

PL Series

Low Temperature Sterilizers



Steelco

Miele Group Member

Global Manufacturer and Supplier for Cleaning and Sterilization Solutions

Born from Steelco and Belimed, SteelcoBelimed pioneers sterile workflow solutions with innovation, reliability, and customer focus. “Innovate with confidence” defines our commitment to high-quality products and services, setting new industry standards in Infection Control and Life Science.

Customer Centricity

Our commitment to fully understand customers' needs and satisfaction is prioritized. Our products and services are designed to meet those specific needs, ensuring every decision we make benefits our customers for the best results.

Innovation

Our dedication to progress drives us to constantly seek out and embrace new ideas, technologies and methods. This commitment ensures our products and services continually evolve and improve.

Sustainability



Our planet, our responsibility. At SteelcoBelimed, sustainability is embedded in everything we do: from optimizing production processes and reducing energy consumption to creating products that support environmental stewardship. For us, protecting the future means acting today. With integrity, purpose, and a deep respect for people and the planet.

Reliability

Our commitment is to achieve the highest levels of productivity through the optimisation of processes, resources, and operations. By consistently delivering dependable solutions, we ensure value creation while minimizing inefficiencies. Our objective is to establish enduring relationships founded on trust, integrity, and mutual respect by reliably fulfilling our commitments.

PL Series
Low Temperature Sterilizers

Innovation and safety in low-temperature sterilization. The PL Series combines advanced hydrogen peroxide technology with reliable processes to ensure patient protection, delicate handling of instruments, and maximum operator safety. Designed to optimize workflow and meet the highest international standards.



PL 130

Single or double vertical sliding down door, automatic opening
Chamber volume up to 148 l



PL 70

Single or double hinged door manual opening towards left
Chamber volume up to 84 l



PL 40

Benchtop, single hinged door, manual opening toward left
Chamber volume 52 l (Table not included)



PL 40

Option: cabinet on a mobile stand

Key Advantages a Winning Combination

The innovative low-temperature vaporized hydrogen peroxide (VH_2O_2) sterilization technology ensures patient safety, user-friendly operation, gentle treatment of instruments, and high protection for the operator. The PL series delivers consistent performance and safety levels, regardless of chamber size.





Process Quality Focus

The ability to safely and effectively sterilize complex and delicate instruments, such as minimally invasive surgery instruments sensitive to heat and humidity, flexible, rigid endoscopes, or robotic surgery is increasingly required.

The PL Series guarantees a quality process without waste and interruptions.

The release of H_2O_2 in the external environment is much lower than required by all international guidelines. The H_2O_2 concentration measured in independent tests is ≤ 0.007 ppm.

Loading Configuration Flexibility

The dimensions of the sterilization chambers, along with the load combinations, made possible by removable shelves and accessories such as baskets and inserts, meet a wide range of re-processing needs.

All models in the series feature five validated programs, enabling the processing of a broad variety of instruments and loads.

Layout Optimization Solutions

The PL Series maximizes workflow efficiency and ergonomics while ensuring process safety, thanks to RFID technology.

Each sterilizer size offers the optimal ratio between machine footprint and usable load volume, facilitating easy integration into barrier systems and providing convenient service access.

Compliance to standard

Our sterilizers conform to:

European Directive for Medical Devices:

- 93/42/EEC and its revised versions

Technical norms and standards:

- EN ISO 14937 (ANSI/AAMI)
- ISO 22441
- EN ISO 14971
- UNI EN ISO 17665-1
- IEC EN 61010-1
- IEC EN 61010-2-040
- EN 62366-1
- IEC EN 61326-1

Safety & Care Balance

Precise dosage of hydrogen peroxide

Thanks to the precise dosage of hydrogen peroxide and the advanced control of the load's exposure to the sterilizing agent, the " H_2O_2 total dose" ensures the correct balance between sterilization effectiveness and material compatibility of the treated instruments.

Independent process verification is ensured through a range of indicators that confirm the proper release of the processed load.

