

## Laboratory glassware washing system





## Driven by customer needs

Steelco is a leading infection control solution provider, supplying the healthcare, laboratory research and pharma sectors. Active in over 100 countries, Steelco has equipped numerous world renown hospitals and counts among its customers household names in the laboratory, pharmaceutical and industrial sectors

Driven by customer feedback, Steelco develops, manufactures and supplies solutions that maximize infection control safety, optimize processes and minimize costs.

Our focus on innovation has led us to become leaders in areas such as automation, improving the efficiency and working environment of those that use Steelco products.

Whether you are just wishing to replace a single small machine or requiring assistance in designing and equipping your scientific or research laboratory, Steelco and it's factory trained dealers are here to help you make the best decision possible that works for you and then support you every step of the way.



*R&D Department*

*Scientific Laboratories*

*Pharmaceutical Laboratories*



## Supporting you every step of the way

Steelco provides technical service and user training courses at the Steelco Academy as well as at customer sites. Our optional remote diagnostics capabilities and worldwide team of factory trained engineers ensure that you receive the service support you need to cost effectively maximize the uptime of your sterilizers.



## Laboratory glassware

### Washing systems

Our complete range of reliable washer disinfectors and automation solutions focuses on optimal cleaning results and operator safety.

Washing systems can be adapted to effectively decontaminate a wide range of different glassware and other materials of common use in laboratories.

Steelco experienced layout design team can help you plan your new or refurbished department and our process engineering team can develop cycles specifically to best meet your needs.

## Water and energy saving

### Unrivalled levels of efficiency

Steelco's washers are already efficient compared to equivalent competitor models.

Quality and speed of the washing process are of utmost importance as well as water, detergent and energy consumption. Our washing systems can be configured with pre-heating tanks with water and energy recovery systems.

## Acceptance Tests & on site activities

### Our reliability is unique: *Factory Acceptance Test and Site Acceptance Tests*

Steelco Group is available anytime to support customers during all acceptance on site including process development and mapping.

All on site activities undertaken to pre-agreed written protocols according to customer requirements. Steelco keeps records of the technical file of each machine to enable full access in case of third party inspection to verify compliance with directives and regulations currently in force.

Installation qualification (IQ), operational qualification (OQ), and performance qualification (PQ) are provided according to the final scope of supply.

Steelco range of washing and sterilization systems for life sciences, laboratory applications and pharma industry:

Washer disinfectors and sterilizers for **life science** applications



Steam sterilizer for **research laboratories**



**Pharmaceutical** washing and sterilization systems



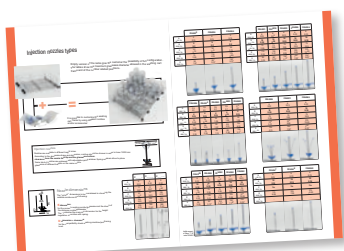


# Steelco LAB Series

## A full range for any size of facility

Hinged or sliding door, single and double door pass through models also with automatic loading/unloading options.

For each Steelco washing device, a wide range of wash carts is available for both standard or configurable solutions.



The final pages of the catalog are dedicated to choosing the most appropriate optimal accessories for convenient loading and to the selection of injection nozzles to set up configurable wash carts.



**LAB 500 Series**  
Chamber volume  
**171 lt (6.04 ft<sup>3</sup>)**



**LAB 600**  
Chamber volume  
**200 lt (7.06 ft<sup>3</sup>)**



**LAB 610 - LAB 610 SL**  
Chamber volume  
**250 lt (8.83 ft<sup>3</sup>)**

## Standard compliant

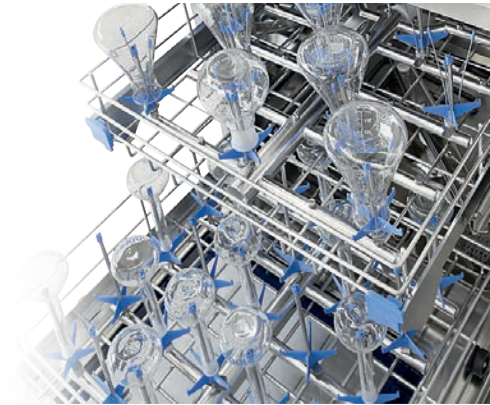
Steelco Laboratory glassware washers comply with the currents European directives and standards as follow: 2006/42/EC, 2014/35/EU, 2014/30/EU and 2011/65/EU Directives, EN 61010-1, EN 61010-2-040, EN 61326-1, EN ISO 15883-1 current standards.





## Machines baskets, inserts and accessories

*"Steelco's laboratory glassware washer range offers customers a large choice of machines, racks and inserts all specifically designed to meet the different needs of end users"*



**LAB 640 SL**  
Chamber volume  
**350 lt (12.36 ft<sup>3</sup>)**



**LAB 900**  
Chamber volume  
**500 lt (17.66 ft<sup>3</sup>)**



**LAB 1000**  
Chamber volume  
**500 lt (17.66 ft<sup>3</sup>)**



**LAB 660 - LAB 680**  
Chamber volume  
**600 lt (21.19 ft<sup>3</sup>)**

## A complete range

racks, inserts, trays,  
and accessories



## Control system

The Control System, with its auto-diagnostic process, constantly monitors and displays current cycle status and alarms. It allows the operator to optimise the washing process and to personalise programmes on machines. Information can be exported via ethernet connectivity or a USB port.



Easy to manage, the touch control system with graphic colour LCD display can simplify the operator's job when using the machine.



LCD Control System



Steelcotronic control system with industrial PLC, 5,7" touch screen display.



The machine can be provided with a USB port that allows the downloading of historical cycle data and enables software upgrade.

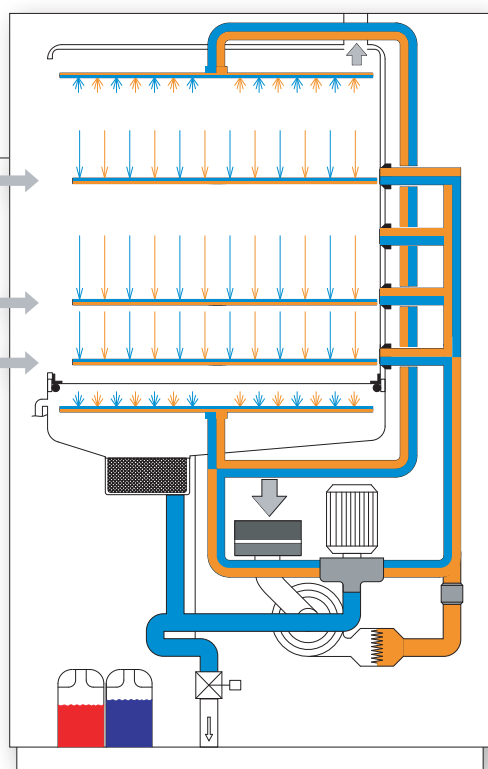
USB port allows an easy paperless document flow, documents can be opened directly by common office applications.

## Key features

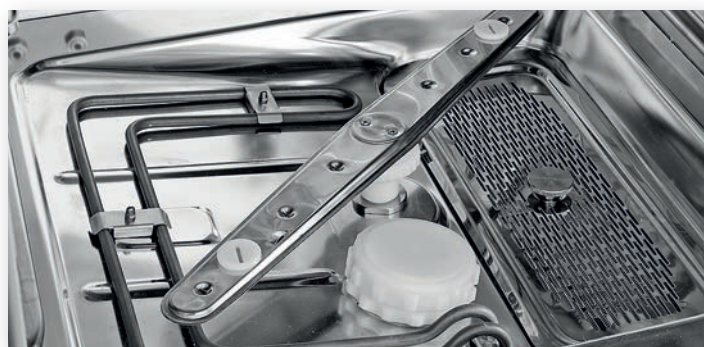
- Up to four liquid detergent dosing pumps.
- Three water connections are available: cold, warm and DI water. Between each phase of a cycle, water is drained and clean water is introduced for the following phase. An additional tank for pre-heating DI water is optionally available.
- Double wall construction and washing chamber insulation in order to reduce heat loss and power consumption.
- Large capacity water softeners are available for a continuous supply of softened water.
- Water purificator system option.

## Cleaning effectiveness

Effective **Mechanical** action with complete coverage is of key importance and one of the main elements to assure an effective cleaning during the washing process. Steelco has customised washing pumps and circuits of each model to ensure a high flow rate combined with effective spray pressure.



Direct coupling system for various mobile injection washing carts.



The washing chamber and spray arms as well as tank filters are made of high quality AISI 316 L stainless steel (DIN 1.4404).

The washing chamber has rounded edges in order to avoid any dirt traps, minimizing the risk of microbial growth.

The external cabinet is made of AISI 304 stainless steel (DIN 1.4301). Water filtering system on three levels.



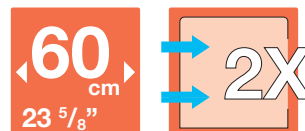


# LAB 500 Series

## Undercounter Glassware Washers

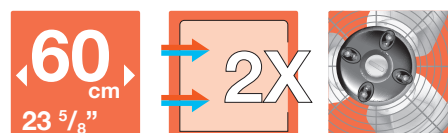


- Chamber volume ~171 lt / 6.04 ft<sup>3</sup>
- Basket volume ~151 lt / 5.33 ft<sup>3</sup>



### LAB 500 SC

- Washing system **on two independent levels**
- Chamber drying by electrical heating elements
- Stainless steel or high visibility full glass door



### LAB 500 CL

- Washing system **on two independent levels**
- Forced hot air drying system **on two independent levels**



#### Stainless steel door version **LAB 500 SC** only

##### Control panel

- LED display, 10 programs for laboratory glassware: 5 pre-programmed cycles, 5 customizable cycles.

##### Connections

- RS 232 port dedicated for printer or PC connection to monitor and validate the washing cycles and/or the data storage.



#### Stainless steel door version **LAB 500 SC** and **LAB 500 CL**

##### Control panel

- LCD display, 40 programs for laboratory glassware: 20 pre-programmed cycles, 20 customizable cycles.

##### Connections

- RS 232 port for printer or PC connection.
- USB port on front panel for cycle data storage and the program updating.



#### Full glass door version **LAB 500 SC**, **LAB 500 CL** and **LAB 500 DRS**

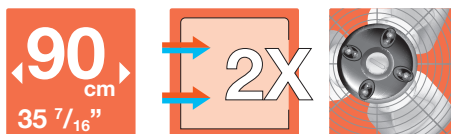
##### Control panel

- Full glass, soft touch control panel, LCD display, 40 programs for laboratory glassware: 20 pre-programmed cycles, 20 customizable cycles.

##### Connections

- RS 232 port for printer or PC connection.
- USB port on front panel for cycle data storage and the program updating.





## LAB 500 DRS

- Washing system **on two independent levels**
- **High power** - forced hot air drying system **on two independent levels**
- **Cabinet door** (300mm width) for:
  - storage of chemistries
  - direct access to drying filtering system
  - direct access to chemical dosing system



- Chamber volume ~171 lt / 6,04 ft<sup>3</sup>
- Basket volume ~151 lt / 5,33 ft<sup>3</sup>



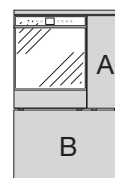
## Stands and side cabinets

Different models of 300mm/11.81" wide side cabinets allow to locate:

- Tank for preheated DI water
- Purification system for DI water
- Up to four 5 lt./1.32 Gal US chemical containers

Stands (600mm/23.62" height) equipped with doors for storage access and to improve ergonomics when machines are not undercounter installed.

## Choosing the right configuration and options



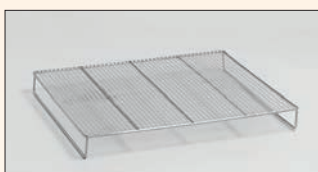
	stand		cabinet left or right side		900mm machine cabinet on right side only			stand + 900mm machine cabinet on right side only	
	comb. 1	comb. 2	comb. 3	comb. 4	comb. 5	comb. 6	comb. 7	comb. 8	comb. 9
pre-heating tank	•	-	-	-	•	-	-	•A	•B
chemical storage	•	•	•	-	-	•	-	•B	•B
purification system	-	-	-	•	-	-	•	-	•A
4 <sup>th</sup> dosing pump	-	-	-	-	-	•	-	-	•A
integrated printer	-	-	-	-	•	•	•	•A	•A
conductivity meter	-	-	-	-	•	•	-	•A	-
pressure booster pump for DI water	-	-	-	-	•	•	•	•A	•A

## LAB 500 Series - Washing carts

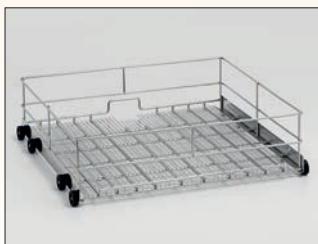
### Full loading space



**C721** - upper washing cart with spray arm, loading space 485x450mm (19 1/16"x17 3/4")



**C788** - support grid ensuring a flat surface on a C721, usable height reduced by 50mm (2")



**C52L** - lower washing cart, loading space 490x470mm (19 5/16"x18 1/2")

### With injection nozzles for glassware



example ❶

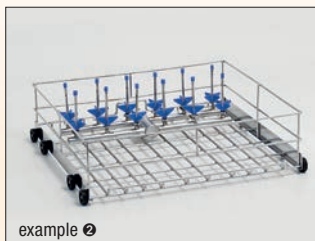
#### Upper level suggested configuration

- A** 36 positions  
max glassware  $\varnothing$  74mm/2 15/16"  
max glassware h 160mm/6 5/16"  
C711E frame  
+ 36 nozzles C054924

#### Lower level suggested configuration

- A** 39 positions,  
max glassware  $\varnothing$  70mm/2 3/4"  
max glassware h 200mm/7 7/8"  
C990E frame  
+ 39 nozzles C054904
- B** 39 positions,  
mixed nozzles  
average glassware  $\varnothing$  70mm/2 3/4"  
max glassware h 200...300mm  
C990E frame  
+ 10 nozzles C054905  
+ 29 nozzles C054904

### With half space + injection nozzles for glassware

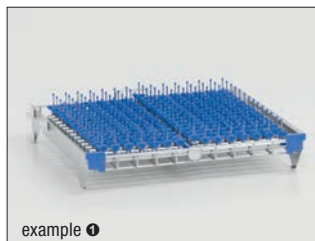


example ❷

#### Lower level suggested configurations

- A** 18 positions,  
mixed nozzles  
max glassware  $\varnothing$  62mm/2 7/16"  
max glassware h 200...300mm  
loading space 250x490mm  
(9 13/16"x19 5/16")  
C1197E frame  
+ 9 nozzles C054905  
+ 9 nozzles C054904
- B** 12 positions,  
mixed nozzles with supports  
max glassware  $\varnothing$  70mm/2 3/4"  
max glassware h 180...280mm  
loading space 290x490mm  
(11 7/16"x19 5/16")  
C717E frame  
+ 6 nozzles C054948  
+ 6 nozzles C054947

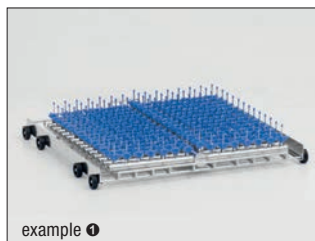
### With injection nozzles for vials



example ❶

#### Upper level suggested configuration

- A** 210 positions,  
max glassware  $\varnothing$  30mm/1 3/16"  
max glassware h 35...65mm  
C1342E frame  
+ 210 nozzles C054953



example ❶

#### Lower level suggested configuration

- A** 210 positions,  
max glassware  $\varnothing$  30mm/1 3/16"  
max glassware h 35...65mm  
C1341E frame  
+ 210 nozzles C054953

## Upper level empty racks

empty rack code	max $\varnothing$ mm/in.	nr. of injection positions	Lev.	notes
C1342E	30 / 1 3/16	210	❶ U	only for mm 2,5/0.1" $\varnothing$ nozzles
C1235E	25 / 1	156	❶ U	only for mm 2,5/0.1" $\varnothing$ nozzles
C1132E	40 / 1 9/16	110	❶ U	only for mm 2,5/0.1" $\varnothing$ nozzles
C809E	50 / 2	64	❶ U	only for mm 2,5/0.1" $\varnothing$ nozzles
C815E	57 / 2 1/4	56	❶ U	only for mm 2,5-4/0.1-0.16" $\varnothing$ nozzles
C711E	74 / 2 15/16	36	❶ U	
C712E	90 / 3 9/16	25	❶ U	
C953E	105 / 4 1/8	18	❶ U	
C723E	70 / 2 3/4	18+121	❸ U	see C1086, C1061, C1105 accessories

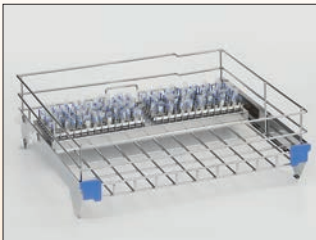
U = Upper level, L = Lower level

The table shows the maximum glassware diameter in the washing cart frame and position options.

