



DE LAMA

Process & Sterilization Solutions since 1949

STERILIZERS

DLOV Series



The most versatile horizontal autoclaves to meet the widest requirements of the pharmaceutical industry featuring a high degree of operational flexibility.

Available configurations range from the basic steam sterilization to the combined air/steam mixture suitable for deformable containers or High Pathogen media. For applications even in chemical, cosmetics and food industries.



Pharmaceutical Industry



Research Centers



Laboratories



Animal Houses



Food



Cosmetics

MAIN FEATURES

Wide range of applications and configurations

Heavy duty construction for industrial use

No-proprietary, high quality components

Compliant with the current International standards

SCADA Windows OS control system, CFR 21-Part 11

OVERVIEW

The saturated steam sterilizers DLOV type are the most versatile autoclaves, designed to meet the widest requirements of the Pharmaceutical Industry. Sterilizers incorporate a high degree of operational flexibility that enable them to be used even for a wide range of industrial and laboratory applications.

Fields of application

- Sterilization of solids (e.g. empty glassware, stainless steel items, parts of equipment, tools, etc.)
- Sterilization of porous materials (e.g. textiles)
- Sterilization of stoppers and rubber materials
- Sterilization of filters and respective accessories
- Sterilization of filled glass or non-deformable containers (e.g. ampoules, bottles, etc.)
- Sterilization of products used at animal facilities (e.g. cages, beddings, feedstuffs, etc.)
- Decontamination of solids at low pathogenic risk (biological agents group 1 or 2 of the European Directive 2000/54/EC)
- Tyndallisation of products sensitive to high temperatures
- Pasteurization for treatment of packed food products

Autoclave in basic configuration is suitable to perform sterilization of solids and porous materials and is fitted with control/utility programs.

Some of the above-mentioned applications can be carried out only if suitable equipment options are purchased and installed.

STANDARD OPERATING PARAMETERS

Pressure	max. 3,5 bar abs.
Temperature	max. 139°C

NOTE: Operating parameters can be modified according to Customer's requirements.



DESIGN, CONSTRUCTION & FUNCTIONAL FEATURES

- parallelepiped chamber in highly satin finish AISI 316L stainless steel. Drainable execution. On request, cylindrical chamber
- jacket, in AISI 304 stainless steel, for heating, load drying and final cooling by recirculating water
- single or double door (pass-through execution for no-cross contamination), semi-automatic hinged type or automatically sliding
- chamber piping and fittings in AISI 316L stainless steel, tri-clamp connections. On request, sanitary execution
- vacuum pump group for vacuum phases, removal of air pockets and load drying
- device to cool drain
- absolute filter with 0,22 micron cartridge for air inlet, steam sterilizable, assembled to allow integrity test (e.g. WIT)
- clamp connections for validation activities
- high grade thermal insulation
- built-in or separate electrical cabinet
- external panels in AISI 304 stainless steel
- chamber pressure control/regulation by pressure transmitter
- temperature monitoring inside the chamber by temperature sensors Pt 100 Ohm Class AA EN 60751
- wide range of alarms and safety devices to assure Operator protection and proper equipment operation
- operation either through steam by factory utility line or through a dedicated steam generator (steam or electrically heated, built-in or externally located)
- available with magnetic door suitable also for isolator coupling

Air/steam Mixture Version DLOV/AV model

Autoclave can be designed to enable Customer to use the same equipment **to run two different types of process cycles**: the conventional steam sterilization combined with the air/steam mixture suitable for treatment of deformable plastic containers, products in blister packs, pre-filled syringes, etc.

Version to perform even sterilization by Superheated water DLOV/S model

Autoclave can be designed to enable Customer to use the same equipment **to run two different types of process cycles**: the saturated steam sterilization or the superheated water sterilization suitable for treatment of liquid solutions

in non-deformable containers or in deformable containers proven to withstand sterilization conditions by hot water spray.

High pathogen version **DLOV/HP model**

The materials at high pathogenic risk - Biological agents group 3 or 4 of the European Directive 2000/54/EC – have to be submitted to a specific treatment before being re-used, disposed or re-cycled in order to avoid any risk of pollution/contamination for the Operators, the working area and the environment. After such treatment load is safe and ready to be re-used or disposed.