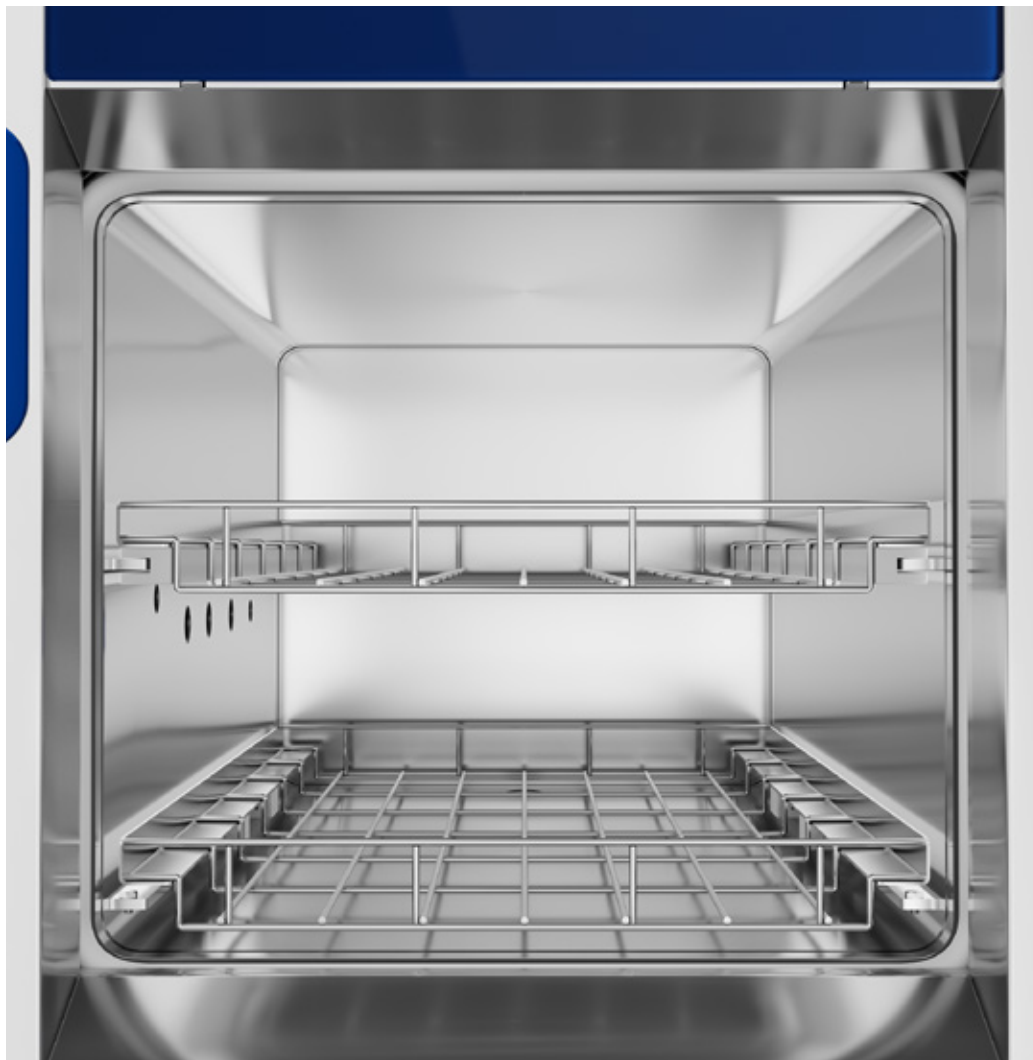


Safety & Performance

Coming Together

Sterilization occurs by injecting vaporized hydrogen peroxide (VH_2O_2) into the sterilization chamber with the sterilizing agent being in contact with the outside and inner lumens of the load.

After the instruments have been exposed to the sterilization phase, the combination of plasma phase and a catalyst action is used to decompose hydrogen peroxide into safe elements of water vapor and oxygen to guarantee the absence of hazardous residues.



Humidity level check performed at the beginning of each cycle

Removal of excess moisture from the load is done automatically before running each cycle through a programmed warming phase. Control of the humidity level in the chamber in real-time at the beginning of the sterilization cycle prevents unwanted aborted cycles.

