

BIO
MEMORY



DEEP FREEZER

GREEN CONCEPT



SINCE 1918
LYON, FRANCE

Vacuum Insulated Panel Technology

A Greener Choice

Minimize Carbon Footprint
Efficient Space Utilisation
Reduced Operation Cost

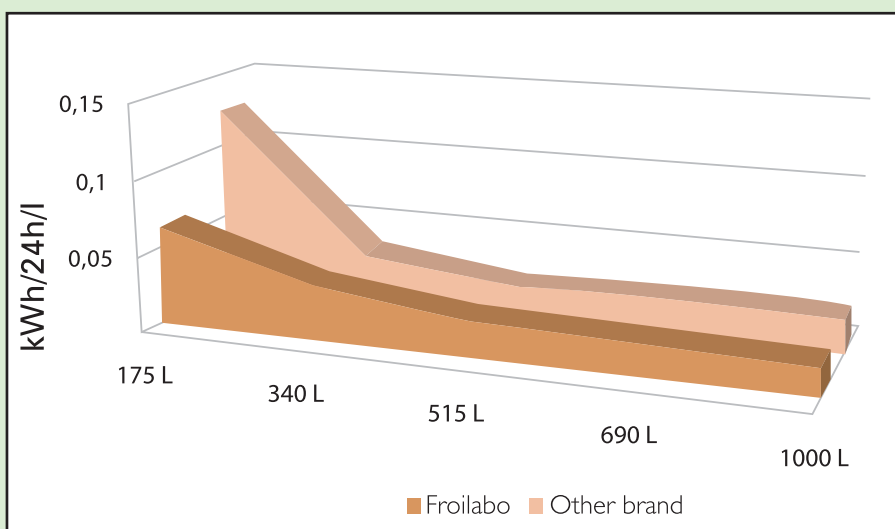
- Vacuum insulated panel outclass traditional insulation technology such as foams or fiber layer which reduce heat transfer by trapping gases. There is no air trapped in the space inside the Vacuum Insulated Panel, as a result heat transfer is largely reduced (Thermal conductivity $<0.005\text{W/m/K}$)



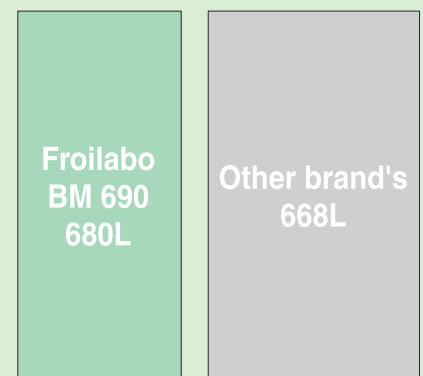
GREEN CONCEPT

Benefits:

- Better insulation performance compare with traditional foam insulation method
- Slim construction which decreases the front surface area by 20% when compared with similar volume freezer
- Larger storage capacity with same footprint
- Reduce more than 15% electricity consumption
- Improved 22% for delaying the temperature rising under power failure



Power Consumption by Capacity



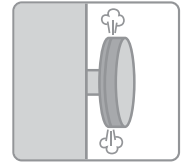
Smaller footprint with larger capacity

BM Series

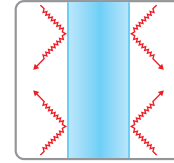
- Vacuum Insulation Panel
- Reliable temperature sensor for accurate temperature monitoring
- No door jamming- Hot gas bypass tube is installed to minimize frost on the triple silicone door lip and the equipped decompression valve balance the lower air pressure built inside the freezer for an effortless door opening
- One-handed door open - The progressive locking lever to facilitate one-handed and easy door opening and closing
- Good temperature stability ($\pm 1^{\circ}\text{C}$)
- $\pm 3^{\circ}\text{C}$ uniformity inside the whole cabinet to ensure samples were stored inside a guaranteed temperature range
- Fits standard doorway even for a 680L model (2 x 0.875 m)
- Able to use in an ambient temperature up to $+35^{\circ}\text{C}$



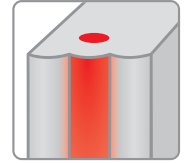
CFC free and HCFC free refrigerants



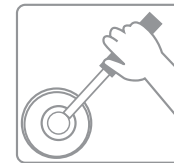
Decompression valve for easy door opening



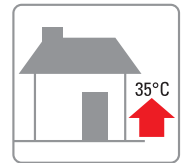
Vacuum Insulation Panel



Triple silicone lip with hot gas bypass



One-handed door open



Permissible ambient temperature up to 35°C

BM 1000 & BMS 1000 – our 1000L models

The largest volume ultralow temperature freezer on the market and with a smallest footprint

