

ULT FREZZERS

TRUST -86°C



-86°C



Pioneer of temperature control

Building on 100 years of experience, Froilabo is today specialized in the manufacture of laboratory equipment requiring precise temperature control for the preparation and/or preservation of samples.

100 years in the service of science

A 100 years ago, **Coupric** company, manufacturer of incubators for newborns is born. At the request of pharmaceutical companies, it was the first company to manufacture centrifuges in France. In 1985, **Coupric** will become **Firlabo**.

The company **Froilabo**, created in 1946, is dedicated to the manufacturing of refrigerating and climatic equipment. In 1970, **Froilabo** has designed the first ULT freezer made in France.

In 1998, **Firlabo** and **Froilabo** regroup their activities.

Since 2009, Froilabo has been part of the **Techcomp** group of different scientific equipment manufacturers: **Precisa**, **Edinburgh Instruments**, **Dynamica** and **Scion Instruments**.

Today, **Froilabo** is a major player in the -86°C freezers market in Europe, and every day we imagine new solutions to preserve your samples under all circumstances.



European manufacturing

With 50 years of experience in ULT Freezers and result of many months of research and development, Froilabo's ULT freezers are designed and developed in France and manufactured in Europe.

 CE Marking

 UL Marking

 Production site certified ISO 9001 and ISO 13485

 **F-Gas Approved**



User-driven development

The design of Froilabo freezers focused on five main objectives :

Design



Innovative & ergonomic

Interface



Intuitive & clear

Performances



Power & homogeneity

Security



Enhanced & complete

Maintenance



Preventive & easier





| Design



User-driven conception

Innovative et ergonomic.



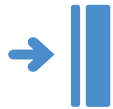
Externals dimensions

Froilabo is the only manufacturer of ULT freezers to offer a useful volume of 690L (24,3 cu.ft.) or 48000 2ml tubes with a device measuring less than 90cm (35.4") wide -standard doorway-.



Robust construction

An interior tank and shelves fully designed in stainless steel for intensive use and maximum life.



VIP insulation as standard

Allows optimal insulation with an excellent ratio of external space to useful space.



Easy-cleaning interior

All interior elements are removable and the rounded corners of the tank allow easy cleaning and disinfection.



Removable accessories

Filter, internal doors and shelves are removable for easy maintenance and defrosting



No frost formation

The flatness of the door and the flat heated door seal help to minimize frost formation.



Maintenance-free heating pressure relief valve

A bidirectional heated valve ensures balance between pressure and allows reopening of the door very quickly after closing.



| Interface



An intuitive and clear interface

Thanks to its eye level display, the Trust range informs you continuously about the proper functioning of the freezer and any alarms.



Instant checking of the freezer

The general functioning of the device and the perfect security of your samples can be verified at a glance thanks to the OK indicator on the door.



Visuals and audible alarms

In the event of an alarm, a pictogram is displayed to identify the current alarm and assist you in the diagnosis. The audible alarm can be silenced by pressing the flashing red panel.



Visible regulator

The regulator is visible at the bottom of the freezer for setpoint setting and easy alarm thresholds. If needed, the display of the actual temperature of the freezer is carried out continuously on regulator.

Performances



-86°C

Cooling power and temperature uniformity

Optimized performances for all your needs.



Quick temperature pull down

Temperature pulls down from +22°C to -80°C is inferior to 5 hours (empty freezer).



Delayed temperature rise

After opening the door, the freezer quickly returns to its set temperature, in order to maintain the preservation conditions of your samples.



Temperature homogeneity

The excellent temperature homogeneity inside the tank guarantees identical storage conditions for all samples.



Cascade compressors

Latest generation compressors made in France for optimal performance and controlled power consumption.



Temperature rise slowed

The VIP insulation throughout the all range makes it possible to control the temperature rise during door openings and in the event of a power failure. "Cryo-accumulator" plates can be proposed as an option to further increase the warm-up time.



F-Gas conformity

The refrigerants fluids used in Froilabo ULT freezers all comply with the new F-Gas regulations (UE n°517/2014).

| Security



Security, at the heart of our concerns

Increased and complete security for all samples.



Cascade refrigeration system

The cascade cooling system is the most efficient and the most durable for the long-term operation of your freezers.



Buzzer reactivation

The buzzer is reactivated automatically in the event of a new alarm or in the event of a long alarm.



Robust construction

The chosen components are all renowned for their robustness and durability, the compressors are manufactured in France.



