



### VERTICAL AUTOCLAVES WITH DRYING

AE-DRY SERIES CLASSIC LINE

ECONOMIC, COST-EFFECTIVE, ROBUST PERFORMANCE AND LIMITED LABORATORY RESOURCES CONSUMPTION



The **AE-DRY** Series vertical floor-standing autoclaves with toploading access cover most laboratory sterilization needs in many industries, educational institutions and research facilities with the aim of increasing the productivity of the laboratory. A great chamber capacity, the final drying feature and the independent water tank together with the optimization of resources such as water, power and operating time results in an affordable and very cost-effective solution to manage laboratory workload.

### **INTENDED USE**

+ STERILIZATION OF LABORATORY WASTE BAGS, PLASTICS, CULTURE MEDIA, GLASSWARE, LIQUIDS, ITEMS OF COMPLEX GEOMETRIES AND SMALL POROUS OR HOLLOW OBJECTS



### MAIN FEATURES

### COST-EFFECTIVE SOLUTION

**AE-DRY** Series autoclaves are robust autoclaves with 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 CYCLES

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

### EASY INSTALLATION AND MAINTENANCE

Every AE-DRY Series autoclave is a plug and play equipment that does not need dedicated installation connections. They simply need a power source and can work even without a connection to the drainage. They include a manually fed independent water tank that automatically feeds the sterilization chamber with an optional upgrade to fully automatic water feed directly from water network. They also include casters so they can be used in different areas of the same facility.

### **SAFETY FIRST**

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



### **ADVANTAGES**



Final vacuum drying feature by a heating jacket and vacuum pump to completely dry solid loads.



Sterilization chamber and door made of high quality stainless steel grade AISI-316L extremely resistant to corrosion.

CE Equipment built following all applicable European Union quality, regulatory and safety standards.

> Heating by powerful electric elements made of Incoloy<sup>®</sup> 825 assembled inside the sterilization chamber and shielded by a protective grid.

Control by a PID microprocessor with 4 predefined and 6 editable programs, adjustable by time, temperature, drying time and type of sterilization cycle (solids or liquids, with optional Agar mode and/or core probe control).



Available special models with augmented power 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<sup>\*</sup>.

Automatic water feed to the sterilization chamber from the independent water tank, with water level sensors included in both locations. Optional upgrade to fully automatic water feed directly from water network.



( )

Adjustable temperature holding at the end of the sterilization cycle between 40-80°C (Agar mode).



Programmable auto-start for up to 24h.

Optional software for sterilization data management.



Optional integrated or external printer.



Plug and play equipment, no plumbing required.



Easy mobility, all models include casters.



# STERILIZATION APPLICATIONS

**AE-DRY** Series autoclaves are intended for the sterilization of a wide range of liquids and solids such as culture media, glassware, plastics, metal utensils, laboratory waste bags and other laboratory items.

Furthermore, thanks to the standard initial prevacuum pulse and the fractioned postvacuum with drying, **AE-DRY** Series autoclaves are also suitable to sterilize wrapped and unwrapped solids, small porous and hollow objects<sup>\*</sup>.

\*AE-DRY Series autoclaves may not be suitable for these applications if the chamber is heavily loaded. In these circumstances, AE-B Series autoclaves should always be used. In case of doubt, please contact us and our team will offer expert guidance.

### WORKING PRINCIPLE

#### **DIGITAL MICROPROCESSOR**

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



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

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

### **AE-DRY SERIES PROGRAMS**

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

#### PREDEFINED PROGRAMS

| <b>Program</b><br>Nº | Sterilization<br>temperature °C | Sterilization<br>time min | Drying time<br>min | <b>Program mode</b><br>Solids, Liquids or Agar | Core probe regulation |
|----------------------|---------------------------------|---------------------------|--------------------|--|-----------------------|
| P0                   | 115                             | 60                        | 12                 | Solids   | -                     |
| P1                   | 121                             | 30                        | 25                 | Solids   | -                     |
| P2                   | 133                             | 20                        | 30                 | Solids   | -                     |
| P3                   | 121                             | 20                        | -                  | Liquids  | -                     |

probe.

