LOW TEMPERATURE PLASMA STERILIZER

Sterilization Solution of Plasmapp

STERLINK

PREMIUM LINE

plasmapp


“Trusted safeguard for all medical devices around the world”
plasmapp
www.plasmapp.com

Core Technologies for obtaining SAFE and Bio-compatible surface

Plasma is defined as a quasi-neutral gas having a collective behavior (or simply as the 4th state of matter). The plasma discharge voltage is determined by the Paschen's law in which pressure is a key parameter to determine the discharge.

Under Independently Controllable Pressure

Gentle plasma can be discharged under a vacuum condition without using additional gas.

Unique Vacuum Technology

Plasma is discharged inside the package by using dielectric barrier of the vacuum state.

By Discharging Gentle and Powerful Plasma

The pressure can be spatially controlled to discharge gentle and powerful plasma.

Operated by Validated Reliable Process

Plasma discharge and overall process are validated for obtaining outstanding performance.

Global Networks

It exports technologies in the world and provides customized solutions that meet the local clients' diversified needs through the global network.

FDA K212200/K212193/K212198 · CE 0068 · TGA 323926 · HC 102958 · ANVISA 81046479001 · SFDA MDMA 19090377

MFDS 18-4069/19-4339 · TFDA DHA05603302400 · TFDA KOR 6209038 · RZN No P3H 2022/17932 · MDA GC5817320 · MHLW JET:302AKBZX

MDSAP · TÜV Rheinland · GMP · cULus LISTED LABORATORY EQUIPMENT E502914 · RoHS

Low temperature plasma sterilizer for wide range of medical devices

The world's first direct injection pouch-type
patented sterilization technology has been applied.
SAL of 10^{-6} is validated to ensure sterilization stability of medical devices.

(SAL: Sterility Assurance Level, 99.9999%)

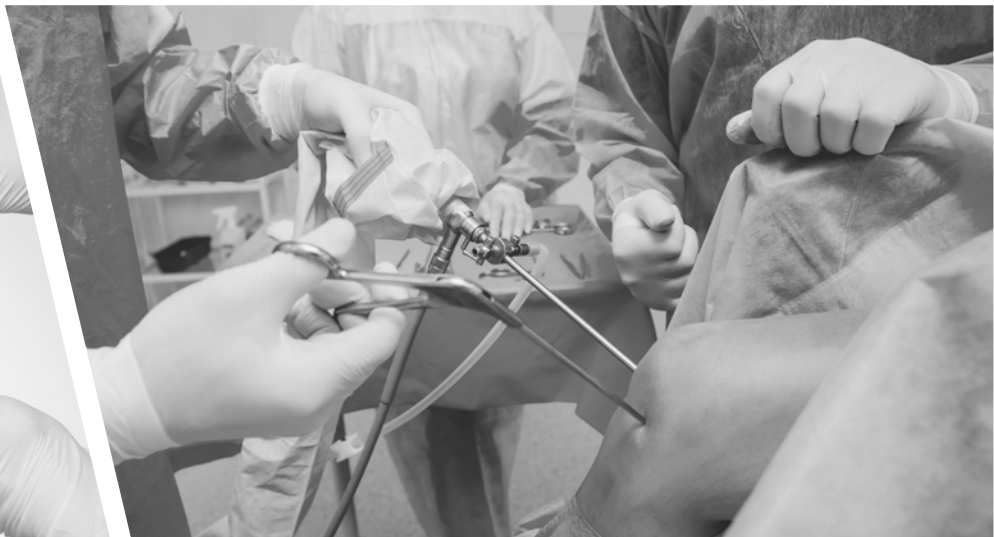
- Low Temperature
- Easy Operation
- Fast Sterilization
- Compact Design
- Lumen Sterilization
- Real-Time Monitoring

STERLINK lab







Plasma sterilization solution is applicable to wide range of medical specialties.

Dental | Plastic Surgery | Ophthalmology | Dermatology | Veterinary | Orthopedics | ENT

Various Diagnosis & Surgeries

With the development of technology, the surgical instruments and diagnostic equipment have been more diversified.