Up to 720 cryoboxes storage capacity



Heated silicone door seal with 3 lips limits frost formation

Insulation inner door with color-coded handles

Lining and fittings in 304 stainless steel
Easy cleaning rounded corners

Easy door opening system -
The progressive locking lever to facilitate one-handed and easy door opening and closing

Cable entry port

Vacuum Insulation Panel

Tube to warm the door seal

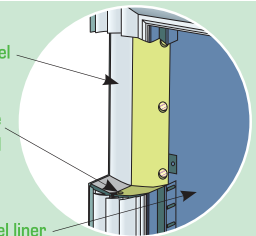
304 stainless steel liner

2 rear spacer ensure good air circulation behind the freezer

Door key lock

Front access washable condenser filter

4 castors and 2 level adjusters





BM freezer with Intellidiag system



Froilabo Freezer's main goal is to protect your precious sample. Our unique **Intellidiag** system is built for providing highest safety for samples even over long years.

The **Intellidiag** system provides an all-rounded alarm system to notify any possible failure or malfunction.

By monitoring the key parameters, **Intellidiag** is possible to propose an in line predictive diagnostic system. This permanent surveillance manages the forecast of failures by interpreting the operation drifts of the freezer.

Every BMS freezer has an own fix IP address that allows communication to computer by LAN or through WiFi (optional) to monitor the condition.

The BMS series are equipped with a LCD display which provides all the information including temperature setting, alarm display, alarm setting, diagnosis data and alarm history. (The freezer condition is fully monitored.)



WiFi option



LCD display
(colour display optional)



Data logging



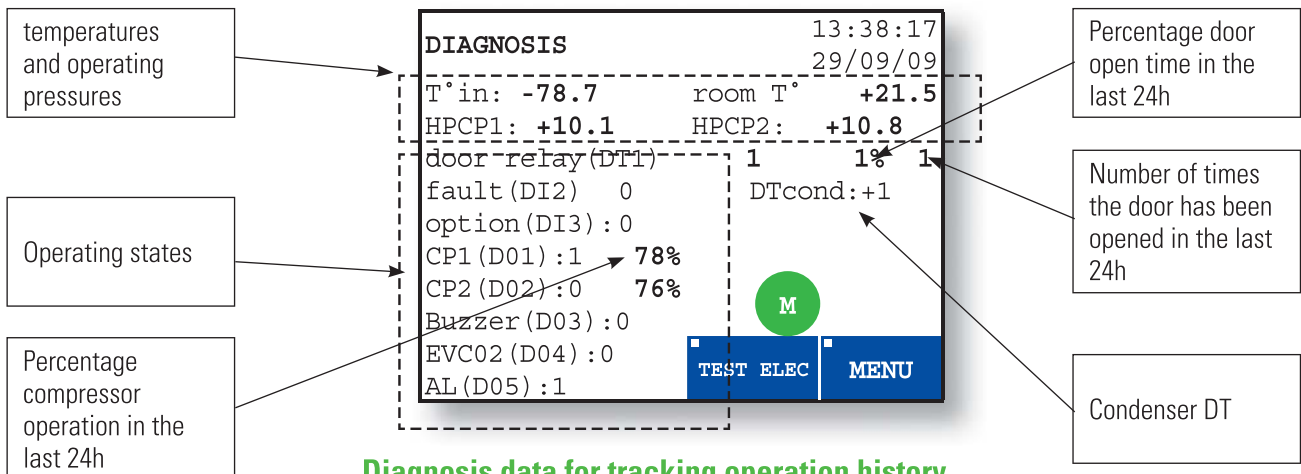
Operation condition surveillance

PV -80.0 °C	13:34:30
SV -80.0 °C	29/09/09
STOP	LOGIN
PARAMETERS	GRAPH
SETTINGS	DIAGRAM
ALARM SETTINGS	DIAGNOSIS
ALARM DATALOGGER	BACK

User Menu

Froilabo	16:30:14
	27/05/08
-84.1 °C	
-85.0 °C	
ON	MENU

LCD display (color display optional)

