ANGELANTONI
LIFESCIENCE

EUROSTEAM

Steam sterilizer for laboratory serie s1-2-4 VSD

AIC
SCHLUMBOHM

Series: lab 1, 2 and 4 with

Series LAB 1.80 VSD
Series LAB 1.100 VSD

Series LAB 2.200 VSD
Series LAB 2.250 VSD

Load ergonomics

Technology

The Eurosteam LAB.STM line is a series of new generation steam sterilisers, result of the most advanced design by Schlumbohm & Angelantoni Life Science, Leader in the design and manufacture of advanced research labs to the highest class BSL4.

German technology combined with Italian creativity and design based on the Corporate Know-how achieved in decades of activity in the sector, has produced equipment focused on the "total quality", concept.

This philosophy enables to meet the needs of an Elite market requiring total safety assurance, absolute reliability and repeatable sterilisation processes avoiding assessment risks to the operators.

Total quality to produce medical devices with high construction standards, advanced techniques and innovative solutions.
Total quality for an environmentally-friendly project with water consumption, extremely low electricity and heat dissipation at almost zero impact on the environment.

Savings

The constant research of high productivity and efficiency leads us to a design commitment aimed to "Safety", "Total quality" and "Saving".

''Saving'' is one of the intents that we focus in the design phase: operating and maintenance saving adopting high quality, reliable and long life devices, solutions and components.

Synergy
Know-how
Experience
Ability
Customer Support

vertical slider doors.

Series LAB 2.220 VSD

Series LAB 4.300 VSD
Series LAB 4.450 VSD
Series LAB 4.600 VSD

rapidity and high productivity.

Service life

The Eurosteam LAB.STM line equipment is designed to last over time.

The generous sizing, the redundant safety factors, the innovative architecture of the structures allow to obtain high performances in terms of duration, so as to double those currently offered on the market.

Considering that the components used also come from world-wide Leading Companies, procurement of components is guaranteed over time as well as their interchangeability with future versions.

All this in contrast with the current market tendency, where the idea of quick obsolescence prevails causing evident negative environmental impact.

Use

Eurosteam LAB.STM sterilisers are necessary for the steam sterilisation of any material entering and leaving laboratories and research centres; as required by rules and restrictions based on the classes of “Bio-Safety Level”

We are talking up of Bio Safety Level 4 for the treatment of hazardous waste at high individual risk, transmissible via aerosol.

+50%
service life

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============================
+    AIC-SCHLUMBOHM      +
============================
SERIE LABSTM   - Rel.1.0
ID1309001 -  01/09/2013
Operatore numero 10
LOTTO : 12345-678-90
CICLO : GLASSWARE
STER. : 134°C 300 sec.
PULS. : 5
RISC. : Elettrico
============================
INIZIO: 09/09/2013 17:05
NUMERO: 00002345
============================
PULSAZIONE N.1   10,0 kPa
17:06   50,6°C     9,6 kPa
PULSAZIONE N.1  180,0 kPa
17:08  115,0°C   187,1 kPa
PULSAZIONE N.2   10,0 kPa
17:11   53,4°C     9,6 kPa
PULSAZIONE N.2  180,0 kPa
17:13  116,7°C   186,8 kPa
PULSAZIONE N.3   10,0 kPa
17:16   54,6°C     9,6 kPa
PULSAZIONE N.3  180,0 kPa
17:18  116,9°C   187,1 kPa
PULSAZIONE N.4   10,0 kPa
17:20   58,9°C     9,6 kPa
PULSAZIONE N.4  180,0 kPa
17:22  116,8°C   187,2 kPa
PULSAZIONE N.5   10,0 kPa
17:25   47,4°C     9,5 kPa
RISCALDAMENTO   134,0 °C
17:29  135,0°C   318,6 kPa
STERILIZZAZIONE   300 sec
17:29  135,1°C   319,3 kPa
17:30  135,1°C   319,3 kPa
17:30  135,2°C   320,5 kPa
17:31  135,0°C   321,2 kPa
17:31  135,2°C   320,3 kPa
17:32  135,2°C   321,1 kPa
17:32  135,1°C   319,6 kPa
17:33  135,2°C   321,0 kPa
17:33  135,1°C   319,5 kPa
17:34  135,2°C   320,7 kPa
ASCIUGATURA      25,0 kPa
17:36   70,3°C    24,4 kPa
ASCIUGATURA       600 sec
17:46   43,3°C     4,4 kPa
AERAZIONE       100,0 kPa
17:47   59,5°C   101,3 kPa
============================
FINE:    09/09/2013 17:47
CICLO REGOLARE
T.MAX 134,5°C
T.MIN 134,2°C
Tempo totale :    42 min
============================
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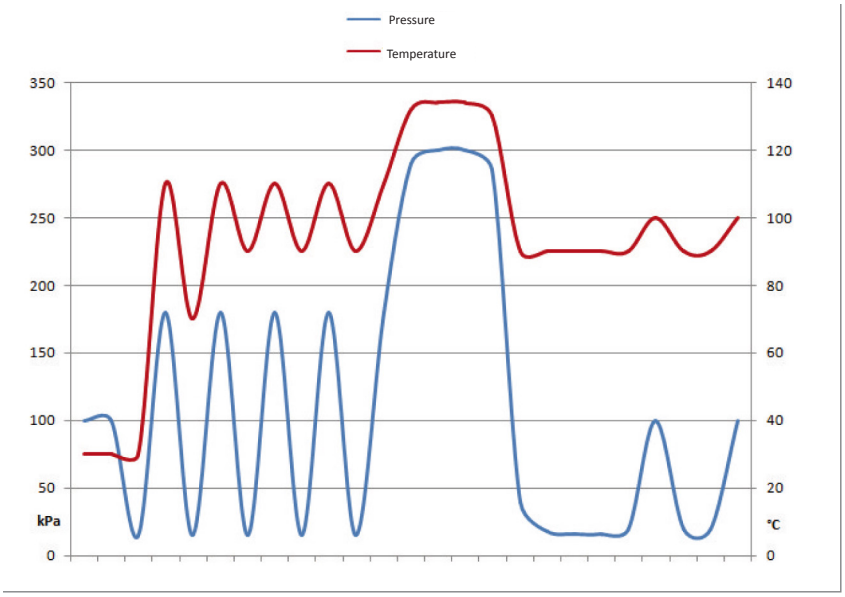