Inefficient Sterilization Methods

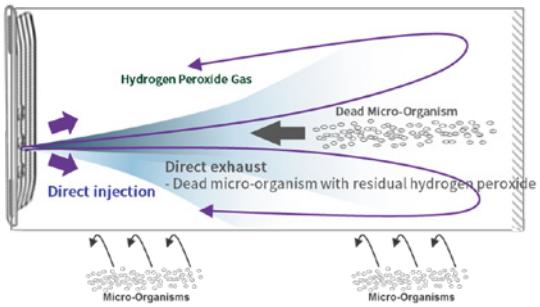
The medical instruments got complicated and minimized following the trend. However, autoclave can't sterilize heat/moisture sensitive medical devices. EtO Gas Sterilizer requires high maintenance and ethylene oxide has potential hazard.

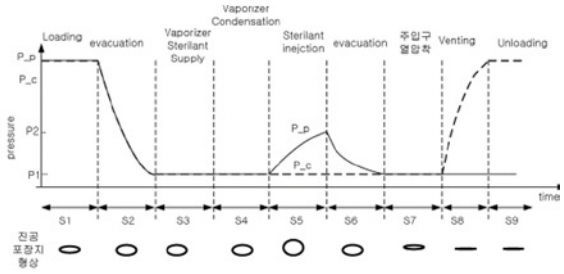
Efficient Instruments Manage

It is important to increase the efficiency to deal with patients quickly.
Increasing medical instruments turnover rate could be one of the best ways to increase the efficiency

Novel sterile packaging to enable super-fast 7 min. sterilization cycle

* STERPACK





- Direct sterilant injection enhances sterilization efficiency.
- Direct vacuum pumping shortens purification process time.
- Independent pressure control allows unique sterilization cycle including compression process.
- Compression maximizes sterilization efficiency to obtain 7 minutes cycle.
- Impermeable pouch allows direct sterilization with compression process and vacuum sealing after the cycle.
- Vacuum sealing visualizes sterile condition which extends shelf life of sterilized devices and provides advanced infection control solution.

Super-fast sterilization cycle

Low temperature reducing maintenance cost of expensive device (Operating temperature < 55°C)

15 FDAs certificates including CE

Reliable sterilization performance (SAL: 10^{-6} with compliance ISO 14937)

Sterilization Performance

STERLINK verifies sterilization performance through the following lumen tests

Single-channel lumen claims for STERLINK

- ø 0.7 x 500 mm Stainless steel
- ø 2.0 x 1,500 mm Stainless steel
- ø 1.0 x 2,000 mm PTFE

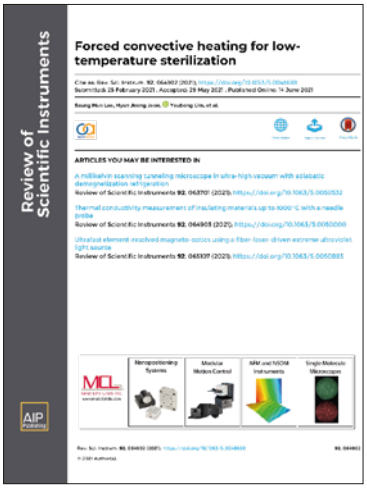
STERLINK – inside diameter 1mm and a length up to 2,000mm

Competitor A
length up to 500mm

Competitor B
length up to 1,000mm

Plasmapp STERLINK

Innovative technologies with patents and research paper



Forced convective heating for low-temperature sterilization

Publication expected in 2021 (AIP) - https://doi.org/10.1063/5.0048688
Review of Scientific Instruments 92, 064902 (2021) conducted by Dr. Youbong Lim, Dr. Wonho Choe, Dr. Seung Hun Lee, Dr. Jun Young Kim and Dr. Hyun Jeong Jeon

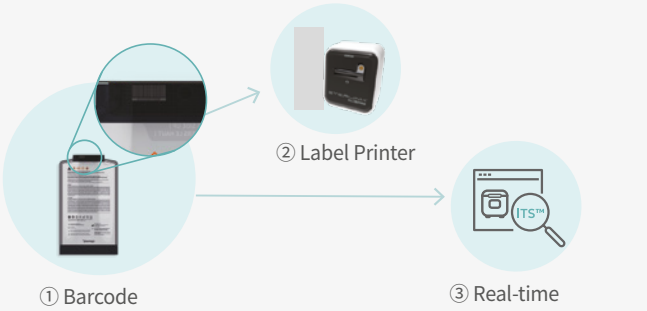
Conclusions

A novel sterile pouch using an impermeable film is presented to improve the heating process, and the experimental and numerical investigations are performed to find that the convective heat transfer coefficient for the forced convective heating is increased more than five times when compared to the natural convective heating. By virtue of the impermeability, the sterilization process is also improved to obtain an overall sterilization cycle completed within 7.5 min, and it is interpreted in terms of the pouch compression.