## Lower level empty racks

empty rack code	max $\varnothing$ mm/in.	nr. of injection positions	Lev.	notes
C1341E	30 / 1 3/16	210	❶ L	only for mm 2,5/0.1" $\varnothing$ nozzles
C1133E	40 / 9/16	110	❶ L	only for mm 2,5/0.1" $\varnothing$ nozzles
C810E	50 / 2	64	❶ L	only for mm 2,5/0.1" $\varnothing$ nozzles
C816E	56 / 2 3/16	56	❶ L	only for mm 2,5-4/0.1-0.16" $\varnothing$ nozzles
C990E	70 / 2 3/4	39	❶ L	
C716E	89 / 3 1/2	25	❶ L	
C954E	105 / 4 1/8	18	❶ L	
C1079E	110 / 4 5/16	16	❶ L	
C901E	150 / 5 15/16	9	❶ L	
C1197E	62 / 2 7/16	18	❷ L	mm 250x490 / 9 13/16"x19 5/16" space
C717E	70 / 2 3/4	12	❷ L	mm 290x490 / 11 7/16"x19 5/16" space
C718E	89 / 3 1/2	10	❷ L	mm 265x490 / 10 7/16"x19 5/16" space
C804E	89 / 3 1/2	10+121	❸ L	see C1086, C1061, C1105 accessories

### With half space + injection nozzles for vials



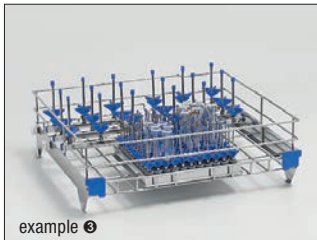
#### Upper level suggested configuration C858

224 positions, useful  $\varnothing$  12mm/ $1/2$ " ,  
equipped with 19mm/ $3/4$ " height nozzles  
+ loading space 250x490mm  
(9  $13/16$ "x19  $5/16$ " )

#### Lower level suggested configuration C859

224 positions, max  $\varnothing$  12mm/ $1/2$ " ,  
equipped with 19mm/ $3/4$ " height nozzles  
+ loading space 270x500mm  
(10  $5/8$ "x19  $11/16$ " )

### With injection nozzles + nozzles for vials



#### Upper level suggested configuration

- A 18 positions**  
max glassware  $\varnothing$  70mm/ $2 3/4$ "  
max glassware h 160mm/ $6 5/16$ "
- 121 positions**  
max glassware  $\varnothing$  20mm/ $13/16$ "  
max glassware h 160mm/ $6 5/16$ "
- C723E frame  
+ 18 nozzles C054924  
+ 121 nozzles C054903

#### Lower level suggested configuration

- B 10 positions**  
max glassware  $\varnothing$  89mm/ $3 1/2$ "  
max glassware h 160mm/ $6 5/16$ "
- 121 positions**  
max glassware  $\varnothing$  20mm/ $13/16$ "  
max glassware h 160mm/ $6 5/16$ "
- C804E frame  
+ 121 nozzles C054903  
+ 10 nozzles C054905  
note: see also C1061, C1086  
and C1105 accessories

### Multipurpose with injection nozzles + pipettes

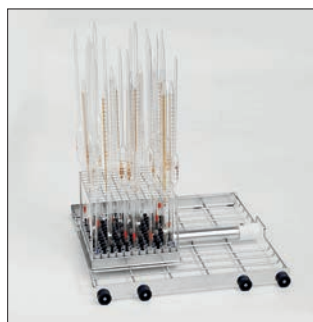


- C1511**  
lower level:  
5 positions for pipettes  
min pipette length 250mm/ $9 13/16$ "  
max pipette length 535 mm/ $21 1/16$ "  
2 nozzles h 220mm/ $8 11/16$ " and  
 $\varnothing$  max 130mm/ $5 1/8$ "  
4 nozzles h 220mm/ $8 11/16$ " and  
 $\varnothing$  max 98mm/ $3 7/8$ "  
3 nozzles (C054922) h 175mm/ $6 7/8$ "  
and  $\varnothing$  max 60mm/ $2 3/8$ " + additional  
loading space 260x230mm  
(10  $1/4$ "x9  $1/16$ " )

### Injection washing for pipettes



- C759**  
lower level, max 48 positions.  
Minimum pipette length  
250mm/ $9 13/16$ " and 300mm/ $11 13/16$ "  
Maximum pipette length 535mm/ $21 1/16$ "



- C719**  
lower level, max 121 positions.  
Min. pipette length 135mm/ $5 5/16$ " ,  
Max. pipette length 470mm/ $18 1/2$ "

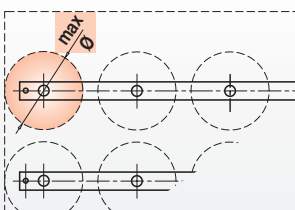
### Immersion washing for pipettes



- C720**  
lower level, with 2 pipette cassettes.  
Maximum pipette length 290mm/ $11 7/16$ " .  
Pipettes must be fully covered by  
water and fully immersed within the  
cassette.

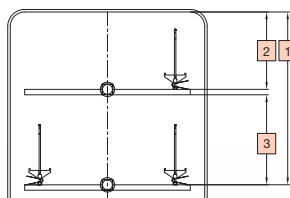
## Glassware diam.

Top view of a portion of a injection  
washing cart showing the maximum  
glassware diameter.



## Level positions

1	480 mm / 18 $7/8$ "
2	210 mm / 8 $1/8$ "
3	250 mm / 9 $13/16$ "



The use of an upper level washing cart fitted with rotating spray arm  
reduces the useful height of the level placed below by 40mm (1  $9/16$ " )  
and allows a gain of 15mm ( $9/16$ " ) on top.

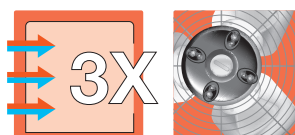


# LAB 600 - LAB 610 - LAB 610 SL

## Freestanding Glassware Washers

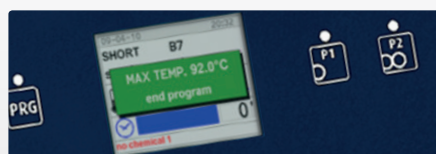


- Chamber volume ~200 lt / 7.06 ft<sup>3</sup>
- Basket volume ~170 lt / 6.04 ft<sup>3</sup>



### LAB 600

- Washing and forced hot air drying system **on three independent levels**  
The upper level can be connected at two different water/air connections depending on the height of the loaded glassware.
- High visibility **hinged** full glass door
- Sliding drawer for storage of chemical containers (up to three 5 lt/1.32 Gal US)



#### Control panel

- Full glass, soft touch control panel, LCD display, 40 programs for laboratory glassware: 20 pre-programmed cycles, 20 customizable cycles.

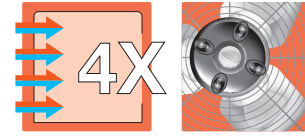
#### Connections

- RS 232 port dedicated for printer or PC connection to monitor and validate the washing cycles and/or the data storage.



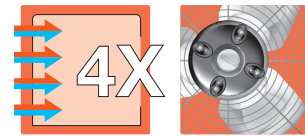


- Chamber volume ~250 lt / 8.83 ft<sup>3</sup>
- Basket volume ~220 lt / 7.77 ft<sup>3</sup>



## LAB 610

- Washing and forced hot air drying system **on four independent levels**. The two upper levels can be placed at either one of three different water/air connections depending on the height of the loaded glassware.
- High visibility **hinged full glass door**
- Sliding drawer for storage of chemical containers (up to three 5 lt/1.32 Gal US)



## LAB 610 SL

- Washing and forced hot air drying system **on four independent levels**. The two upper levels can be placed at either one of three different water/air connections depending on the height of the loaded glassware.
- Vertical **sliding down** high visibility **full glass door**
- Hinged door for access to storage of chemical containers (up to three 5 lt/1.32 Gal US)



### High capacity

LAB 610 and LAB 610 SL models can be used to clean large bottles of up to 60 lt, 15.85 Gal US

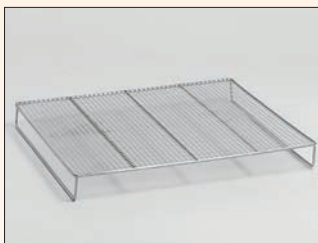
Dimensions		LAB 600	LAB 610	LAB 610 SL
Width	mm	650	650	685
	inches	25 <sup>9</sup> / <sub>16</sub>	25 <sup>9</sup> / <sub>16</sub>	27
Depth	mm	660	687	697
	inches	26	27 <sup>1</sup> / <sub>16</sub>	27 <sup>7</sup> / <sub>16</sub>
Height	mm	1685	1840	1960
	inches	66 <sup>5</sup> / <sub>16</sub>	72 <sup>7</sup> / <sub>16</sub>	77 <sup>3</sup> / <sub>16</sub>

# LAB 600 - LAB 610 - LAB 610 SL Series - Washing carts

## Full loading space



**C728** - upper washing cart with washing arm, loading space 485x525mm (19 1/16" x 20 11/16")



**C788** - support grid ensuring a flat surface on a C736, usable height reduced by 50mm (2")



**C736** - lower washing cart, loading space 470x540mm (18 1/2" x 21 1/4")

## With injection nozzles for mid size glassware



example ❶

### Upper level suggested configuration

- A** 42 positions  
max glassware  $\varnothing$  70mm/2 3/4"  
max glassware h 160mm/6 5/16"  
C724E frame  
+ 42 nozzles C054924
- B** 20 positions  
max glassware  $\varnothing$  100mm/3 15/16"  
max glassware h 230mm/9 1/16"  
C725E frame  
+ 20 nozzles C054922
- C** 42 positions, mixed nozzles  
average glassware  $\varnothing$  70mm/2 3/4"  
max glassware h 200...300mm  
C724E frame  
+ 10 nozzles C054922  
+ 32 nozzles C054924

## With injection nozzles for mid size glassware

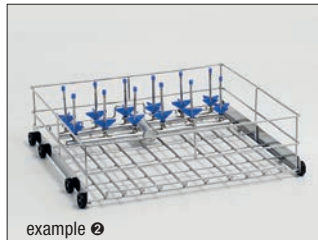


example ❶

### Lower level suggested configurations

- A** 42 positions,  
max glassware  $\varnothing$  70mm/2 3/4"  
max glassware h 230mm/9 1/16"  
C729E frame  
+ 42 nozzles C054904
- B** 20 positions  
max glassware  $\varnothing$  100mm/3 15/16"  
max glassware h 300mm/11 13/16"  
C730E frame  
+ 20 nozzles C054905
- C** 42 positions, mixed nozzles  
average glassware  $\varnothing$  70mm/2 3/4"  
max glassware h 200...300mm  
C729E frame  
+ 10 nozzles C054922  
+ 32 nozzles C054924
- D** 42 positions, mixed nozzles with supports  
average glassware  $\varnothing$  70mm/2 3/4"  
max glassware h 180...280mm  
C729E frame  
+ 12 nozzles C054948  
+ 30 nozzles C054947

## With half space + injection nozzles for glassware



example ❷

### Lower level suggested configurations

- A** 24 positions, mixed nozzles  
max glassware  $\varnothing$  70mm/2 3/4"  
max glassware h 200...300mm  
loading space mm 230x490  
(9 1/16" x 19 5/16")  
C731E frame  
+ 12 nozzles C054905  
+ 12 nozzles C054904
- B** 12 positions, mixed nozzles with supports  
max glassware  $\varnothing$  100mm/3 15/16"  
max glassware h 180...280mm  
loading space mm 220x490  
(8 11/16" x 19 5/16")  
C732E frame  
+ 6 nozzles C054948  
+ 6 nozzles C054947

## Multipurpose with injection nozzles + pipettes



### C1328

lower level:  
5 positions for pipettes  
min pipette length 250mm/9 13/16"  
max pipette length 535 mm/21 1/16"  
2 nozzles h 220mm/8 11/16" and  $\varnothing$  max 130mm/5 1/8"  
4 nozzles h 220mm/8 11/16" and  $\varnothing$  max 98mm/3 7/8"  
3 nozzles (C054922) h 175mm/6 7/8" and  $\varnothing$  max 60mm/2 3/8" + additional loading space 260x230mm (10 1/4" x 9 1/16")

## Upper level empty racks

empty rack code	max $\varnothing$ mm/in.	nr. of injection positions	notes
C1092E	32 / 1 1/4	156	❶ only for mm 2,5/1/8" $\varnothing$ nozzles
C1192E	40 / 1 9/16	110	❶ only for mm 2,5/1/8" $\varnothing$ nozzles
C837E	35 / 1 3/8	84	❶ only for mm 2,5/1/8" $\varnothing$ nozzles
C724E	70 / 2 3/4	42	❶
C1603E	80 / 3 1/8	36	❶
C725E	100 / 3 15/16	20	❶
C838E	110 / 4 5/16	16	❶
C1443E	75 / 2 15/16	27	❶
C991E	20 / 13/16	121	❷ mm 200x490 / 7 7/8" x 19 5/16" space
C746E	75 / 2 15/16	24+121	❸ see C1086, C1061, C1105 accessories
C1148E	25 / 1	121	❹ only for mm 2,5/1/8" $\varnothing$ nozzles

The table shows the maximum glassware diameter in the washing cart frame and position options.

