ANTECH

CRYOGENIC PRESERVATION

PRESERVING ESSENCE OF LIFE

Antech Scientific is dedicated to provide innovative solutions meeting the high standard of life science applications in cryopreservation sample preparation, cryogenic preservation, cryogenic transportation and real-time monitoring.

Quick Selection Guide

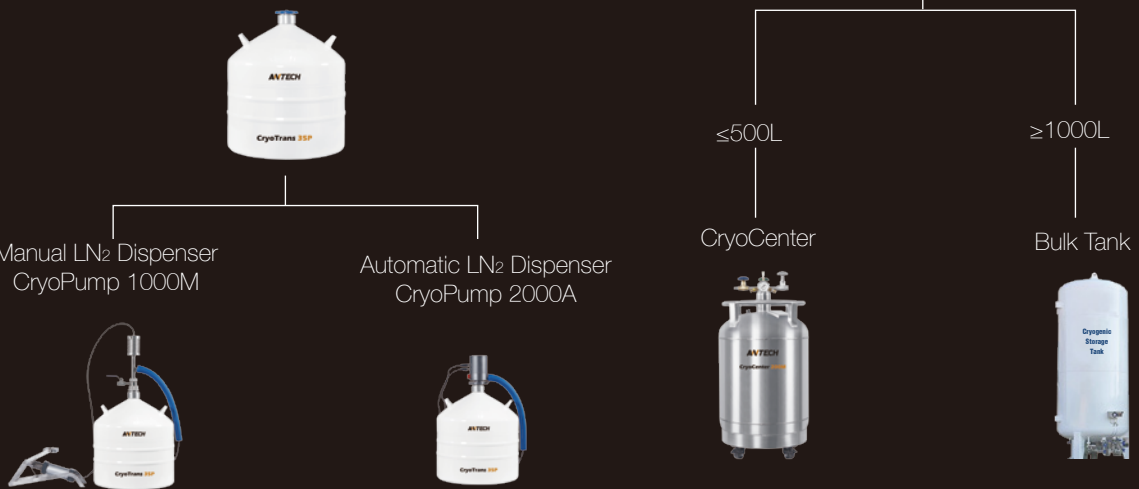
Cryopreservation sample preparation
Controlled rate freezer, CryoVita Series

Bio Samples Preservation & Transportation

- Preservation
  - Auto-fill, vapor/liquid phase storge
    - Stainless Steel ≥10, 000vials
      - Narrow Neck CryoMatrix
      - Wide Open W series
    - Aluminum 750~6,000 vials
      - CryoLite
  - Manual fill, liquid phase storage
    - Dewar with monitoring CryoEssence
    - Vials/blood bags CryoMaster
    - Straws/vials CryoMajor
- Transportation
  - Dry-shipper CryoCarrier

Liquid Nitrogen Storage

- W/O Pressure CryoTrans
  - Manual LN_2 Dispenser CryoPump 1000M
  - Automatic LN_2 Dispenser CryoPump 2000A
- With Pressure
  - ≤500L
    - CryoCenter
  - ≥1000L
    - Bulk Tank



CONTENTS

CryoVita Series

Controlled Rate Freezer

- Innovative technology for reproducible result and highest sample viability.

In order to maintain cellular viability during the freezing process, certain cells – such as protist, mammalian, and plant cells – require precise control of the freezing rate in order to minimize the detrimental effects of undercooling and the heat liberated during the phase change process from water to ice.

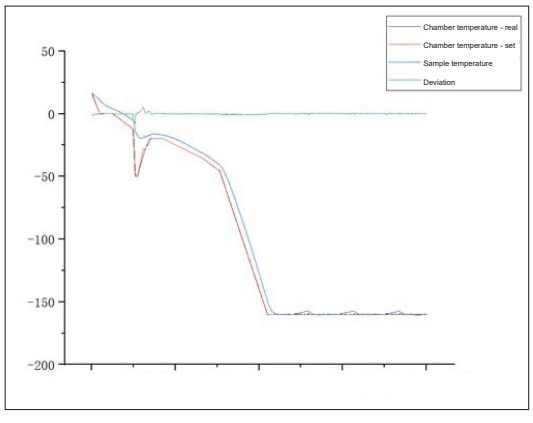
Controlled rate freezing is an established procedure for the cryopreservation of biologic material in research and clinical applications. In-line with GMP protocols, cell material can be frozen then stored at cryogenic temperatures.

CryoVita controlled-rate freezer (CRF) achieve reliable, reproducible results with maximum operational safety. They are used for clinical, veterinary and research tasks for controlled rate freezing of samples.