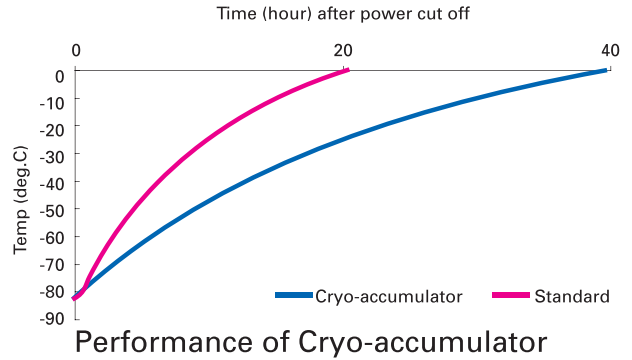


Diagnosis data for tracking operation history

	BM -45°C	BM -86°C	BMS -86°C
Temperature range	-20°C to -45°C	-60°C to -86°C	-60°C to -86°C
Vacuum Insulation Panel	✓	✓	✓
Stainless steel cabinet	✓	✓	✓
Door key lock	✓	✓	✓
Pressure regulation	✓	✓	✓
Insulated inner doors	✓	✓	✓
Castors	✓	✓	✓
Cable entry port	✓	✓	✓
Low & High temperature Audible visual alarms	✓	✓	✓
Battery backup	□	□	✓
Remote alarm contact	✓	✓	✓
CO ₂ Back up	✗	□	✓
Advanced alarm control	✗	✗	✓
Ethernet communication	✗	✗	✓

Greener and Safer

Optional **Cryo-accumulator** - An aluminium alloy installed below the storage compartment of the freezer which provide additional cooling source. Non-aging, Power-free construction gives a prolonged cooled environment even experience a power cutoff.



Options and accessories


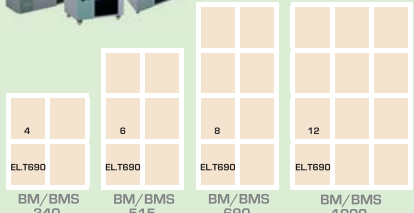
Reference	Name & Description	BM	BMS
Security options			
CNGOPT5000088	CO ₂ Backup system	□	✓
PENFLEX000015	CO ₂ Connection tube	□	□
CNGOPT5000089 CRYSTOC000018	LN ₂ Backup system	□	□
CRYSTOC000019	LN ₂ Connection tube	□	□
CNGOPT5000031	Cryo accumulator - provide additional cooling source	□	□
CNGOPT5000072	Turn on / off key lock	□	✗
CNGOPT5000004	Battery backup - Additional 12V x 2 Battery increasing the backup system range in case of power failure	□	✓
Monitoring options			
	Output relays	✓	✓
CNGOPT5000095	Pt 100 ohms probe x 3wired in the freezer output on electric terminal	□	✓
CNGOPT5000092	Independent Pt 100 ohms probe output 4-20 mA/ -100°C to +50 °C	□	□
CNGOPT5000094	Independent Pt 100 ohms probe output mV/°c -100°C to +50 °C	□	□
CNGOPT5000027	Sensor connected by a long wire to allow external calibration	□	□
CNGOPT5000028	Certified temperature sensor	□	□
CNGOPT5000097	RS 485 Output	□	□
CNGOPT5000115	Circular chart recorder 1r/7 days range 0°C to -100°C / independent power supply with battery	□	□
	RS232 for Ethernet communication	✗	✓
CNGOPT5000029	WiFi	✗	□
LYOPTA000005	3 channels video recorder	✗	□
Other options			
CNGOPT5000030	Water cooled condenser	□	□
CNGOPT5000005	220 Volts / 60 Hz Electric supply	□	□
9 points temperature monitoring performed by independent and qualified laboratory			
CNGOPT5000078	Certificate 1 temperature set-point	□	□
✓ As standard ✗ Not available □ Option			


Inventory rack


Reference	Name	For model	Ext. Dimensions W x D x H (mm)	No. of shelves	Usable height (mm)	Cryoboxes capacity	BM / BMS Deep freezer Racks capacity
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(Cryoboxes 133x133x51mm)

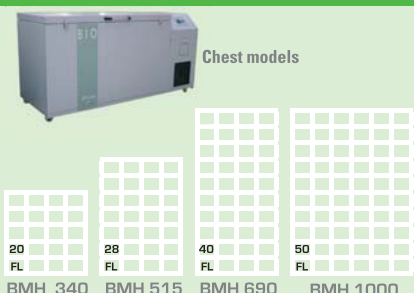
Additional shelves							
CNGOPT5000066	Shelves 175	175					
CNGOPT5000067	Shelves 340	340 515 690					
CNGOPT5000065	Shelves 1000	1000					