## Lower level empty racks

empty rack code	max $\varnothing$ mm/in.	nr. of injection positions	notes
C1093E	40 / 1 9/16	110	❶ only for mm 2,5/1/8" $\varnothing$ nozzles
C1570E	52 / 2 1/16	70	❶ only for mm 2,5-4/1/8"-3/16" $\varnothing$ nozzles
C1127E	60 / 2 3/8	56	❶ only for mm 2,5-4/1/8"-3/16" $\varnothing$ nozzles
C729E	70 / 2 3/4	42	❶
C1604E	80 / 3 1/8	36	❶
C730E	100 / 3 15/16	20	❶
C839E	110 / 4 5/16	16	❶
C1442E	75 / 2 15/16	27	❶
C885E	130 / 5 1/8	12	❶
C1571E	160 / 6 5/16	9	❶
C731E	70 / 2 3/4	24	❷ mm 230x490 / 9 1/16" x 19 5/16" space
C732E	100 / 3 15/16	12	❷ mm 220x490 / 8 11/16" x 19 5/16" space
C836E	75 / 2 15/16	24+121	❸ see C1086, C1061, C1105 accessories
C1149E	25 / 1	121	❹ only for mm 2,5/1/8" $\varnothing$ nozzles

### With injection nozzles for large size glassware



#### Lower level

##### C1039

up to 4 items  $\varnothing$  max 240mm/9  $\frac{7}{16}$ "  
up to 5 items  $\varnothing$  max 190mm/9  $\frac{1}{2}$ "

##### C1040

up to 2 items  $\varnothing$  max 280mm/11"

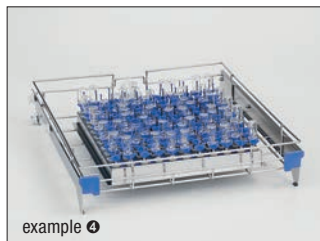
##### C1121

for 50 lt carboy.  
Only for LAB 610 model

##### C1160

for 1500ml graduated cylinders  
up to 9 positions  
max  $\varnothing$  100mm/3  $\frac{15}{16}$ " body  
max  $\varnothing$  160mm/6  $\frac{5}{16}$ " base

### With injection nozzles for vials



example 4

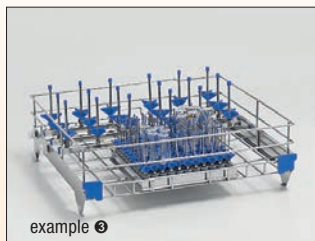
#### Upper level suggested configurations

- A** 121 positions,  
max glassware  $\varnothing$  25mm/1"  
max glassware h 90mm/3  $\frac{9}{16}$ "  
C1148E frame  
+ 121 nozzles C054953  
note:  
see also C1150 accessory

#### Lower level suggested configurations

- B** 121 positions,  
max glassware  $\varnothing$  25mm/1"  
max glassware h 140mm/5  $\frac{1}{2}$ "  
C1149E frame  
+ 121 nozzles C054953  
note:  
see also C1150 accessory

### With injection nozzles + nozzles for vials



example 5

#### Upper level suggested configurations

- A** 121 positions  
max glassware  $\varnothing$  20mm/1  $\frac{3}{16}$ "  
max glassware h 160mm/6  $\frac{5}{16}$ "  
24 positions  
max glassware  $\varnothing$  75mm/2  $\frac{15}{16}$ "  
max glassware h 160mm/6  $\frac{5}{16}$ "  
C746E frame  
+ 121 nozzles C054903  
+ 24 nozzles C054924  
note: see also C1061, C1086  
and C1105 accessories

#### Lower level suggested configurations

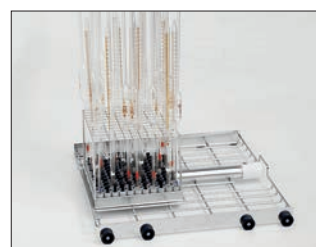
- B** 121 positions  
max glassware  $\varnothing$  20mm/1  $\frac{3}{16}$ "  
max glassware h 160mm/6  $\frac{5}{16}$ "  
24 positions  
max glassware  $\varnothing$  75mm/2  $\frac{15}{16}$ "  
max glassware h 300mm/11  $\frac{13}{16}$ "  
C836E frame  
+ 121 nozzles C054903  
+ 24 nozzles C054905  
note: see also C1061, C1086  
and C1105 accessories

### Injection washing for pipettes



#### C989

lower level, max 56 positions.  
Min. pipette length 250mm/9  $\frac{13}{16}$ " and  
300mm/11  $\frac{13}{16}$ ". Max. pipette length:  
760mm/29  $\frac{15}{16}$ " on LAB 610 model,  
535mm/21  $\frac{1}{16}$ " on LAB 600 model.



#### C733

lower level, max 121 positions.  
Min. pipette length 135mm/5  $\frac{5}{16}$ ".  
Max. pipette length 470mm/18  $\frac{1}{2}$ " on  
LAB 600, 620mm/24  $\frac{7}{16}$ " on LAB 610

### Immersion washing for pipettes



**C734** lower level, with 2 pipettes  
cassettes, for LAB 610 only  
Max. pipette length 520mm / 20  $\frac{1}{2}$ "

**C735** lower level, with 3 pipettes  
cassettes, for LAB 610 only.  
Max. pipette length 290mm / 11  $\frac{7}{16}$ "

**C1141** lower level, with 2 pipettes  
cassettes, for LAB 600 only  
Max. pipette length 290mm/ 11  $\frac{7}{16}$ "

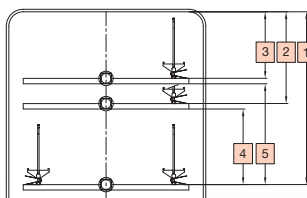
Pipettes must be fully covered by water  
and fully immersed within the cassette.

## Level positions

The use of an upper level washing cart provided with spray arm  
reduces the useful height of the level placed below by 40mm/1  $\frac{9}{16}$ "  
but allows a gain of 15mm/  $\frac{9}{16}$ " on top.

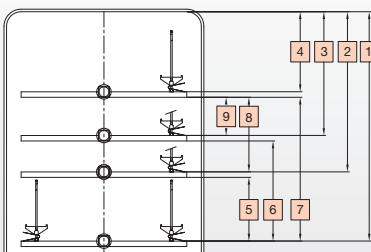
### LAB 600

1	480 mm / 24 $\frac{7}{8}$ "
2	250 mm / 9 $\frac{13}{16}$ "
3	180 mm / 7 $\frac{1}{16}$ "
4	210 mm / 8 $\frac{1}{4}$ "
5	280 mm / 11"



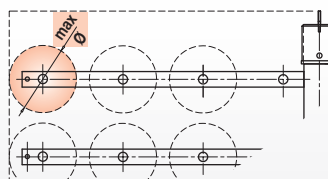
### LAB 610 - LAB 610 SL

1	630 mm / 24 $\frac{13}{16}$ "
2	440 mm / 17 $\frac{5}{16}$ "
3	340 mm / 13 $\frac{3}{8}$ "
4	220 mm / 8 $\frac{11}{16}$ "
5	170 mm / 6 $\frac{11}{16}$ "
6	270 mm / 10 $\frac{5}{8}$ "
7	390 mm / 15 $\frac{3}{8}$ "
8	200 mm / 7 $\frac{7}{8}$ "
9	100 mm / 3 $\frac{15}{16}$ "



## Glassware diameter

Top view of a portion of an injection  
washing cart showing the maximum  
glassware diameter.





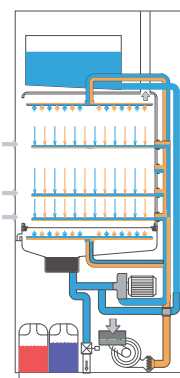
# LAB 640 SL

## Freestanding Glassware Washers



### LAB 640 SL

- Washing and forced hot air drying system on four independent levels. The upper levels can be docked to three different water/air connections depending on the height of the loaded glassware.
- **Vertical sliding down full glass door.**
- Steelcotronic control system with industrial PLC, 5,7" touch screen display. Up to 65 washing programs for laboratory glassware.
- Hinged door for access to storage of chemical tanks (up to two 10 lt/2.64 Gal US)

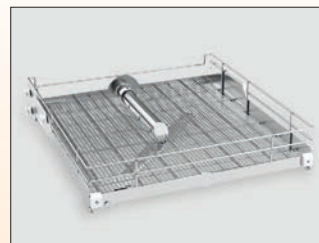


### Single pass final rinse

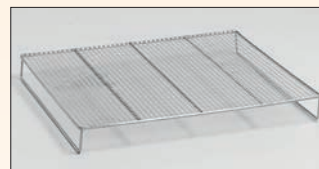
LAB 640 washer can be equipped with a non recirculated final rinse hydraulic circuit option.

- Chamber volume ~350 lt / 12.36 ft<sup>3</sup>
- Basket volume ~280 lt / 9.89 ft<sup>3</sup>

### Full loading space



**C1390** - upper washing cart with washing arm, loading space 570x600mm (22 7/16"x23 5/8")



**C1502** - support grid to have a flat surface on a C1390, usable height reduced by 50mm/2"

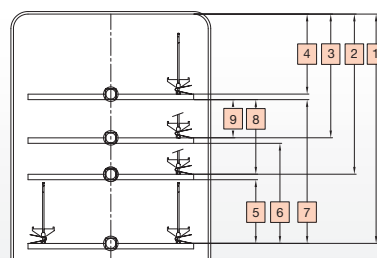


**C1389** - lower washing cart, loading space 570x600mm (22 7/16"x23 5/8")

Dimensions		LAB 640 SL
Width	mm	765
	inches	30 1/8"
Depth	mm	800
	inches	31 1/2"
Height	mm	1975
	inches	77 3/4"

### Level positions

1	630 mm / 24 13/16"
2	440 mm / 17 5/16"
3	340 mm / 13 3/8"
4	220 mm / 8 11/16"
5	170 mm / 6 11/16"
6	270 mm / 10 5/8"
7	390 mm / 15 3/8"
8	200 mm / 7 7/8"
9	100 mm / 3 15/16"



The use of an upper level washing cart provided with spray arm reduces the useful height of the level placed below by 40mm/1 9/16" but allows a gain of 15mm/ 9/16" on top.



## LAB 640 SL - washing carts

### Injection nozzles for small size glassware



upper/lower levels  
suggested configurations

- A 208 positions**  
max glassware  $\varnothing$  41mm/1  $\frac{5}{8}$ ",  
max glassware h 160mm/6  $\frac{5}{16}$ "  
C1412E frame  
+ 208 nozzles C054903
- B 137 positions**  
max glassware  $\varnothing$  51mm/2",  
max glassware h 180mm/7  $\frac{1}{16}$ "  
C1411E frame  
+ 137 nozzles C054924
- C 90 positions,**  
max glassware  $\varnothing$  60mm/2  $\frac{3}{8}$ ",  
max glassware h 230mm/9  $\frac{1}{16}$ "  
C1408E frame  
+ 90 nozzles C054904

### Injection nozzles for mid size glassware



upper/lower levels  
suggested configurations

- A 56 positions**  
max glassware  $\varnothing$  76mm/3",  
max glassware h 230mm/9  $\frac{1}{16}$ "  
C1407E frame  
+ 56 nozzles C054904
- B 35 positions**  
max glassware  $\varnothing$  95mm/3  $\frac{3}{4}$ ",  
max glassware h 280mm/11"  
C1406E frame  
+ 35 nozzles C054905
- C 18 positions**  
max glassware  $\varnothing$  120mm/4  $\frac{3}{4}$ ",  
max glassware h 330mm/13"  
C1405E frame  
+ 18 nozzles C054959

### Injection nozzles for large size glassware



- C1404**  
upper/lower level, capacity:  
up to 8 items  $\varnothing$  max 200mm/7  $\frac{7}{8}$ "
- C1403**  
upper/lower level, capacity:  
up to 5 items  $\varnothing$  max 240mm/9  $\frac{7}{16}$ "
- C1515**  
upper/lower level, capacity:  
up to 4 items  $\varnothing$  max 280mm/11",  
7 measuring cylinders:  
- 4 x max  $\varnothing$  130mm/5  $\frac{7}{8}$ "  
- 3 x max  $\varnothing$  180mm/7  $\frac{1}{16}$ "
- C1455**  
upper/lower level, capacity:  
up to 4 items  $\varnothing$  max 280mm/11"  
1 measuring cylinder  $\varnothing$  max 95mm/3  $\frac{3}{4}$ "
- C1402**  
upper/lower level, capacity:  
up to 3 items  $\varnothing$  max 305mm/12"

### Injection washing for pipettes



- C1409**  
lower level, max 200 positions.  
Min. pipette length 150mm/5  $\frac{15}{16}$ "  
Max. pipette length 620mm/24  $\frac{7}{16}$ "



- C1410E**  
upper level, to be used combined  
with C1409 wash cart for pipettes
- suggested configuration**

- A 20 positions**  
max glassware  $\varnothing$  95mm/3  $\frac{3}{4}$ ",  
max glassware h 280mm/11"  
C1410E frame  
+ 20 nozzles C054905

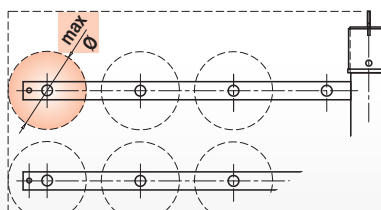
## Upper and lower level empty racks

empty rack code	max $\varnothing$ mm/in.	nr. of injection positions	Upper level Lower level	notes
C1412E	41 / 1 $\frac{5}{8}$	208	1 U/L	only for mm 2,5/0.1" $\varnothing$ nozzles
C1411E	51 / 2	137	1 U/L	only for mm 2,5/0.1" $\varnothing$ nozzles
C1408E	60 / 2 $\frac{3}{8}$	90	1 U/L	only for mm 2,5/0.1" $\varnothing$ nozzles
C1407E	76 / 3	56	1 U/L	only for mm 2,5-4/0.1-0.16" $\varnothing$ nozzles
C1521E	80 / 3 $\frac{1}{8}$	36	1 U/L	
C1406E	95 / 3 $\frac{3}{4}$	35	1 U/L	
C1518E	110 / 4 $\frac{5}{16}$	22	1 U/L	
C1405E	120 / 4 $\frac{3}{4}$	18	1 U/L	
C1519E	135 / 5 $\frac{5}{16}$	14	1 U/L	
C1520E*	180 / 7 $\frac{1}{16}$	8	1 U/L	
C1410E	95 / 3 $\frac{3}{4}$	20	6 U	

\*Inserts for glassware alignment/support for C1520:  
C1520900 max  $\varnothing$  180mm / 5  $\frac{7}{8}$ "  
C1520901 max  $\varnothing$  100mm / 5  $\frac{7}{8}$ "

## Glassware diameter

Top view of a portion of an injection washing cart showing the maximum glassware diameter allowed.



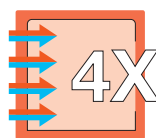
The table shows the maximum glassware diameter allowed in the washing cart frame and of the number related positions.

## Wash cart frame selection for custom configurations

Selection of an empty rack enables users to customize the wash cart frame using different nozzles and accessories. See final pages of the catalogue.

## LAB 900

### Freestanding Glassware Washers



## LAB 900

- Washing system **on four independent levels**  
The upper level can be docked to three different water/air connections depending on the height of the loaded glassware.
- Two automatic dispensers for liquid chemicals
- **Sliding up**, full glass door
- Storage space for chemical tanks (up to three 10 lt/2.64 Gal US)

- Chamber volume ~500 lt / 17.66 ft<sup>3</sup>
- Basket volume ~350 lt / 12.36 ft<sup>3</sup>



#### Control panel

- LCD display, 40 programs for laboratory glassware: 20 pre-programmed cycles, 20 customizable cycles.

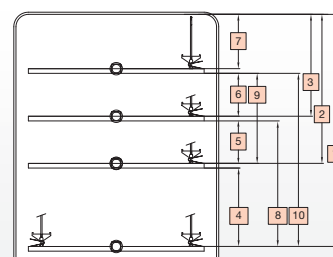
#### Connections

- RS 232 port dedicated for printer or PC connection to monitor and validate the washing cycles and/or the data storage.

Dimensions		LAB 900
Width	mm	1140
	inches	44 7/8
Depth	mm	915
	inches	36
Height	mm	1900
	inches	74 13/16

## Level positions

1	585 mm / 23"
2	345 mm / 13 9/16"
3	235 mm / 9 1/4"
4	205 mm / 8 1/16"
5	75 mm / 2 15/16"
6	75 mm / 2 15/16"
7	125 mm / 4 15/16"
8	315 mm / 12 3/8"
9	185 mm / 7 1/4"
10	425 mm / 16 3/4"



The use of an upper level washing cart provided with spray arm reduces the useful height of the level placed below by 50mm/2" but allows a gain of 15mm/9/16" on top.

