



# DE LAMA

Process & Sterilization Solutions since 1949

## TERMINAL STERILIZERS

# DLOAV & DLOS Series

The industrial solution by air mix or water shower for terminal sterilization of Large/Small Volume Parenteral solutions (LVP/SVP) in glass or deformable containers. The air mix DLOAV Series also suitable for Pre Filled Syringes (PFS) application.



**Pharmaceutical  
Industry**



**Parapharmaceutical  
Industry**



**Food**

## MAIN FEATURES

Wide range of chambers sizes 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

## DESIGN, CONSTRUCTION & FUNCTIONAL FEATURES

- design for installation on the floor (for loading with in-chamber & transfer trolleys) or pit-mounted (for loading at floor level with in/out trolleys or automatic loading/unloading units)
- cylindrical chamber in highly satin finish AISI 316L stainless steel
- single or double door, semi-automatic hinged type or automatically sliding chamber pipings and fittings in AISI 316L stainless steel, tri-clamp connections. On request, sanitary execution
- absolute filter with 0,22 micron cartridge for air inlet, assembled to allow integrity test (e.g. WIT)
- clamp connections for validation activities
- high grade thermal insulation
- built-in or separate electrical cabinet
- optional external panel/s in AISI 304 stainless steel
- pressure monitoring inside the chamber by pressure transmitter
- temperature monitoring/regulation inside the chamber by temperature sensors Pt 100 Ohm class A EN 60751/IEC 751
- wide range of alarms and safety devices to assure Operator protection and proper equipments operation

### DLOAV AIR MIXTURE

- full jacket double wall chamber
- ventilation group by high efficiency magnetic coupling fan/s made of AISI 316L
- exchanges made of AISI 316L to circulate steam during heating and cold water during cooling
- optional quick cooling by water spray headers

### STANDARD OPERATING PARAMETERS

Pressure	max. 4,5 bar abs.
Temperature	max. 139° C

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

### DLOS SUPERHEATED WATER

- water spray distribution headers fitted with nozzles suitably located to assure water uniform distribution on the product with consequent excellent temperature uniformity throughout the entire load
- high efficiency plate-type heat exchanger, in AISI 316L stainless steel, for recirculation of heating/cooling water
- high delivery pump, in AISI 316L stainless steel, for recirculation of heating/cooling water in a closed loop
- water circulation in a closed loop assuring quick heating/cooling and minimizing risks of contamination
- water level monitoring inside the chamber by sight level assembly and capacitive level sensors

### STANDARD OPERATING PARAMETERS

Pressure	max. 4 bar abs.
Temperature	max. 139° C

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

## Pros & Cons of DLOAV vs DLOS

	DLOAV air steam mix	DLOS superheated w.
Cycle Duration	2.5 hours	1.5 hours
Consumption of purified Water (RO)	No	Yes
Consumption of industrial steam	No	Yes
Consumption of clean steam	Yes	No
Drying of goods	Yes	No



Autoclave DE LAMA DLOAV 43-40 2S  
Gross volume 9810 lts.



Autoclave DE LAMA DLOS 43-61 2S  
Gross volume 14575 lts.

## TECHNICAL DATA

Model	Volume	Chamber nominal internal dimensions			
		Diameter mm	Height mm	Width mm	Depth mm
DLOAV & DLOS	lts.				
20-10	1158	1120	800	800	1000
20-12	1405	1120	800	800	1250
20-20	2195	1120	800	800	2000
20-25	2685	1120	800	800	2500
20-30	3180	1120	800	800	3000
20-37	3870	1120	800	800	3700
35-10	1880	1400	1000	1000	1000
35-12	2265	1400	1000	1000	1250
35-15	2650	1400	1000	1000	1500
35-20	3420	1400	1000	1000	2000
35-25	4265	1400	1000	1000	2500
35-30	5035	1400	1000	1000	3000
35-37	6115	1400	1000	1000	3700
35-40	6575	1400	1000	1000	4000
35-50	8115	1400	1000	1000	5000
43-30	7540	1700	1200	1200	3000
43-37	9130	1700	1200	1200	3700
43-40	9810	1700	1200	1200	4000
43-50	12080	1700	1200	1200	5000
43-61	14575	1700	1200	1200	6100
43-75	17750	1700	1200	1200	7500
43-85	20016	1700	1200	1200	8500
43-99	23195	1700	1200	1200	9900
55-40	12315	1900	1450	1200	4000
55-61	18265	1900	1450	1200	6100
55-92	27050	1900	1450	1200	9200
55-122	35555	1900	1450	1200	12200
60-115	40215	2070	1600	1250	11500

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.



Autoclave DE LAMA DLOS 60-115 2S  
Gross volume 40215 lts.

DLOAV-DLOS 05/18