Instrument Tracking System (ITS)

Equipment tracking using barcode

Real-time monitoring to check the STERLINK



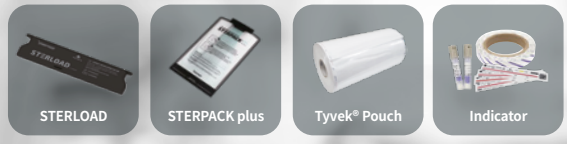
Comparison Chart

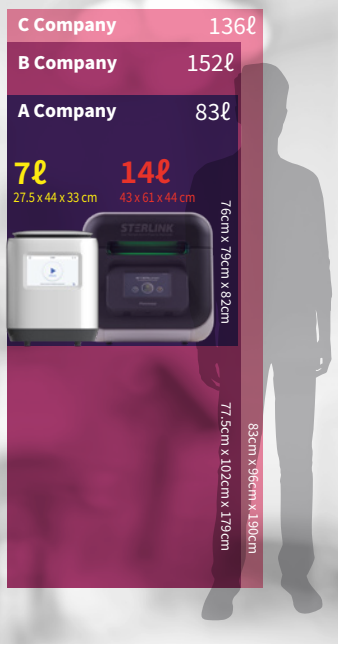
Sterilizer	Temperature	Cycle Time	Sterilant	Feature
Autoclave	Up to 134°C	60 min + 1 hour cooldown	Hot steam	・Cloth sterilization ・Risk of burn ・Long cycle time ・Damage of medical instruments
E.O. Gas	Up to 60°C	Over 120 min + 12 hour ventilation	E.O. gas	・Highly dangerou toxic gas ・Long cycle time
Plasma Sterilizer	Up to 60°C	70 min	H_2O_2	・High cost ・Additional ventilation ・Large volume ・Very low efficiency
STERLINK	Up to 60°C	Pouch Mode : 7min Pouch Plus Mode : 14 min Chamber Mode : 36 min	H_2O_2 direct injection	・Fast sterilization cycle ・Easy maintenance ・Economic cost ・ITS™ system ・Compact size ・Eco-friendly ・Ergonomic design ・Safeness of heat sensitive instrument

