

CryoMatrix Series

Cryogenic Vapor Freezer

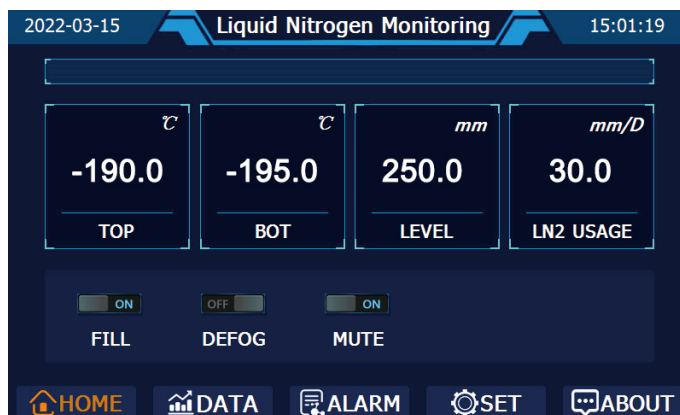
CryoMatrix series high-efficiency vapor phase liquid nitrogen storage system provides the most ideal storage conditions for biological samples. The whole series realize -190°C vapor phase storage. Supported by LN_2 automatic filling system and temperature & LN_2 level monitoring system, CryoMatrix freezers provide all-round protection to precious sample, assisting life science research and cell therapy applications.

Based on the actual needs of users, Antech has innovatively optimized the performance, structure and control system of the vapor-phase cryogenic freezer to meet the user's highest standard of large-capacity vapor-phase cryogenic storage requirements.



Advanced Control System

- HMI human-machine interactive touch screen, display temperature, liquid level, temperature curve and alarm information.
- Important events such as temperature, alarm, liquid nitrogen fill, can be checked, and can also download through USB disk.
- Various alarms, and the alarm information can be stored and downloaded through the USB disk.
- Operating data, such as temperature and liquid level, can be stored for up to 10 years.
- Optimized structure design to achieve the best sample storage density and save space.

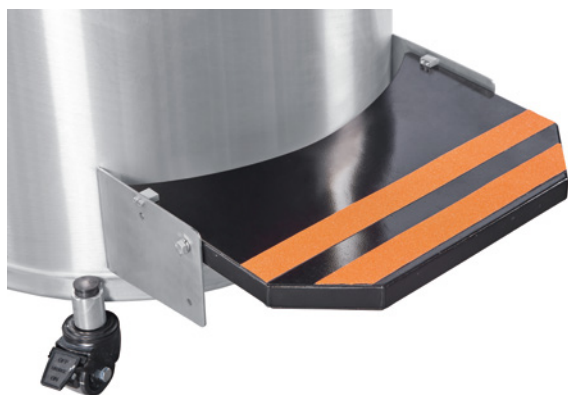


Features

- Multiple capacity freezers, 2.0ml vials storage capacity up to 94,875.
- Excellent temperature uniformity and stability, enabling samples to be stored at -190°C vapor phase environment.
- Excellent vacuum performance and structural design ensure minimum liquid nitrogen consumption and lower storage costs.
- Advanced temperature, liquid level monitoring and alarm system, and can realize remote monitoring.
- Automatic supply of liquid nitrogen, safe and labor-saving.
- The liquid nitrogen supply system is controlled by multiple solenoid valves, which can effectively prevent the overflow of liquid nitrogen and sample contamination caused by high LN_2 level.
- Manual filling available under special circumstances.
- Compatible with vapor phase and liquid phase storage modes, users can choose according to their needs.
- The optimized mechanism design realizes high-density storage to save space.



Humanized Design



- Defog function, easier to find samples and shorten lid opening time.
- After 48 hours of lid open, temperature in the freezer remains below -150°C (according to the factory test standard).
- The remote alarm interface can be connected to the central alarm system.
- Foldable step for convenient operation & space saving.
- Standard backup battery in case of power failure.
- Standard 1.27cm internal-diameter flexible filling hose with dual swivel connectors and 3/8-inch male NPT adapter;
- Optional vacuum jacketed hose for lower liquid nitrogen consumption.

Why CryoMatrix?