The rest of the programs are editable with the following parameters settings:

- Sterilization temperature.
- Sterilization time.
- Final drying time.
- · Sterilization mode (solids or liquids).
- · Sterilization with temperature holding at the end of the cycle (Agar mode).

### STANDARD AE-DRY SERIES STERILIZATION CYCLE

#### **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 that couldn't otherwise be reached with simple gravity displacement.
- · Afterwards, the independent water tank starts to feed water to the sterilization chamber and the heating jacket is turned on, preheating the load.

### **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 power, 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**

 After sterilization phase finishes, only for solid programs, vacuum drying starts,

#### **Sterilization cycle** graph for a solid load

- Prevacuum phase в
- Heating phase Sterilization phase С
- D Vacuum drying phase
- Е Cooling phase
- Temperature Pressure

· Sterilization controlled by main chamber

temperature probe or both main chamber

temperature probe plus core temperature

where multiple vacuum pulses occur while the heating jacket is turned on, completely drying the load and automatically feeding back the water to the independent water tank.

#### **COOLING PHASE**

- After the vacuum drying step is completed natural cooling begins and an acoustic beep will sound when a safety temperature is reached and the door can be opened.
- · In liquid programs with Agar mode activated, the equipment will hold the preprogrammed temperature indefinitely, selectable between 40 and 80°C





### **FUNCTIONS DISPLAYED BY THE ALPHANUMERIC** LCD SCREEN

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. For other languages please contact us.

| PROG. N°<br>P0 - P9<br>PROGRAM<br>MODE | _P7 12<br>-SOL-2 | 1°C 820mi<br>DRY: 30mi       | TIME        |
|--|------------------|------------------------------|-------------|
| SOL-1<br>SOL-2<br>LIQ-1                |                  | CURRENT                      | CURRENT     |
| LIQ-2<br>AGAR-1<br>AGAR-2              |                  | STERILIZATION<br>TEMPERATURE | DRYING TIME |

### LOADING CAPACITIES



### **ISO ERLENMEYER FLASKS**

| Autoclave Usable<br>model volume<br>L | volume           | <b>250mL</b><br>(Ø85 x 143mm) |                  |      | <b>500mL</b><br>(Ø105 x 183mm) |                  |                  | <b>1000mL</b><br>(Ø131 x 230mm) |       |                  | <b>2000mL</b><br>(Ø166 x 280mm) |      |       |                  |                  |      |         |
|---------------------------------------|------------------|-------------------------------|------------------|------|--------------------------------|------------------|------------------|---------------------------------|-------|------------------|---------------------------------|------|-------|------------------|------------------|------|---------|
|                                       | Total<br>baskets |                               | Units/<br>basket | Tota | l units                        | Total<br>baskets | Units/<br>basket | Total                           | units | Total<br>baskets | Units/<br>basket                | Tota | units | Total<br>baskets | Units/<br>basket | Tota | I units |
|                                       |                  |                               |                  | А    | В                              |                  | Α                | В                               |       |                  | А                               | В    | -     |                  | А                | В    |         |
| 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.

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.



### **ISO BOTTLES**

| Autoclave Usable<br>model volume<br>L |     | <b>250mL</b><br>(Ø70 x 143mm)  |     |       | <b>500mL</b><br>(Ø80 x 185mm) |                  | <b>1000mL</b><br>(Ø101 x 230mm) |       |       | <b>2000mL</b><br>(Ø136 x 260mm) |                  |       |       |                  |                  |      |         |
|---------------------------------------|-----|--------------------------------|-----|-------|-------------------------------|------------------|---------------------------------|-------|-------|---------------------------------|------------------|-------|-------|------------------|------------------|------|---------|
|                                       |     | Total Units/<br>baskets basket |     | Total | units                         | Total<br>baskets | Units/<br>basket                | Total | units | Total<br>baskets                | Units/<br>basket | Total | units | Total<br>baskets | Units/<br>basket | Tota | I units |
|                                       | A   |                                | A B |       |                               | А                | В                               |       |       | A                               | В                | -     |       | A                | В                |      |         |
| 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               |
|  | 79 L  | ✓                | -                |
| For autoclaves with the following<br>chamber volumes | 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. The device is built into the side of the autoclave. 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.



