LORDERAN

TECHNICAL DATASHEET
DS-150J-400J-EN · REV. B · NOV 2026

STEAM STERILIZER

150–400 L Horizontal Steam Sterilizer

Gravity displacement from **115 to 134 °C** at **0.22 MPa**, then drying in the same chamber — with a door that stays locked under pressure.

MODELS

150J | 200J | 300J | 400J







150–400 L	**115–134 °C**	**0.22 MPa**	**≤ ±2.0 °C**
FOUR CHAMBER SIZES	STERILIZATION RANGE	WORKING PRESSURE	TEMPERATURE UNIFORMITY
0–999 min	**0.28 MPa**	**142 °C**	**12–18 kW**
STERILIZE & DRY TIMERS	DESIGN PRESSURE	DESIGN TEMPERATURE	HEATING POWER

01 No vacuum pump needed
Steam is lighter than air and pushes it out through the drain.

02 Sterilize, then dry
Dressings and instruments dry in the same chamber.

03 Locked under pressure
Door opens only below 0.027 MPa.

APPLICATIONS

Laboratories · Dental · Veterinary · Mushroom growing

Warranty
Major defects: full refund or replacement.

Free DDP shipping
Duties paid, no surprise import charges.

30-day returns
Most new, unopened items.

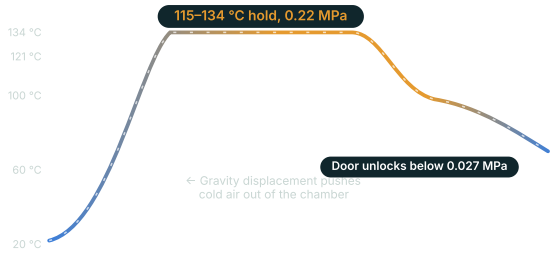
PRODUCT OVERVIEW

One cycle, four stages

A horizontal steam sterilizer from 150 to 400 L that uses **gravity displacement**: steam enters the chamber and pushes the heavier cold air out through the drain. Sterilize at any set point from 115 to 134 °C, then dry dressings and instruments in the same chamber.

Steam heats the load and drives cold air out, the temperature holds at the set point for the sterilization time, pressure is released, and the drying stage removes moisture. Interlocks keep the door shut while the chamber is under pressure.

Cycle. Temperature through a typical 134 °C cycle. Times are set by the user.



HOW IT WORKS

01 Fill
Water from the supply at 0.1–0.2 MPa is heated to make steam inside the vessel.

02 Purge
Steam fills the chamber from the top and pushes cold air down and out of the drain.

03 Sterilize
The load holds at 115–134 °C for the time you set, up to 999 minutes.

04 Exhaust and dry
Pressure is released, then the drying stage runs for up to 999 minutes.

WORKING PRESSURE
0.22 MPa
design 0.28 MPa

SET POINT
115–134 °C
design 142 °C

UNIFORMITY
≤ ±2.0 °C
in the chamber

DOOR UNLOCK
< 0.027 MPa
chamber pressure

STERILIZING VALUE

$$F_0 = \Sigma\, 10^{(T - 121.1)/z} \cdot \Delta t$$

With z = 10 °C, one minute at 121.1 °C counts as F0 = 1 min; one minute at 134 °C counts as about 19.5 min. Reference relation for saturated steam.

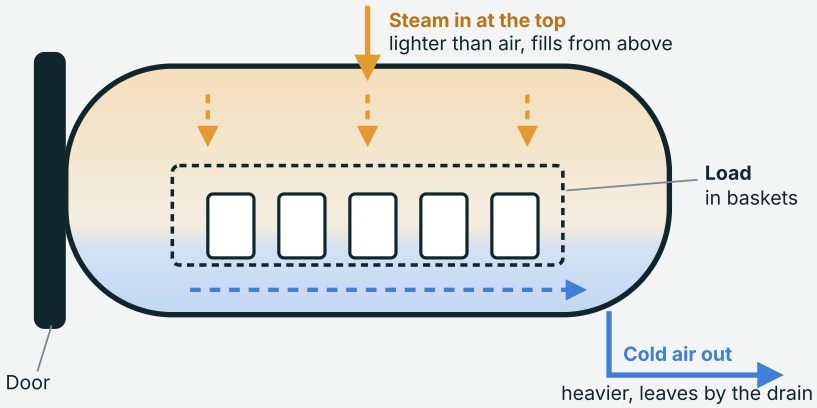
Remove the air
Trapped air lowers the temperature at the load. Steam has to reach every surface.

