



Plasmabank 900 LT

Plasma freezer

Freezer certified as a medical device according to Directive 93/42/EEC, equipped with microprocessor and digital display, ideal for storing plasma at negative temperatures to guarantee reliability and continual performance monitoring.

Intended use:

It is used in all those situations where **bags of plasma need to be stored** at negative temperatures without altering their properties.

Applications:

It is normally used in hospitals, in analysis laboratories, operating theatres, transfusion centres and in all those areas where plasma bags are required in optimal state of preservation.

Plasmabank's features

Maximum protection

The choice of **AISI 304 STAINLESS STEEL** to construct the internal tank guarantees maximum protection against corrosion and the prolonged life of the freezer.

Latest generation controller

All the freezers in the Plasmabank line are electronically run by an electronic controller (with a 7" Display touch screen) to optimise reliability and performance.

Optimum temperature stabilisation

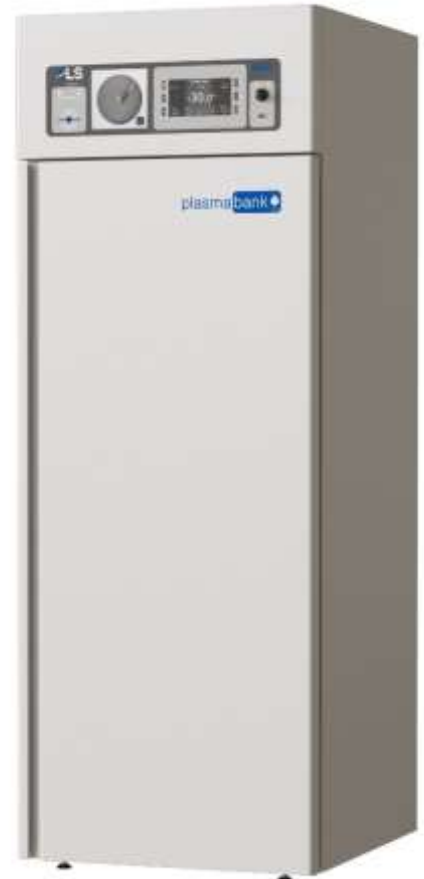
The forced-air cooling and distribution ensures a uniform temperature throughout the compartment and guarantees optimum conservation of the biological material stored inside.

High insulating properties

The magnetic door gaskets and 75 mm-thick insulation enable the internal temperature to be kept at an optimum level with limited energy consumption

Optimisation of the internal spaces

Internal structure designed for the best shelf position to improve load capacity and temperature distribution.



Plasmabank 900 LT, optional chart recorder

INTERIOR IN
AISI 304
STAINLESS STEEL

A lot of information visible immediately!





Construction specifications

Load-bearing structure

Exterior/Interior: External structure made of hot galvanised, corrosion proof and non-toxic, steel sheet, coated in RAL 9006 grey P.V.C., resistant to the most common cleaning products and disinfectants. **Internal tank made of AISI 304 Stainless steel.** The runners and grids are easily removable for easy cleaning and high standards of hygiene.

Insulation: 75 mm thick to ensure less heat dispersion and limited energy consumption as a result.

Casters: Four (4) casters integrated into the freezer profile, complete with two (2) adjustable front feet to clamp it to the floor. The casters make it easy to move and guarantee the freezer is extremely stable and vibrates less.

Lighting: LED Lighting when door opens via a micro-switch and switched on manually via a dedicated key on the control panel.

Shelves: nine (9) plasticised, grid shelves with adjustable height and completely extractable

Door: Made of pre-painted metal sheet, with self-closing system, magnetic gaskets, key lock and electric heating element on the door frame. Fully opens up to 180°, with 90° retainer. Hinged on the right.

Door handle: Made of plastic and integrated on to door front.



Emoplasmabank 900 LT
with door open



Detail of casters



Detail of shelf

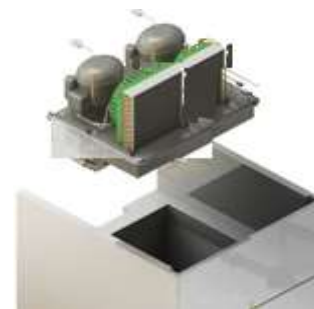
Cooling system

Particularly silent refrigerant system, separate from the body (thus ensuring great flexibility and ease of use), placed at the top of the freezer, consists of two silent, airtight compressors and a ventilated air condenser.