Autoclave can be designed, therefore, to combine the conventional steam sterilization with the air/steam mixture sterilization to perform treatment of high pathogenic risk loads (Customer is enabled to use the same equipment to run two different types of process cycles).

Version to perform washdown treatments **DLOV/W model**

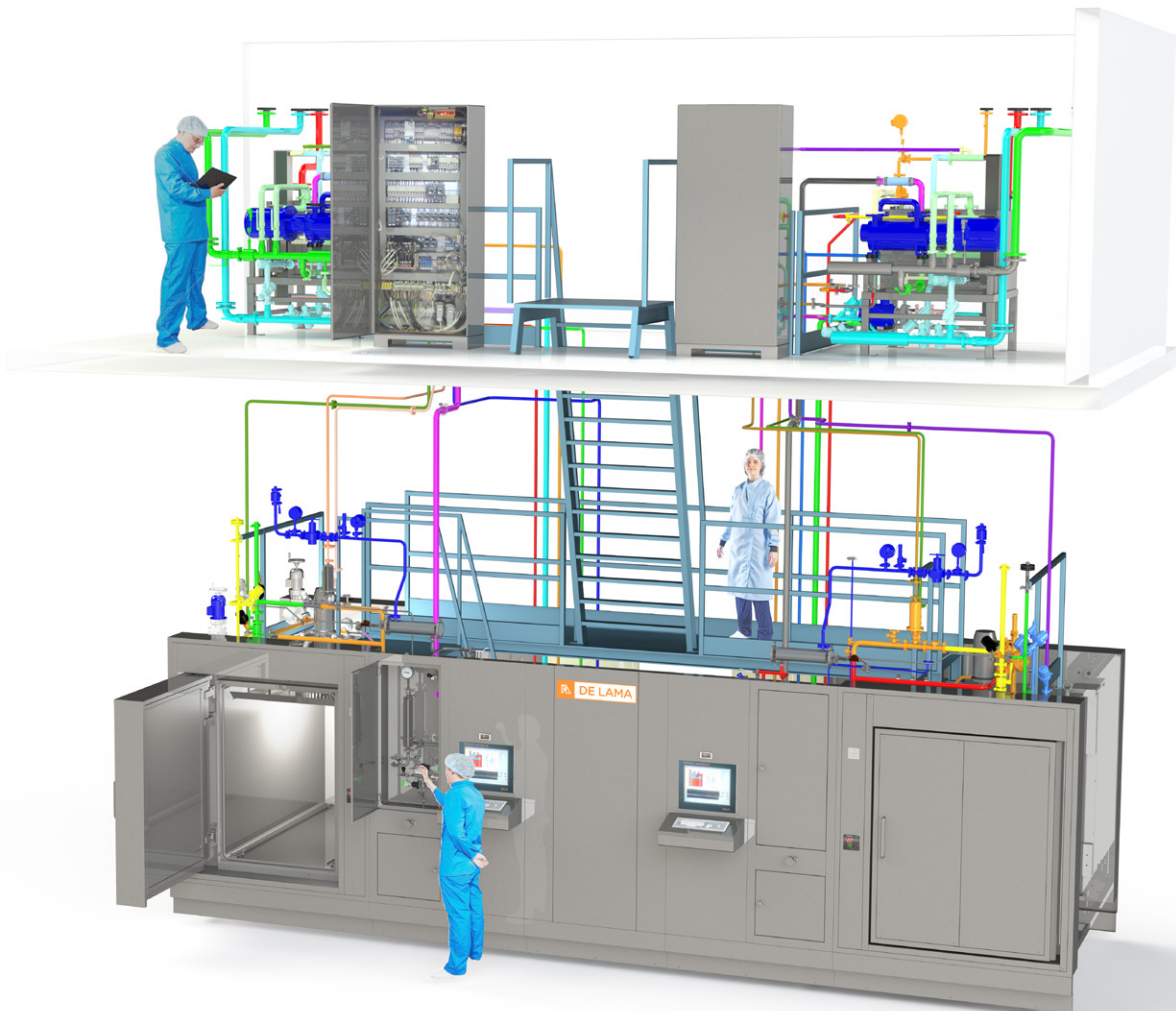
Autoclave can be designed to enable Customer to use the same equipment to perform washing (by water with/without detergent or soda) of frames, plates, trays, parts of equipment, etc. as a solo cycle or as a combined cycle before sterilization