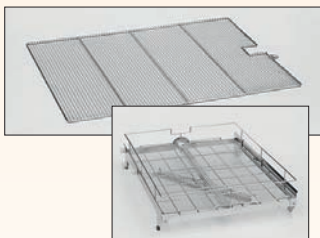
## LAB 900 - washing carts

### Full loading space

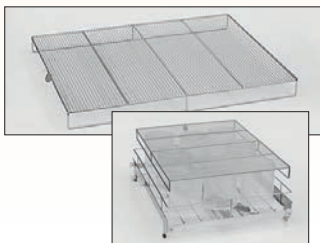


**C436** - upper washing cart with washing arm, loading space 585x765mm (23"x30 1/8")

**C1256** - lower washing cart without washing arm, loading space 620x765mm (24 7/16"x30 1/8")

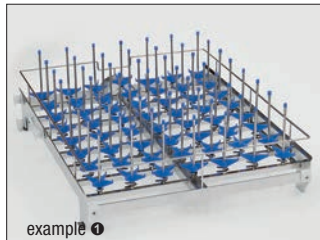


**C446** - grid to allow the loading of small object on std. washing carts dim. 752x582mm (29 5/8"x22 15/16")



**C447** - grid cover to be positioned over light object dim. 752x582mm (29 5/8"x22 15/16")

### Injection nozzles all levels



#### suggested configurations

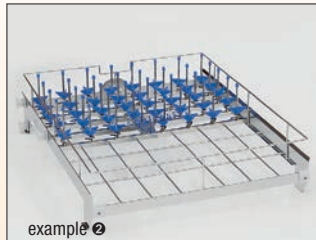
**A 72 positions**  
max glassware  $\varnothing$  75mm/2 15/16"  
max glassware h 160mm/6 5/16"  
C434E frame  
+ 72 nozzles C054924

**B 48 positions**  
max glassware  $\varnothing$  90mm/3 9/16"  
max glassware h 230mm/9 1/16"  
C440E frame  
+ 48 nozzles C054922

**C 72 positions, mixed nozzles**  
average glassware  $\varnothing$  75mm/2 15/16"  
max glassware h 200...300mm  
C434E frame  
+ 18 nozzles C054922  
+ 54 nozzles C054924

**D 72 positions, mixed nozzles with supports**  
average glassware  $\varnothing$  75mm/2 15/16"  
max glassware h 180...280mm  
C434E frame  
+ 18 nozzles C054948  
+ 54 nozzles C054947

### Half space + Injection nozzles all levels



#### suggested configuration

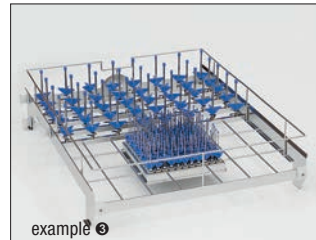
**A 21 positions,**  
max glassware  $\varnothing$  85mm/3 3/8"  
max glassware h 300mm/11 13/16"  
loading space mm 480x585 (18 7/8"x23")  
C450E frame  
+ 21 nozzles C054905

### Injection Washing for Pipettes



**C442**  
lower level, max 88 positions.  
Min. pipette length 300mm/11 13/16"  
Max. pipette length 500mm/19 11/16"  
with 1 upper level installed  
and 700mm/27 9/16" without upper levels installed.

### Injection nozzles + Nozzles for vials



#### suggested configurations

**A upper level**  
**121 positions**  
max glassware  $\varnothing$  20mm/13/16",  
max glassware h 160mm/6 5/16"

**40 positions**  
max glassware  $\varnothing$  75mm/2 15/16"  
max glassware h 230mm/9 1/16"  
C441E frame  
+ 121 nozzles C054903  
+ 40 nozzles C054904

note:  
see also C1061, C1086 and C1105 accessories

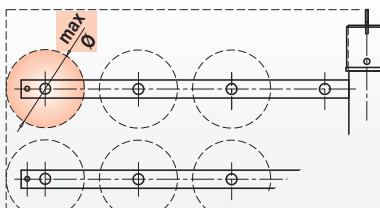
## Empty wash racks

empty rack code	max $\varnothing$ mm/in.	nr. of injection positions	Upper level	Lower level	notes
C439E	25 / 1	330	1	all	only for mm 2,5/0.1" $\varnothing$ nozzles
C434E	75 / 2 15/16	72	1	all	
C435E	84 / 3 5/16	56	1	all	
C440E	90 / 3 9/16	48	1	all	
C445E	150 / 5 15/16	18	1	all	
C1205E	190 / 7 1/2	10	1	all	
C450E	85 / 3 3/8	21	2	all	mm 480x585 / 18 7/8"x23" space
C441E	75 / 2 15/16	40+121	2	all	see C1086, C1061, C1105 accessories

The table shows the maximum glassware diameter in the washing cart frame and position options.

## Glassware diameter

Top view of a portion of an injection washing cart showing the maximum glassware diameter.

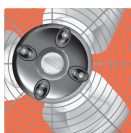
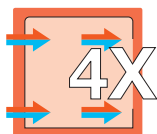


## Wash cart frame selection for custom configurations

Selection of an empty rack enables users to customize the wash cart frame using different nozzles and accessories. See final pages of the catalogue.

# LAB 1000

## Freestanding Glassware Washers



### LAB 1000

- Washing system with **washing carts composed of 4 removable injection cassettes on two levels.** The upper level can be removed depending on the height of the loaded glassware
- **Sliding down** full glass door, also available in double door **pass-through** version
- Storage space for chemical containers (up to three 10 lt/2.64 Gal US)



- Chamber volume ~500 lt / 17.66 ft<sup>3</sup>
- Basket volume ~350 lt / 12.36 ft<sup>3</sup>



#### Control panel

- Steelcotronic control system with industrial PLC, 5,7" touch screen display. Up to 65 washing and programs for laboratory glassware.

#### Connections

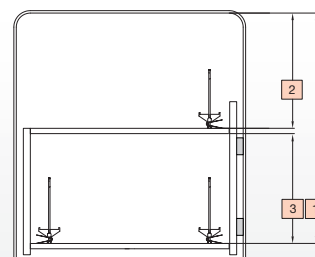
- RS 232 port for printer connection, Ethernet connection to general data system to monitor and validate the washing cycles and/or the data storage.

Washer dimensions		LAB 1000
Width	mm	1100
	inches	43 <sup>5</sup> / <sub>16</sub>
Depth	mm	960
	inches	37 <sup>13</sup> / <sub>16</sub>
Height	mm	1940
	inches	76 <sup>3</sup> / <sub>8</sub>

### Level positions

1	605 mm / 23 <sup>13</sup> / <sub>16</sub> "
2	275 mm / 10 <sup>13</sup> / <sub>16</sub> "
3	315 mm / 12 <sup>3</sup> / <sub>8</sub> "

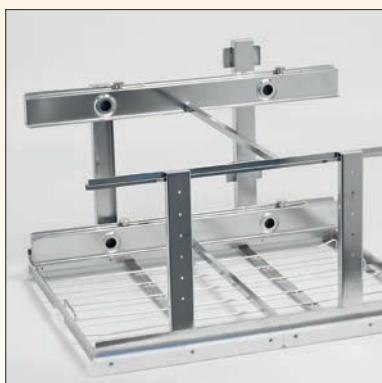
LAB 1000 washing cart system comprises a support washing cart that can be configured with removable cassettes on two levels. For injection nozzles details and cassette custom configurations, please refer to the final pages of the catalogue.





## LAB 1000 - washing carts

### Base injection washing cart



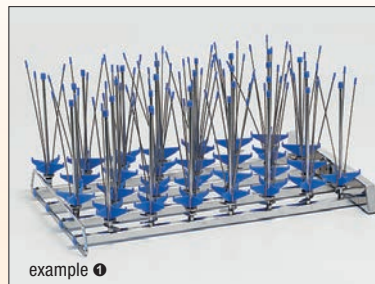
**C400W** - base injection washing cart  
suitable for removable cassettes on 2 levels

### Injection Washing for Pipettes



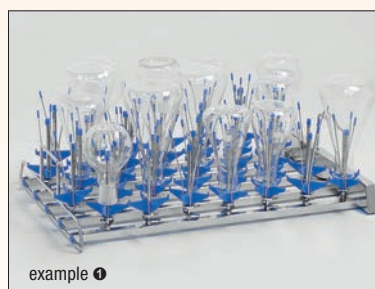
**C408**  
lower vertical pipettes cassette  
68 positions.  
Minimum pipette length 270mm/10 <sup>5</sup>/<sub>8</sub>" ,  
maximum pipette length 590mm/23 <sup>1</sup>/<sub>4</sub>" .

### Injection nozzles all levels



#### suggested configurations

- A** **34 positions**  
max glassware  $\varnothing$  75mm/2 <sup>15</sup>/<sub>16</sub>" ,  
max glassware h 160mm/6 <sup>5</sup>/<sub>16</sub>"  
  
composition:  
C402E frame + 34 nozzles C054924



- B** **24 positions**  
max glassware  $\varnothing$  98mm/3 <sup>3</sup>/<sub>8</sub>" ,  
max glassware h 230mm/9 <sup>1</sup>/<sub>16</sub>"  
  
composition:  
C406E frame + 24 nozzles C054922

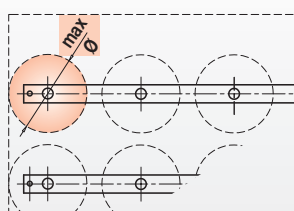
## Empty wash racks

empty rack code	max $\varnothing$ mm/in.	nr. of injection positions	Upper level	Lower level	notes
C409E	40 / 1 <sup>9</sup> / <sub>16</sub>	99	1	all	only mm 2,5/0.1" $\varnothing$ nozzles can be used
C407E	50 / 2	76	1	all	
C402E	75 / 2 <sup>15</sup> / <sub>16</sub>	34	1	all	
C406E	98 / 3 <sup>7</sup> / <sub>8</sub>	24	1	all	
C403E	92 / 3 <sup>5</sup> / <sub>8</sub>	22	1	all	
C470E	104 / 4 <sup>1</sup> / <sub>16</sub>	18	1	all	
C469E	190 / 7 <sup>1</sup> / <sub>2</sub>	5	1	all	

The table shows the maximum glassware diameter in the washing cart frame and position options.

## Glassware diameter

Top view of a portion of a injection washing cart showing the maximum glassware diameter.



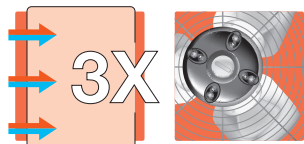
## Wash cart frame selection for custom configurations

Selection of an empty rack enables users to customize the wash cart frame using different nozzles and accessories. See final pages of the catalogue.



# LAB 660 - LAB 680

## Freestanding Glassware Washer



### LAB 660

- Washing and forced hot air drying system **on three independent levels**. The upper levels can be used simultaneously or individually by docking the washing carts to one of the connections suitable for the height of the loaded glassware
- **Hinged door** with glass window

- Chamber volume ~600 lt / 21.19 ft<sup>3</sup>
- Basket volume ~430 lt / 15.18 ft<sup>3</sup>



- Sliding drawer for storage of chemical tanks (up to three 10 lt/2.64 Gal US)

### LAB 660/680 Control Panel



#### Control panel

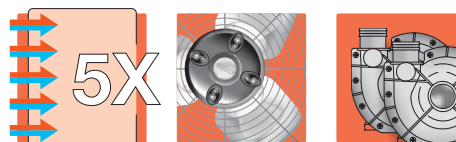
LCD display, 40 programs for laboratory glassware: 20 pre-programmed cycles, 20 customizable cycles.

#### Connections

RS 232 port dedicated for printer or PC connection to monitor and validate the washing cycles and/or the data storage.



Dimensions		LAB 660	LAB 680
Width	mm	1140	1140
	inches	44 7/8	44 7/8
Depth	mm	930	930
	inches	36 5/8	36 5/8
Height	mm	1975	1975
	inches	77 3/4	77 3/4



## LAB 680

- **Two washing pumps** feeding washing circuits to ensure high flow rate combined with effective spray pressure
- Washing and forced hot air drying system **on five independent levels**. The upper levels can be used simultaneously or individually by positioning the washing carts on one of the connections suitable for the height of the loaded glassware
- **Hinged door** with glass window

- Chamber volume ~600 lt / 21.19 ft<sup>3</sup>
- Basket volume ~430 lt / 15.18 ft<sup>3</sup>

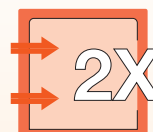
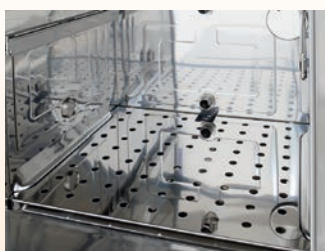


- Sliding drawer for storage of chemical tanks (up to three 10 lt/2.64 Gal US)

## LAB dryer underbench glassware dryer compatible with LAB 500 Series washer loading racks



A compact device dedicated to the **drying of laboratory glassware**. When combined in the same facility ward with LAB 500 series washers, it allows to reach higher productivity levels.



- **High power forced hot air drying system on two independent levels**

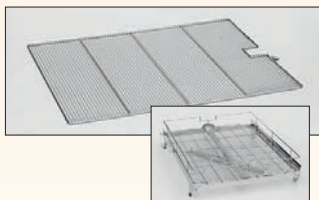
## LAB 660 - LAB 680 Series - Washing carts

### Full loading space

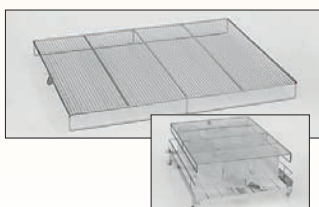


**C420** - upper washing cart with washing arm, loading space 585x765mm (23"x30 1/8")

**C419** - lower washing cart without washing arm, loading space 620x765mm (24 7/16"x30 1/8")

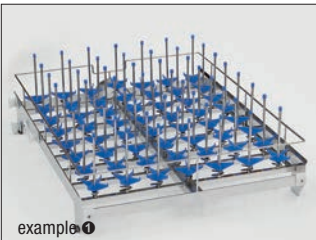


**C446** - grid to allow the loading of small objects on std. washing carts dim. 752x582mm (29 5/8"x22 15/16")



**C447** - grid cover to be positioned over light objects dim. 752x582mm (29 5/8"x22 15/16")

### With injection nozzles for mid size glassware



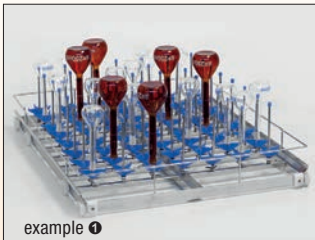
#### Upper level suggested configuration

**A** 72 positions  
max glassware  $\varnothing$  65mm/2 9/16"  
max glassware h 160mm/6 5/16"  
C410E frame  
+ 72 nozzles C054924

**B** 48 positions  
max glassware  $\varnothing$  90mm/3 9/16"  
max glassware h 230mm/9 1/16"  
C425E frame  
+ 48 nozzles C054922

**C** 72 positions, mixed nozzles  
average glassware  $\varnothing$  65mm/2 9/16"  
max glassware h 200...300mm  
C410E frame  
+ 18 nozzles C054922  
+ 54 nozzles C054924

### With injection nozzles for mid size glassware



#### Lower level suggested configurations

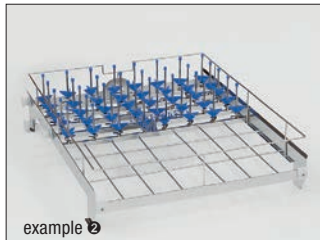
**A** 72 positions,  
max glassware  $\varnothing$  75mm/2 15/16"  
max glassware h 230mm/9 1/16"  
C414E frame  
+ 72 nozzles C054904

**B** 48 positions  
max glassware  $\varnothing$  90mm/3 9/16"  
max glassware h 300mm  
C424E frame  
+ 48 nozzles C054905

**C** 72 positions, mixed nozzles  
average glassware  $\varnothing$  75mm/2 15/16"  
max glassware h 200...300mm  
C414E frame  
+ 18 nozzles C054922  
+ 54 nozzles C054924

**D** 72 positions,  
mixed nozzles with supports  
average glassware  $\varnothing$  75mm/2 15/16"  
max glassware h 180...280mm  
C414E frame  
+ 18 nozzles C054948  
+ 54 nozzles C054947

### With half space + injection nozzles for mid size glassware



#### Upper level suggested configurations

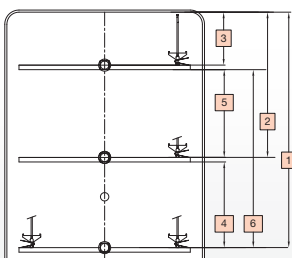
**A** 21 positions,  
max glassware  $\varnothing$  85mm/3 3/8"  
max glassware h 300mm/11 13/16"  
loading space mm 480x585  
(18 7/8"x23")

C413E frame  
+ 21 nozzles C054905

## Level positions

### LAB 660

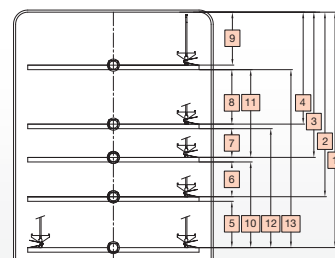
1	770 mm / 30 5/16"
2	480 mm / 18 7/8"
3	170 mm / 6 11/16"
4	280 mm / 11"
5	290 mm / 11 7/16"
6	580 mm / 22 13/16"



The use of an upper level washing cart provided with spray arm reduces the useful height of the level placed below by 50mm/2" and allows a gain of 15mm/9/16" on top.