Your most effective surgeries with STERLINK sterilizer system

The first non-US plasma sterilizer clearance by US FDA

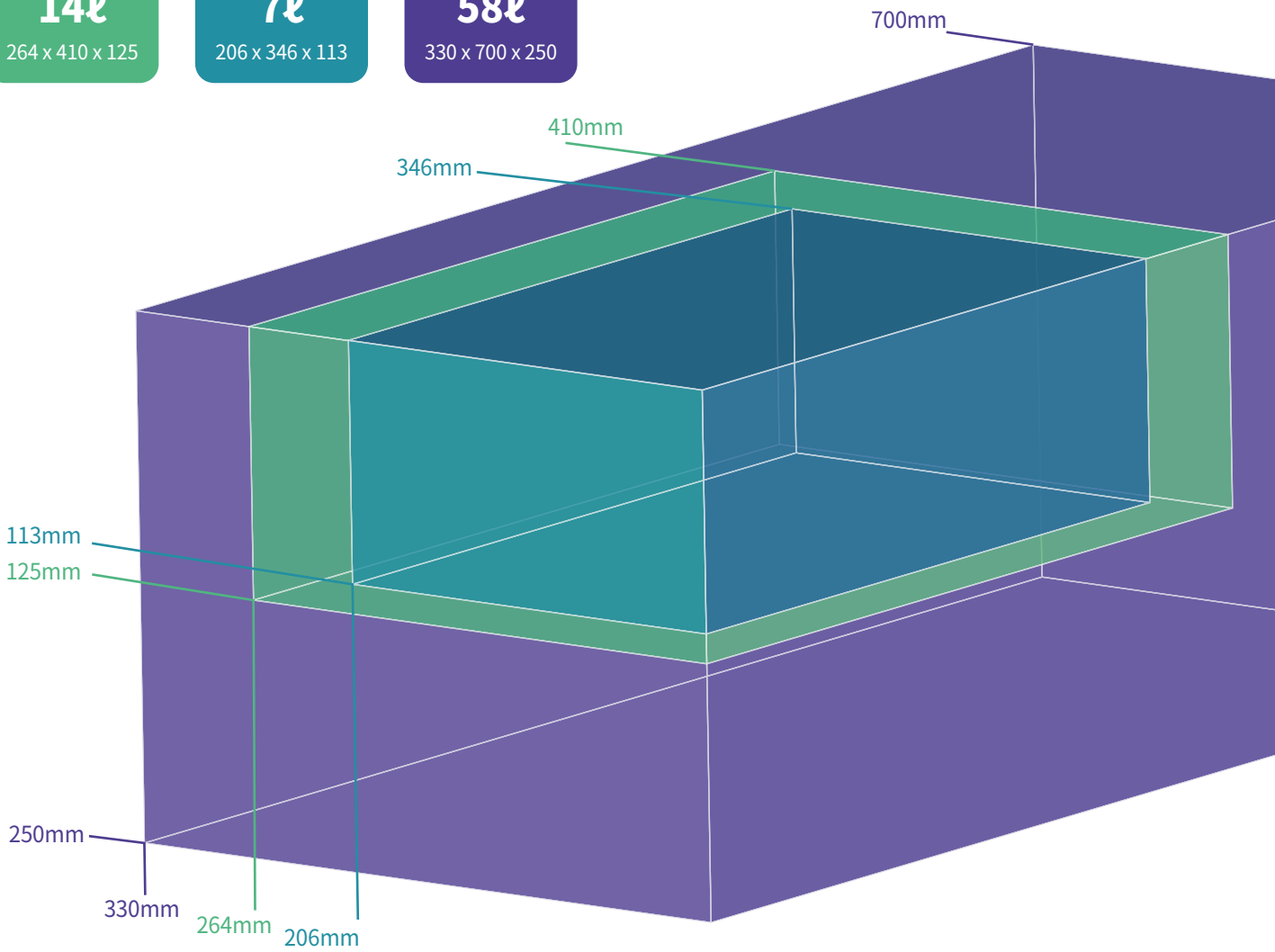
510(k) clearance for STERLINK sterilizer system of Plasmapp
(K212200 / K212193 / K212198)





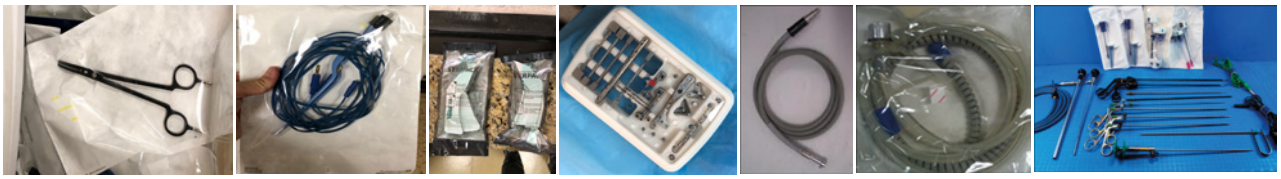
Low temperature plasma chamber sterilization
Various sizes of medical devices can be sterilized.