The condenser structure prevents dust and grease from accumulating to avoid regular cleaning operations and facilitate a reduction in energy consumption

Refrigerant:

Two refrigerator circuits operating with latest generation, non-flammable. HFO-based **R452a** refrigerant mix.



Internal air conditioning

Internal forced-air evaporators.

Effective vertical air circulation system, which enables temperature to be evenly distributed with rapid cooling.

The micro-switch on the door disables the internal fans when the door is open to avoid cold air exiting from the compartment. All this enables considerable energy saving.



Detail of fans

Defrosting:

Timed, Manual and Automatic, managed by the controller via a temperature probe on the evaporator. The controller manages every type of defrosting according to requirements and duration of defrosting.



Commands and controls



ACP7 Controller: optimisation of consumption and continual monitoring

Latest generation ACP7 controller with integrated electronic temperature recorder which guarantees high performance, maximum safety and easy use.

- ✓ Simple, functional interface
- ✓ Access protected by password with 3 privilege levels: USER, SERVICE and ADMINISTRATOR



✓ Three separate Processors linked to each other via the CAN-BUS connection system:

- ① Adjustment
- ② Alarm
- ③ Supervision/Recording System

The Alarm ② system has a dedicated PT100 probe, in addition to the one used for Adjustment ①. The power supply is distributed to the two physically separated ① Adjustment and ② Alarm sections (even though they are mounted on the same support) and both have a dedicated power supply unit.



If the main power supply blacks out, the Alarm ② section continues to be supplied via the back-up battery (with 36 hours' autonomy) to guarantee the power supply to the user panel ③ and maintain the display of current data and the storage of historic data.

The supervision unit 3 (user panel) constantly monitors and provides information on the correct functioning of the Alarm ② section and the Adjustment ① section and promptly shows the user any anomaly in the storage of data.



✓ Internal (non-removable) MicroSD which enables the functional data to be recorded for 10 years (every 30 seconds).

✓ Integrated USB placed on the front to:

- Download thermo-recording data
- Configure connected devices
- Upgrade firmware

✓ 7" Touch screen with simplified display or colour graphics panel capable of displaying:

- Equipment identification information
- Date and time of the system
- Set temperature (resolution 0.1°C)
- Operational temperature (resolution 0.1°C)
- Set alarm
- Temperature graph



- ✓ Intuitive **browsing with ideograms** to give a simple, immediate display of the menu steps and an intuitive colour identification of the alarms



Innovative functions:

SMART DIAGNOSTIC function which guarantees constant monitoring of degree of wear and tear of the main components. When the maximum pre-set wear and tear threshold is reached, an alarm suggests a replacement and reduces the risk of machine downtime.

The fridge-freezer is equipped with a **BACK-UP BATTERY** which is regularly tested for its charge level. In the event of a blackout, a 36-hour period of autonomy is guaranteed with the battery perfectly efficient.



List of alarms:

- ✓ High or low temperature (adjustable setting)
- ✓ Prolonged open door
- ✓ No power or voltage outside range
- ✓ Compressor malfunction
- ✓ Relay fault
- ✓ Flat buffer battery
- ✓ Faulty probes
- ✓ Dirty condenser
- ✓ Power supply 12VAC outside range
- ✓ Mains voltage outside range

EVENT ICONS



Possible configuration to send automatic e-mail in the event of an alarm.
In this case, the machine will have to be equipped with one of the Internet connection modules (see list of accessories).