Processes with excessive humid loads are interrupted without the sterilizing agent cartridge being used, thus saving considerable time and costs.

Continuous monitoring of the process

Chamber pressure, H_2O_2 concentration and temperature are monitored with redundant sensors. All process data are recorded and made available for traceability also in the paper printout. Each deviation from pre-established process parameters is notified by visual and audible alarms.

Plasma generator outside the chamber

The external plasma generation system guarantees better protection of the reprocessed instruments and, at the same time, ensures high load capacity and reduction of alarms.

Leak Test

For best practice, a daily vacuum test in the Steelco PL sterilizer range can be optionally programmed for automatic activation.

5 high performance validated cycles

- Fast, dedicated to non lumened instruments with and without articulations
- Flex, for flexible endoscopes, and da Vinci® instruments
- Standard, for mixed loads: flexible, rigid, and semi-rigid lumens and non-lumened instruments
- Intensive, for mixed loads: flexible, rigid, and semi-rigid lumens and non-lumened instruments with more challenging dimensions and channels
- Superfast, ultra-fast cycle for reduced loads that can be activated as an option on all models of the PL range.



H₂O₂ emissions up to 70 times lower than the most restrictive guidelines



No dangerous release of H₂O₂ at the end of the process!
Triple safety system for the reduction of hydrogen peroxide release:

- Plasma generator outside the chamber
- Platinum catalytic converter
- Additional active carbon filter

	PL range	Reference	ppm	mg/m ³
PEL-TWA	≤ 0,007 ppm (≤ 0,010 mg/m ³) OSHA method 1019	OSHA PEL-TWA	1	1,4
		ACGIH TLV-TWA	1	1,4
		NIOSH REL-TWA	1	1,4
		ECHA OEL-TWA	1	1,4
		MAK	0,5	0,7

OSHA, ACGIH, NIOSH, ECHA and MAK are bodies that establish universally recognized guidelines and maximum acceptable values.

The SteelcoPro PL sterilizing agent

The sterilizing agent is packaged in sealed single-dose or double-dose cartridges, depending on the model.

Thanks to their low volume, these cartridges significantly reduce the risks for the operator associated with handling, especially when compared to large bottles.



Safety & Performance

Coming Together

The effectiveness of sterilization and the delicate handling of instruments are in perfect balance in the Steelco PL series

Safety & Care Balance

Controlled exposure: the process involves a sterilization temperature between 50 °C and 55 °C. Exposure to the sterilizing agent is split into 4 separate pulses. Thus, it avoids prolonged contact with high concentrations of hydrogen peroxide, which could damage instruments, ensuring that the load is exposed to a limited “H₂O₂ total dose”.

The plasma generation takes place without further heat in the chamber, avoiding the development of possible overheating, which is harmful to the most delicate instruments.

- Safe one-shot cartridge: cycle cost guaranteed
- Ergonomic and fast front loading cartridge system with “poka-yoke” design
- RFID identified sterilant cartridge to check expiry date, for traceability and to avoid misuse
- Zero risk of cartridge waste due to cycle interruption caused by loading errors or excessive humidity
- Recyclable materials cartridge without chemical residue at the end of the cycle even in the event of an interrupted cycle
- Cartridges can be shipped both by sea and by air, in addition to standard methods.

Quick recognition with RFID or Barcode readers

All the devices have the option of the Barcode or RFID scanner for rapid recognition of the operator, the load, and starting cycles.

Excellent penetration into hollow instruments

Lumens: Ø ≥ 0.5 length ≤ 2200 mm.
(single, double, and triple channel)



PL 130
Low Temperature Vaporized H₂O₂ Sterilizers
High Capacity



Sterilization programs*	Time min.	Kg max	Lumens	Inizialization
Fast	27	19.5	No	+3 min
Flex	37	10.5	2 flex. endo or 2 da Vinci	+3 min
Standard	48	10.5	42 max	+4 min
Intensive	60	6.5	42/3-4 max**	+4 min
Superfast	20	5.5	No	+2 min

* In order to support validation procedures selected users are allowed to execute password protected half cycles.

