

# 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.

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## 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.

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## 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.

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## 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.



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## 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: on stand cabinet

## Key Advantages a Winning Combination

The innovative low-temperature vaporized hydrogen peroxide (VH<sub>2</sub>O<sub>2</sub>) 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.





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### 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<sub>2</sub>O<sub>2</sub> in the external environment is much lower than required by all international guidelines. The H<sub>2</sub>O<sub>2</sub> concentration measured in independent tests is ≤ 0.007 ppm.

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### Safety & Care Balance

Thanks to the precise dosage of hydrogen peroxide and the advanced control of the load's exposure to the sterilizing agent, the "H<sub>2</sub>O<sub>2</sub> 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.

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### 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

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### 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.

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### Layout Optimization Solutions

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

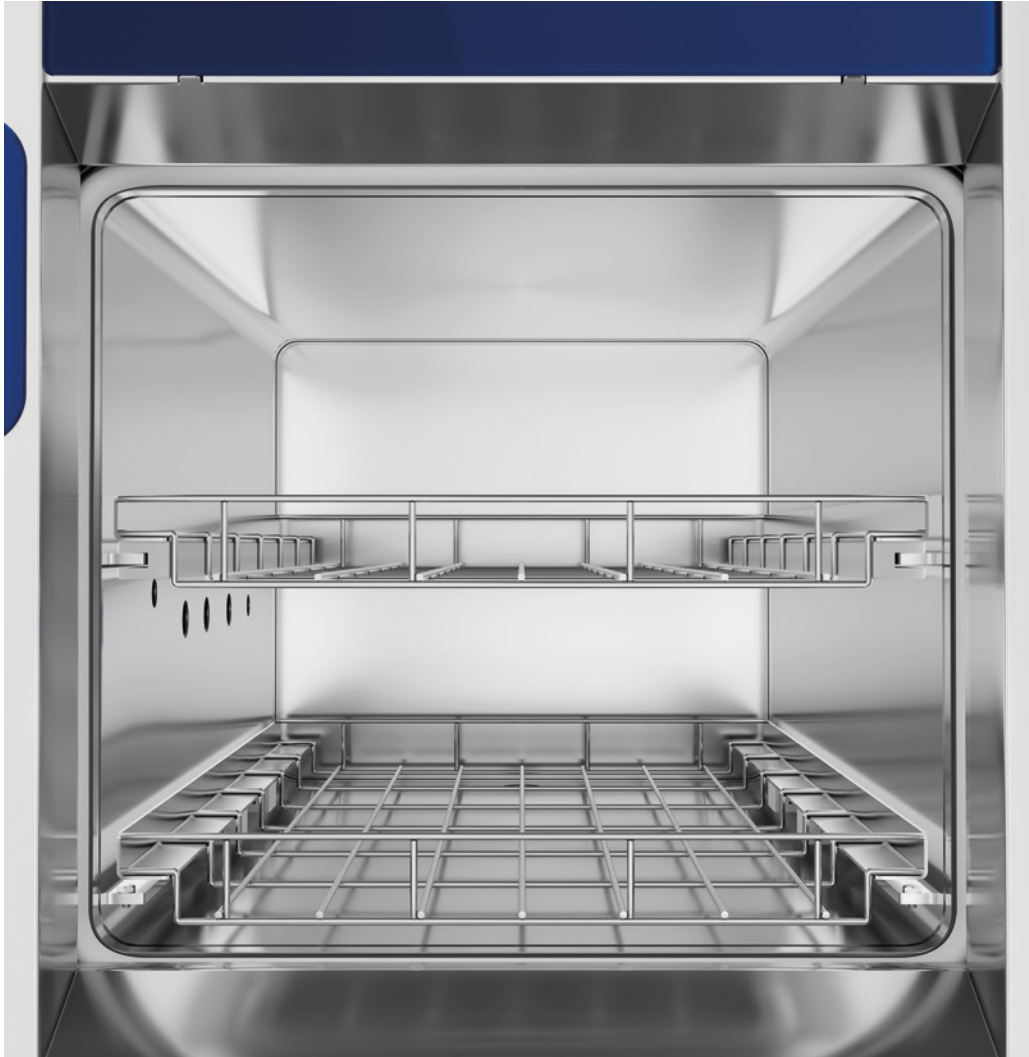
Each sterilizer size offers the optimal ratio between machine footprint and usable load volume, facilitating easy integration into barrier systems and providing convenient service access.

## 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.



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#### Humidity level check performed at the beginning of each cycle

Removal of excess moisture from the load is done automatically before running each cycle. 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.

