



CryoMatrix High Performance Cryogenic Freezer



Larger Volume

10-30% higher loading
efficiency than similar products



Higher Performance

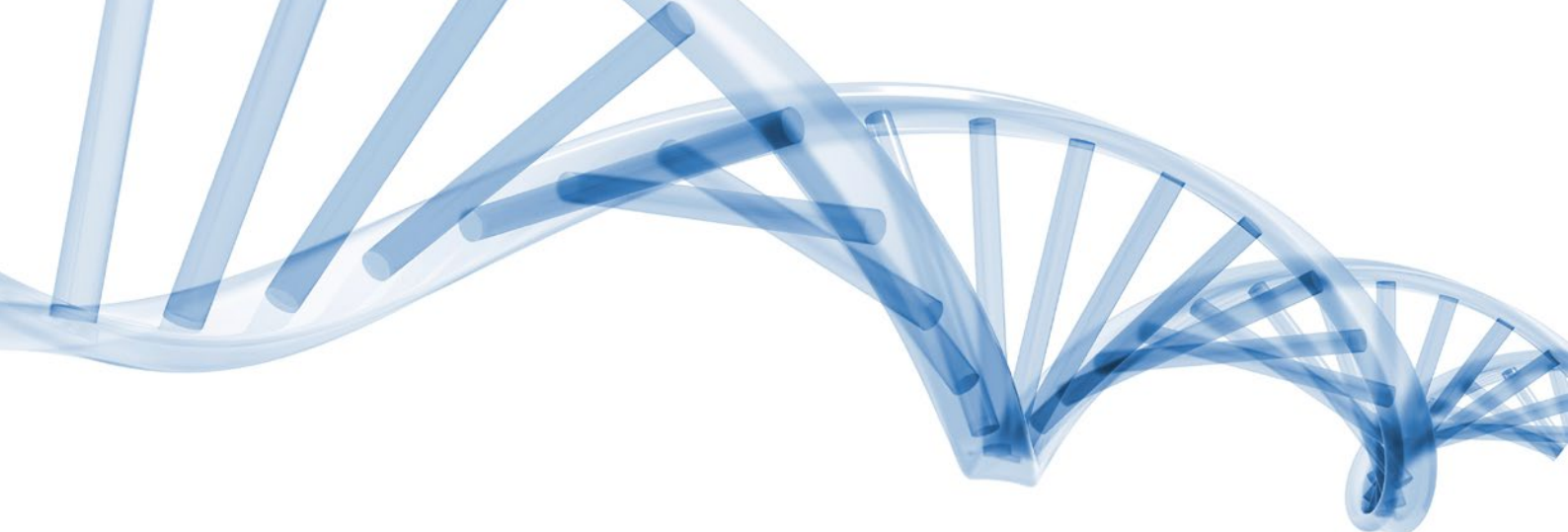
-190°C vapor phase storage
longer storage time
Low LN2 consumption



Easier To Use

Humanized design
Multiple alarm modes
Touch screen operation

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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.

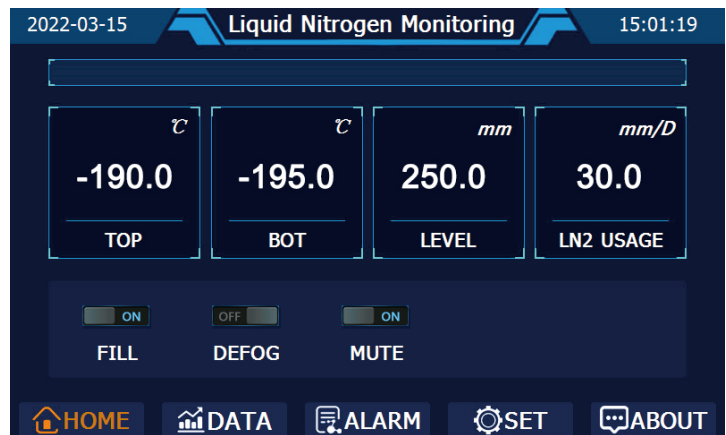
Features

- Multiple capacity freezers, from 370L to 1800L, 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.



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.



Humanized Design



- Automatic defogging function, make it easier to find samples and shorten lid opening time.
- After 48 hours of opening the lid, the temperature in the tank 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 remain 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.

Racks for CryoMatrix Freezers



Slim rack/ Vertical rack



Square rack/ Horizontal rack

Slim rack/ Vertical rack	Description	Vial	Dimension, W×D×H(mm)
VR-4-2	4 layer, for 100/81-well boxes	1.2/2ml	138*58*575
VR-5-2	5 layer, for 100/81-well boxes	1.2/2ml	138*58*710
VR-6-2	6 layer, for 100/81-well boxes	1.2/2ml	138*58*845

Square rack/ Horizontal rack	Description	Vial	Dimension, W×D×H(mm)
HR-12-2	12 layer, for 100/81-well boxes	1.2/2ml	139*139*694
HR-12-2M	12 layer, for 25-well boxes	1.2/2ml	81*81*694
HR-13-2	13 layer, for 100/81-well boxes	1.2/2ml	139*139*751
HR-13-2M	13 layer, for 25-well boxes	1.2/2ml	81*81*751
HR-14-2	14 layer, for 100/81-well boxes	1.2/2ml	139*139*808
HR-14-2M	14 layer, for 25-well boxes	1.2/2ml	81*81*808
HR-15-2	15 layer, for 100/81-well boxes	1.2/2ml	139*139*865
HR-15-2M	15 layer, for 25-well boxes	1.2/2ml	81*81*865

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

LN2 Capacity						
LN2 capacity, L	370	460	550	800	1000	1800
LN2 capacity at vapor platform, L	55	55	133	133	200	295

Dimensions & Weight						
Neck opening, mm	320	320	445	445	500	635
Usable internal height, mm	680	875	600	780	870	870
Inner diameter, mm	730	730	980	980	1130	1390
Overall Height, mm	1400	1450	1505	1605	1680	1685
Liftover height	920	1118	1052	1052	1118	1118
Door width requirement	815	815	1090	1090	1300	1565
Weight empty, kg	258	283	310	355	580	805
Weight full, kg	559	657	418	1006	743	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
USB port/ data download	Standard	Standard	Standard	Standard	Standard	Standard
Password access	Standard	Standard	Standard	Standard	Standard	Standard
Automatic filling	Standard	Standard	Standard	Standard	Standard	Standard
Backup battery	Standard	Standard	Standard	Standard	Standard	Standard

Blood bag qty / rack layer/ rack qty						
791 OS/U (25ml)	1224/6/204	1836/9/204	2490/6/415	3320/8/415	4160/8/520	6432/8/804
4R9951 (50ml)	768/6/128	1024/8/128	1488/6/248	1736/7/248	2528/8/316	3920/8/490
4R9953 (250ml)	416/4/104	520/5/104	812/4/203	812/4/203	1320/5/264	2010/5/402
4R9955 (500ml)	304/4/76	380/5/76	608/4/152	608/4/152	1000/5/200	1550/5/310
DF200 (200ml)	236/4/59	295/5/59	496/4/124	496/4/124	780/5/156	1230/5/246
DF200 (700ml)	/	/	/	256/4/64	440/5/88	680/5/136