BoSS System (optional)

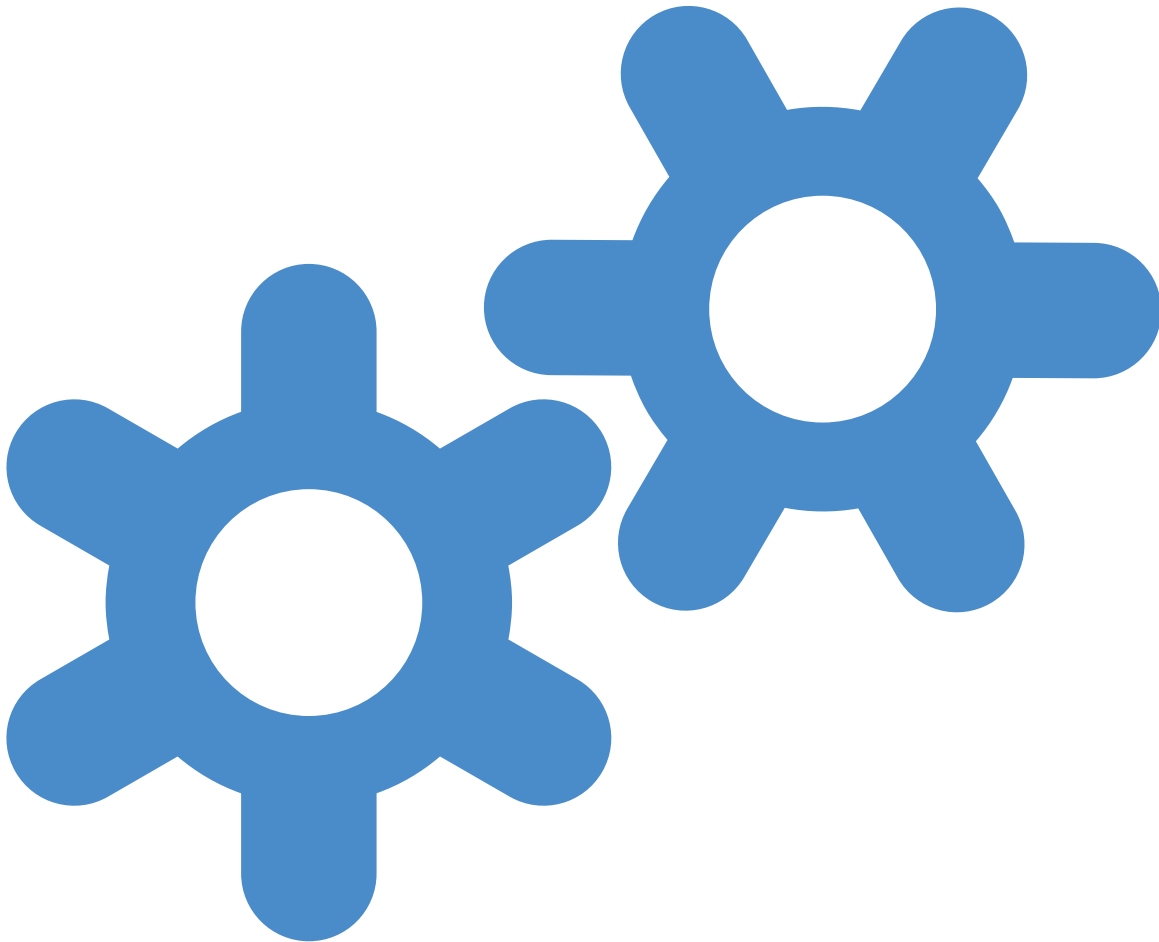
In the event of an incident affecting the electronic control of the device, the BoSS system guarantees continuous cold production, thus preserving the samples.



Degraded mode

In the event of a temperature probe breakage, the freezer goes into alarm and produces continuous cold.

| Maintenance



Preventive and easier maintenance

Optimal operation of your device requires regular maintenance.



Plug & Play electronics

The electronics and power supply of the freezer are easily extractable and can be replaced in minutes.



Removable cooling system

The entire cold production system is attached to an extractable tray, which facilitates interventions on the cold production part.



No oil separator

A simple and efficient evaporator architecture eliminates the need for an oil separator, a costly maintenance source during the life of the freezer.



7 LED state's indicator

The display incorporates several pictograms of alarms indicating the operation of the freezer, thereby quickly identify a fault.