Sterilisation cycles

The Eurosteam LAB.STM line is configured with the following cycles:

1 - sterilisation cycle at 134°C for textiles, machine parts, filters, empty glassware.

2 - sterilisation cycle at 134° for all potentially infected material from the laboratory.

3 - sterilisation cycle at 121° for rubber and material derived from rubber.

4 - sterilisation cycle at 121° for liquids in open containers and natural cooling.

5 - sterilisation cycle at 121° for liquids in open containers and indirect. forced cooling.

6 - sterilisation cycle at 121° for liquids in hermetically sealed containers and direct forced cooling.

7 - Crash test.

8 - Sterilisation cycle at 121° with air-steam mixture for sensitive products and delicate packages.

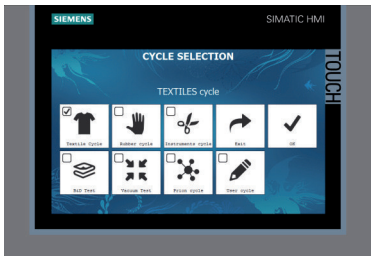
9 - steam penetration test cycle (Bowie&Dick Test).

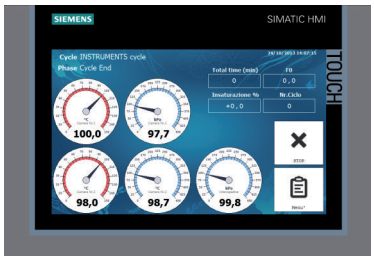
10 - automatic and electronic steam penetration test cycle according to EN 285.

11 - vacuum seal test cycle.

12 - open cycle: possibility of programming 100 new cycles.

-25%
Total cycle time





-85%

Water consumption

100%

Recycling

-40%

Energy consumption

Cycles you can trust

The Eurosteam LAB.STM line has a series of features that make running a sterilisation cycle “safer” compared to the classic steam steriliser.

The application of the concept of redundancy and the painstaking design of the systems, components and devices involved in the sterilisation cycle, has made it possible to guarantee zero risk.

In particular, the cycle for infected materials involves the use of specific innovative technical construction solutions that eliminate the risks of human and environmental contamination posed by a sterilisation process that is not safe in all its aspects.

The specific cycle was also “certified” for the application by the Robert Koch Institute Laboratory. Safety is not limited to the process but extends to all components and devices affecting the “reliable and safe” result.

Environmental impact

The Eurosteam LAB.STM line was developed by applying an environmentally friendly design with the aim of preserving the environment in which we live as much as possible, adopting innovative technical solutions and high quality components, in order to significantly reduce consumption and, therefore, pollute less during the entire life cycle.