### **MOBILE BASKET LIFT SYSTEM**

| Reference               | MOB-LIFT         |
|-------------------------|------------------|
| Dimensions L x D x H mm | 420 x 800 x 2200 |
| Power W                 | 200              |
| Voltage V               | 90 - 250         |
| Frequency Hz            | 50/60            |
| Weight Kg               | 70               |
| 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.





### Accessories

### STAINLESS STEEL WIRE BASKETS

| Reference                  |                      | CV-28     | CV-75-130 | CV-75S    | CV-75     | CV-150-130 | CV-150S   | CV-150M   |
|----------------------------|----------------------|-----------|-----------|-----------|-----------|------------|-----------|-----------|
| Dimonoiono                 | Exterior<br>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 |
| Dimensions                 | Interior<br>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 |
|                            | 33 L                 | 2         | -         | -         | -         | -          | -         | -         |
| For autoclaves<br>with the | 55 L                 | 3         | -         | -         | -         | -          | -         | -         |
| following                  | 79 L                 | -         | 4         | 3         | 2         | -          | -         | -         |
| chamber<br>volumes         | 115 L                | -         | 6         | 4         | 3         | -          | -         | -         |
|                            | 175 L                | -         | -         | -         | -         | 6          | 4         | 3         |



### STAINLESS STEEL LIQUIDS COLLECTOR TRAY FOR WIRE BASKETS

| Reference                                |                             | TR-270   | TR-370   | TR-470   |
|--|-----------------------------|----------|----------|----------|
| Dimensions                               | <b>Exterior</b><br>Ø x H mm | 240 x 50 | 320 x 50 | 420 x 50 |
| Dimensions                               | <b>Interior</b><br>Ø x H mm | 238 x 48 | 318 x 48 | 418 x 48 |
|  | CV-28                       |          | -        | -        |
| For the following wire<br>baskets models | CV-75S & CV-75              | -        |          | -        |
|  | CV-150S & CV-150M           | -        | -        |          |



## UNPERFORATED STAINLESS STEEL BASKETS FOR LABORATORY WASTE STERILIZATION

| Reference                  |                      | CCI-28    | CCI-75S   | CCI-75    | CCI-150S  | CCI-150M  |
|----------------------------|----------------------|-----------|-----------|-----------|-----------|-----------|
| Dimensions                 | Exterior<br>Ø x H mm | 270 x 185 | 370 x 180 | 370 x 265 | 470 x 190 | 470 x 235 |
| Dimensions                 | Interior<br>Ø x H mm | 260 x 180 | 360 x 175 | 360 x 260 | 460 x 185 | 460 x 230 |
| <b>-</b>                   | 33 L                 | 2         | -         | -         | -         | -         |
| For autoclaves<br>with the | 55 L                 | 3         | -         | -         | -         | -         |
| following                  | 79 L                 | -         | 3         | 2         | -         | -         |
| chamber<br>volumes         | 115 L                | -         | 4         | 3         | -         | -         |
|                            | 175 L                | -         | -         | -         | 4         | 3         |



