6 user free)
Programmable auto-start	Up to 24 h
Screen type	LCD display
Opening door mode	Horizontal swiveling door with blocking wheel
Monitoring of sterilization parameters	Self-control of obtained values (T° & 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
Casters	Included standard casters. Optional upgrade to medical grade casters with brakes

MORE INFORMATION

Watch video

Download the installation guide

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REV 10.2025