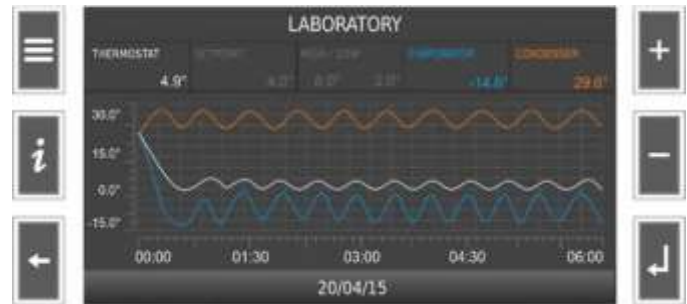
The freezer is equipped with an intelligent control system, capable of maintaining the set temperature, even if the probes break down



Integrated chart recorder

Chart recorder incorporated in the ACP7 controller with sampling every 30 seconds of the following parameters:

1. Internal compartment temperature
2. Evaporator temperature
3. Condenser temperature
4. Set-point
5. Set temperature limits (high/low)



The parameters can be displayed on screen according to the operator's requirements.

There are two display modes:

- REAL TIME which enables the internal temperature of the compartment, set point and temperature limits to be displayed.
- HISTORIC which enables all five parameters to be displayed for a period of time set by the operator.

A maximum 6-hour period can be displayed, which can be narrowed by using the ZOOM IN/OUT function.

The integrated Chart Recorder is a device that is completely autonomous and independent from the adjustment section, which maintains operational autonomy for 36h if the adjustment system breaks down and there is a blackout (see explanation given in the paragraph "Three separate, independent Processors" on page 3 of this document).

There are other independent solutions from the machine management system, but these do not allow their health status and correct functioning to be monitored. For example, a paper Chart Recorder can never have reports on the battery charge level or the malfunction of a nib.



Technical data

Trademark		Angelantoni Life Science
Model		Plasmabank 900 LT
Commercial Code		14382
Design		Vertical Cabinet
External dimensions	mm	810(W) x 1010(D) x 1998(H)
Internal dimensions of each compartment	mm	660(W) x 875(D) x 1500 (H)
Volume	Lt	870
Weight	Kg	180
<u>Shelves</u>	No.	9
<u>Drawers (accessory*)</u>	No.	9
Useful shelf dimensions	mm	600 (W) x 800 (D)
Max shelf load	Kg	40
<u>Useful drawer dimensions</u>	mm	570 (W) X 750 (D) X 82 (H)
<u>Drawer capacity</u>	N	55 bags (450ml)
<u>Total capacity</u>	N	495 bags (450ml)
<u>Max drawer load (accessory*)</u>	Kg	40
<u>Porthole (accessory*)</u>	No.	(Ø 23 or 50 mm)
Temperature range.	°C	-10 ~ -30
Operational temperature	°C	- 30
Voltage	V/Hz	230 V – 50 Hz
Noise level**	dB(A)	< 55
Maximum absorbed power	A	6
CFC Free	-	R452a
Defrosting	-	Automatic and manual
Outputs	-	Clean contact for alarm
	-	USB
	-	ETHERNET (accessory*)
Plug	-	Schuko
<u>Conditions of use</u>		
Temperature	°C	+10 ~ +30
Relative humidity	%	30 ~ 80 (without condensate)
<u>Packaging</u>		
		Box + pallet
Packaging dimensions	mm	840 (W) x 110 (D) X 2140 (H)
Packaging weight	Kg	30

** The sound pressure level is measured 1 m from the front, at a height of 1.6 m and in the open or non-reverberating environment according to the EN standard ISO 11201.

* See the list of accessories on the page giving the price of the product



Certifications

The device bears the **CE mark** and is designed according to the following Directives and standards:

- Directive **93/42/EEC**
- Directive **2006/42/EU**
- Directive **2011/65/EU**

More specifically, it complies with the following Harmonised Standards:

- **EN 60601-1**
- **EN 60601-1-2**
- **EN 6300:2018**

ANGELANTONI LIFE SCIENCE SRL Loc. Cimacolle, 646 06056 – Massa Martana	www.angelantonilifescience.it	email: biomedical@angelantoni.it tel: 075.89551 fax: 075.8955312	COMPANY WITH QUALITY MANAGEMENT SYSTEM CERTIFIED BY DNV GL =ISO 9001=	COMPANY WITH ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFIED BY DNV GL =ISO 14001=	COMPANY WITH QUALITY MANAGEMENT SYSTEM CERTIFIED BY DNV GL =ISO 13485=
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