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#### 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.

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#### 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.

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#### Leak Test

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

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#### 5 high performance validated cycles

- Fast, dedicated to non lumened instruments with and without articulations
- Flex, for flexible endoscopes, including DaVinci® 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.



## H<sub>2</sub>O<sub>2</sub> emissions up to 70 times lower than the most restrictive guidelines



No dangerous release of H<sub>2</sub>O<sub>2</sub> 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 <sup>3</sup>
PEL-TWA	≤ 0,007 ppm (≤ 0,010 mg/m <sup>3</sup> ) 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

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### 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 “H<sub>2</sub>O<sub>2</sub> 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 are suitable for sea and air shipment

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### 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.

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### Excellent penetration into hollow instruments

Lumens:  $\varnothing \geq 0.5$  length  $\leq 2200$  mm.  
(single, double, and triple channel)



# PL 130

## Low Temperature Vaporized H<sub>2</sub>O<sub>2</sub> Sterilizers High Capacity

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.

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	10.3	42 max	+4 min
Intensive	60	6.5	42/3-4 max**	+4 min
Superfast	20	5.5	No	+2 min

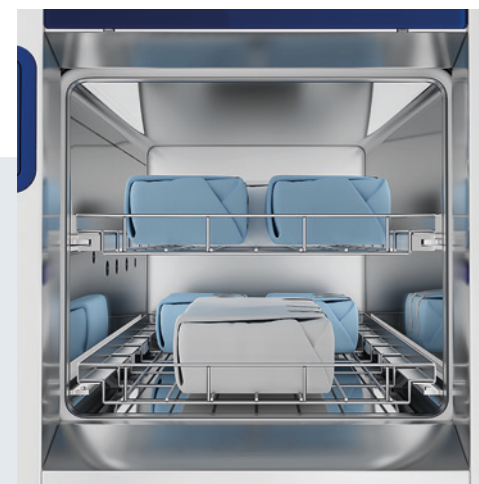
\* In order to support validation procedures selected users are allowed to execute password protected half cycles.

\*\* 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.

### 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

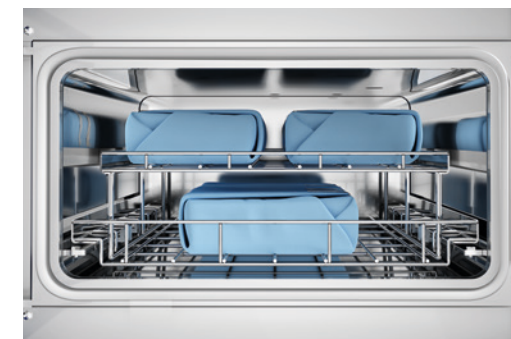
## Low Temperature Vaporized H<sub>2</sub>O<sub>2</sub> Sterilizers

### 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	Inizialization
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

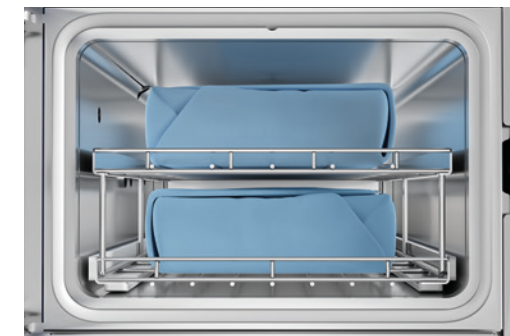
## Low Temperature Vaporized H<sub>2</sub>O<sub>2</sub> Sterilizers

### 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 (H<sub>2</sub>O<sub>2</sub>), 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.

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

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.

### 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.



# Safety & Performance

## Coming Together

### Biological and chemical indicators

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).

In a safe sterilization process, the correct release of the load is a fundamental step.



VH<sub>2</sub>O<sub>2</sub> 30 mins self-contained biological indicators and Rapid Read Incubator (suitable also for steam, formaldehyde, and EO).



A Starter Kit including: packing tape, cartridges, chemical and biological indicators, and paper for the built in printer is available for all the PL range models.



VH<sub>2</sub>O<sub>2</sub> Type 1 tape 19mm x 50m and sterilization tape dispenser.



VH<sub>2</sub>O<sub>2</sub> 24 hours self-contained biological indicators and Incubator (suitable also for steam, and EO).