### LAB 680

1	770 mm / 30 5/16"
2	610 mm / 24"
3	480 mm / 18 7/8"
4	370 mm / 14 9/16"
5	150 mm / 5 15/16"
6	115 mm / 4 1/2"
7	90 mm / 3 9/16"
8	180 mm / 7 1/16"
9	170 mm / 6 11/16"
10	280 mm / 11"
11	290 mm / 11 7/16"
12	390 mm / 15 3/8"
13	580 mm / 22 13/16"





### With injection nozzles for large size glassware

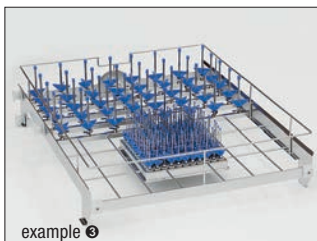


**C1360**  
lower level, capacity:  
up to 4 items Ø max 240mm/9 7/16"  
1 item Ø max 315mm/12 3/8"

**C1177**  
lower level, capacity:  
up to 4 items Ø max 300mm/11 13/16"

**C1178**  
lower level, capacity:  
up to 2 items Ø max 400mm/15 3/4"

### With injection nozzles + nozzles for vials



example ②

#### suggested configurations

**A** upper level  
**121 positions**  
max glassware Ø 20mm/13/16"  
max glassware h 160mm/6 5/16"

**40 positions**  
max glassware Ø 75mm/2 15/16",  
max glassware h 230mm/9 1/16"

C421E frame  
+ 121 nozzles C054903  
+ 40 nozzles C054904

note: see also C1061, C1086  
and C1105 accessories

### Injection washing for pipettes



**C416**  
lower level, max 88 positions.  
Min. pipette length 300mm/11 13/16"  
Max. pipette length 450mm/17 3/4"  
with 2 upper levels installed  
and 700mm/27 9/16" with 1 upper  
level installed.

### Immersion washing for pipettes



**C418** lower level, with 3 pipettes  
cassettes,  
Max. pipette length 520mm/20 1/2"

**C417** lower level, with 2 pipettes  
cassettes,  
Max. length 520mm/20 1/2"

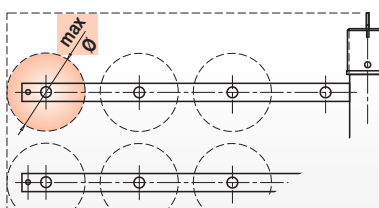
Pipettes must be fully covered by  
water and therefore must stay within  
the cassette.

## Upper and lower level empty racks

empty rack code	max Ø mm/in.	nr. of injection positions	Upper level	Lower level	notes
C423E	25 / 1	330	①	U	only for mm 2,5/1/8" Ø nozzles
C410E	65 / 2 9/16	72	①	U	
C411E	84 / 3 5/16	56	①	U	
C425E	90 / 3 9/16	48	①	U	
C1238E	105 / 4 1/8	35	①	U	
C444E	150 / 5 15/16	18	①	U	
C413E	85 / 3 3/8	21	②	U	mm 480x585 / 18 7/8"x23" space
C421E	75 / 2 15/16	40+121	③	U	see C1086, C1061, C1105 accessories
C414E	75 / 2 15/16	72	①	L	
C415E	85 / 3 3/8	56	①	L	
C424E	90 / 3 9/16	48	①	L	
C1239E	105 / 4 1/8	35	①	L	
C443E	150 / 5 15/16	18	①	L	
C426E	190 / 7 1/2	10	①	L	
C427E	250 / 9 13/16	6	①	L	

## Glassware diameter

Top view of a portion of a injection  
washing cart showing the maximum  
glassware diameter.



The table shows the maximum glassware  
diameter in the washing cart frame and  
position options.

## Wash cart frame selection for custom configurations

Selection of an empty rack  
enables users to customize the  
wash cart frame using different  
nozzles and accessories. See  
final pages of the catalogue.



## Technical data

	LAB 500 SC	LAB 500 CL	LAB 500 DRS	LAB 600	LAB 610
<b>Dimensions</b>					
External WxDxH mm/inches	600 x 630 x 850 23 5/8 x 24 13/16 x 33 7/8	600 x 630 x 850 23 5/8 x 24 13/16 x 33 7/8	900 x 630 x 850 35 7/16 x 24 13/16 x 33 7/8	650 x 660 x 1685 25 9/16 x 26 x 66 5/16	650 x 687 x 1840 25 9/16 x 27 1/16 x 72 1/4
External with door opened WxDxH mm/inches	600 x 1190 x 850 23 5/8 x 46 7/8 x 33 7/8	600 x 1190 x 850 23 5/8 x 46 7/8 x 33 7/8	600 x 1190 x 850 23 5/8 x 46 7/8 x 33 7/8	650 x 1230 x 1685 25 9/16 x 48 7/16 x 66 5/16	650 x 1402 x 1840 25 9/16 x 55 3/16 x 72 1/16
Door passage WxH mm	540 x 540 21 1/4 x 21 1/4	540 x 540 21 1/4 x 21 1/4	540 x 540 21 1/4 x 21 1/4	540 x 540 21 1/4 x 21 1/4	540 x 690 21 1/4 x 27 3/16
Chamber WxDxH mm	555 x 500 x 670 21 7/8 x 19 11/16 x 26 3/8	555 x 500 x 670 21 7/8 x 19 11/16 x 26 3/8	555 x 500 x 670 21 7/8 x 19 11/16 x 26 3/8	555 x 585 x 600 21 7/8 x 23 x 23 3/8	555 x 585 x 900 21 7/8 x 23 x 35 7/16
Chamber Volume (liter/ft³)	~171 / 6.04	~171 / 6.04	~171 / 6.04	~200 / 7.06	~250 / 8.83
Basket volume or useful volume (liter/ft³)	~151 / 5.33	~151 / 5.33	~151 lt / 5.33	~170 / 6.04	~220 / 7.77
<b>Device configuration</b>					
Door opening	Hinged	Hinged	Hinged	Hinged	Hinged
Stainless steel door	•	•	•	-	-
Stainless steel door with glass window	-	-	-	-	-
Full glass door	○ <sup>2</sup>	○ <sup>2</sup>	○ <sup>2</sup>	•	•
Double door pass through version	-	-	-	-	-
Light inside the chamber	○	○	○	○	○
<b>Washing system</b>					
Nr. of independent levels of the washing and/or drying system	2	2	2	3	4
Nr. of levels that can be used simultaneously	2	2	2	2	3
Triple stage water filtering system	•	•	•	•	•
Built-in water softener	○	○	○	○	○
Preheating boiler for DI water	○ <sup>5</sup>	○ <sup>5</sup>	○	○ <sup>8</sup>	○ <sup>8</sup>
Preheating tank DI water	-	-	-	-	-
Adjustable water temperature (up to 93°C)	•	•	•	•	•
Double PT 1000 probe for temperature check	•	•	•	•	•
<b>Chemicals</b>					
Std equipment of chemical dosing pumps: nr.	2	2	2	2	2
Additional chemical dosing pumps: up to nr.	3	3	4	4	4
Storage of chemical tanks, nr. and capacity lt/Gal US (capacity may vary depending on option configured in the washer)	-	-	2 5/1.32	3 5/1.32	3 5/1.32
<b>Drying system</b>					
Forced hot air drying system	-	•	•	•	•
Pre filter 98%	-	•	•	•	•
Hepa H14 air filter	-	○	○	○	○
Steam condenser	•	•	•	•	•
<b>Control system and traceability</b>					
LED display control panel, 10 programs	•	-	-	-	-
LCD display control panel, 40 programs (20 pre-programmed, 20 user defined)	○	•	•	-	-
LCD display soft touch control panel, 40 programs	○ <sup>1</sup>	○ <sup>1</sup>	○ <sup>1</sup>	•	•
Touch screen display, 65 programs	-	-	-	-	-
RS232	○	•	•	•	•
USB port	• <sup>7</sup>	•	•	○	○
Ethernet connection	-	-	-	○	○
External printer	○	○	○	○	○
Integrated printer	-	-	○	○	○
<b>Complements</b>					
Integrated lateral compartment (300mm width)	○	○	•	-	-
Stands (600 mm height)	○	○	○	-	-
<b>Utilities</b>					
Electrical feeding	•	•	•	•	•
Steam feeding	-	-	-	○	○
Standard electrical connection others available on request	230V 1~50Hz	400V 3~+N 50Hz	400V 3~+N 50Hz	400V 3~+N 50Hz	400V 3~+N 50Hz
Total power W	3050	5600	5600	8250	8250
<b>Compliance with standards</b>					
EN 61010-1, EN 61010-2-040, EN 61326-1, EN ISO 15883-1	•	•	•	•	•
2006/42/EC, 2014/35/EU, 2014/30/EU and 2011/65/EU	•	•	•	•	•

LAB 610 SL	LAB 640 SL	LAB 900	LAB 1000	LAB 660	LAB 680	LAB DRYER
685 x 697 x 1960 27 x 27 <sup>7</sup> / <sub>16</sub> x 77 <sup>3</sup> / <sub>16</sub>	765 x 800 x 1975 30 <sup>1</sup> / <sub>8</sub> x 31 <sup>1</sup> / <sub>2</sub> x 77 <sup>3</sup> / <sub>4</sub> *including air exhaust	1140 x 915 x 1900 44 <sup>7</sup> / <sub>8</sub> x 36 x 74 <sup>13</sup> / <sub>16</sub>	1100 x 960 x 1940 43 <sup>5</sup> / <sub>16</sub> x 37 <sup>19</sup> / <sub>16</sub> x 76 <sup>3</sup> / <sub>8</sub>	1140 x 930 x 1975 44 <sup>7</sup> / <sub>8</sub> x 36 <sup>5</sup> / <sub>8</sub> x 77 <sup>3</sup> / <sub>4</sub>	1140 x 930 x 1975 44 <sup>7</sup> / <sub>8</sub> x 36 <sup>5</sup> / <sub>8</sub> x 77 <sup>3</sup> / <sub>4</sub>	600 x 630 x 850 23 <sup>5</sup> / <sub>8</sub> x 24 <sup>13</sup> / <sub>16</sub> x 33 <sup>7</sup> / <sub>8</sub>
-	-	1140 x 915 x 2355 44 <sup>7</sup> / <sub>8</sub> x 36 x 92 <sup>3</sup> / <sub>4</sub>	-	1140 x 1775 x 1975 44 <sup>7</sup> / <sub>8</sub> x 69 <sup>7</sup> / <sub>8</sub> x 77 <sup>3</sup> / <sub>4</sub>	1140 x 1775 x 1975 44 <sup>7</sup> / <sub>8</sub> x 69 <sup>7</sup> / <sub>8</sub> x 77 <sup>3</sup> / <sub>4</sub>	600 x 1190 x 850 23 <sup>5</sup> / <sub>8</sub> x 46 <sup>7</sup> / <sub>8</sub> x 33 <sup>7</sup> / <sub>8</sub>
540 x 690 21 <sup>1</sup> / <sub>4</sub> x 27 <sup>3</sup> / <sub>16</sub>	620 x 690 24 <sup>7</sup> / <sub>16</sub> x 27 <sup>3</sup> / <sub>16</sub>	665 x 675 26 <sup>3</sup> / <sub>16</sub> x 26 <sup>9</sup> / <sub>16</sub>	660 x 670 26 x 26 <sup>3</sup> / <sub>8</sub>	665 x 835 26 x 32 <sup>7</sup> / <sub>8</sub>	665 x 835 26 x 32 <sup>7</sup> / <sub>8</sub>	540 x 540 21 <sup>1</sup> / <sub>4</sub> x 21 <sup>1</sup> / <sub>4</sub>
555 x 585 x 780 21 <sup>7</sup> / <sub>8</sub> x 23 x 30 <sup>11</sup> / <sub>16</sub>	636 x 650 x 825 25 <sup>1</sup> / <sub>16</sub> x 25 <sup>9</sup> / <sub>16</sub> x 32 <sup>1</sup> / <sub>2</sub>	710 x 800 x 900 27 <sup>15</sup> / <sub>16</sub> x 31 <sup>1</sup> / <sub>2</sub> x 35 <sup>7</sup> / <sub>16</sub>	715 x 815 x 940 28 <sup>1</sup> / <sub>8</sub> x 32 <sup>1</sup> / <sub>16</sub> x 37	710 x 810 x 1060 27 <sup>15</sup> / <sub>16</sub> x 31 <sup>3</sup> / <sub>8</sub> x 41 <sup>3</sup> / <sub>4</sub>	710 x 810 x 1060 27 <sup>15</sup> / <sub>16</sub> x 31 <sup>3</sup> / <sub>8</sub> x 41 <sup>3</sup> / <sub>4</sub>	555 x 500 x 670 21 <sup>7</sup> / <sub>8</sub> x 19 <sup>11</sup> / <sub>16</sub> x 26 <sup>3</sup> / <sub>8</sub>
~250 / 8.83	~350 / 12.36	~500 / 17.66	~500 / 17.66	~600 / 21.19	~600 / 21.19	~171 / 6.04
~220 / 7.77	~280 / 9.89	~350 / 12.36	~350 / 12.36	~430 / 15.18	~430 / 15.18	~151 / 5.33
Vertical sliding down	Vertical sliding down	Vertical sliding up	Vertical sliding down	Hinged	Hinged	Hinged
-	-	-	-	-	-	•
-	-	-	-	•	•	-
•	•	•	•	-	-	-
-	-	-	○	-	-	-
○	○	○	○	○	○	-
4	4	4	4 <sup>4</sup>	3	5	2
3	3	3	3	3	4	2
•	•	•	•	•	•	-
-	-	-	-	-	-	-
-	-	○	-	○	○	-
○	○ <sup>3</sup>	-	○	-	-	-
•	•	•	•	•	•	-
•	•	•	•	•	•	•
2	2	2	2	2	2	-
4	4	4	4	4	4	-
3	2	3	3	3	3	-
5/1.32	10/2.64	10/2.64	10/2.64	10/2.64	10/2.64	-
•	○	○	•	○	○	•
•	○ <sup>6</sup>	○ <sup>6</sup>	○ <sup>6</sup>	○ <sup>6</sup>	○ <sup>6</sup>	•
○	○	○	○	○	○	○
○	○	○	○	○	○	-
-	-	-	-	-	-	•
-	-	•	-	•	•	-
•	-	-	-	-	-	-
-	•	○	•	-	-	-
•	-	•	-	•	•	○
○	-	○	-	○	○	-
○	•	○	•	○	○	-
○	-	○	-	○	○	○
○	○	○	○	○	○	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
•	•	•	•	•	•	•
○	○	○	○	○	○	-
400V 3~+N 50Hz	400V 3~+N 50Hz	400V 3~+N 50Hz	400V 3~+N 50Hz	400V 3~+N 50Hz	400V 3~+N 50Hz	230V 1~50Hz
13000	13000	20000	20000	20000	20000	2000
•	•	•	•	•	•	•
•	•	•	•	•	•	•