Dependable sample protection

For customers in research, cell and gene therapy, vaccine production, and biobanking, the CryoVita CRF provides precise, repeatable freezing results that protect the sample from intracellular freezing.

Liquid nitrogen flows via a metal hose connection, as a gas, into the freezing chamber. Predetermined cooling profiles are used to freeze samples prior to removal and storage at cryogenic temperatures. Data logging ensures continual monitoring of the entire process, including multiple temperature sensor set-points, actual values and the supply pressure of liquid nitrogen.

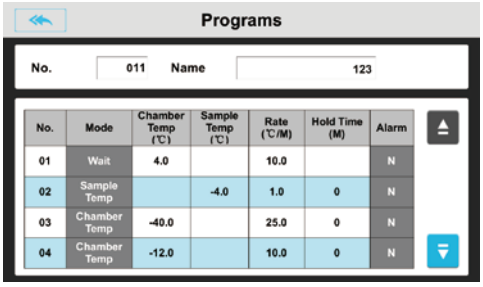


Reliable temperature performance for high-throughput usage

- Dual solenoid valves design, one for working, the other for backup. When one valve fails, switch to the other valve through touch screen controller
- Consistent temperature control and uniformity achieved via an air-handling system and liquid nitrogen injection device
- Environmentally friendly insulating foam
- Type 304 stainless steel with exterior powder-coat finish

User-friendly operation with enhanced data traceability

- Intuitive touchscreen display allows for easy set-up, operation, and review of a freezing run
- Six pre-set freezing profiles and space for up to 20 user-defined, “custom” freeze profiles
- Convenient to create and edit a custom program on touch screen
- Record temperature curve of each cycle automatically
- External influences are avoided during freezing



Real-time run monitoring for sample protection

- Chamber and sample temperatures are monitored by Type T thermocouples, eliminating lag time and providing “real time” responsiveness
- Standard alarms to alert users of thermocouple failures, heater malfunction, high/low temperature limits, temperature tracking, power failure, and completion of run
- RS232 Port
- USB port to download running data
- Printer (optional)
- Software on PC (optional)

Installation

CryoCenter series self-pressurized liquid nitrogen container is recommended to supply liquid nitrogen to cryoVita series controlled rate freezers.

- 0.1MPa pressure
- Pressure building regulator
- Liquid level meter (float type/ electric digital type)
- Casters for easy movement

Specifications (Vertical)

Model	CryoVita 18	CryoVita 34	CryoVita 49
Door type	Front open (upright)	Front open (upright)	Front open (upright)
Capacity (Liter)	18	34	51
2ml vial	380	810	1190
5ml vial	228	486	714
Cassette BBC-A/B	30	60	90
Cassette BBC-C	10	20	30
Cassette BBC-D	10	20	30
1/2 cc straw	450	900	1350
1/4 cc straw	594	1188	1782
Interior dimensions W x D x H (mm)	180 x 305 x 330	330 x 305 x 330	502 x 305 x 330
Exterior dimensionsW x D x H (mm)	860 x 540 x 550	1006 x 540 x 550	1190 x 540 x 550
Net weight (kg)	73	86	97
Heating power (W)	2500	3000	3000
Power supply	AC 100~240V, 50/60Hz		
Interior material	SUS304		
Door seal	Yes		
Temperature range (°C)	-190 ~ 50		
Freezing rate (°C/min)	0.1 ~ 60		
Heating rate (°C/min)	0.1 ~ 10		
Temperature deviation (°C)	<2		
Controller	Touch screen & microprocessor		
Freezing program storage	Up to 20 (6 default programs)		
Data storage and USB port	Yes		
Temperature display	Chamber & sample		
Remote alarm contact	Yes		
Door-operation safety interlock	Yes		
Printer	Optional		
Refrigerant	Liquid nitrogen		
Prefilter for liquid nitrogen	Yes		
Liquid nitrogen source pressure	14 ~ 22 PSI		
Pressure relief valve	Yes, 125 PSI		
Freezing racks	Optional		
PC software	Optional		

Freezing Racks and Rack Holders

Image	Model	Dimensions	CryoVita 18	CryoVita 34	CryoVita 49
	CRF-V1	Small size rack system for 2ml vials: 5 layers, 76 vials per layer, 380 vials per rack	1 small	–	1 small & 1 large
	CRF-V2	Small size rack system for 5ml vials: 3 layers, 76 vials per layer, 228 vials per rack			
	CRF-V3	Large size rack system for 2ml vials: 5 layers, 162 vials per layer, 810 vials per rack	–	1 large	
	CRF-V4	Large size rack system for 5ml vials: 3 layers, 162 vials per layer, 486 vials per rack			
	CRF-B1	10 layer rack for 25ml blood bag	3	6	9
	CRF-B2	10 layer rack for 50ml blood bag	3	6	9
	CRF-B3	10 layer rack for 250ml blood bag	1	2	3
	CRF-B4	10 layer rack for 500ml blood bag	1	2	3
	CRF-B5	8 layer rack for 700ml blood bag	1	2	3