### STAINLESS STEEL "SCHIMMELBUSCH" DRUM FOR MEDICAL INSTRUMENTS STERILIZATION

| Reference             |                      | TBE-24x16 | TBE-34x24 | TBE-48x24 |
|-----------------------|----------------------|-----------|-----------|-----------|
| Dimensions            | Exterior<br>Ø x H mm | 240 x 165 | 340 x 240 | 480 x 240 |
| Dimensions            | Interior<br>Ø x H mm | 230 x 155 | 330 x 230 | 470 x 230 |
|                       | 33 L                 | 2         | -         | -         |
| For autoclayes with   | 55 L                 | 4         | -         | -         |
| the following chamber | 79 L                 | -         | 2         | -         |
| volumes               | 115 L                | -         | 3         | -         |
|                       | 175 L                | -         | -         | 3         |



### Accessories

### STAINLESS STEEL CYLINDERS FOR PETRI DISHES STERILIZATION

| Reference               |                                     | CEP-1027  | CEP-1041  | CEP-1427  | CEP-1441  |
|-------------------------|-------------------------------------|-----------|-----------|-----------|-----------|
| Dimensions              | <b>Exterior</b><br>Ø x H mm         | 100 x 270 | 100 x 410 | 140 x 270 | 140 x 410 |
| Petri dishes            | Maximum number<br>dishes / cylinder | 10        | 18        | 10        | 18        |
|                         | Diameter Ø mm                       | 80        | 80        | 120       | 120       |
|                         | 33 L                                | 4         | 4         | 2         | 2         |
| For autoclaves with the | 55 L                                | 8         | 4         | 4         | 2         |
| following               | 79 L                                | 16        | 8         | 10        | 5         |
| chamber<br>volumes      | 115 L                               | 24        | 16        | 15        | 10        |
|                         | 175 L                               | 28        | 14        | 16        | 8         |



### STAINLESS STEEL CYLINDERS FOR PIPETTE STERILIZATION

|                             | CEPP-726  | CEPP-740   | CEPP-1025  | CEPP-1435   |
|-----------------------------|---|--|--|---|
| <b>Exterior</b><br>Ø x H mm | 70 x 260  | 70 x 400   | 100 x 250  | 140 x 350   |
| Interior<br>Ø x H mm        | 60 x 250  | 60 x 390   | 90 x 240   | 130 x 340   |
| 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  |
|                             | Ø x H mm<br>Interior<br>Ø x H mm<br>33 L<br>55 L<br>79 L<br>115 L | Exterior         70 x 260           Ø x H mm         60 x 250           Jaster         11           55 L         22           79 L         42           115 L         63 | Exterior<br>Ø x H mm         70 x 260         70 x 400           Interior<br>Ø x H mm         60 x 250         60 x 390           33 L         11         11           55 L         22         11           79 L         42         21           115 L         63         42 | Exterior<br>Ø x H mm70 x 26070 x 400100 x 250Interior<br>Ø x H mm60 x 25060 x 39090 x 24033 L1111655 L22111279 L422120115 L634230 |

### **HEIGHT ADJUSTABLE TRAY SUPPORT**

| Reference                   |        | SRA-R-300 | SRA-R-400      | SRA-R-500      |                |  |
|-----------------------------|--------|-----------|----------------|----------------|----------------|--|
| Dimensions Ext. Ø x H mm    |        |           | 250 x 190      | 350 x 180      | 450 x 180      |  |
| Max. number trays / support |        |           | 4              | 4              | 4              |  |
| Referen                     |        | ice       | TRAY-SRA-R-300 | TRAY-SRA-R-400 | TRAY-SRA-R-500 |  |
| Trays                       | Dim. Ø | x H mm    | 240 x 20       | 340 x 20       | 440 x 20       |  |
|                             |        | 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 CORE TEMPERATURE PROBE PT-100 CLASS A

- After installing this accessory, the temperature regulation of the sterilization cycle can either be controlled by the main chamber temperature sensor or both the main chamber temperature sensor and the temperature sensor of the flexible core temperature probe.
- The temperature control by the flexible core temperature probe is especially advantageous for processes involving the sterilization of large volumes of liquids, where the sterilization process is regulated by both the temperature achieved in the center of the liquid sample as well as the temperature achieved in the sterilization chamber. Furthermore, should the autoclave be opened at chamber temperatures higher than 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.