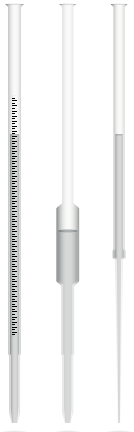
**Note:**

- 1) With glass door version only;
- 2) With LCD Soft touch only;
- 3) Preheating tank. Single pass final rinse option on LAB 640;
- 4) On removable cassettes;
- 5) Into side cabinet;
- 6) With forced hot air drying system;
- 7) When configured with LCD and LCD soft touch control panel;
- 8) Not compatible with the storage of chemicals

• = Standard  
○ = Optional  
- = Not available

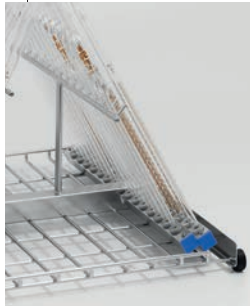
# Washing system selection, injection nozzles, accessories and components

With **preconfigured** wash carts



Bulb, graduated, Pasteur pipettes

Injection washing



Immersion and flushing washing



Beakers



Jugs



Mugs



Buckets



Jars



Weighing bottles



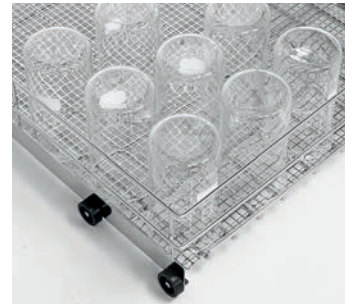
Funnels



Powder funnels



Imhoff cones



Evaporating dishes



Weighing dishes



Petri dishes



Basins



Trays



Erlenmeyer flasks



Bottles



Beakers



Weighing bottles

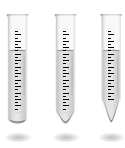


Test tubes





## With **configurable** wash carts



Test tubes  
and vials



Low capacity  
volumetric flasks



Centrifuge  
tubes



Volumetric flasks  
narrow neck



Graduated  
cylinders



Wide neck  
bottles



Erlenmeyer flasks  
wide neck



Erlenmeyer  
flasks  
narrow neck



Flat or round  
bottom flask  
narrow neck



Funnels



Graduated  
cylinders



Erlenmeyer flasks  
wide neck



Wide or narrow neck  
bottles



Weighing  
bottles



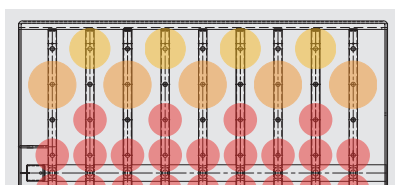
Graduated  
cylinders



Imhoff  
cones



## Accessories, inserts and components



Example of configuration based on C414 washing cart for LAB 660 and LAB 680 glassware washer for simultaneous washing of  $\varnothing 70\text{mm}/2\frac{3}{4}"$ ,  $\varnothing 85\text{mm}/3\frac{3}{8}"$ , and  $\varnothing 100\text{mm}/3\frac{15}{16}"$  glassware by the use of C057002 cap screws for closing injection nozzle seats.



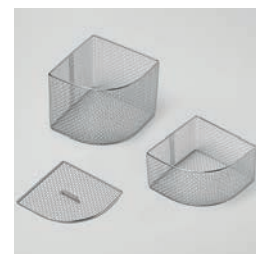
**C61**  
insert with 28 spring hooks for laboratory glassware



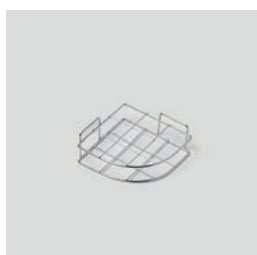
**C63**  
net basket mm.120x120x120  
 $4\frac{3}{4}" \times 4\frac{3}{4}" \times 4\frac{3}{4}"$   
C64 cover for C63



**C97**  
26 positions insert for Petri dishes



**C68** mm 100h/ $3\frac{15}{16}"$ h  
**C69** mm 130h/ $5\frac{1}{8}"$ h  
**C70** mm 200h/ $7\frac{7}{8}"$ h  
**C77** cover for C68/C69/C70



**C86**  
net separator for 1/4 net basket



Net cover for 121 positions test tubes wash carts (i.e. C421, C441, C723, C804.....)

**C1061** 248x248x250h mm /  $9\frac{3}{4}" \times 9\frac{3}{4}" \times 9\frac{13}{16}"$ h

**C1086** 248x248x175h mm /  $9\frac{3}{4}" \times 9\frac{3}{4}" \times 6\frac{7}{8}"$ h

**C1105** 248x248x45h mm /  $9\frac{3}{4}" \times 9\frac{3}{4}" \times 1\frac{3}{4}"$ h

(C1105 to be laid directly on top of the test tubes)



**C1150**  
Adjustable height net cover for 121 positions test tubes washing carts (i.e. C1148, C1149)  
dim. 365x365x255h mm  
( $14\frac{3}{8}" \times 14\frac{3}{8}" \times 10\frac{1}{16}"$ h)



Injection nozzle support

**C054925** Ø 6 mm / H. 140 mm

Ø 1/4" / H. 5 1/2"

**C054926** Ø 6 mm / H. 186 mm

Ø 1/4" / H. 7 5/16"



Gasket for pipette Ø max 14mm/<sup>9</sup>/<sub>16</sub>", min 4mm/<sup>3</sup>/<sub>16</sub>"

**C056005** Ø 20 mm / H. 21 mm

Ø 13/16" / H. 13/16"

Cap for closing unused holes

**C056001**



Injection nozzle bottle support

**C054915** Ø 6 mm / H. 200 mm

Ø 1/4" / H. 7 7/8"

**C054916** Ø 6 mm / H. 130 mm

Ø 1/4" / H. 5 1/8"



Support for injection nozzle Ø 2,5mm/<sup>1</sup>/<sub>8</sub>"

**C056004** Ø 25 mm / H. 13 mm

Ø 1" / H. 1/2"

Cap for closing unused holes

**C056001**



Injector sleeve with silicone guard for pipettes (max pipette Ø 11mm/<sup>7</sup>/<sub>16</sub>" )

**C058902**



Plastic cross Ø 32mm/<sup>1</sup>/<sub>4</sub>" for injection nozzle Ø 2,5mm/<sup>1</sup>/<sub>8</sub>"

**C054008**

Plastic cone Ø 15mm/<sup>9</sup>/<sub>16</sub>" for injection nozzle Ø 2,5mm/<sup>1</sup>/<sub>8</sub>"

**C057007**

Injection nozzle cap Ø 4mm/<sup>3</sup>/<sub>16</sub>" for injection nozzle Ø 2,5mm/<sup>1</sup>/<sub>8</sub>"

**C054006**



Bottle support Ø 28mm/<sup>1</sup>/<sub>8</sub>" for injection nozzle Ø 6mm/<sup>1</sup>/<sub>4</sub>"

**C054037**

Bottle support Ø 33mm/<sup>5</sup>/<sub>16</sub>" for injection nozzle Ø 6mm/<sup>1</sup>/<sub>4</sub>"

**C054038**

Bottle support Ø 45mm/<sup>3</sup>/<sub>4</sub>" for injection nozzle Ø 6mm/<sup>1</sup>/<sub>4</sub>"

**C054040**



Plastic cross Ø 54mm/<sup>2</sup>/<sub>8</sub>" for injection nozzle Ø 4mm/<sup>3</sup>/<sub>16</sub>"

**C054009**

Injection nozzle cap Ø 5mm/<sup>3</sup>/<sub>16</sub>" for injection nozzle Ø 4mm/<sup>3</sup>/<sub>16</sub>"

**C054005**



Plastic cross Ø 75mm/<sup>2</sup>/<sub>16</sub>" for injection nozzle Ø 6mm/<sup>1</sup>/<sub>4</sub>"

**C402001**

Injection nozzle cap Ø 10mm/<sup>3</sup>/<sub>8</sub>" for injection nozzle Ø 6mm/<sup>1</sup>/<sub>4</sub>"

**C054007**



Stainless steel cross Ø 87mm/<sup>3</sup>/<sub>16</sub>" for injection nozzle Ø 8mm/<sup>5</sup>/<sub>16</sub>"

**C054963**



Injection nozzle support for graduated cylinders

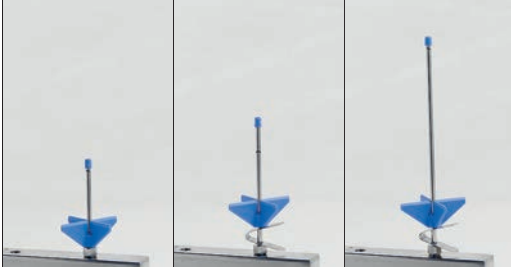
Ø 105mm/<sup>4</sup>/<sub>8</sub>" h=290mm/<sup>11</sup>/<sub>16</sub>" for injection nozzle Ø 8mm/<sup>5</sup>/<sub>16</sub>"

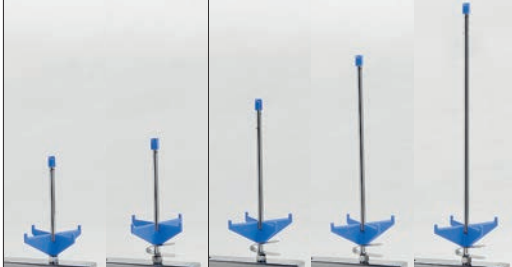
**C054946**

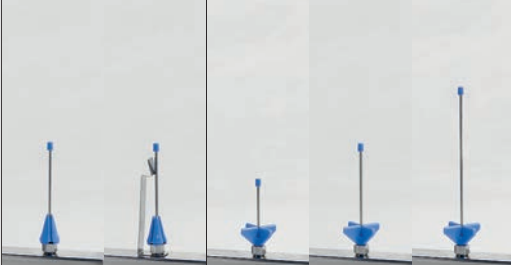





Ø 6mm/<sup>1</sup>/<sub>4</sub>" Adaptor nipple for injection nozzle Ø 8mm/<sup>5</sup>/<sub>16</sub>"

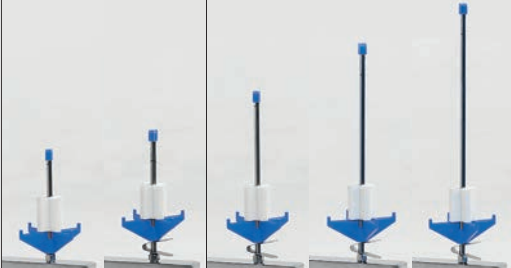
**C057013**




	C054930	C054924	C054904
A mm / in.	4 3/16	4 3/16	4 3/16
B mm / in.	5 3/16	5 3/16	5 3/16
C mm / in.	54 2 1/8	54 2 1/8	54 2 1/8
D mm / in.	75 2 5/16	110 4 5/16	175 6 7/8
E mm / in.	50 2	80* 3 1/8*	130* 5 1/8*
			

	C054921	C054910	C054922	C054905	C054959
A mm / in.	6 1/4	6 1/4	6 1/4	6 1/4	6 1/4
B mm / in.	10 3/8	10 3/8	10 3/8	10 3/8	10 3/8
C mm / in.	75 2 15/16	75 2 15/16	75 2 15/16	75 2 15/16	75 2 15/16
D mm / in.	115 4 1/2	135 5 5/16	175 6 7/8	225 8 7/8	275 10 13/16
E mm / in.	85 3 3/8	95* 3 3/4*	130* 5 1/8*	185* 7 1/4*	235* 9 1/4*
					

	C054906	C054914	C054953	C054903	C054943
A mm / in.	2,5 1/8	2,5 1/8	2,5 1/8	2,5 1/8	2,5 1/8
B mm / in.	4 3/16	4 3/16	4 3/16	4 3/16	4 3/16
C mm / in.	15 9/16	15 9/16	32 1 1/4	32 1 1/4	32 1 1/4
D mm / in.	80 3 1/8	80 3 1/8	50 2	80 3 1/8	155 6 1/8
E mm / in.	75 2 15/16	75 2 15/16	30 1 3/16	60 2 3/8	135 5 5/16
					

	C054908	C054911	C054960
A mm / in.	6 1/4	6 1/4	6 1/4
B mm / in.	10 3/8	10 3/8	10 3/8
C mm / in.	75 2 15/16	75 2 15/16	75 2 15/16
D mm / in.	135 5 5/16	225 8 7/8	275 10 13/16
E mm / in.	105 4 1/8	185* 7 1/4*	235* 9 1/4*
			

	C054949	C054950	C054951	C054952	C054961
A mm / in.	6 1/4	6 1/4	6 1/4	6 1/4	6 1/4
B mm / in.	10 3/8	10 3/8	10 3/8	10 3/8	10 3/8
C mm / in.	75 2 15/16	75 2 15/16	75 2 15/16	75 2 15/16	75 2 15/16
D mm / in.	115 2 1/2	135 5 5/16	175 6 7/8	225 8 7/8	275 10 13/16
E mm / in.	85 3 3/8	95* 3 3/4*	130* 5 1/8*	185* 7 1/4*	235* 9 1/4*
					

	C054947	C054948	C054962
A mm / in.	6 1/4	6 1/4	6 1/4
B mm / in.	10 3/8	10 3/8	10 3/8
C mm / in.	flex	flex	flex
D mm / in.	175 6 7/8	225 8 7/8	275 10 13/16
E mm / in.	-	-	-
			

bottle support  
ø 28mm / 1 1/8"  
code C054037

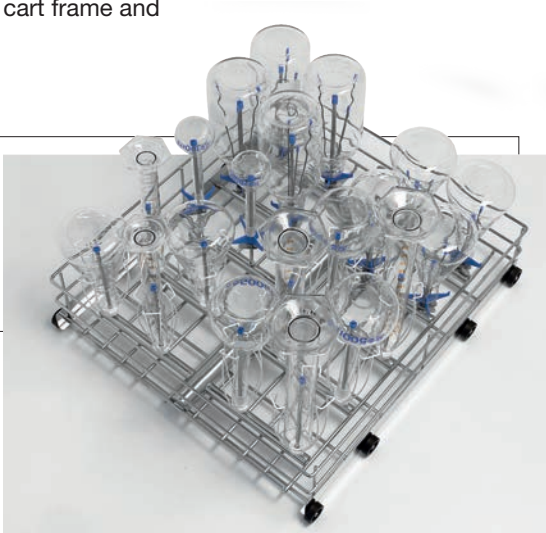
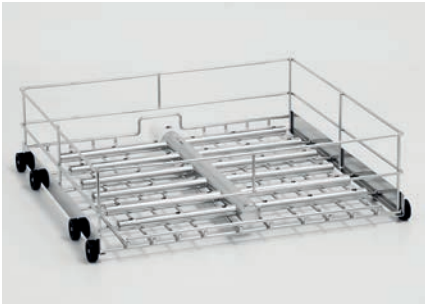
The \* indicates the maximum dimension for the height regulation of nozzles with spring.