** Intensive cycle allows the sterilization of the most challenging hollow instruments, including vaporized hydrogen peroxide compatible duodenoscopes, up to 4 channels.

Additional sterilization programs can be added and validated by the customer.

The PL 130 is a low-temperature sterilizer with a 148-liter chamber, ideal for terminal sterilization of packaged medical devices sensitive to heat and humidity. It supports instruments with lumens up to 2200 mm long and starting from 0.5 mm in diameter. Available in single or double-door versions, it features an automatic space-saving sliding door and ergonomic loading at 920 mm height. The system is operated via a PLC microprocessor and a 10" color touchscreen HMI.

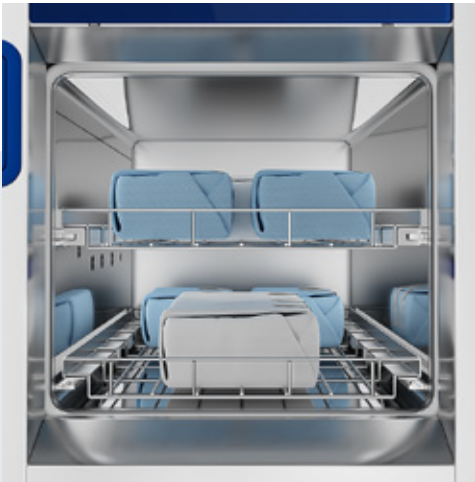
Chamber	Height mm	Shelves
	175 175	2
Baskets	Inserts	Pouches capacity
C1683	C1706	12
	C1682	20



Ergonomic front-loading cartridge system with “poka-yoke” design, which totally avoids operators’ mistakes.

Process Quality Focus

To ensure efficient and safe sterilization, the PL Series offers advanced features such as a dedicated humidity control system to eliminate excess moisture, redundant sensors for real-time monitoring of chamber pressure and temperature, and an external plasma generator to protect both instruments and the environment.

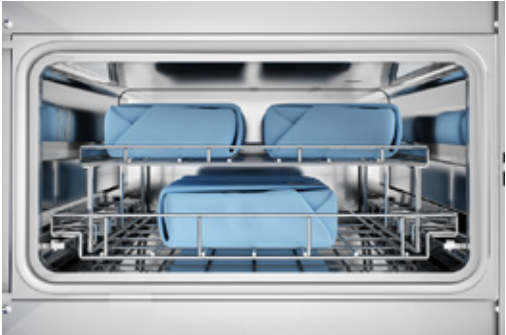


PL 70
Low Temperature Vaporized H₂O₂ Sterilizers
Medium Capacity



The PL 70 is a low-temperature sterilizer with an 84-liter chamber, designed for terminal sterilization of moist and heat-sensitive medical devices using vaporized hydrogen peroxide. It accommodates surgical instruments, including those with lumens up to 2200 mm long and 0.5 mm in diameter. Available with single or double manual hinged doors, it offers flexible loading configurations and ergonomic operation at 1020 mm height. The system is managed via a PLC microprocessor and a 7" color touchscreen HMI.

Chamber	Height mm	Shelves
	220	2
Baskets	Inserts	Pouches capacity
C1683	C1706	12
	C1682	20



To ensure efficiency and safety, the PL Series includes features such as humidity control to remove excess moisture, redundant sensors for real-time process parameters monitoring, and an external plasma generator to protect instruments and the environment.

Sterilization programs*	Time min.	Kg max	Lumens	Initialization
Fast	29	13.5	No	+3 min
Flex	39	5.5	1 flex. endo or 1 da Vinci	+3 min
Standard	56	5.5	12 max	+4 min
Intensive	62	4.5	12/3 max**	+4 min
Superfast	22	2.2	No	+2 min

* In order to support validation procedures selected users are allowed to execute password protected half cycles.
** Intensive cycle allows the sterilization of the most challenging hollow instruments.
Additional sterilization programs can be added and validated by the customer.