- High density storage
Compared with similar products, CryoMatrix freezers have a small footprint and can store a large number of samples. It truly realizes high-density storage, which not only saves space, but also reduces the storage cost per sample. Both horizontal and vertical rack systems available.
- Excellent temperature uniformity
Vacuum insulated stainless steel tank structure, high vacuum coverage, to ensure excellent thermal insulation performance. When samples are stored at vapor phase, top level sample temperature is lower than -180°C .

- Stable opening temperature

The innovative lid and vacuum insulated neck design reduce LN₂ evaporation. Even when the lid is opened for up to 48 hours, the inner temperature can remains stable.

- Advanced temperature monitoring system

The monitoring system based on microprocessor and platinum temperature probe can display the maximum and minimum temperature inside the tank in real time with an accuracy of $\pm 1^{\circ}\text{C}$. The user can set the alarm point by himself, with the option of alarm mute.

- Automatic LN₂ filling & level monitoring system

The liquid level monitoring system based on high-precision differential pressure sensor displays the liquid level in real time to ensure the safety and reliability of the automatic filling of liquid nitrogen. The color touch screen can display: top temperature, bottom temperature, liquid level height, daily liquid nitrogen consumption and other parameters.

- Warm gas bypass

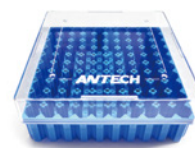
The warm gas bypass design can remove the high temperature nitrogen (gas) in the pipeline before the liquid nitrogen is injected, so as to ensure that only ultra-low temperature liquid nitrogen is injected into freezer, which avoids the temperature fluctuation in the freezer & thermo shock to samples during filling process, protecting the safety of samples.



Rack for cryogenic boxes



Inventory racks for cryobox



Model	Description	Part Number
For 81/100-place 2" height box		
CFC-10-2	10-place	5122A93
CFC-12-2	12-place	5122C93
CFC-13-2	13-place	5122D93
CFC-14-2	14-place	5122E93
CFC-15-2	15-place	5122F93
For 25-place 2" height box		
CFC-10-2S	10-place	5121A93
CFC-12-2S	12-place	5121C93
CFC-13-2S	13-place	5121D93
CFC-14-2S	14-place	5121E93
CFC-15-2S	15-place	5121F93
For 81-place 3.75" height box		
CFC-5-3	5-place	5123153
CFC-6-3	6-place	5123163
CFC-8-3	8-place	5123183
Cryogenic box, polycarbonate material, LN ₂ duration		
CBA-25-2	25-place box, 2" height, for 1.5~2.0ml vials	5211110
CBA-81-2	81-place box, 2" height, for 1.5~2.0ml vials	5211120
CBA-100-2	100-place box, 2" height, for 1.5~2.0ml vials	5211130
CBA-81-3	81-place box, 3.75" height, for 5ml vials	5211140

Frame Rack & Cassette for Blood Bags



Blood bag cassette



Blood bag frame

Model	Description/capacity	Part Number
Cassette & frame		
BBC-A	791 OS/U [Dimensions(mm): 98*90*11mm]	5241100
CFB-A-3	3-place	5124135
CFB-A-4	4-place	5124145
CFB-A-5	5-place	5124155
CFB-A-6	6-place	5124165
CFB-A-7	7-place	5124175
CFB-A-8	8-place	5124185
CFB-A-9	9-place	5124195
Cassette & Frame		
BBC-B	Fenwal 4R9951, OriGen CS 50 [Dimensions(mm): 92*160*11.8]	5241200
CFB-B-3	3-place	5125135
CFB-B-4	4-place	5125145
CFB-B-5	5-place	5125155
CFB-B-6	6-place	5125165
CFB-B-7	7-place	5125175
CFB-B-8	8-place	5125185
CFB-B-9	9-place	5125195
CFB-B-10	10-place	51251A5
CFB-B-11	11-place	51251B5
Cassette & Frame		
BBC-C	Fenwal 4R9953 & 4R5461, OriGen CS 250, CryoMACS 50 & 250, CryoPAC 025B & 050B [Dimensions(mm): 152.5*191*11.8]	5241300
CFB-C-3	3-place	5126135
CFB-C-4	4-place	5126145
CFB-C-5	5-place	5126155
CFB-C-6	6-place	5126165
CFB-C-7	7-place	5126175
Cassette & Frame		
BBC-D	Fenwal 4R9955 & 4R5462, OriGen CS 500, CryoPAC 250B & 500B [Dimensions(mm): 152.5*236*11.8]	5241400
CFB-D-3	3-place	5127135
CFB-D-4	4-place	5127145
CFB-D-5	5-place	5127155
CFB-D-6	6-place	5127165
CFB-D-7	7-place	5127175
Cassette & Frame		
BBC-E	Gambro DF-200 or CryoMACS 50 & 250 [Dimensions(mm): 163*191*20]	5241500
CFB-E-3	3-place	5128135
CFB-E-4	4-place	5128145
CFB-E-5	5-place	5128155
Cassette & Frame		
BBC-F	Gambro DF-700, OriGen CS 1000, CryoMACS 500 & 750 & 1000, CryoPAC 750B [Dimensions(mm): 165*300*20]	5241600
CFB-F-3	3-place	5129135
CFB-F-4	4-place	5129145
CFB-F-5	5-place	5129155

