

CryoMatrix Series

Cryogenic Vapor Freezer

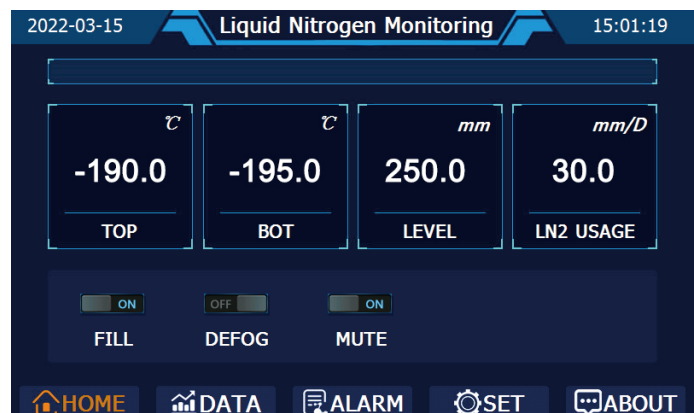
CryoMatrix series high-efficiency vapor phase liquid nitrogen storage system provides the most ideal storage conditions for biological samples. The whole series realize -190°C vapor phase storage. Supported by LN2 automatic filling system and temperature & LN2 level monitoring system, CryoMatrix freezers 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, from 370L to 1,800L, 2.0ml vials storage capacity from 15,600 to 94,500.
- 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 LN2 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.
- Standard automatic charging backup battery to ensure the normal operation of the system for a period of time after power failure.

Why CryoMatrix?

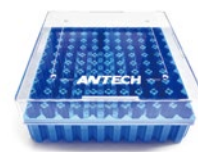
- High density storage
Compared with similar products, CryoMatrix freezers have a small footprint and can store a large number of samples. It truly realizes high-density storage, which not only saves space, but also reduces the storage cost per sample. Both horizontal and vertical rack systems available.
- 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



Rack for cryo boxes



Rack for cryo boxes	Description/Capacity	WxDxH(mm)
CFC-10-2	10-layer, for 100/81-well boxes	140x140x600
CFC-10-2S	10-layer, for 25-well boxes	81x81x600
CFC-12-2	12-layer, for 100/81-well boxes	140x140x694
CFC-12-2S	12-layer, for 25-well boxes	81x81x694
CFC-13-2	13-layer, for 100/81-well boxes	140x140x751
CFC-13-2S	13-layer, for 25-well boxes	81x81x751
CFC-14-2	14-layer, for 100/81-well boxes	140x140x808
CFC-14-2S	14-layer, for 25-well boxes	81x81x808
CFC-15-2	15-layer, for 100/81-well boxes	140x140x865
CFC-15-2S	15-layer, for 25-well boxes	81x81x865
CBA-25-2	25-place box, 2" height, for 1.5~2.0ml vials, polycarbonate material for LN2 duration, 30 pcs/carton	75 x 75 x 53
CBA-81-2	81-place box, 2" height, for 1.5~2.0ml vials, polycarbonate material for LN2 duration, 20 pcs/carton	133 x 133 x 53
CBA-100-2	100-place box, 2" height, for 1.5~2.0ml internal thread vials, polycarbonate material for LN2 duration, 20 pcs/carton	133 x 133 x 53
CBA-81-3	81-place box, 3.75" height, for 5ml vials, polycarbonate material for LN2 duration, 20 pcs/carton	133 x 133 x 95

Frame Rack & Cassette for Blood Bags



Blood Bag Cassette & Frame



Cassette & Frame for 25 ml Blood Bag

Item#	Description / Capacity	WxDxH(mm)
BBC-25	Cassette for 25 ml blood bag	91×100×11
CFB-25-6	6 positions	605×108×17
CFB-25-7	7 positions	700×108×17
CFB-25-8	8 positions	795×108×17
CFB-25-9	9 positions	890×108×17

Cassette & Frame for 50 ml Blood Bag

Item#	Description / Capacity	WxDxH(mm)
BBC-50	Cassette for 50 ml blood bag	91×157×11
CFB-50-6	6 positions	605×165×17
CFB-50-7	7 positions	700×165×17
CFB-50-8	8 positions	795×165×17
CFB-50-9	9 positions	890×165×17

Cassette & Frame for 250 ml Blood Bag

Item#	Description / Capacity	WxDxH(mm)
BBC-250	Cassette for 250 ml blood bag	143×202×11
CFB-250-3	3 positions	476×210×17
CFB-250-4	4 positions	623×210×17
CFB-250-5	5 positions	770×210×17

Cassette & Frame for 500 ml Blood Bag

Item#	Description / Capacity	WxDxH(mm)
BBC-500	Cassette for 500 ml blood bag	143×277×11
CFB-500-3	3 positions	476×285×17
CFB-500-4	4 positions	623×285×17
CFB-500-5	5 positions	770×285×17

Inventory & Layout

2ml vials

Model	CryoMatrix 15K	CryoMatrix 19K	CryoMatrix 28K	CryoMatrix 39K	CryoMatrix 55K	CryoMatrix 94K
Rack layout						
Maximum capacity	15600	19500	28000	39200	55500	94500
Rack model x rack qty	CFC-12-2 x 12	CFC-15-2 x 12	CFC-10-2 x 24	CFC-14-2 x 24	CFC-15-2 x 32	CFC-15-2 x 60
Rack model x rack qty	CFC-12-2S x 4	CFC-15-2S x 4	CFC-10-2S x 16	CFC-14-2S x 16	CFC-15-2S x 20	CFC-15-2S x 12