Ergonomic design

The PL 70 models also offer ease of operation thanks to a small hinged door. All the models have a rectangular sterilization chamber to accommodate the most frequently used accessories for packaging and loading.



PL 40

Low Temperature Vaporized H₂O₂ Sterilizers

Benchtop

The PL 40 is a compact benchtop hydrogen peroxide sterilizer with a 52-liter chamber, ideal for small clinics, endoscopy departments or as a backup in space-constrained CSSDs. It performs terminal sterilization of delicate, moist, and heat-sensitive medical devices using vaporized hydrogen peroxide (H₂O₂), including surgical instruments with lumens. Featuring a manual hinged door, it can be configured as free-standing with a dedicated stainless steel cabinet. The device includes a 7” color touchscreen HMI and a PLC digital microprocessor. All PL Series models are Plug & Play, ready for quick setup anywhere.

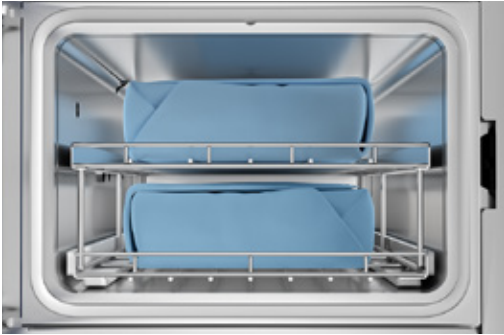


Sterilization programs*	Time min.	Kg max	Lumens	Inizialization
Fast	24	11.8	No	+4 min
Flex	36	3.5	1 flex. endo	+4 min
Standard	51	5.5	12 max	+4 min
Intensive	58	3.5	12/3 max**	+4 min
Superfast	21	1.5	No	+4 min

* In order to support validation procedures selected users are allowed to execute password protected half cycles.
 ** Intensive cycle allows the sterilization of the most challenging hollow instruments.
 Additional sterilization programs can be added and validated by the customer.

Chamber	Height mm	Shelves
	230	2
Baskets	Inserts	Pouches capacity
C1722	C1723	16
C1724*	C1725	6

* Half size loading basket



To ensure efficiency and safety, the PL Series includes features such as humidity control to remove excess moisture, redundant sensors for real-time process parameters monitoring, and an external plasma generator to protect instruments and the environment.

Best footprint in the market vs features

A benchtop sterilizer solution for small clinics or as a backup for CSSDs. PL 40 has similar features, benefits and performances of the larger capacity PL models in a compact footprint. Can be optionally equipped with a stand cabinet with 4 lockable wheels with space for material storage.



Consumables

Biological and chemical indicators

In a safe sterilization process, the correct release of the load is a fundamental step. Steelco PL sterilizers are supported by a complete range of chemical and biological indicators, including rapid-read solutions. The range also includes packaging tape, incubators, and process challenge devices (PCDs).



Starter Kit

A comprehensive consumables solution pack useful for the PL machines installation. One dedicated Starter Kit per each PL models with the following articles:

- 1 x Tape Type 1 chemical indicator
- 1 box of Type 1 chemical indicator
- 1 box of biological indicators, 24 hours incubation time
- 1 box of 10 SteelcoPro PL cartridges
- 1 Tyvek reel 75mm x 70m



Super Rapid biological indicators and incubator for VH_2O_2 sterilization process

Self-Contained Biological Indicator with 5 minutes incubation time at 60°C. These vials are processed in the dedicated incubator for 5 minutes and after the device will provide quality checks on the sterilization process. The incubator can be connected to the traceability software available for PL machines.



Standard biological indicators for VH_2O_2 sterilization process

Self-Contained Biological Indicator with 24 hours incubation time at 60°C. These vials are processed in the dedicated incubator. After the incubation time, it will be possible to determine the effectiveness of the sterilization process.

The incubator is suitable also for self-contained biological indicators for steam sterilization processes.



