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

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



# 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.
- 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, 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

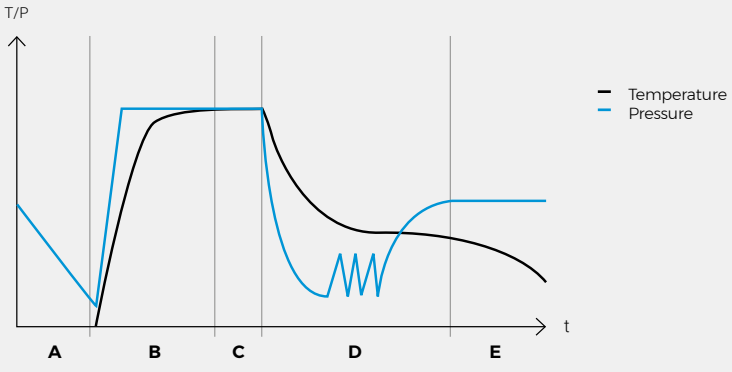
- Upon reaching the set sterilization temperature inside the chamber, the sterilization phase begins accurately sustaining the temperature throughout the duration of this phase.
- This crucial step is controlled by a PT-100 Class A temperature probe located within the chamber. As an option for liquids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

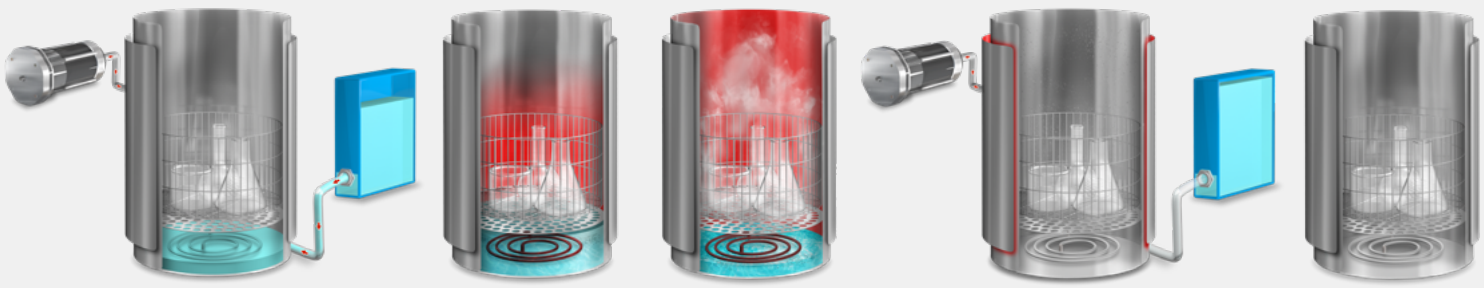
### VACUUM DRYING PHASE

- 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.

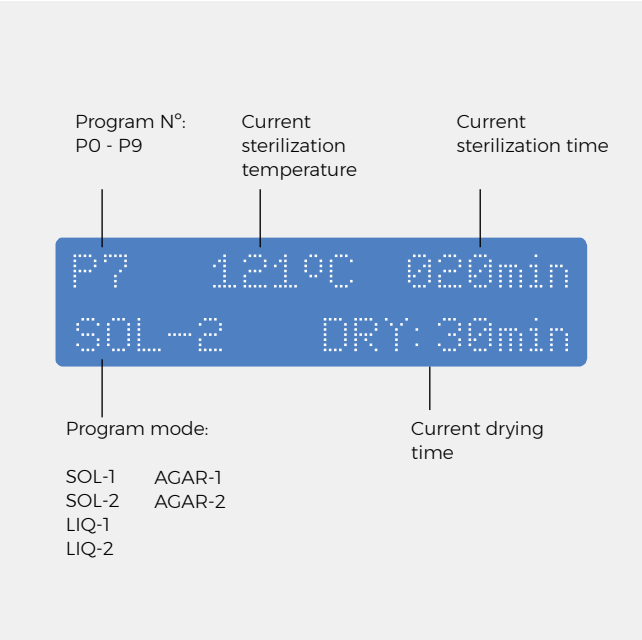
## DIGITAL MICROPROCESSOR

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.



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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-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**

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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.**

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### EMBEDDED THERMAL PRINTER

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

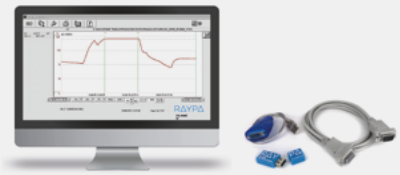
Selectable print frequency between 10 and 240 seconds.

Must be installed at our factory.