25ml blood bag

Model	CryoMatrix 15K	CryoMatrix 19K	CryoMatrix 28K	CryoMatrix 39K	CryoMatrix 55K	CryoMatrix 94K
Rack layout						
Maximum capacity	1484	1908	2448	3264	4988	7992
Rack model x rack qty	CFB-25-6 x 212	CFB-25-9 x 212	CFB-25-6 x 408	CFB-25-8 x 408	CFB-25-8 x 532	CFB-25-8 x 888
Cassette model x qty	BBC-25 x 1484	BBC-25 x 1908	BBC-25 x 2448	BBC-25 x 3264	BBC-25 x 4988	BBC-25 x 7992

50ml blood bag

Model	CryoMatrix 15K	CryoMatrix 19K	CryoMatrix 28K	CryoMatrix 39K	CryoMatrix 55K	CryoMatrix 94K
Rack layout						
Maximum capacity	896	1152	1488	1984	3132	4788
Rack model x rack qty	CFB-50-6 x 128	CFB-50-8 x 128	CFB-50-6 x 248	CFB-50-7 x 248	CFB-50-8 x 348	CFB-50-8 x 532
Cassette model x qty	BBC-50 x 896	BBC-50 x 1152	BBC-50 x 1488	BBC-50 x 1984	BBC-50 x 3132	BBC-50 x 4788

250ml blood bag

Model	CryoMatrix 15K	CryoMatrix 19K	CryoMatrix 28K	CryoMatrix 39K	CryoMatrix 55K	CryoMatrix 94K
Rack layout						
Maximum capacity	400	500	588	980	1340	2140
Rack model x rack qty	CFB-250-4 x 100	CFB-250-5 x 100	CFB-250-3 x 196	CFB-250-4 x 196	CFB-250-5 x 268	CFB-250-5 x 428
Cassette model x qty	BBC-250 x 400	BBC-250 x 500	BBC-250 x 588	BBC-250 x 812	BBC-250 x 1340	BBC-250 x 2140

500ml blood bag

Model	CryoMatrix 15K	CryoMatrix 19K	CryoMatrix 28K	CryoMatrix 39K	CryoMatrix 55K	CryoMatrix 94K
Rack layout						
Maximum capacity	240	300	396	660	900	1360
Rack model x rack qty	CFB-500-4 x 60	CFB-500-5 x 60	CFB-500-3 x 132	CFB-500-4 x 132	CFB-500-5 x 180	CFB-500-5 x 272
Cassette model x qty	BBC-500 x 240	BBC-500 x 300	BBC-500 x 396	BBC-500 x 660	BBC-500 x 900	BBC-500 x 1360

Specification

Model CryoMatrix 15K CryoMatrix 19K CryoMatrix 28K CryoMatrix 39K CryoMatrix 55K CryoMatrix 94K

Vials Capacity, Square Rack						
1.2 & 2 ml vials (internally threaded)	15,600	19,500	28,000	39,200	55,500	94,500
Qty of rack (100-cell box)	12	12	24	24	32	60
Qty of rack (25-cell box)	4	4	16	16	20	12
Number of shelves per rack	12	15	10	14	15	15

Blood bag qty / rack layer/ rack qty						
25ml	1484/7/212	1908/9/212	2448/6/408	3264/8/408	4988/9/532	7992/9/888
50ml	896/7/128	1152/9/128	1488/6/248	1984/8/248	3132/9/348	4788/9/532
250ml	400/4/100	500/5/100	588/3/196	980/5/196	1340/5/268	2140/5/428
500ml	240/4/60	300/5/60	396/3/132	660/5/132	900/5/180	1360/5/272

LN2 Capacity						
LN2 capacity, L	370	460	550	800	1160	1800
LN2 capacity at vapor platform, L	55	55	125	133	200	295

Dimensions & Weight						
Neck opening, mm	320	320	445	445	526	635
Usable internal height, mm	708	914	590	840	887	906
Inner diameter, mm	730	730	980	980	1130	1390
External diameter, mm	820	820	1090	1090	1256	1565
Overall height, mm	1400	1600	1400	1650	1790	1750
Door width requirement	900	900	1110	1110	1300	1585
Weight empty, kg	210	264	310	395	580	805
Weight full, kg	511	638	758	1046	1524	2270

Functions						
Controller	Touch screen	Touch screen	Touch screen	Touch screen	Touch screen	Touch screen
Temperature /liquid level diagram	Standard	Standard	Standard	Standard	Standard	Standard
Data storage/USB port	Standard	Standard	Standard	Standard	Standard	Standard
Password access	Standard	Standard	Standard	Standard	Standard	Standard
Automatic fill	Standard	Standard	Standard	Standard	Standard	Standard
Defog	Standard	Standard	Standard	Standard	Standard	Standard
Backup battery	Standard	Standard	Standard	Standard	Standard	Standard
Foldable step	Standard	Standard	Standard	Standard	Standard	Standard
Vacuum hose	Standard	Standard	Standard	Standard	Standard	Standard
Rack/box	Optional	Optional	Optional	Optional	Optional	Optional