FPS-15s plus	*mini*	*lab*
14ℓ	**7ℓ**	**58ℓ**
264 x 410 x 125	206 x 346 x 113	330 x 700 x 250



Compatible Medical Devices

- Cranial pressure transducer cables
- Cryoprobes
- Defibrillator paddles
- Dopplers
- Electrocautery instruments
- Endoscopic instruments
- Esophageal dilators
- Fiberoptic lite cables
- Laryngoscope blads
- Laser handpieces, fibers, and accessories
- Metal instruments
- Ophthalmic lenses (diagnostic, magnifying)
- Patient lead cables
- Pigmentation handpieces
- Radiation therapy equipment
- Resectoscope / working elements and sheaths
- Rigid endoscopes
- Shaver handpieces
- Flexible endoscopes
- Stereotactic equipment and batteries
- Trocar sheaths
- Ultrasound probes
- Video cameras and couplers
- Micro instrument kit
- Laparoscopic Grasping Forceps
- Bipolar Forceps with cables
- Vessel Sealer
- Electrosurgical Pencils
- Endotracheal Tube
- Surgical Staples
- Micro Instrument Set
- Oxygen tubing
- Suction & Irrigation tube
- Oxygen mask
- Surgical tips
- Catheters
- Biopsy forceps



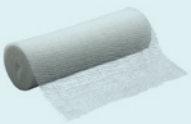
Compatible Materials

Metal	• Aluminum • Stainless Steel
Non-metal	• Acrylonitrile butadiene styrene (ABS) • Delrin • Ethyl vinyl acetate (EVA) • Fluorinated ethylene propylene (PFTE) • Glass, USP Type 1 borosilicate • High density polyethylene • Kraton • Latex • Polyethylene • Monel • Phenolic resin • Polycarbonate (PC) • Polyetherimide (PEI) • Polyethylene terephthalate (PET) • Polymethyl methacrylate (PMMA) • Polyphenyl sulphone • Polypropylene (PP) • Polystyrene • Polysulfone • Polytetrafluoroethylene (PTFE) • Polyurethane • Polyvinyl chloride (PVC) • Silicon

Non-Compatible Materials

Absorptive Materials (Cellulose)
• Wood • Linen • Paper • Sponge

Liquids (Moisture)



Oil

Powders

STERLINK FPS-15s plus

Pouch Mode

Chamber Mode

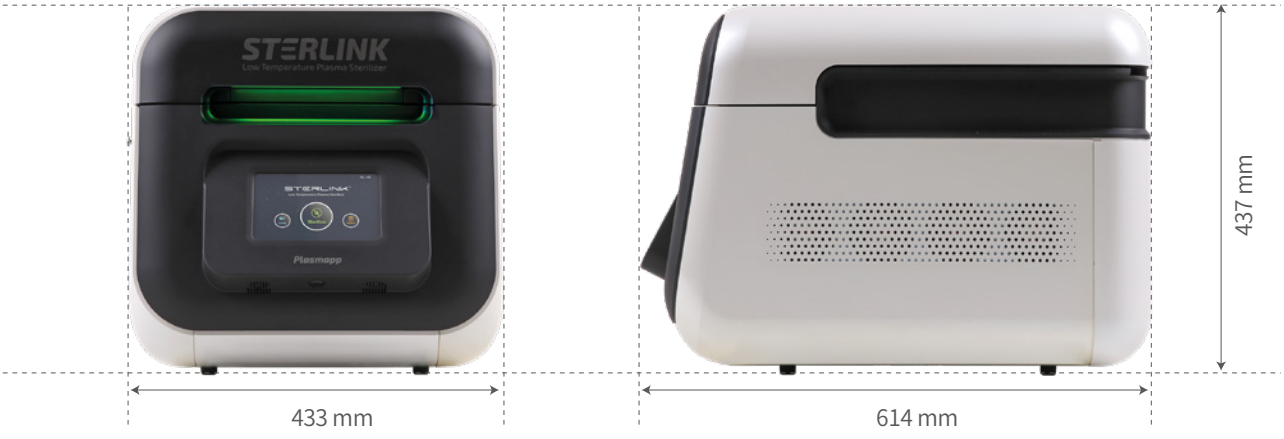
STERPACK & STERPACK plus

STERLOAD

Specification

Size (W x D x H)	433 x 614 x 437 mm	Vacuum Pump	Pump built-in type
Chamber (W x D x H)	264 x 410 x 125 mm (14 ℓ)	Weight	67kg
Diagonal Length (Chamber)	470 mm	Sterilant Cassette	1 Cycle

Mode	Cycle time	Capacity	Sterilant
Pouch Mode	STERPACK: 7 min	1 ℓ	H_2O_2 58%—59.5% (0.1 ml/cell)
Pouch Plus Mode	STERPACK Plus: 14 min	4.5 ℓ	H_2O_2 58%—59.5% (0.3 ml/cell)
Chamber Mode	STERLOAD: 36 min	14 ℓ	H_2O_2 58%—59.5% (0.9 ml/cell)