Building on the idea of producing sustainable consumption equipment, reducing environmental impact, significant and measurable objectives have been reached that enhance the Eurosteam line in view of the performances it reaches.

Highlighted aspects are:

- **water consumption**
- **energy consumption**
- **recyclability**

The vacuum is generated by an innovative vacuum pump that runs fully dry and is compatible with steam. Water consumption for generating the vacuum is zero. The only water consumption, even if minimal, relates to the production of steam and cooling of outlets.

Bioseal

The modern concept of sterilisation unit foresees equipment, flows, paths, procedures, checks and traceability that must be installed in order to consider safe the "reprocessing" of the instruments , the production and the preservation of medical devices.
In particular, sterile preservation of medical devices is such a determining aspect that a protected area is set aside for the purpose, with significant access limits and constructive solutions aimed at guaranteeing a "sterile" and non pollutable environment.Hence the need to create a barrier inside the through sterilisers, between clean and sterile, that prevents contact between the areas.
The Eurosteam line is produced in order to fully meet this need through complete separation of the equipment on the sterile side called "Bioseal", that is aligned and sealed with the wall.

Industrialization

The position of the components, main functional units and the operational phases are designed to facilitate pre-assemblies and general assemblies, to significantly reduce times and costs in the serial production. The reduction of phases and the repetition of assembly operations, together with the optimisation of the semi-finished products, advantage the industrialisation of the production process and guarantee the constant high quality standards of the finished product.

Validation

Validation is one of the most important operations as it allows verifying, after installation, whether design conditions are respected. About the load (which is the subject of validation), has verified that the values for pressure, temperature, time and non-condensable gases are within the correct parametersand therefore the efficiency of the process, in compliance with the Standard UNI EN ISO 17665, is guaranteed.

Certificates, quality and construction standards

The LAB.STM Eurosteam line equipment is CE marked with identification number issued by the notified body according to the European Directive 93/42/EEC and 2007/47/EEC as a medical device and the European Directive 97/23/EC pressure equipment (PED) and European directive 2009/125/EEC (ecodesign).
Also to conform the following European directives: 2006/95/EC low-voltage directive, 2004/108/EEC for electromagnetic compatibility and 2006/42/EEC for machinery.
The construction is done in compliance with European Standard of reference UNI EN ISO 285: 2009 (steam sterilizers) and those related to it UNI EN ISO 17665-1 (development, validation, and routine tests), CEI EN ISO 61010-1 (electrical safety), CEI EN ISO 61010-1-040 (electrical safety), CEI EN ISO 61010-2-041 (electrical safety) CEI EN 60204-1 ISO (electrical), UNI EN ISO 15614-1: 2012 (welding procedures), UNI EN ISO 287-1 (welders qualification), UNI CEI EN ISO 17050-1: 2005 (conformity assessment), UNI EN ISO 14971-1: 2000 (risk analysis), EN IEC 62304: 2006 (validation of software) and EN IEC 62366: 2008 (human-machine interface).
All of that within a UNI EN ISO 9001 Quality System (quality certification) and UNI EN ISO 13485 (medical quality certification).

Main technical features

1 - Supporting structure, front and side panels in AISI 30 stainless steel.
2 - 8 mm thick, 316Ti STAINLESS STEEL chambers, fully drainable and cleanable.
3 - Drainable chamber bottom with central draining and filtering.
4 - 5 mm thick AISI 316TI stainless steel cavity.
5 - Cavity with total cover of the chamber.
6 - 20 mm thick AISI 304 or above stainless steel door(s).
7 - Chamber internal finishing and mirrored doors with a degree of roughness below 0.2 microns.
8 - Automatic vertical door sliding device.
9 - Door seal device of door(s) with dynamic chamber with "air chamber" type gasket.
10 - Chamber insulation, door(s), steam and condensation generator and piping with internal kevlar fabric.
11 - Separation bioseal of sterile side from clean side.
12 - AISI 304 or above stainless steel electrical steam generator (E).
13 - AISI 304 or above stainless steel heat recovery steam generator (SE).
14 - Direct steam (S).
15 - Direct steam and electrical steam generator (ES).
16 - Generator water pre-heating device.
17 - Energy recovery device.
18 - Generator water degassing device.
19 - Physical steam quality control device.
20 - Outlet temperature control device.
21 - Generation group of dry vacuum compatible with steam.
22 - Double data detection systems.
23 - Siemens integrated safety, programmable electronic controller.
24 - Siemens colour, high resolution touch screen monitor.
25 - Second Siemens colour, high resolution touch screen monitor dirty side.
26 - Alphanumerical printer on board the machine.
27 - Remote connection-ready.
28 - Sterilisation cycles for empty glassware, rubber materials, fabrics, liquids in sealed containers and liquids in open containers and cycle for infected liquids and materials.
29 - Ability to operate in accordance with 21 CFR Part 11 FDA.
30 - B&D Test Electronic / Automatic.
31 - Microbiological filter at outlet.
32 - Condensate vaporisation device.
33 - Sterilisation of in-line filter and integrity check.
34 - Burner at chamber air outlet.
35 - Chamber fan for uniform temperature.