Type 1 chemical indicators for VH_2O_2 sterilization process

Type 1 chemical indicators and tape to monitor the contact between machine load and hydrogen peroxide vapors, useful to verify and check the sterilization process in CSSD environment. Tape and Type 1 labels available to be used and place with load to be processed in VH_2O_2 sterilization processes.



Type 4 chemical indicators for VH_2O_2 sterilization process

Type 4 chemical indicators to monitor the contact between machine load and right amount of hydrogen peroxide vapors, useful to verify and check the sterilization process in CSSD environment. Two different dimensions of Type 4 labels available to be used and placed with load to be processed in VH_2O_2 sterilization processes.



PCDs – Process Challenge Devices for Performance Qualification procedures

The PCD range includes dedicated lumens, both rigid and flexible. When used in combination with biological and chemical indicators, they allow to verify the correct exposure to the sterilizing agent and ensure the proper release of the load.



Tyvek reels – dedicated packaging material for VH_2O_2 sterilization process

Dedicated Tyvek reels for wrapping and preparing the load to be sterilized with VH_2O_2 process.

Based on the different device and load dimensions to be sterilized, 7 different reels sizes are available.



Rapid Read Incubator traceability

The traceability software is a standard feature of the Rapid Read Incubator with the aim of recording all the results of self-contained biological indicators (SCBIs) with fluorescence readout. The system allows to keep trace of all the reports and sterilization verification which can be attached to the documentation related to the CSSD's processes.



Complete traceability of the sterilization process

The Super Rapid SCBI incubator can be integrated with the PL traceability system, allowing both the results of the biological indicators and all cycle control parameters to be included in the final traceability report.



Easy Configuration and Productivity

Coming Together

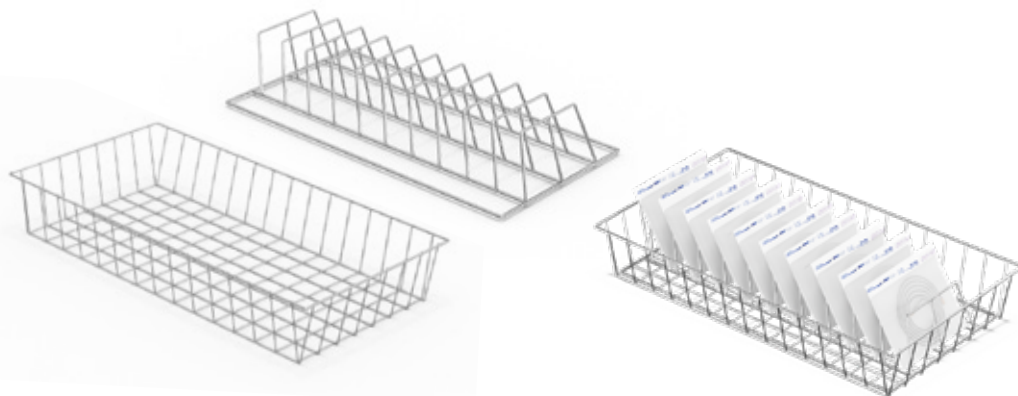
Being flexible in accepting different loads and, at the same time, preventing possible incorrect loading is the key for your productivity goals!

Easy loading

The semi-extractable shelf design prevents incorrect load positioning, enhancing process safety and reducing the frequency of alarms and interruptions. All models are fitted with a removable top shelf to maximise the use of available height.

Perfect range of accessories

In addition to the removable shelves supplied, we offer optional baskets and inserts for the correct arrangement of even the bulkiest loads. These accessories guarantee excellent loading flexibility in relation to the choice of the cycle and an adequate diffusion and penetration of the hydrogen peroxide vapor.



Reprocessing of *da Vinci® optics

The Steelco PL 130 and PL 70 models have been validated for reprocessing “da Vinci Si/X/Xi” endoscopes using the Flex cycle. Load configuration: n.2 endoscopes (PL 130), n.1 endoscope (PL70).

* The “da Vinci” trademark and logo are registered trademarks of Intuitive Surgical, Inc.