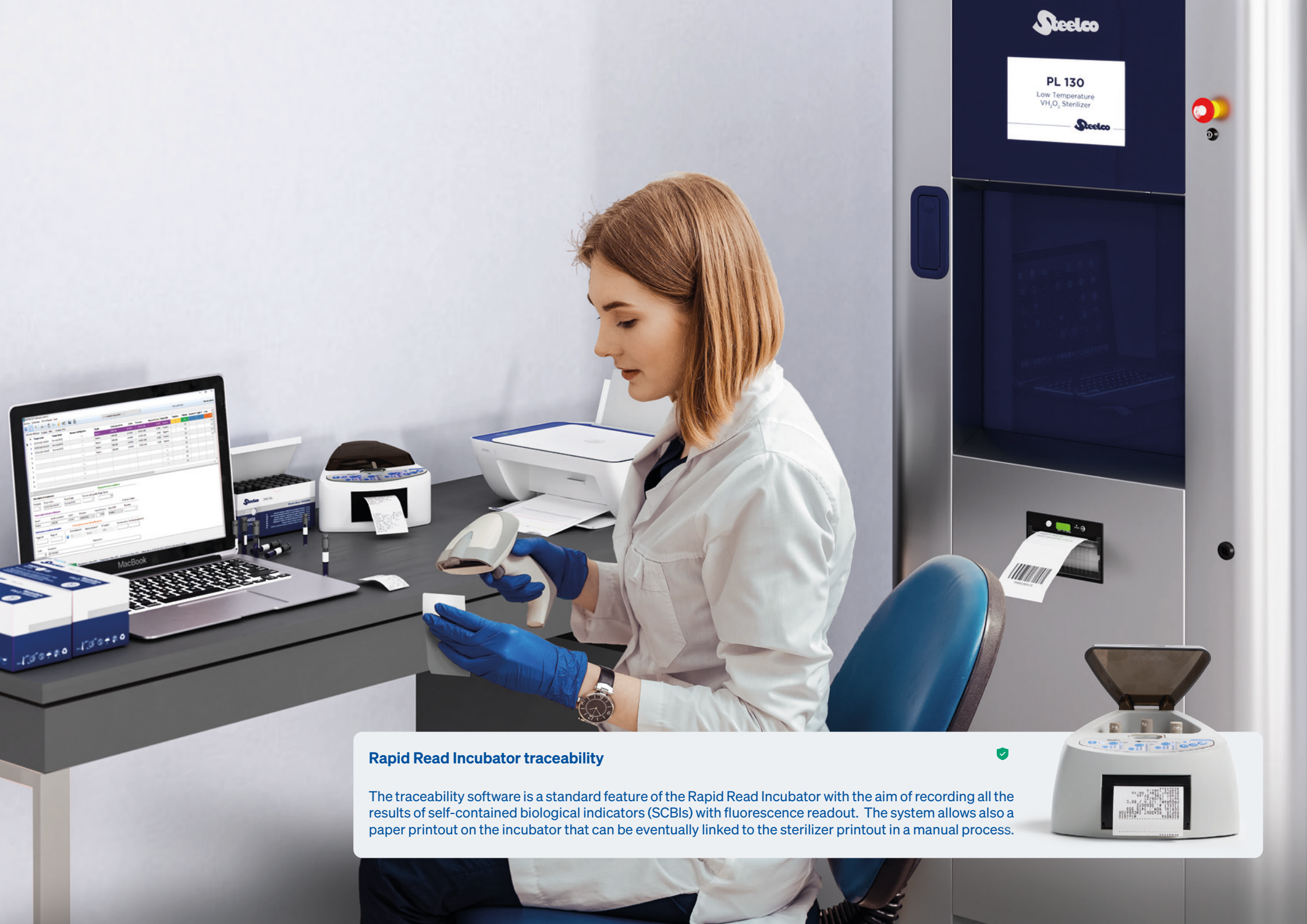
VH<sub>2</sub>O<sub>2</sub> Type 4 and Type 1 indicators also available in addition to adhesive label.



Tyvek® bags: available in seven different sizes.




PCDs available in different sizes for routine test and Performance Qualification (PQ) activities




Steelco

PL 130  
Low Temperature  
VH<sub>2</sub>O<sub>2</sub> Sterilizer  
Steelco



**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 also a paper printout on the incubator that can be eventually linked to the sterilizer printout in a manual process.