* **Cassette BBC-A**: Pall MEDSEPTM 25 mL, OriGen CS 25; **Cassette BBC-B**: Fenwal 4R9951, OriGen CS 50;
Cassette BBC-C: Fenwal 4R9953 & 4R5461, OriGen CS 250, CryoMACS 50 & 250, CryoPAC 025B & 050B; **Cassette BBC-D**: Fenwal 4R9955 & 4R5462, OriGen CS 500, CryoPAC 250B & 500B;
Cassette BBC-E: Gambro DF-200 or CryoMACS 50 & 250; **Cassette BBC-F**: Gambro DF-700, OriGen CS 1000, CryoMACS 500 & 750 &1000, CryoPAC 750B.

Specifications (Horizontal)

Model	CryoVita 26H	CryoVita 90H	CryoVita 150H
Door type	Top open (horizontal)	Top open (horizontal)	Top open (horizontal)
Capacity (Liter)	26	90	150
0.25ml Straw	1000	3000	5500
0.5ml Straw	750	2250	4125
Interior dimensions W x D x H (mm)	476 × 184 × 340	476 × 552 × 340	476 × 767 × 380
Exterior dimensions W x D x H (mm)	701× 769× 539	701× 1244 × 570	711× 1444 × 584
Net weight (kg)	40	62	140
Heating power (W)	2500	3000	3000
Power supply	AC 220~240V, 50/60Hz		
Interior material	SUS304		
Door seal	Yes		
Temperature range (°C)	-180 ~ 50		
Freezing rate (°C/min)	0.1 ~ 50		
Heating rate (°C/min)	0.1 ~ 10		
Temperature deviation (°C)	<2		
Controller	Touch screen & microprocessor		
Freezing program storage	Up to 20 (6 default programs)		
Data storage and USB port	Yes		
Chamber temperature display	Yes		
Sample sensor & temp display	Yes		
Freezing step display	Yes		
Running time display	Yes		
Remaining time display	Yes		
Remote alarm contact	Yes		
Door-operation safety interlock	Yes		
Printer	Optional		
Refrigerant	Liquid nitrogen		
Prefilter for liquid nitrogen	Yes		
Liquid nitrogen source pressure	14 ~ 22 PSI		
Pressure relief valve	Yes, 125 PSI		
Freezing racks	Optional		
PC software	Optional		

Global Users

sinovac

RemeGen

CryoMatrix Series

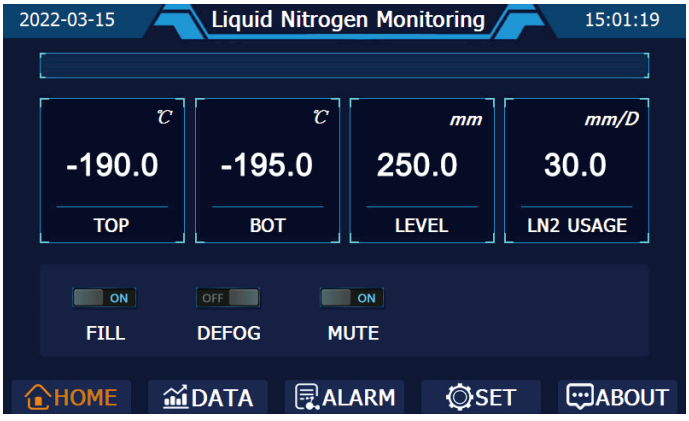
Cryogenic Vapor Freezer

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

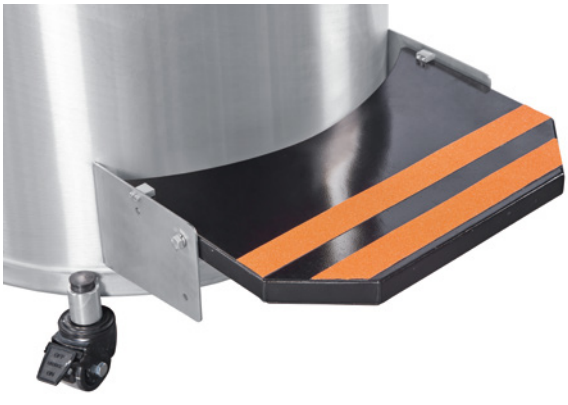
- HMI human-machine interactive touch screen, display temperature, liquid level, temperature curve and alarm information.
- Important events such as temperature, alarm, liquid nitrogen fill, can be checked, and can also download through USB disk.
- Various alarms, and the alarm information can be stored 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, 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 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.
- 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.