Specification

Model

CryoMatrix 94K

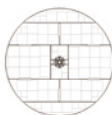
Maximum Storage Capacity		
1.2 & 2ml vial	1.2 & 2ml vial	94875
	Number of large rack (81/100-place box)	60
	Number of small rack (25-place box)	13
	2" Boxes per rack	15
5ml vial	5ml vial (81-place)	34020
	Number of racks	60
	3.75" Boxes per rack	7
Cassette BBC-A	Numbers of blood bag	7308
	Levels per rack	9
	Number of racks	812
Cassette BBC-B	Numbers of blood bag	5382
	Levels per rack	9
	Number of racks	598
Cassette BBC-C	Numbers of blood bag	2360
	Levels per rack	5
	Number of racks	472
Cassette BBC-D	Numbers of blood bag	1935
	Levels per rack	5
	Number of racks	387
Cassette BBC-E	Numbers of blood bag	1240
	Levels per rack	5
	Number of racks	248
Cassette BBC-F	Numbers of blood bag	680
	Levels per rack	5
	Number of racks	136
LN ₂ Capacity		
LN ₂ capacity (L)		1854
LN ₂ capacity at vapor platform (L)		300
Dimensions		
Neck opening (mm)		635
Usable internal height (mm)		906
External working height (from top of step to lid opening) (mm)		1636
Step height (mm)		616
Inner diameter (mm)		1467
External diameter (mm)		1565
Overall height (mm)		1750
Door width limit (mm)		1615
Weight empty (kg)		805
Weight full, vapor charged (kg)		2307
Functions		
Controller		Touch screen
Full auto fill		Standard
Data storage / USB port / RS485 port		Standard
Defog		Standard
Foldable step		Standard
Backup battery		Standard
Flexible filling hose		Standard
Inventory rack		Optional
Wi-Fi connection & cloud access		Optional

Inventory & Layout

Model

CryoMatrix 94K

2ml vial (square rack)

Rack layout	
Maximum capacity	94875
Large rack model x rack qty	CFC-15-2 x 60
Small rack model x rack qty	CFC-15-2S x 13

5ml vial (square rack)

Maximum capacity	34020
Rack model x rack qty	CFC-7-3 x 60

25ml blood bag

Maximum capacity	7308
Cassette model x qty	BBC-A x 7308
Rack model x rack qty	CFB-A-9 x 812

50ml blood bag

Maximum capacity	5382
Cassette model x qty	BBC-B x 5382
Rack model x rack qty	CFB-B-9 x 598

250ml blood bag

Maximum capacity	2360
Cassette model x qty	BBC-C x 2360
Rack model x rack qty	CFB-C-5 x 472

500ml blood bag

Maximum capacity	1935
Cassette model x qty	BBC-D x 1950
Rack model x rack qty	CFB-D-5 x 387

200ml blood bag (Gambro DF-200 or CryoMACS 50 & 250)

Maximum capacity	1240
Cassette model x qty	BBC-E x 1240
Rack model x rack qty	CFB-E-5 x 248

700ml blood bag (Gambro DF-700, OriGen CS 1000 or CryoMACS 500& 750 & 1000)

Maximum capacity	680
Cassette model x qty	BBC-F x 680
Rack model x rack qty	CFB-F-5 x 136