Ergonomics and Logistics

Coming Together

Easy, quick, and safe loading and cycle start operations for a workflow without any interruption

Compact design

The “sliding door” solution that can also be operated by a pedal on the PL 130 model reduces overall dimensions and facilitates “hands-free” loading of the instruments.
The PL 70 and PL 40 models also offer ease of operation thanks to a small hinged door, making them the most compact in relation to the load capacity.
All the models have a rectangular sterilization chamber to accommodate the most frequently used accessories for packaging and loading.
Loading operations always take place at an ergonomic height.

Immediately available

The models of the PL series are all Plug & Play, ready to be started quickly in any location. They are equipped with lockable pivoting wheels for maximum ease of handling, even in confined spaces.



Smart Maintenance and Easy Integration

Maintenance can be easily performed from the front of the equipment, thanks to the fully opening front door with key access.

The side panels are also completely removable. Barrier installation is simplified by the minimal space required for maintenance access.



Flexibility & Control

Coming Together

The large 7" or 10" touchscreen control panel (on both sides for double door devices) facilitates device control with bright, easy-to-read information even from a distance: an intuitive and practical aid for operators in their daily tasks. In addition, the well-thought-out and user-friendly design is consistent throughout the portfolio of our devices, supporting intuitive operation and reliable processes.

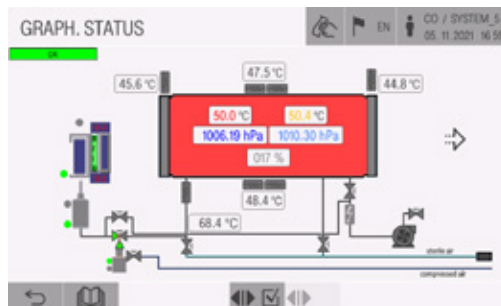
A user-friendly interface

Operators are supported in every step of their interaction with the device through clear and easy-to-understand commands. Cycle programs can also be selected via barcode or RFID scanner.

The large touchscreen control panel displays cycle status and alarm messages, facilitating device control with bright and easy to read information

Technical service mode

The sterilizer is designed with few components to streamline maintenance. An easy-to-read synoptic panel allows for an in-depth overview of component status of the sterilizer, speeding up service interventions.



Easy-to-read synoptic panel

User access levels

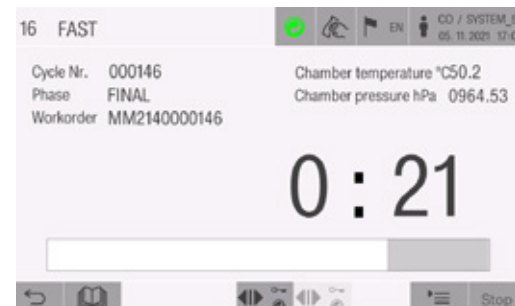
User access is split into 5 levels to ensure that only trained staff have access to specific functions: operator, department manager, service technician at the customer's site, authorized service technician, and manufacturer.

Thanks to the HMI's intuitive design, in line with the whole our portfolio of devices, operations are easy and processes are safe.

Cycle data storage

Cycle data is stored and available from the integrated printer and, if the device is connected to the network, data can be sent to a centralized traceability system.

USB port for machine data backup available as an option



Highly visible cycle status and alarm messages.



Digitalization Solutions

Management and Tracking Software

Our digital solutions ensure instruments are available at the right time in the right place, reprocessed according to the correct standard, in the shortest possible time, and at the lowest possible cost.

SmartHub Connect

SmartHub Connect is an on-premise software solution that collects data from compatible equipment and delivers it to an Instrument Tracking System.

Users gain full transparency with a visual dashboard that displays the status of programs and cycles for each connected machine.

SmartHub Connect's dashboard is a powerful tool for streamlined CSSD management.

SmartHub Flow

SmartHub Flow is our web-based and cloud-ready software for tracking sets and instrument localization.