# Easy Configuration and Productivity

## Coming Together

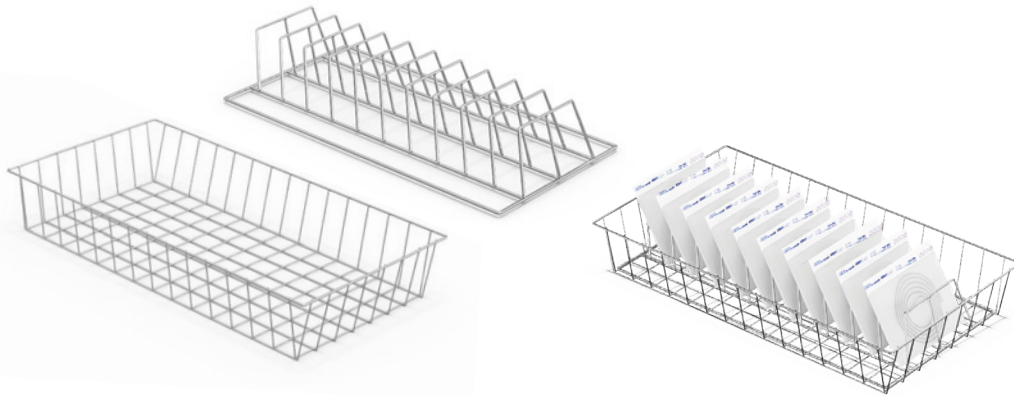
Being flexible in accepting different loads and, at the same time, preventing possible incorrect loading is the key for your productivity goals!

### 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

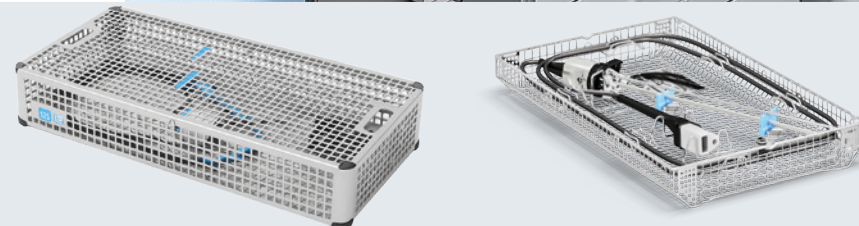
In addition to the removable shelves supplied, we offer optional baskets and inserts for the correct arrangement of even the bulkiest loads. These accessories guarantee excellent loading flexibility in relation to the choice of the cycle and an adequate diffusion and penetration of the hydrogen peroxide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



### Reprocessing of \*da Vinci® optics

Validation of device compatibility and sterilization efficacy of the Steelco PL 130 and PL 70 using the FLEX cycle for “da Vinci” Si/X/Xi endoscopes. 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) HMI 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.

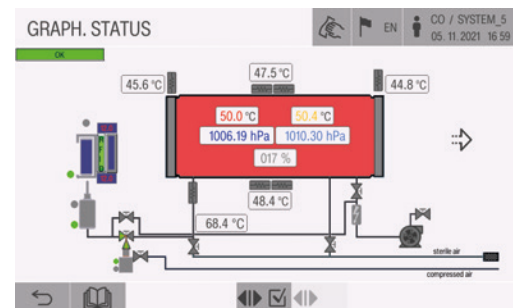
### A user-friendly interface

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

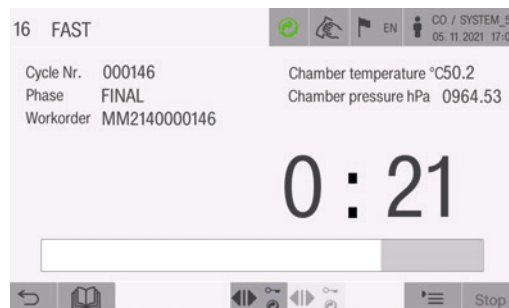
User access is split into 5 levels to ensure that only trained staff have access to specific functions: operator, department manager, service technician at the customer's site, authorized service technician, and manufacturer.

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 optional 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.

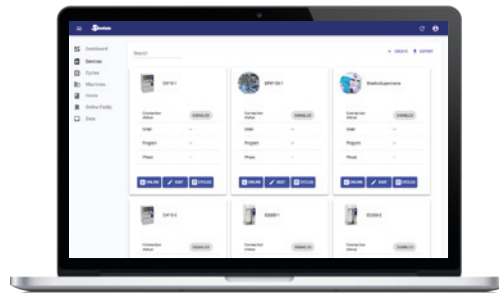
Designed to address the growing complexity of your CSSD, the software provides an accurate and secure monitoring tool allowing you to progressively refine your workflow and maintain high-productivity standards.

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

(\*) footprint (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 (*)

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



# Maximized performance with SteelcoBelimed's experts

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## 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.

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## 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.

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## 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.

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## 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.

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Innovate with confidence

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909/MDD certificate