Load loosely
Leave space between items and do not overfill baskets, so steam can circulate.

Slow exhaust for liquids
Release pressure slowly for media and solutions to prevent boil-over.

FEATURES

Safety built into every step



01 Safety

- Door locked until pressure is below **0.027 MPa**
- Cycle blocked unless the door is closed
- **Water shortage** protection with alarm
- Over-temperature protection
- Over-pressure protection

02 Process

- **Gravity displacement** air removal
- Sterilization temperature **115–134 °C**
- Sterilization time 0–999 min
- Drying time 0–999 min
- Temperature uniformity **≤ ±2.0 °C**

03 Build

- High-quality **stainless steel** chamber
- Strong corrosion resistance
- Horizontal loading with baskets
- Three-phase power supply

04 Utilities

- Water source **0.1–0.2 MPa**
- No vacuum, compressed air or external steam required
- (220 V or 380 V), three-phase, 50/60 Hz
- 12, 15 or 18 kW by model

TECHNICAL SPECIFICATIONS

Technical specifications

Parameter	150J	200J	300J	400J
MAIN TECHNICAL PARAMETERS				
Design pressure	0.28MPa			
Design temperature	142°C			
Working pressure	0.22MPa			
Operating temperature	115-134°C			
Temperature uniformity	≤±2.0°C			
Water source pressure	0.1 ~ 0.2MPa			
Vacuum	/			
Compressed air pressure	/			
External steam pressure	/			
Power supply voltage	(220V or 380V), Three-phase 50/60Hz			
PRODUCT PARAMETERS				
Volume	150L	200L	300L	400L
Power	12KW	15KW	18KW	18KW
Voltage	AC 380V/220V 50/60Hz (3-phases)			
Rated working pressure	0.22MPa			
Rated working temperature	134°C			
Sterilization temperature selection range	115 ~ 134°C			
Sterilization time selection range	0 ~ 999 min			
Drying time selection range	0 ~ 999 min			
DIMENSIONS AND WEIGHT				
Cavity dimensions (mm)	φ472x850	φ472x1130	φ620x960	φ620x1280
Basket dimensions (mm)	780×452×217	1060×452×217	860×600×285	850×678×330
Overall dimensions (mm)	1320×635×1520	1600×635×1520	1540×790×1700	1570×875×1780
Packaging dimensions (L×W×H) (mm)	1470×785×1720	1750×785×1720	1690×940×1900	1830×1025×1980
Gross/net weight	350/270kg	410/310kg	600/450kg	680/510kg

Specifications from the LORDERAN product documentation. "/" means not applicable to this gravity displacement design. Subject to change without notice for product improvement.

AT A GLANCE

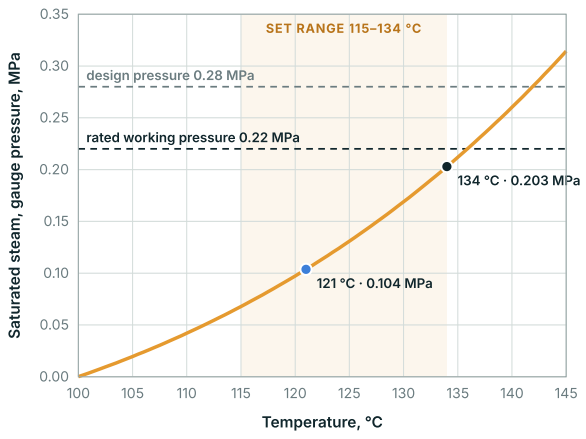
MODEL	150J	200J	300J	400J
Volume	150L	200L	300L	400L
Chamber	φ472x850	φ472x1130	φ620x960	φ620x1280
Basket	780×452×217	1060×452×217	860×600×285	850×678×330
Overall size	1320×635×1520	1600×635×1520	1540×790×1700	1570×875×1780
Power	12KW	15KW	18KW	18KW
Gross / net	350/270kg	410/310kg	600/450kg	680/510kg