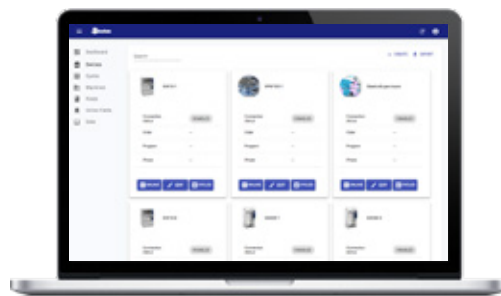
Designed to address the growing complexity of your CSSD, the software provides an accurate and secure monitoring tool allowing you to progressively refine your workflow and maintain high-productivity standards.

The collected information about the production, shipment, and warehouse handlings helps to precisely quantify and analyze production expenditure, improving cost-efficiency. The software is compliant to the international security standards, i.e. ISO 27001, ISO 13485.

SmartHub Orbit

SmartHub Orbit is our innovative web-based application that transforms machine data into actionable insights and added value. All relevant equipment data and cycle statuses are accessible from any device, anywhere, at any time.

This gives CSSD managers full control and revolutionizes their way of working. SmartHub is designed to support the entire CSSD team with continuously evolving features and updates, such as e-learning, troubleshooting, process digitalization, and advanced analytics.



Capacity and Dimensions

Layouts and Configurations

Model	Chamber (WxHxD) - mm			Litres		Overall (WxHxD) - mm	
Single door							
PL 70/1	450	220	825	81.7	642	1630	920 (*)
PL 130/1	450	400	795	143.1	770	1685	1040
Double door							
PL 70/2	450	220	850	84.1	642	1630	990 (*)
PL 130/2	450	400	820	147.6	770	1685	1070

(*) for outer dimensions of PL 70 add 50 mm of the door handle protrusion. Loading height: PL 70, 1020 mm above finished floor - PL 130, 920 mm above finished floor

Model	Chamber (WxHxD) - mm			Litres		Overall (WxHxD) - mm	
Single door							
PL 40/1	350	230	640	51,5	535	930	777 (*)
PL 40/1 on stand cabinet	350	230	640	51,5	535	1630	777 (*)

(*) for outer dimensions add 53 mm of the door handle protrusion. Loading height: 1050 mm above finished floor (on stand cabinet).



Maximized performance with SteelcoBelimed's experts

Service Plans

Prevention is better than cure. Our tailored service plans ensure maximum equipment uptime through customized preventive maintenance based on machine usage. Whether you rely on in-house technicians or our expert team, different solutions may include scheduled preventive maintenance visits, repairs and parts, depending on the options chosen. Optional enhancements, such as chamber cleaning and water quality monitoring, help optimize performance and control costs – keeping your operations running smoothly and efficiently. Ask your local SteelcoBelimed representative for the range of services offered in your area.

SteelcoBelimed Academy

The SteelcoBelimed Academy offers a diverse range of training options tailored to the specific needs of CSSD professionals. The state-of-the-art training facility in Riese, Italy, serves SteelcoBelimed divisions Infection Control, Laboratory, and Biomedical Research (BMR) with an impressive capacity to train up to 1,100 service technicians annually. The Academy represents our commitment to advancing the entire field of sterile processing. Healthcare professionals who train here will gain insights that go beyond equipment operation to encompass the science of infection control and the optimization of sterile processing workflows. This knowledge translates directly to improved patient safety and operational efficiency in their facilities.

Total Cost of Ownership (TCO) Contracts

Our TCO contracts offer a multi-year, fixed-cost service solution that ensures budget stability and long-term value. By locking in rates and minimizing exposure to rising costs, these contracts provide clear financial planning. Ideal for extending the life of your equipment, these all-inclusive packages reduce operating costs, protect investments and support sustainability goals over the entire equipment lifecycle.

Digitalization in Service Operations

Our digital solutions provide access to real-time equipment data, helping service teams monitor performance and more quickly identify any potential issues. Clear dashboards and automated alerts allow maintenance to become more predictive and efficient. These tools support better planning, reduce unexpected downtime and simplify compliance. By integrating digital workflows into service routines, facilities can improve reliability and make more informed decisions based on actual usage and performance trends.

SteelcoBelimed  Group Member

Innovate with confidence