**Ref. IT**

**Consumable: PAPER-IT for paper**

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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**

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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**

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## 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 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**

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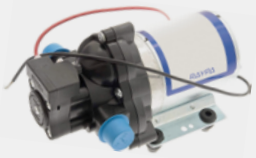


## PURIFIED WATER TANK

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**

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# 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**

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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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### 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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Attention: The availability and type of services described on this page will depend on the geographic location of the customer purchasing the equipment.

## 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. 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**

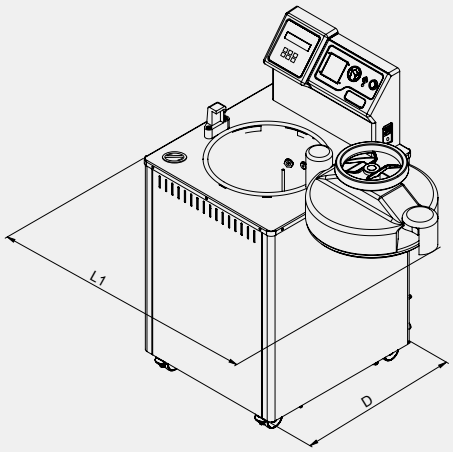


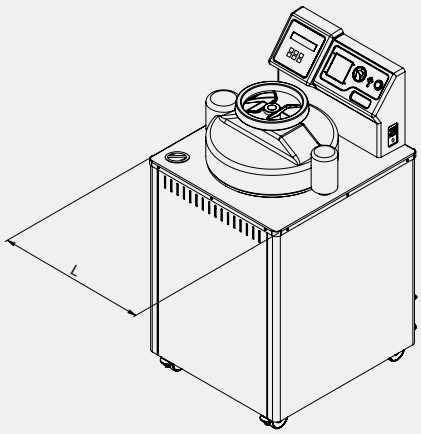

### SET OF CONSUMABLES, SPARE PARTS AND ESSENTIAL COMPONENTS

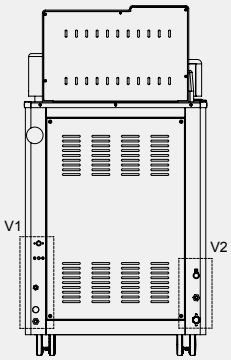
Set of original spare parts, consumables and components, chosen specifically to adhere to each model's maintenance plan, intended to maximize equipment longevity and minimize downtime in the event of a malfunction.