THE LORDERAN AUTOCLAVE RANGE · THIS MODEL HIGHLIGHTED

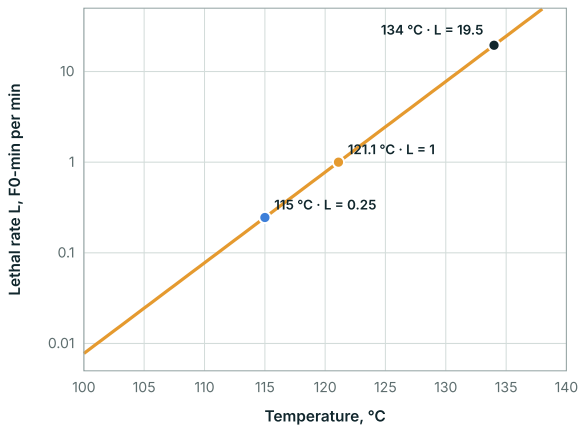
Model	Capacity	Air removal / exhaust	Highlights
Horizontal steam sterilizer	**150–400 L**	**Gravity displacement via the drain**	**Drying 0–999 min, door interlock**
Vertical autoclave with drying	35–100 L	Automatic internal exhaust to built-in tank	Drying 0–240 min, self-inflating seal
Autoclave with condensate bottle	35–100 L	Automatic internal exhaust, condensate bottle	Solid, liquid, agar and custom modes; printer
Food autoclave	100 and 150 L	Automatic exhaust with counter-pressure air	Air compressor standard, 0–200 kPa
Vertical autoclave, bolt lid	35–150 L	Automatic exhaust	Traditional bolt-structure lid

THE PHYSICS OF STEAM STERILIZATION

Pressure follows temperature. Saturated steam has one pressure for each temperature, so the gauge confirms the chamber is really at the set point.



Hotter kills faster. Each 10 °C rise multiplies the lethal rate tenfold, which is why 134 °C cycles are much shorter than 121 °C.



Calculated reference curves (IAPWS-IF97; z = 10 °C). Not product test data.

SATURATED STEAM REFERENCE VALUES

Temperature	Gauge pressure	Lethal rate L (z = 10 °C)	Hold for F0 = 15 min
115 °C	0.068 MPa	0.25	61.1 min
121 °C	0.104 MPa	0.98	15.3 min
126 °C	0.138 MPa	3.09	4.9 min
134 °C	0.203 MPa	19.50	0.8 min

Calculated reference figures: IAPWS-IF97 saturation pressure at sea level and F0 lethality at constant load temperature. Heat-up, steam penetration and validated cycle times depend on the load and are set by the user.

APPLICATIONS & SERVICE

Where it works, and what comes with it

Laboratories
Media, glassware, waste and instruments in volume.

Dental
Instruments and dressings, sterilized then dried.

Veterinary
Surgical packs and large instrument sets.

Mushroom growing
Substrate bags and grain spawn in baskets.

INSTALLATION

Supply
AC 380 V / 220 V, three-phase, 50/60 Hz.

Water
Water source at 0.1–0.2 MPa.

Space
Up to 1570 × 875 × 1780 mm (400J), plus room to open the door and pull baskets.

WARRANTY & SERVICE

Warranty
Major defects under warranty: full refund or replacement.

30-day returns
Return most new, unopened items within 30 days.

Free DDP shipping
Delivered duty paid, no surprise import charges.

Formal quotation
PDF quote on request, with a confirmed ship date.

Request a quotation

Send your application, model and quantity through www.lorderan.com and we will reply with a formal PDF quotation.

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Laboratory and environmental test equipment