STERLINK *mini*

Pouch Mode

Chamber Mode

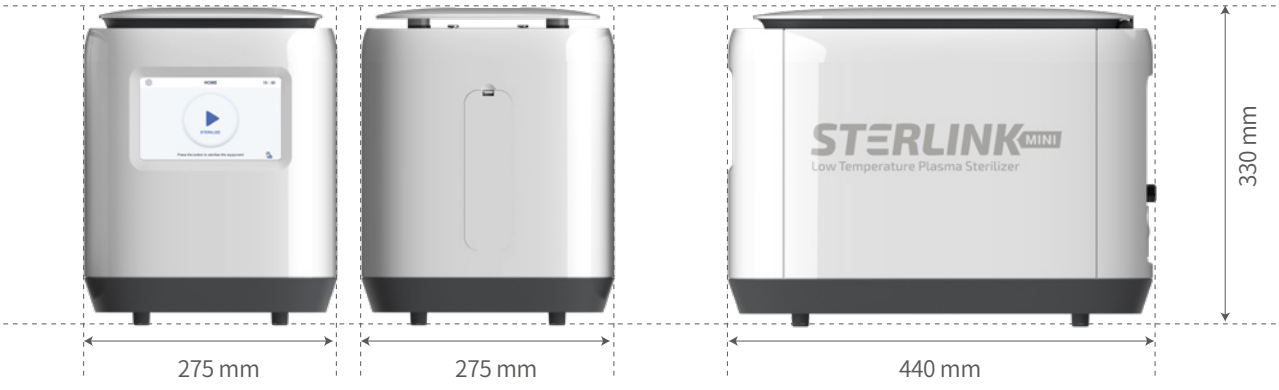
STERPACK

STERLOAD mini

Specification

Size (W x D x H)	275 x 440 x 330 mm	Vacuum Pump	Pump stand-alone type
Chamber (W x D x H)	206 x 346 x 113 mm (7 ℓ)	Weight	20kg (Pump module : 21kg)
Diagonal Length (Chamber)	360 mm	Sterilant Cassette	1 Cycle

Mode	Cycle time	Capacity	Sterilant
Pouch Mode	STERPACK: 7 min	1 ℓ	H_2O_2 58%—59.5% (0.1 ml/cell)
Advanced Mode	STERLOAD mini: 18 min	7 ℓ	H_2O_2 58%—59.5% (0.7 ml/cell)



STERLINK lab

Chamber Mode

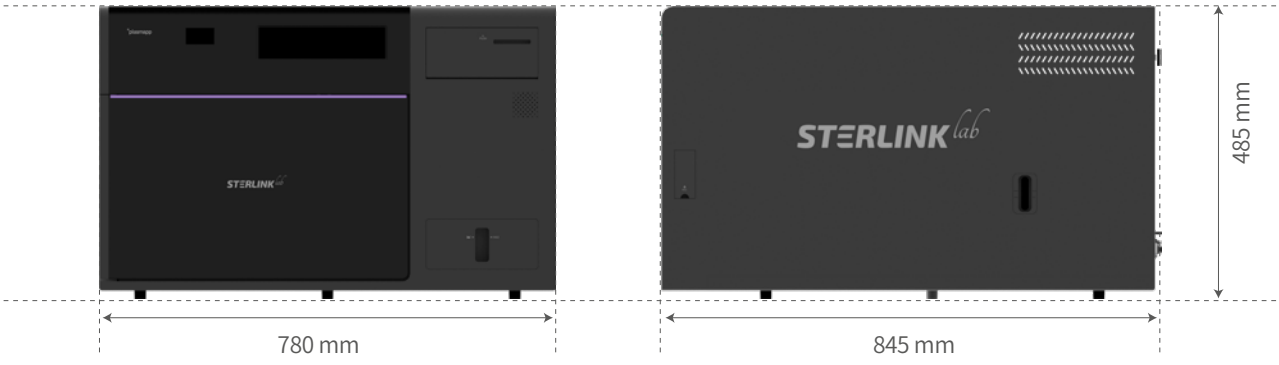
UV & Dry Mode

STERLOAD lab

Specification

Size (W x D x H)	780 x 845 x 485 mm	Vacuum Pump	Pump built-in type
Chamber (W x D x H)	330 x 700 x 250 mm (58 ℓ)	Weight	126 kg
Diagonal Length (Chamber)	770 mm	Sterilant Cassette	1 Cycle