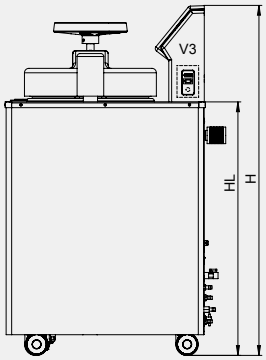
# AE-DRY Series

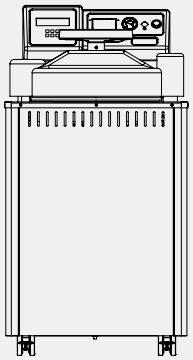
## TECHNICAL DRAWINGS OF THE AUTOCLAVE

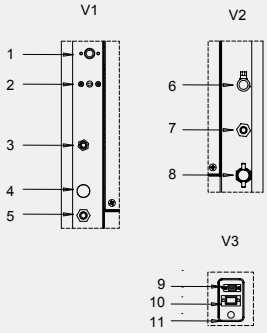


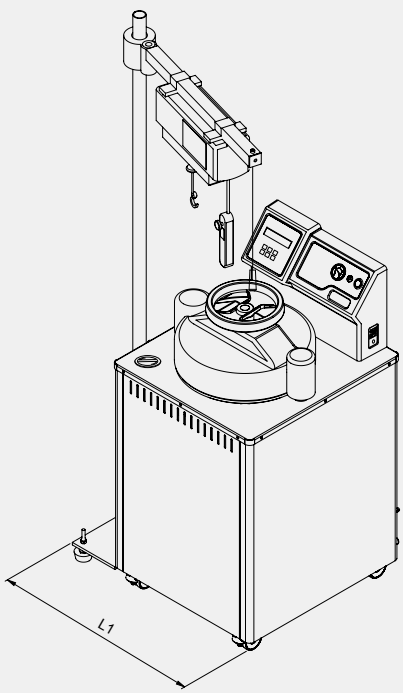


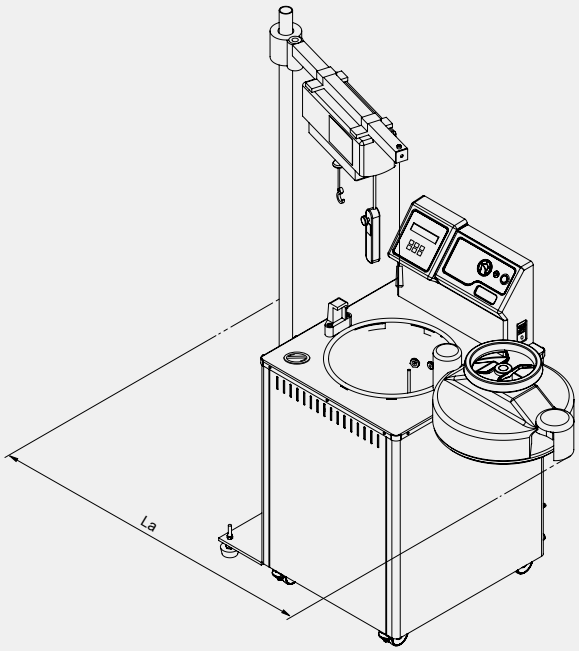

| MODELS | L<br>LENGTH<br>with closed door | L1<br>LENGTH<br>with maximum door opening | D<br>DEPTH | H<br>HEIGHT | HL<br>LOAD HEIGHT |
|---|---|---|---|---|---|
| AE-28-DRY | 505 mm | 900 mm | 580 mm | 1110 mm | 788 mm |
| AE-50-DRY | 505 mm | 900 mm | 580 mm | 1290 mm | 967 mm |
| AE-75-DRY | 610 mm | 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 |

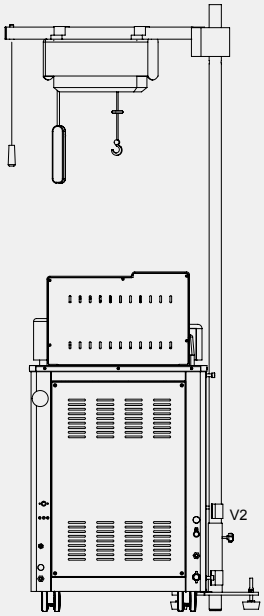
### CONNECTIONS

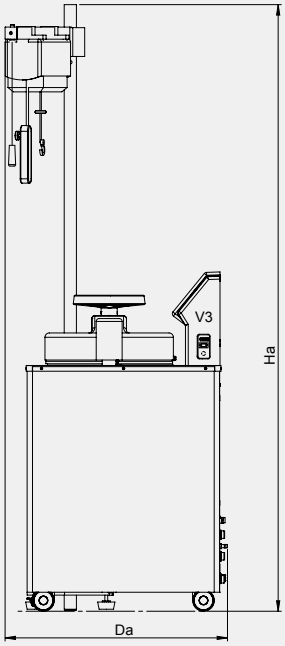
| | |
|---|---|
| 1 | Sterilization chamber electrical heating elements safety thermostat |
| 2 | Heating jacket safety thermostat |
| 3 | Power supply cable (AE-110-DRY and AE-150-DRY models) |
| 4 | Safety valve outlet |
| 5 | Automatic water supply inlet |
| 6 | Independent clean water tank drain 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) |

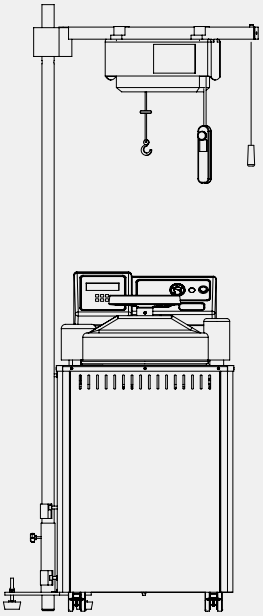
# TECHNICAL DRAWINGS OF THE AUTOCLAVE + CLASSIC-LIFT



| 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 |

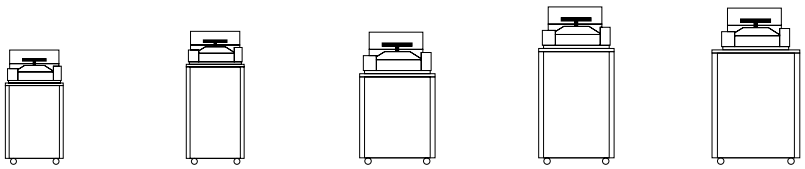
# AE-DRY Series

## TECHNICAL SUMMARY

| | | |
|---|---|---|
| General classification | Recommended setting | General laboratory |
| | Equipment placement | Floor-standing |
| | Load direction | Top-loading |
| | Chamber profile | Round |
| Recommended type of load | Glassware | + |
| | Plastics and metal objects | + |
| | Laboratory waste bags | + |
| | Liquids and culture media | + |
| 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

REV 06.2026

The equipment shown is representative; its design may be subject to change as part of manufacturing improvements or adjustments.

RAYPA

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