Vacuum Hydrogen Peroxide Sterilization **DLVHP/ST Model**

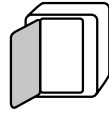
The industrial and pharmaceutical H_2O_2 treatment unit for terminal sterilization of thermo-labile solids, porous materials and products packaging

Version to perform sanitization treatment by hydrogen peroxide **DLVHP/DE model**

Autoclave can be designed to enable Customer to perform, in addition to conventional sterilization, even sanitization/ treatment by hydrogen peroxide (H_2O_2).



SEMI-AUTOMATIC HINGED DOOR

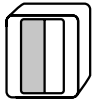


MODEL	CAPACITY	CHAMBER NOMINAL INTERNAL DIMENSIONS		
		Height mm	Width mm	Depth mm
DLOV 25-07	439	950	660	700
DLOV 25-10	627	950	660	1000
DLOV 25-13	815	950	660	1300
DLOV 25-15	941	950	660	1500
DLOV 30-10	800	1000	800	1000
DLOV 30-12	1000	1000	800	1250
DLOV 35-10	1000	1000	1000	1000
DLOV 35-12	1250	1000	1000	1250
DLOV 35-15	1500	1000	1000	1500
DLOV 35-20	2000	1000	1000	2000
DLOV 35-25	2500	1000	1000	2500
DLOV 40-13	1521	1300	900	1300
DLOV 40-15	1755	1300	900	1500
DLOV 40-18	2106	1300	900	1800
DLOV 40-20	2340	1300	900	2000
DLOV 40-24	2808	1300	900	2400
DLOV 45-20	2900	1450	1000	2000
DLOV 45-25	3625	1450	1000	2500
DLOV 45-30	4350	1450	1000	3000
DLOV 70-25	6500	2000	1300	2500
DLOV 73-18	3780	2100	1000	1800
DLOV 73-22	4620	2100	1000	2200
DLOV 75-31	6820	2200	1000	3100



Autoclave DE LAMA DLOV 40-18 type
nominal volume 2106 lts.

AUTOMATIC SLIDING DOOR



MODEL	CAPACITY	CHAMBER NOMINAL INTERNAL DIMENSIONS		
		Height mm	Width mm	Depth mm
DLOV 05-07	81	340	340	700
DLOV 05-10	116	340	340	1000
DLOV 05-13	150	340	340	1300
DLOV 10-07	142	450	450	700
DLOV 10-10	203	450	450	1000
DLOV 10-13	263	450	450	1300
DLOV 15-07	305	660	660	700
DLOV 15-10	436	660	660	1000
DLOV 15-13	566	660	660	1300
DLOV 20-10	640	800	800	1000
DLOV 20-12	800	800	800	1250
DLOV 20-15	960	800	800	1500
DLOV 25-07	439	950	660	700
DLOV 25-10	627	950	660	1000
DLOV 25-13	815	950	660	1300
DLOV 25-15	941	950	660	1500
DLOV 30-10	800	1000	800	1000
DLOV 30-12	1000	1000	800	1250
DLOV 35-10	1000	1000	1000	1000
DLOV 35-12	1250	1000	1000	1250
DLOV 35-15	1500	1000	1000	1500
DLOV 35-20	2000	1000	1000	2000
DLOV 35-25	2500	1000	1000	2500
DLOV 40-13	1521	1300	900	1300
DLOV 40-15	1755	1300	900	1500
DLOV 40-18	2106	1300	900	1800
DLOV 40-20	2340	1300	900	2000
DLOV 40-24	2808	1300	900	2400
DLOV 45-20	2900	1450	1000	2000
DLOV 45-25	3625	1450	1000	2500
DLOV 45-30	4350	1450	1000	3000
DLOV 70-25	6500	2000	1300	2500
DLOV 73-18	3780	2100	1000	1800
DLOV 73-22	4620	2100	1000	2200
DLOV 75-31	6820	2200	1000	3100
DLOV 80-22	8712	2200	1800	2200

Tables show standard sizes. Other dimensions available on request.

The technical contents of present brochure are not binding and can be varied by DE LAMA without any prior notice.