Mode	Cycle time	Capacity	Sterilant
Dry Mode	12 min	58 ℓ	-
Sterilization Mode	39 min		H_2O_2 58%—59.5% (5 ml/cell)



Sterilant & Consumables and Accessories

for Medical Devices Sterilization Performance

Sterilant cassettes

※ 1 cycle use only

STERPACK

- Size : 135 x 280 mm
- 50 ea / Box

※ 1 cycle use only

STERPACK plus

- Size : 250 x 430 mm
- 30 ea / Box

※ 1 cycle use only

STERLOAD lab

- 20 ea / Box

※ 1 cycle use only

STERLOAD

- 30ea / Box

※ 1 cycle use only

STERLOAD mini

- 30ea / Box

Consumables

※ 1 cycle use only

Tyvek® 100

- Size : 100 x 400 mm
- 120 ea / Box

※ 1 cycle use only

Tyvek® 200

- Size : 200 x 400 mm
- 90 ea / Box

※ 1 cycle use only

Tyvek® 300

- Size : 300 x 400 mm
- 60 ea / Box

※ 1 cycle use only

Sterilization Wrap

- Size : 60 x 60 cm
- 500 ea / Box

※ Tyvek® is a Dupont™ registered trademark.

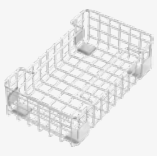
Tray

STERPACK Tray

- Size : 195 x 80 x 30 mm

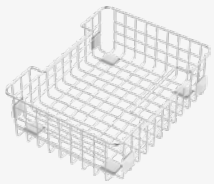
STERPACK Plus Tray

- Size : 260 x 160 x 50 mm



Chamber Tray (7ℓ)

- Size : 289 x 183 x 90.5 mm



Chamber Tray (14ℓ)

- Size : 327 x 252 x 112 mm

Accessories

STERSEAL
- Size : 505 x 250 x 145 mm
- Weight : 12 kg
- Temperature : 135°C / 150°C

Cart
- plus / mini / lab

Label Printer
- Size : 120x 102 x 146 mm
- Weight : 0.5 kg

Label Sticker Roll
- Label size : 40 x 57 mm

※ 1 cycle use only

CI tape
- Width : 20 mm
- Length : 50 m

※ 1 cycle use only

CI strip
- Size : 18 x 105 mm
- 250 ea / Box

※ 1 cycle use only

BI
- Time : 30 min
- 50 ea / Box

Maintenance

※ 1 cycle use only

VC Cartridge
- 1ea
- For the vacuum calibration

※ 1 cycle use only

HEPA Filter
- 1ea
- Every 6 months

※ 1 cycle use only

Ozone Filter
- 1ea
- Every 6 months

※ 1 cycle use only

Chamber Filter
- 1ea
- Every 6 months

※ 1 cycle use only

FPS-15s Plus Deodorizing Filter
- 1ea
- Every 12 months

※ 1 cycle use only

mini Deodorizing Filter
- 1ea
- Every 12 months

Pump Oil (LB100)
- 1ea / 280ml
- Every 12 months

Oil Replacement Kit
- for FPS-15s Plus & mini
- Every 12 months

Filter Replacement Kit
- for FPS-15s Plus & mini
- Every 6 months

FPS-15s Plus Filter Kit
- for FPS-15s Plus
- Every 12 months

mini Filter Kit
- for mini
- Every 12 months

www.plasmapp.com

STERLINK
PREMIUM LINE

Low Temperature Plasma Sterilizer

plasmapp

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R&D 2 | 372, Dongbu-daero, Osan-si, Gyeonggi-do, Republic of Korea [18151]
Factory | 102, Cheombok-ro, Dong-gu, Daegu, Republic of Korea [41061]

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Please contact the local sales representative for current products availability.