



Emoplasmabank 700

Fridge-freezer for plasma and blood

Combined system (refrigerator + freezer) certified as a medical device according to Directive 93/42/EEC, equipped with microprocessor and digital display, ideal for storing blood and plasma at positive and negative temperatures to guarantee reliability and continual performance monitoring.

Intended use:

It is used in all those situations where **bags of blood need to be stored at +4°C and bags of plasma at -20°C** without altering their properties.

Applications:

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

Emoplasmabank'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 fridge-freezer.

Advanced, efficient, ecological refrigerant



The refrigerator circuit uses **R290 (natural gas)** refrigerant which not only guarantees optimum efficiency, but is also considered one of the best, ecologically valid alternatives to many of the most popular, high GWP refrigerants in the sector.

Latest generation controller

All the fridge-freezers in the Emoplasmabank line are electronically run by the latest generation 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 compartments and guarantees optimum conservation of the biological material stored inside.



Emoplasmabank 700, optional chart recorder

Detail of antifogging triple glazed window



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 grey P.V.C., resistant to the most common cleaning products and disinfectants. **Internal tank divided into two compartments with the bottom compartment set at a positive temperature (+4°C) and the top one at a negative temperature (-20°C), both made of AISI 304 Stainless steel.**

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

Casters: Four (4) casters complete with two (2) adjustable front feet to clamp it to the floor. The casters make it easy to move and guarantee the fridge 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.

Drawers and shelves: two (2) stainless steel drawers in the positive compartment, two (2) plasticised, grid shelves in the negative compartment. *(Please note that the fridge-freezer can hold drawers and shelves at the same time, if necessary).*

Door: The positive temperature compartment has a double glazed, insulated door, whereas the negative temperature compartment has a triple glazed, insulated door. Both have an aluminium profile, a self-closing system, complete with magnetic gaskets, key lock and over 90° retainer.

Door handle: Both inserted on the door with PVC grab profile.

Emoplasmabank 700 with door open



Detail of casters



Detail of shelf

Cooling system

The refrigerant system, placed at the top of the fridge-freezer, consists of two Independent systems, one for each compartment.

Refrigerant:

The refrigerator circuits operate with R290 - a hydrocarbon belonging to the group of natural refrigerants that offers high energy and environmental efficiency.



Internal air conditioning

Internal forced-air evaporator

The fans stop automatically when the door is opened to reduce thermal shock and the work of the compressor as a result.



Particolare ventilatore

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 performance, maximum safety and easy use.

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



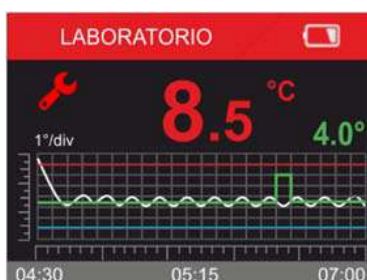
✓ Three separate Processors **linked to each other via the CAN-BUS connection system**

- 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 simultaneously:

- The work temperatures of the two compartments (*simultaneously*)
- 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, perfect efficiency is guaranteed by a 36-hour battery autonomy



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).



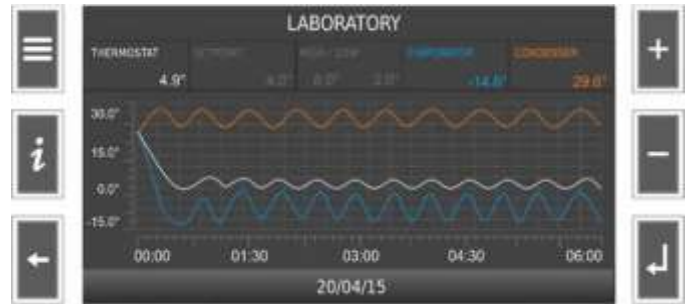
The fridge-freezer is equipped with an intelligent control system, capable of maintaining the set temperature, even if the probes break down



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
<i>Model</i>		Emoplasmabank 700
<i>Commercial Code</i>		14387
<i>Design</i>		Vertical Cabinet
<i>External dimensions</i>	mm	740(W) x 815(D) x 1995(H)
<i>Internal dimensions of positive compartment</i>	mm	590(W) x 675(D) x 675(H)
<i>Internal dimensions of negative compartment</i>	mm	590(W) x 675(D) x 675(H)
<i>Volume</i>	Lt	300 (compartment at +4°C) + 300 (comp. at -20°C)
<i>Weight</i>	Kg	180
<i>Drawers</i>	No.	2 in the positive compartment
<i>Shelves</i>	No.	2 in the negative compartment
<i>Useful shelf dimensions</i>	mm	530 x 650
<i>Max shelf load</i>	Kg	40
<i>Useful drawer dimensions</i>	mm	504 (W) X 635 (D) X 82 (H)
<i>Drawer capacity</i>	N	76 bags (250ml), 44 bags (450ml)
<i>Capacity tot</i>	N	304 bags (250ml), 176 bags (450ml)
<i>Max drawer load (accessory*)</i>	Kg	40
<i>Porthole (accessory*)</i>	No.	(Ø 23 or 50 mm)
<i>Temperature range of fridge compartment</i>	°C	0 ~ +15
<i>Temperature range of freezer compartment.</i>	°C	-10 ~ -23
<i>Operational temperature of fridge comp.</i>	°C	+ 4
<i>Operational temperature of freezer comp.</i>	°C	- 20
<i>Voltage</i>	V / Hz	230 V – 50 Hz
<i>Noise level**</i>	dB(A)	< 60
<i>Maximum absorbed power</i>	A	7
<i>Refrigerant gas</i>	-	R290
<i>Defrosting</i>	-	Automatic and manual
<i>Outputs</i>	-	Clean contact for alarm
	-	USB
	-	ETHERNET (accessory*)
<i>Plug</i>	-	Schuko
<u>Conditions of use</u>		
<i>Temperature</i>	°C	+10 ~ +38
<i>Relative humidity</i>	%	30 ~ 80 (without condensate)
<u>Packaging</u>		
<i>Packaging dimensions</i>	mm	770 (W) x 900 (D) X 2140 (H)
<i>Packaging weight</i>	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=
-------------------------------------------------------------------------------------	----------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------	------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------

This product sheet is the property of ANGELANTONI LIFE SCIENCE SRL. It cannot be reproduced in any form and/or sent to Third parties without authorisation. The information it contains may be amended according to the legislation in force and to production requirements.