# Injection nozzles types

Empty version of the racks give the customer the possibility of full configuration.

The tables show the maximum glassware diameter allowed in the washing cart frame and of the number related positions.



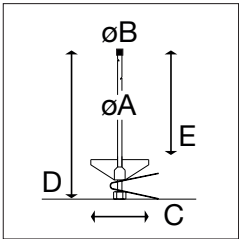
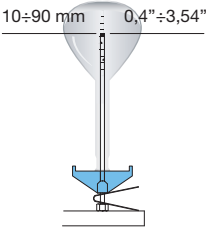
It is possible to customize the washing cart frame by using different nozzles and/or accessories.

## Injection nozzles

Nozzles are available in different height sizes.

According to the glassware shape and dimension, nozzles should be chosen in order to have 10/90 mm **clearance from the nozzle final tip and the glassware bottom**.

Some kind of nozzles are endowed with adjustable spring retainer. Spring retainers allow to place glassware of different heights on the same nozzle.



## Nozzle dimensions

The “critical” dimensions to be considered in choosing the suitable nozzle are the following:

**E dimension:**

for the correct coupling nozzle/glassware and the check of the distance nozzle/glassware.

The \* indicates the maximum dimension for the height regulation of nozzles with spring.

**D dimension + clearance:**

for the compatibility check washing machine/positioning level.

	C057911	C057912	C057913
A mm / in.	8 5/16	8 5/16	8 5/16
B mm / in.	17 11/16	17 11/16	17 11/16
C mm / in.	87 3 7/16	87 3 7/16	105 4 1/8
D mm / in.	255 10 1/16	320 12 5/8	320 12 5/8
E mm / in.	235 9 1/4	300 11 13/16	300 11 13/16



**Miele** Group Member

ARES - flexible endoscope automated reprocessing system



Dental washer disinfectors

Flusher disinfectors

Steam sterilizing autoclaves



Washer disinfectors for central of sterilization departments

Laboratory glassware washer disinfectors



Washing and sterilizing systems for life science and pharmaceutical applications

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Products offered for sale may differ from those described or illustrated in this brochure due to later production changes or/and optional configurations. The products and technical specifications are subjected to change without prior notice. Please consult your Steelco dealer for the latest information.

## Steelco VS L range

Small & Medium Laboratory Steam Sterilizers





# Driven by customer needs

Steelco is a leading infection control solution provider, supplying the healthcare, laboratory research and pharma sectors. Active in over 100 countries, Steelco has equipped numerous world renown hospitals and counts among its customers household names in the laboratory, pharmaceutical and industrial sectors.

Driven by customer feedback, Steelco develops, manufactures and supplies solutions that maximize infection control safety and contamination prevention, optimize processes and minimize costs.

Our focus on innovation has led us to become leaders in areas such as automation, improving the efficiency and working environment of those that use Steelco products.

Whether you are just wishing to replace a single small machine or **requiring assistance in designing and equipping your scientific or research laboratory**, Steelco and it's factory trained dealers are here to help you make the best decision possible that works for you and then support you every step of the way.



Steelco's catalogues of the **washing systems for life sciences and laboratory applications**:

Washer disinfectors for **life science applications**



**Laboratory glassware** washer disinfectors





# Steam sterilizing autoclaves

## for pharma and research laboratories

Steelco is the ideal partner for the sterilization of glassware and other items used in laboratory activities or life sciences applications. Customers appreciate the **versatility, intuitive functionality, high performance** and **reliability** of the VS L Series. With an extensive range, models are available for any size facility.

Our experienced layout design team can help you plan your new or refurbished department and our process engineering team can develop cycles specifically to best meet your needs.



*R&D Department*

*Scientific Laboratories*

*Pharmaceutical Laboratories*

## Supporting you every step of the way

Steelco provides technical service and user training courses at the Steelco Academy. Our optional remote diagnostics capabilities and worldwide team of factory trained engineers ensure that you receive the service support you need to cost effectively maximize the uptime of your sterilizers. Spare parts are readily available from Steelco logistic and technical support center.



Steelco's catalogues for the  
**pharmaceutical applications:**

Pharmaceutical **washing**  
and **sterilization** systems





# Steelco VS L Series

Small and medium range for any size of facility

Steelco Steam Autoclaves are designed for sterilization of heat-resistant and moisture-stable materials such as metal parts, liquids in sealed or vented containers, porous loads, etc., used in scientific and research laboratories.

Steelco has developed a full range of high capacity steam sterilizers to provide the perfect solution from the smallest facility to the largest laboratory department. **Up to 8 standard chamber sizes with a volume from 110 to 920 litres**, are available with pressure vessel and relief valves that are PED and/or ASME marked or according to the directives of the country of destination.



## VS L Small Range

*Automatic vertical sliding door  
or manual hinged door*

Chamber volume

**from 110 litres (3 <sup>8</sup>/<sub>9</sub> ft<sup>3</sup>)  
to 675 litres (23 <sup>5</sup>/<sub>6</sub> ft<sup>3</sup>)**

## Standard compliant

Steelco manufactures according the ISO 9001 quality system. Steam sterilizers VS L series meet the following standards requirements:

- 2006/42/CE (Machinery Directive)
- 2014/30/EU (EMC Directive)
- 2014/68/UE (PED)

Additional technical norms and standards (according to country of destination and customer requirements):

- IEC 61010-2-040
- EN ISO 12100
- EN 61326
- EN 13445
- EN ISO 9712
- EN ISO 9606-1
- EN ISO 15614-1
- ASME code Sec.VIII div. 1 & div. 2
- UL compliant
- EN 285 (available upon request)

- **ECO water saving options**, unrivalled levels of efficiency.
- Single and double door pass through options.
- Manual hinged or automatic sliding door
- Technical service access either on the left or right loading side.



**VS L Medium Range**  
Automatic horizontal sliding door  
or manual hinged door



Chamber volume  
**from 600 litres** ( $21 \frac{1}{5} \text{ ft}^3$ )  
**to 920 litres** ( $32 \frac{1}{2} \text{ ft}^3$ )

## Steelco VS LD Series



**VS 13 LD - VS 9 LD**  
Vertical loading sterilizers  
Hinged door

View pages 14-15.

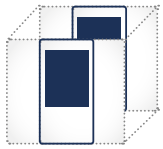
Chamber volume  
**from 90 litres** ( $3 \frac{1}{6} \text{ ft}^3$ )  
**to 125 litres** ( $4 \frac{2}{5} \text{ ft}^3$ )



# Steelco VS L range

Small and medium laboratory steam sterilizers

## Flexible configuration



vertical sliding  
down



horizontal sliding  
left or right



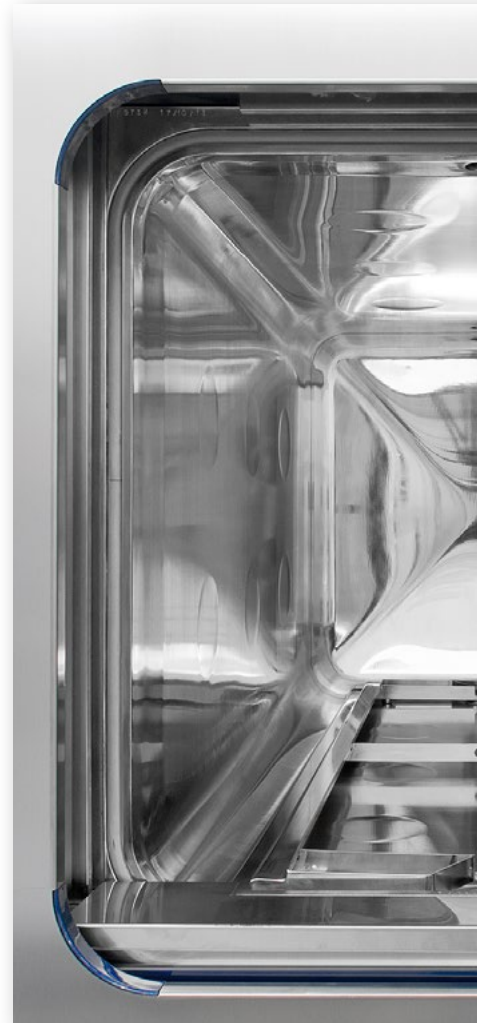
hinged door  
left or right

- *Single or double doors for pass through installation\**
- *Sliding or hinged, automatic or manual doors\**
- *Technical area either on the left or right side\**

*\* Limitation may apply based on country destination and sterilizer model/configuration*

## Key features

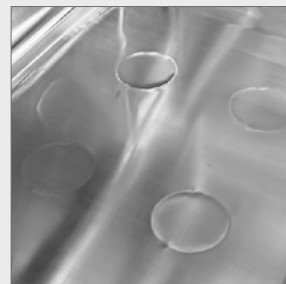
- *AISI 316L stainless steel chamber with high efficiency heat transfer **full jacket system** for even heat distribution*
- *Doors internally made of stainless steel AISI 316L with no welding*
- *Heat insulation with durable reusable cover for fast service maintenance at a lower cost*
- *Load control probe included as standard*
- *Colour touch screen HMI with multi level user access system*
- *Built-in printer for process recording*
- *Non proprietary widely available durable spare parts*
- *ECO cool down water saving system included as standard*



User friendly colour touch screen.



Integrated printer and ethernet port.



Full high efficiency heat transfer jacket system.

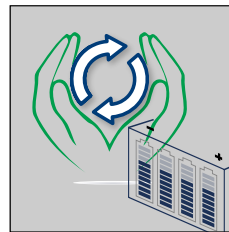


Piping is made of AISI 316L stainless steel with hygienic tri-clamp hydraulic connections available as option.





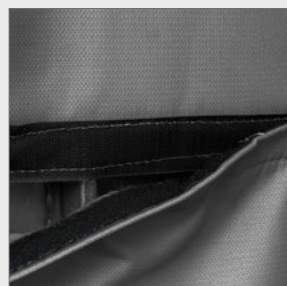
Air-differential seals  
available as options



UPS option for up to 5  
minutes of continuous  
operation in the event of a  
power failure.



Door internally made of stainless  
steel AISI 316L with no welding.  
Safe, hermetically sealing for  
durability and reliability.



Heat insulation with durable  
fabric covering for improved  
service maintenance.



RTD (Resistance Temperature  
Detectors) temperature probes.



High efficiency water ring  
vacuum pump available as  
option.



# ECO water saving options

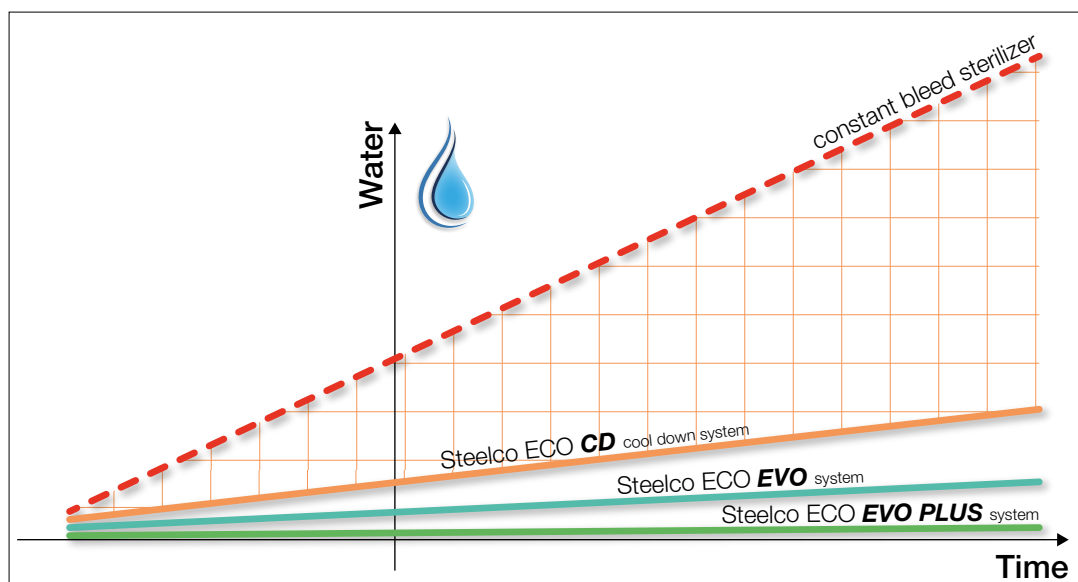
## Unrivalled levels of efficiency

Steelco's sterilisers set new standards in utilities reduction.

Water saving options can reduce water consumption to nearly zero depending on chosen model and water saving configuration.

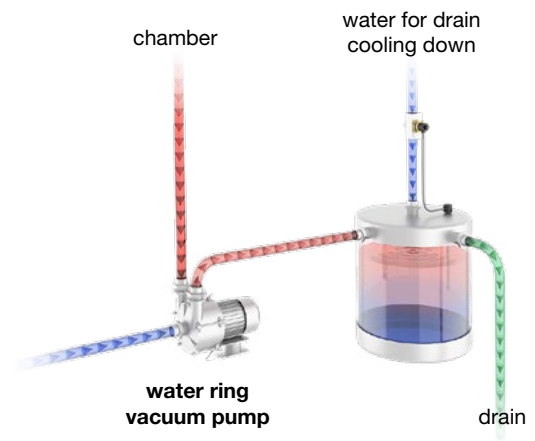
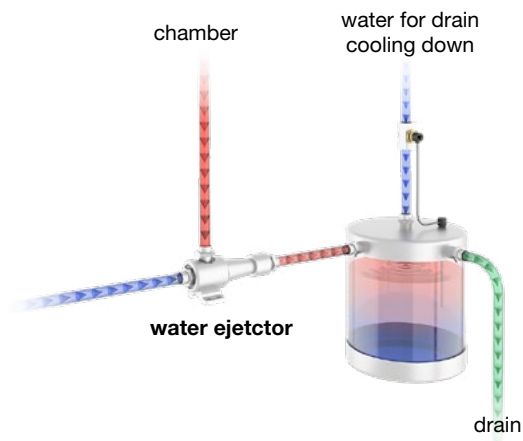
As part of its environmental water saving policy, Steelco equips **all sterilizers as standard** with its **ECO CD cool down system** water saving package.