Reference: PT-2



### **EXTERNAL TEMPERATURE PROBE ADAPTER**



- External adapter for continuous validation processes that allows the access of an external probe (Ø 3-6 mm) to obtain a temperature reading independent from that of the equipment microprocessor.
- It is located on the door of the autoclave.
- Must be installed in our facilities. Reference: **EXT-TP**

### **INTEGRATED THERMAL PRINTER**



- Prints program number, cycle number, temperature, date and hour of the run and error messages.
- Selectable printing cadence between 10 and 240 seconds.

• Must be installed in our facilities. Reference: **IT** 

Consumable: Paper: **PAPER-IT** 

### TABLE TOP DOT MATRIX PRINTER



- Prints program number, cycle number, temperature, date and hour of the run and error messages.
- Used with RS-232 connection.
- Selectable printing cadence between 10 and 240 seconds. Reference: ITS

Consumables: Paper: PAPER-ITS, Ribbon: 70945

### **PREMIUM CASTERS (2 WITH BRAKES)**



- Although all AE-DRY Series autoclaves include casters, this accessory offers the option of upgrading them with a more resistant and higher quality casters that include brakes.
- Enables an easier movement of the equipment.

• Must be installed in our facilities. Reference: **4WHBR** 

### Accessories

### SW7000 SOFTWARE





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

Reference: SW7000

### **STERILIZATION CONTROL TAPE**



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

### TRANSPORT TROLLEY



- Auxiliary trolley to assist the loading and unloading of the autoclave.
- Built in chromed iron and plastic.
- The surface of each shelf is textured to prevent the load from shifting.
- Rubber coated wheels to reduce noise.
- Dimensions (LxDxH): 730 x 490 x 700 mm.

Reference: TR-TR

### **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.

Must be installed at our factory.
Reference: **PRENSACLAV**

#### 20 min 121°C Color change.

AUTOMATIC WATER FILLING KIT



- Water pump to automate the feed of the independent water tank with purified water.
- Compatible with installations that either have a purified water network, a purified water tank or facilities that have an unpurified water network, in the latter case, the kit should be supplied with two other accessories: water purifier (ECOPUR-500) and purified water tank (TANK-KLL).
- Must be installed in our facilities.
  Reference: KLL

### **ECO-EFFICIENT WATER PURIFIER**



- Direct flow eco-efficient water purifier without water accumulation capable of filtering 1,3L/min with LED display.
- The installation of this accessory requires the joint installation of the external tank (TANK-KLL) and the automatic water filling system (KLL) corresponding to each model.

Reference: ECOPUR-500

| Exterior<br>dimensions<br>L x D x H mm | Purity (TDS)<br>ppm | Electrical<br>conductivity<br>µS | Hardness<br>mmol/l |
|--|---------------------|----------------------------------|--------------------|
| 220 x 425 x 415                        | 0,0005              | >1                               | 0,0125             |