Range of product EUROSTEAM Lab

Series	Model	Capacity (l)	Chamber dimensions (WxHxD mm)	Overall dimensions (WxHxD mm)
1	LAB STM.1.80 .1/2VSD.E/S/ES/SE	80	330x330x700	1020x1850x850
1	LAB STM.1.100.1/2VSD.E/S/ES/SE	110	330x330x1000	1020x1850x1150
2	LAB STM.2.200.1/2VSD.E/S/ES/SE	212	460x460x1000	1020x1850x1150
2	LAB STM.2.250.1/2VSD.E/S/ES/SE	275	460x460x1300	1020x1850x1450
2	LAB STM.2.220.1/2VSD.E/S/ES/SE	218	460x680x700	1020x1850x850
4	LAB STM.4.300.1/2VSD.E/S/ES/SE	315	660x680x700	1400x1850x850
4	LAB STM.4.450.1/2VSD.E/S/ES/SE	449	660x680x1000	1400x1850x1150
4	LAB STM.4.600.1/2VSD.E/S/ES/SE	584	660x680x1300	1400x1850x1450

Definition of the model code:

Euro Steam Line:
Type of equipment - Steam sterilisers
Laboratory Device - "LAB": Laboratory Application
Steam - "STM": Means of Sterilisation
Series - "1/2/4": load capacity in S.U. (size 300X300 mm) considering the chamber section
Volume - "from 80 l to 584 l": Chamber capacity in litres
Execution - "1 or 2": Number of Doors
Door Movement - "VSD": Vertical door automatic sliding
Heating - "E/S/ES/SE": Internal Electric Steam Generator / Centralised Steam / Electric-Steam / Steam Exchange

Example. Model LABSTM.4.600.2VSD.ES

Laboratory Device
Steam
4 S.U. according to the section
600 litres
2 Vertical sliding automatic doors
Internal electric steam generator and connection for centralised steam line

Angelantoni Life Science

Our skills and basic services for total customer satisfaction:

- Training, either at our premises a the customer's premises
- Testing and quality control
- Process Validations (IQ-OQ-PQ)
- Design for Central of sterilization (CSSD) and central of disinfection (CSDD).
- Management of traceability and remote control of the equipment
- Certificate tools SIT Calibration
- Service contracts "full risk"
- Extended warranties
- Research and development
- Production and Assembly
- Installation and commissioning
- Preventive maintenance
- Market analysis and advice
- Special applications

Angelantoni Life Science (ALS) is sub-wholly-owned holding company Angelantoni Industrie, is among the internationally leading supplier of refrigeration equipment and designing technological solutions in the biomedical field, with a constant commitment to innovation and safety, environmental or biological.
Research centres, hospitals, laboratories, universities, industrial companies of chemical and pharmaceutical sectors are the target Customers of ALS, which covers all the requirements of refrigeration, control of infection (Infection Control) and microbiological safety through a wide range of standard and special products.
Angelantoni Life Science is present in more than 40 countries and can be an ideal partner in Science and Technology.
Angelantoni Life Science, with agents and distributors in over 40 countries, is the ideal partner for the health sector and scientific research. Angelantoni Life Science has a long presence in refrigeration applied to biomedical field, both in research and industrial sectors within the cleaning, disinfection and sterilization with a complete range of equipment and services to meet the needs of sterilization (CSSD), disinfection stations (CSDD) and special applications BSL3 laboratories-BSL4 and treating infected waste (Biohazard).
Our strength comes from the expertise of engineers and handed experience that they have acquired in the design, by the professionalism of the technicians in the production and service, from coordinating manager who complete our team.
Each team member brings their enthusiasm and their scientific and industrial knowledge, in a working environment that stimulates innovation and development.
Angelantoni Life Science invests more than 10% of its turnover in research and development, which involved a multidisciplinary team of scientists that provides clients with cutting-edge solutions in terms of quality, reliability and innovation

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ALS ANGELANTONI LIFESCIENCE

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