Racks with drawers								
EL3T	CNGOPT5000034	EL2T175	288 x 425 x 290	175	2	142	24	 <p>Upright models</p>
	CNGOPT5000039	EL3T175			3	93	18	
	CNGOPT5000041	EL4T175			4	68	24	
	CNGOPT5000043	EL5T175			5	54	30	
EL5T	CNGOPT5000035	EL2T690	288 x 730 x 343	340 515 690 1000	2	164	60	
	CNGOPT5000040	EL3T690			3	109	60	
	CNGOPT5000042	EL4T690			4	80	40	
	CNGOPT5000044	EL5T690			5	63	50	
	CNGOPT5000046	EL6T690			6	53	60	

Racks with fixed shelves								
EL3E	CNGOPT5000050	EL3E175	140 x 424 x 290	175	3	95	9	
	CNGOPT5000051	EL4E175			4	68	12	
	CNGOPT5000053	EL5E175	140x730x343	340 515 690 1000	5	54	15	
	CNGOPT5000047	EL3E690			3	109	30	
	CNGOPT5000052	EL4E690			4	80	20	
	CNGOPT5000054	EL5E690			5	63	25	
CNGOPT5000055	EL6E690	6	54	30				

Racks for microplates								
ELMP	CNGOPT5000037	ELMP175	142 X 425 X 294	175	2	140	144	
	CNGOPT5000038	ELMP690	142 x 740 x 330	340 515 690 1000	2	140	160	

Baskets								
T	CNGOPT5000104	Tiroir standard	142 x 740 x 330	340 515 690 1000				

Upright racks							
FL	CNGOPT5000057	FL12EBV	Horizontal	340 x 288 x 368	For Cryoboxes 133x133x51	12	 <p>Chest models</p>
	CNGOPT5000056	FL7EBV			For Cryoboxes 133x133x95	7	
	CNGOPT5000073	PAN VRAC H					

Ordering Information

Reference	Name	Volume (l)	Ext. Dimensions W x D x H (mm)	No. of Compartment
Desk freezers				
CNGMEMO000023	BM P175 -45°C	176	1275 x 680 x 810	2
CNGMEMO000024	BM P175 -86°C	176	1275 x 680 x 810	2
CNGMEMO000030	BMS P175 -86°C	176	1275 x 680 x 810	2
Upright freezers				
CNGMEMO000008	BM 340 -45°C	339	875 x 1012 x 1280	2
CNGMEMO000013	BM 515 -45°C	510	875 x 1012 x 1640	3
CNGMEMO000018	BM 690 -45°C	680	875 x 1012 x 2000	4
CNGMEMO000001	BM 1000 -40°C	1011	1200 x 1004 x 2000	4
CNGMEMO000009	BM 340 -86°C	339	875 x 1012 x 1280	2
CNGMEMO000014	BM 515 -86°C	510	875 x 1012 x 1640	3
CNGMEMO000019	BM 690 -86°C	680	875 x 1012 x 2000	4
CNGMEMO000002	BM 1000 -82°C	1011	1200 x 1004 x 2000	4
CNGMEMO000027	BMS 340 -86°C	339	875 x 1012 x 1280	2
CNGMEMO000028	BMS 515 -86°C	510	875 x 1012 x 1640	3
CNGMEMO000029	BMS 690 -86°C	680	875 x 1012 x 2000	4
CNGMEMO000025	BMS 1000 -82°C	1011	1200 x 1004 x 2000	4
Chest freezers				
CNGMEMO000011	BM 340 H -45°C	339	1380 x 794 x 1032	
CNGMEMO000016	BM 515 H -45°C	510	1740 x 794 x 1032	
CNGMEMO000022	BM 690 H -45°C	680	2100 x 794 x 1032	
CNGMEMO000003	BM 1000 H -40°C	1011	2000 x 1084 x 1050	
CNGMEMO000012	BM 340 H -86°C	339	1380 x 794 x 1032	
CNGMEMO000017	BM 515 H -86°C	510	1740 x 794 x 1032	
CNGMEMO000021	BM 690 H -86°C	680	2100 x 794 x 1032	
CNGMEMO000004	BM 1000 H -82°C	1011	2000 x 1084 x 1050	

The Froilabo range includes :

- Ovens, refrigerated and non-refrigerated incubators with precise temperature control
- Climatic cabinets that meet stringent ICH requirements for drug stability testing.
- Centrifuges with maximum capacities from 1 litre to 6 litres.
- Water Baths, Blast Plasma Freezers and Air Streamers



Incubator



Oven



ICH Chamber



Blast Plasma Freezer



Centrifuge



Air Streamer



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