Removable filter

Clogging of the filter causes a decrease in the performance of the freezer or even a stop in the most critical cases. The filter is removable for easy cleaning and maintain a high level of performances.

| Specifications

Options and storage elements

Technicals datas

Volume	Compartments	Capacity (2mL cryo-tubes)	External dimensions (H x P x L in mm and in.)	Inner dimensions (H x P x L in mm and in.)	Net weight (kg and lb.)	Power supply
340L 12.0 cu.ft.	2	24 000	1280 x 970 x 875 50.4 x 38.2 x 34.5	716 x 752 x 630 28.2 x 29.6 x 24.8	223 kg 492 lb.	230V/50Hz 110V/50Hz 110V/60Hz
515L 18.1 cu.ft.	3	36 000	1640 x 970 x 875 64.6 x 38.2 x 34.5	1076 x 752 x 630 42.4 x 29.6 x 24.8	267 kg 589 lb.	
690L 24.3 cu.ft.	4	48 000	1990 x 970 x 875 78.4 x 38.2 x 34.5	1436 x 752 x 630 56.6 x 29.6 x 24.8	330 kg 728 lb.	



| Options

Options list

CAT	REF	DESCRIPTION
SHELVES	BM/ES515	1 extractables shelves for BM515 and BM690
	BM/ES690	2 extractables shelves for BM690 only
	BM/ETA2	Stainless steel shelf for 340L/515L/690L (597x743 mm) (23.5 x 29.3 in.)
SECURITY	BM/CO2T	Liquid CO2 injection backup system. Autonomy 15 hours, flexible 3m included
	BM/CRYO2E	Cryo accumulators for BM340, +/- 6 hours of additional autonomy
	BM/CRYO3E	Cryo accumulators for BM515, +/- 6 hours of additional autonomy
	BM/CRYO4E	Cryo accumulators for BM690, +/- 6 hours of additional autonomy
	BM/OPT19	BoSS system (factory installation)
	BM/OPT20	Padlock closure bracke
TEMPERATURE CONTROL	BM/OPT4E	Pt 100 ohms x3 (-100°C à +50 °C) probes (DIN connector at the back)
	BM/OPT5E	Sensor with 3m cable length for external calibration
	BM/OPT7E	Circular diagram temperature recorder 0°C to -100°C (1 revolution for 7 days)
COMMUNICATIONS OPTIONS	BM/OPT13E	4-20mA output
	BM/OPT18	Dry contacts NO/C/NC (external box)
IQ/OQ	BM/QIQO	Installation and qualification IQ/OQ (without travelling expenses)

| Storage



Storage elements

CAT	REF	DESCRIPTION	Number of shelves	Usable height (mm / in.)	Cryotubes capacity (133 x 133 x 51 mm) (5.23 x 5.23 x 2 in.)	Freezer racks capacity (340L / 515L /690L)
RACKS WITH DRAWERS (288x730x343mm)	BM/EL2T690 BM/EL2T690A	Full stainless steel 2 drawers rack Stainless steel rack with 2 aluminium drawers	2	164 / 6.46	60	4 / 6 / 8
	BM/EL3T690 BM/EL3T690A	Full stainless steel 3 drawers rack Stainless steel rack with 3 aluminium drawers	3	109 / 4.29	60	
	BM/EL4T690 BM/EL4T690A	Full stainless steel 4 drawers rack Stainless steel rack with 4 aluminium drawers	4	80 / 3.15	40	
	BM/EL5T690 BM/EL5T690A	Full stainless steel 5 drawers rack Stainless steel rack with 5 aluminium drawers	5	63 / 2.48	50	
	BM/EL6T690 BM/EL6T690A	Full stainless steel 6 drawers rack Stainless steel rack with 6 aluminium drawers	6	53 / 2.08	60	
RACKS WITH FIXED SHELVES (140x730x343mm)	BM/EL3E690AC	Aluminium rack, 15 compartments	3	109 / 4.29	30	8 / 12 / 16
	BM/EL4E690AC	Aluminium rack, 20 compartments	4	80 / 3.15	20	
	BM/EL5E690AC	Aluminium rack, 25 compartments	5	63 / 2.48	25	
	BM/EL6E690AC	Aluminium rack, 30 compartments	6	54 / 2.12	30	
OTHER STORAGE ELEMENTS	BM/ELE690	Stainless steel drawer rack (142x740x330 mm) (5.6 x 29.2 x 13 in.)	Between 1 and 6	Between 54 and 109	160 micro-plates 96 wells 30 compartments	8 / 12 / 16
BASKETS	BM/TIR	Tiroir de stockage en acier inoxydable (142x740x330 mm) (5.6 x 29.2 x 13 in.)	1	330	/	8 / 12 / 16



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