### TECHNICAL SUMMARY OF AE-DRY SERIES AUTOCLAVES

|   | Recommended setting                                      | General laboratory       |
|---|--|--------------------------|
| General classification                        | Equipment placement                                      | Floor-standing           |
| General classification                        | Load direction   | Top-loading              |
|   | Chamber profile  | Round                    |
|   | Culture media and liquids                                | ++                       |
| Recommended type of load                      | Laboratory waste bags                                    | ++                       |
| Recommended type of load                      | Porous solids and wrapped loads                          | +                        |
|   | Glassware  | ++                       |
|   | Method to generate steam                                 | Heating elements         |
| Sterilization technology features             | Type of purge  | Vacuum                   |
|   | Vacuum drying by heating jacket and vacuum pump          | ×                        |
| ) Transfer of data                            | RS-232   | ×                        |
| Batch printers                                | Integrated printer                                       | 0                        |
| Batch printers                                | External printer   | 0                        |
|   | Sterilization chamber volume                             | 33 - 175 L               |
|   | External building material                               | AISI-304                 |
|   | Sterilization chamber material                           | AISI-316L                |
|   | Heating elements material                                | Incoloy <sup>®</sup> 825 |
|   | Gasket material  | Silicone rubber          |
| Sterilization chamber and door specifications | Min max. sterilization temperature                       | 100 - 134°C              |
| specifications                                | 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                                 | ×                        |
|   | Screen display   | Digital LCD              |
|   | Screen size  | 2 lines x 16 digits      |
| User interface and microprocessor             | Total number of available programs                       | 10                       |
|   | Automatic microprocessor control                         | <b>v</b>                 |
|   | Timer start  | ×                        |
|   | Agar mode (temperature holding after cycle ends 40-80°C) | ×                        |
| Special cycles and process optimization       | Final postvacuum drying (to completely dry solid loads)  | ×                        |
| οριπιΖατιστ                                   | Temperature regulation by core probe                     | 0                        |
|   | Agar mode  | 40 - 80°C                |
|   | Temperature of sterilization phase                       | 100 - 134°C              |
|   | Duration of sterilization phase                          | 1 - 250 min              |
| Adjustable cycle parameters                   | Duration of drying phase                                 | 3 - 99 min               |
|   | Temperature regulation by core probe                     | On/Off                   |
|   | Sterilization mode (solids or liquids)                   | ✓                        |
|   | Air intake with bacteriological filter                   | ✓                        |
|   | Independent water tank capacity                          | 9 - 20 L                 |
|   | Flexible core temperature probe                          | 0                        |
|   | Standard casters   | ✓                        |
| Other specifications                          | Premium casters with brakes                              | 0                        |
|   | Pressure gauge   | v                        |
|   | Electric customization (115-230M V/230-400T V)           | 0                        |
|   | Special models with augmented power                      | 0                        |
|   | opeoid modelo with dugmented power                       | <u> </u>                 |

+: 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 $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$ | 33/31            | 55/50            | 79/75            | 115/110            | 175/153          |
| Usable dimensions of the chamber $ {\ensuremath{\varnothing}}  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 powers W   | 2000 or 3200     | 3200 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 power 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 with overflow drainage.
- 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.



Installation guide available for download on our website.

# **RΔΥΡΔ**

### **General features**

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| General leatures                       |  |
|--|--|
| Adjustable sterilization temperature   | 100 - 134°C  |
| Adjustable sterilization time          | 1 - 250min   |
| Adjustable drying time                 | 3 - 99min  |
| Max. pressure                          | 2,1Barg  |
| Sterilization control system           | Fully automatic microprocessor control by either<br>chamber temperature probe or flexible core<br>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   |
| Single prevacuum pulse system          | Vacuum pump  |
| Sterilization chamber material         | AISI-316L stainless steel  |
| Heating elements material              | Incoloy <sup>®</sup> 825   |
| Gasket material                        | Silicone rubber  |
| Connection to PC                       | RS-232   |
| Connection to printer                  | RS-232 or integrated   |
| Number of programs                     | 10 (4 preset and 6 user free)  |
| Programmable auto-start                | Up to 24h  |
| 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<br>values. Cycle is automatically interrupted if obtained<br>values differ from programmed values   |
| Pressure display                       | Pressure gauge on control panel  |
| Water management                       | Independent manually fed water tank that<br>automatically feeds the sterilization chamber. Water<br>returns automatically to the independent water tank<br>after cycle is completed. Optional upgrade to fully<br>automatic water feed directly from water network |
| Drainage system                        | A drainage connection and a manual valve for overflov<br>and drainage of the independent water tank and a<br>screw to manually clean the drainage filter and drain<br>the sterilization chamber  |
| Casters                                | Included standard casters, optional upgrade to premiun<br>casters with brakes  |
|  |  |