## Every drop counts!

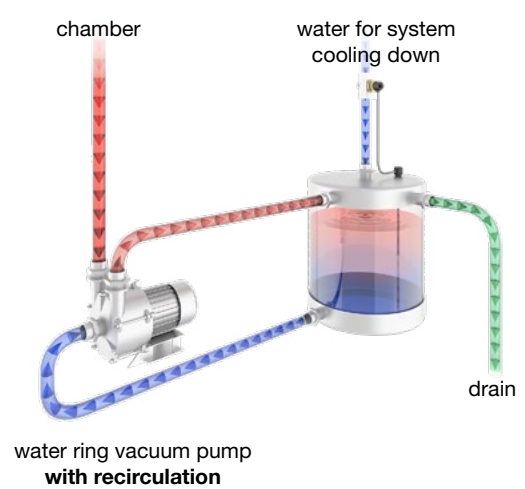
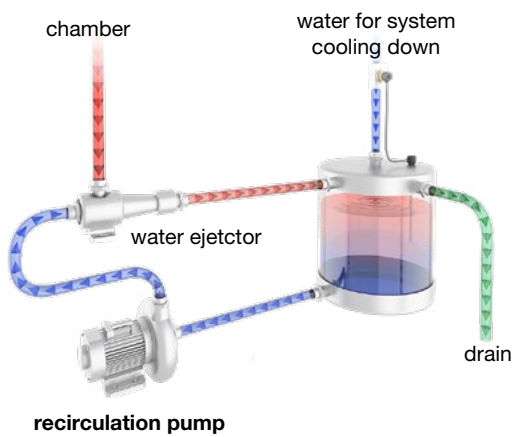


## ECO configurations

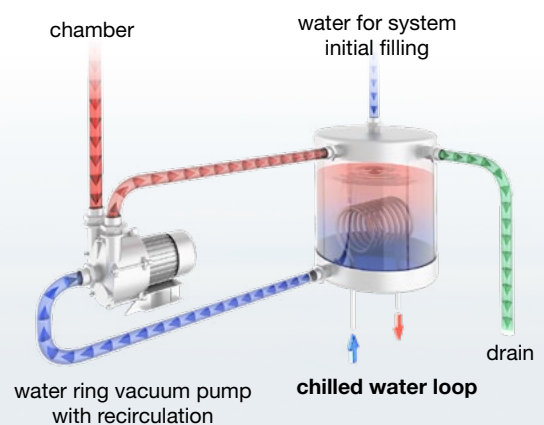
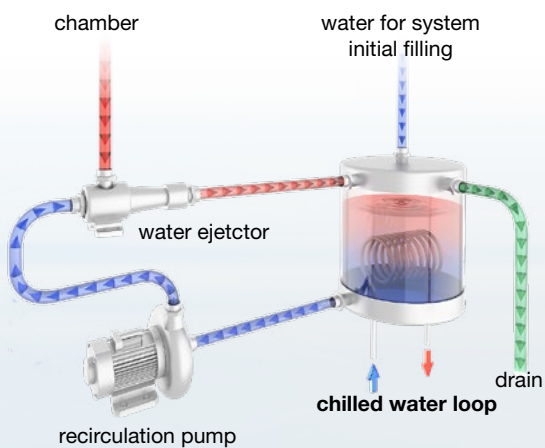
### CD cool down system



### EVO system



### EVO PLUS system





# Machine configuration

## Standard features

- Chamber made of AISI 316L stainless steel fine satin finishing  $Ra < 2 \mu m$  ( $Ra < 80 \mu inch$ )
- Frame and external panels made of AISI 304 stainless steel
- Single door
- Building steam
- Piping and valves in copper-brass
- Water ejector
- ECO CD - cool down system
- Solenoid valves
- Load Control Probe
- Hinged front cabinet panel
- HMI - touch screen display operating panel with PLC
- On board thermal printer on loading side
- Degreasing and passivation
- Gravity Cycle
- Liquid Cycle
- Pre-Post Vacuum cycles
- Leak Test
- DART (Daily Air Removal Test) cycle

## Steam supply system

Standard steam supply:

- Building steam

Optional steam supply:

- Integral electric steam boiler made of carbon steel or AISI 316L stainless steel
- Integral steam-to-steam AISI 316L boiler



## Car and carriage

- Fixed height loading carriage and loading car with 2 or 3 shelves
- Perforated shelves in lieu of car and carriage system
- Individually customized loading car on request

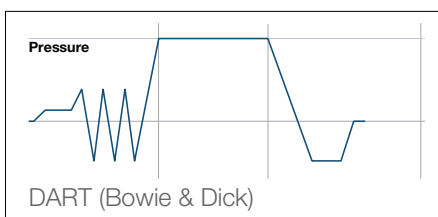
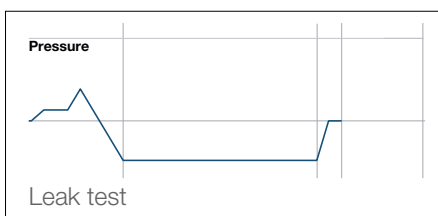
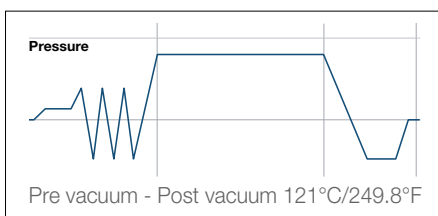
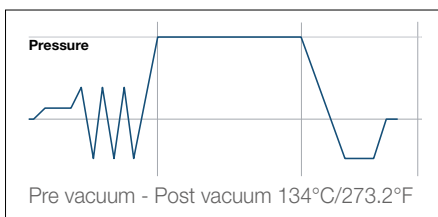
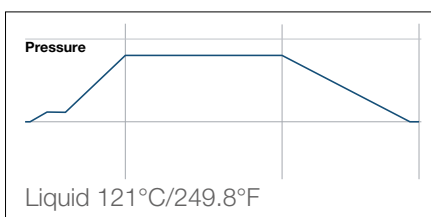
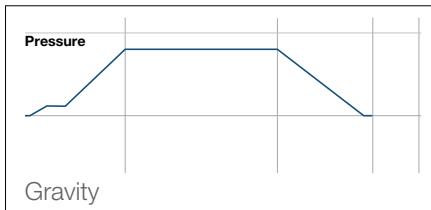




# Cycle configuration

To match your process needs

The following cycles are factory programmed and included as standard.



Jacket cooling, air over pressure with jacket cooling, effluent decontamination, low temperature cycle and  $F_0$  function are available **as option**.

Steelco can develop and provide specific cycles to meet individual customers needs.



# Machine configuration

## Options

Structural machine options
• Second door
• Air differential seal
• Floating switch for vessel
• Chamber made of 316Ti stainless steel
• Side and top panels
• Seismic Tie-Down Kit
• Seismic Calculations
Hydraulic options
• Vacuum Pump
• Pneumatic Valves
• Air Compressor
• 316L Stainless Steel process-steam Wetted Piping
• 316L Stainless Steel valves and components
• Steam Filter for direct steam feeding
• 316L Stainless Steel Integral electric boiler
• Carbon steel Integral electric boiler
• 316L Stainless Steel internal steam to steam boiler for clean steam application
• Boiler Automatic Blow down
• Auxiliary Low Water Cutoff w/Manual Reset
• Blow down tank for boiler
• ECO EVO system
• ECO EVO PLUS system
Process quality options
• Jacket cooling cycle
• Air over pressure with jacket cooling cycle
• Low temperature feature
• Effluent decontamination cycle
• F <sub>0</sub> function
• H <sub>2</sub> O <sub>2</sub> port
• EN 285 (applicable requirements)
Control options
• Control panel on the side for non-slim version
• UPS Uninterruptible Power Supply
• HMI full capability on unload side
• Connection for remote monitoring (tele-service)
Other options
• Knocked down delivery

## Validation

Upon request Steelco supplies IQ/OQ documentation and execution, FAT and SAT documentation and test.

# Capacity and dimensions

The following tables show a selection of Steelco VS L standard models. In addition to the standard configurations, specific sizes can be made upon request.

## VS L - Small capacity range

All models are available in **manual hinged** or **automatic vertical sliding door**, **single** or **double** door version.

Model	Capacity	Chamber dimensions (mm/inch)			Overall dimensions (mm/inch)		
	Liters/ft <sup>3</sup>	Width	Height	Depth	Width	Height	Depth
VS 161626 L	<b>110</b>	<b>406</b>	<b>406</b>	<b>660</b>	<b>635</b>	<b>1842</b>	<b>965</b>
	3 <sup>8</sup> / <sub>9</sub>	16	16	26	25	72 <sup>1</sup> / <sub>2</sub>	38
VS 202038 L	<b>250</b>	<b>508</b>	<b>508</b>	<b>965</b>	<b>737</b>	<b>1842</b>	<b>1270</b>
	8 <sup>5</sup> / <sub>6</sub>	20	20	38	29	72 <sup>1</sup> / <sub>2</sub>	50
VS 262639 L	<b>430</b>	<b>660</b>	<b>660</b>	<b>991</b>	<b>889</b>	<b>1994</b>	<b>1295</b>
	15 <sup>1</sup> / <sub>5</sub>	26	26	39	35	78 <sup>1</sup> / <sub>2</sub>	51
VS 262649 L	<b>542</b>	<b>660</b>	<b>660</b>	<b>1245</b>	<b>889</b>	<b>1994</b>	<b>1549</b>
	19 <sup>1</sup> / <sub>7</sub>	26	26	49	35	78 <sup>1</sup> / <sub>2</sub>	61
VS 262661 L	<b>675</b>	<b>660</b>	<b>660</b>	<b>1549</b>	<b>889</b>	<b>1994</b>	<b>1854</b>
	23 <sup>5</sup> / <sub>6</sub>	26	26	61	35	78 <sup>1</sup> / <sub>2</sub>	73

Note: Standard sizes dimensions for both hinged or vertical sliding door versions. Overall dimension depends on sterilizer model/configuration. Custom sizes also available.

## VS L - Medium capacity range

All models are available in **manual hinged** or **automatic horizontal sliding door**, **single** or **double** door version.

Model	Capacity	Chamber dimensions (mm/inch)			Overall dimensions (mm/inch)		
	(Liters/ft <sup>3</sup> )	Width	Height	Depth	Width	Height	Depth
<b>Manual hinged door</b>							
VS 263639 L	<b>600</b>	<b>660</b>	<b>914</b>	<b>991</b>	<b>1426</b>	<b>1709</b>	<b>1354</b>
	21 <sup>1</sup> / <sub>5</sub>	26	36	39	56 <sup>1</sup> / <sub>7</sub>	67 <sup>3</sup> / <sub>10</sub>	53 <sup>5</sup> / <sub>16</sub>
VS 263649 L	<b>750</b>	<b>660</b>	<b>914</b>	<b>1245</b>	<b>1426</b>	<b>1709</b>	<b>1608</b>
	26 <sup>1</sup> / <sub>2</sub>	26	36	49	56 <sup>1</sup> / <sub>7</sub>	67 <sup>3</sup> / <sub>10</sub>	63 <sup>5</sup> / <sub>16</sub>
VS 263660 L	<b>920</b>	<b>660</b>	<b>914</b>	<b>1524</b>	<b>1426</b>	<b>1709</b>	<b>1888</b>
	32 <sup>1</sup> / <sub>2</sub>	26	36	60	56 <sup>1</sup> / <sub>7</sub>	67 <sup>3</sup> / <sub>10</sub>	74 <sup>5</sup> / <sub>16</sub>
<b>Horizontal sliding door</b>							
VS 263639 L	<b>600</b>	<b>660</b>	<b>914</b>	<b>991</b>	<b>1860</b>	<b>1765</b>	<b>1275</b>
	21 <sup>1</sup> / <sub>5</sub>	26	36	39	73 <sup>11</sup> / <sub>50</sub>	69 <sup>1</sup> / <sub>2</sub>	50 <sup>3</sup> / <sub>16</sub>
VS 263649 L	<b>750</b>	<b>660</b>	<b>914</b>	<b>1245</b>	<b>1860</b>	<b>1765</b>	<b>1530</b>
	26 <sup>1</sup> / <sub>2</sub>	26	36	49	73 <sup>11</sup> / <sub>50</sub>	69 <sup>1</sup> / <sub>2</sub>	60 <sup>21</sup> / <sub>89</sub>
VS 263660 L	<b>920</b>	<b>660</b>	<b>914</b>	<b>1524</b>	<b>1860</b>	<b>1765</b>	<b>1810</b>
	32 <sup>1</sup> / <sub>2</sub>	26	36	60	73 <sup>11</sup> / <sub>50</sub>	69 <sup>1</sup> / <sub>2</sub>	71 <sup>13</sup> / <sub>50</sub>

Note: Overall dimension depends on sterilizer model/configuration. Custom sizes also available.



## VS 13 LD - VS 9 LD

### Vertical sterilizers

With proven and reliable high performance sterilizing technology, the new Steelco's vertical loading autoclaves meets the needs of a wide range of applications used in modern laboratories.

- + Safe, efficient and reliable performance
- + Unrivalled capacity/footprint ratio
- + Easy to use and modular loading
- + Equipment and cycle options for different applications



### Main features

- Chamber and process piping made of stainless steel AISI 316L
- Single piece hinged door of stainless steel AISI 316L for durability and ease of cleaning. Full shockproof ABS cover. Easy and effortless door opening and closing
- Cladding made of stainless steel AISI 304
- Lockable antistatic castors
- Built-in electrical steam generator
- PT 1000 RTD flexible probe for liquid sterilization
- Easy service access and maintenance
- User friendly 7" touch screen panel HMI
- $F_0$  value calculation
- Cycle memory capacity of 660 cycles
- Service indicator
- Ethernet interface to traceability system

### Cycle Programs

#### Standard working programs:

- Solids at 134°C/273,2°F
- Liquids at 121°C/249,8°F
- Glassware at 121°C/249,8°F
- Waste at 121°C/249,8°F

#### Test/service programs:

- Warm up to 121°C/249,8°F
- Maintaining temperature at 121°C/249,8°F

#### Additional programmes:

possibility to program up to 8 additional cycles







*Free-standing, compact, vertical sterilizers:  
cost-effective performance for laboratory  
applications*

## Main options

### Process performance options

- Vacuum pump for efficient pre vacuum air removal and post vacuum faster drying of **solid loads**
- Additional chamber heating with external steam coil to shorten cycles and enhance drying phase of **solid loads**
- Enhanced microbiologically filtered compressed air plus chamber cooling using cold water in an external coil for cutting in half the cool down time of **liquid loads**

### Accessories

- Additional RTD flexible probe and data recording
- Additional pressure transducer and data recording

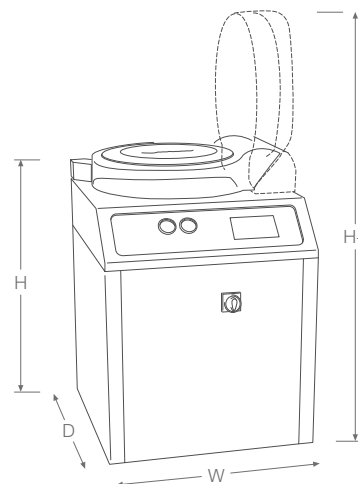
### Connectivity and recording options

- Integrated thermal paper printer
- SteelcoData LAB supervisor software
- WiFi connection
- Barcode scanner



## Loading accessories

- Lifting device with electronic control and swivel arm for fully assisted loading and unloading with easy handling at all load types.
- Several types and dimensions of loading baskets are available to optimize loading capacity.



## Dimensions

model	chamber (Ø x H) - mm/inch		litres/gal	overall (W x H (H+) x D) - mm/inch			
VS 9 LD	420/16.53	636/25.04	89/23.51	720/39.37	1000/39.37	1467/57.76	723/28.46
VS 13 LD	420/16.53	896/35.28	125/33.02	1235/48.62	1235/48.62	1702/67.01	723/28.46

## Loading capacity (ml)



Erlenmeyer  
flasks

model	250	500	1000	2000	3000
VS 9 LD	13 x 2	8 x 2	5 x 2	3 x 1	1 x 1
VS 13 LD	13 x 3	8 x 3	5 x 3	3 x 2	1 x 2



Flask bottles

model	250	500	1000	2000	3500
VS 9 LD	23 x 2	14 x 2	9 x 2	4 x 2	3 x 1
VS 13 LD	23 x 3	14 x 3	9 x 3	4 x 3	3 x 2



**Miele** Group Member

ARES - flexible endoscope automated reprocessing system



Dental washer disinfectors

Flusher disinfectors

Steam sterilizing autoclaves



Washer disinfectors for central of sterilization departments

Laboratory glassware washer disinfectors



Washing and sterilizing systems for life science and pharmaceutical applications

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