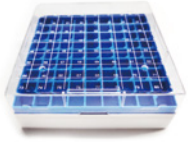
- Excellent temperature uniformity
  Vacuum insulated stainless steel tank structure, high vacuum coverage, to ensure excellent thermal insulation performance. When samples are stored at vapor phase, top level sample temperature is lower than -180°C.

- Stable opening temperature
  The innovative lid and vacuum insulated neck design reduce LN_2 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 ±1°C. The user can set the alarm point by himself, with the option of alarm mute.
- Automatic LN_2 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, LN2 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

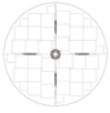
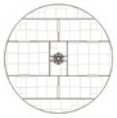
Frame Rack & Cassette for Blood Bags

Blood bag cassette

Blood bag frame

Model	Description/capacity	Part Number
	Cassette & frame	
BBC-A	Pall MEDSEPTM 25 mL, OriGen CS 25[Dimensions(mm): 91*100*11]	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): 91*157*11]	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): 143*202*11]	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): 143*277*11]	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

Inventory & Layout

Model	CryoMatrix 15K	CryoMatrix 19K	CryoMatrix 28K	CryoMatrix 39K	CryoMatrix 44K	CryoMatrix 55K	CryoMatrix 94K
2ml vial (square rack)							
Rack layout							
Maximum capacity	15600	19500	28000	39200	44200	55500	94875
Large 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-13-2 x 32	CFC-15-2 x 32	CFC-15-2 x 60
Small 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-13-2S x 8	CFC-15-2S x 20	CFC-15-2S x 13
5ml vial (square rack)							
Maximum capacity	5832	6840	9720	13608	15552	18144	34020
Rack model x rack qty	CFC-6-3 x 12	CFC-7-3 x 12	CFC-5-3 x 24	CFC-7-3 x 24	CFC-6-3 x 32	CFC-7-3 x 32	CFC-7-3 x 60
25ml blood bag (Pall MEDSEPTM 25 mL, OriGen CS 25)							
Maximum capacity	1316	1692	1780	2848	3052	4192	6840
Cassette model x qty	BBC-A x 1316	BBC-A x 1692	BBC-A x 1780	BBC-A x 2848	BBC-A x 3052	BBC-A x 4192	BBC-A x 6840
Rack model x rack qty	CFB-A-7 x 188	CFB-A-9 x 188	CFB-A-5 x 356	CFB-A-8 x 356	CFB-A-7 x 436	CFB-A-8 x 524	CFB-A-9 x 760
50ml blood bag (Fenwal 4R9951, OriGen CS 50)							
Maximum capacity	812	1044	1100	1760	1904	2592	4266
Cassette model x qty	BBC-B x 812	BBC-B x 1044	BBC-B x 1100	BBC-B x 1760	BBC-B x 1904	BBC-B x 2592	BBC-B x 4266
Rack model x rack qty	CFB-B-7 x 116	CFB-B-9 x 116	CFB-B-5 x 220	CFB-B-8 x 220	CFB-B-7 x 272	CFB-B-8 x 324	CFB-B-9 x 474
250ml blood bag (Fenwal 4R9953 & 4R5461, OriGen CS 250 or CryoMACS 50 & 250)							
Maximum capacity	264	352	516	860	848	1160	1890
Cassette model x qty	BBC-C x 264	BBC-C x 352	BBC-C x 516	BBC-C x 860	BBC-C x 848	BBC-C x 1160	BBC-C x 1890
Rack model x rack qty	CFB-C-3 x 88	CFB-C-4 x 88	CFB-C-3 x 172	CFB-C-5 x 172	CFB-C-4 x 212	CFB-C-5 x 232	CFB-C-5 x 378
500ml blood bag (Fenwal 4R9955 & 4R5462, OriGen CS 500)							
Maximum capacity	156	208	336	560	576	780	1240
Cassette model x qty	BBC-D x 156	BBC-D x 208	BBC-D x 336	BBC-D x 560	BBC-D x 576	BBC-D x 780	BBC-D x 1240
Rack model x rack qty	CFB-D-3 x 52	CFB-D-4 x 52	CFB-D-3 x 112	CFB-D-5 x 112	CFB-D-4 x 144	CFB-D-5 x 156	CFB-D-5 x 248
200ml blood bag (Gambro DF-200 or CryoMACS 50 & 250)							
Maximum capacity	240	300	348	464	576	800	1240
Cassette model x qty	BBC-E x 240	BBC-E x 300	BBC-E x 348	BBC-E x 464	BBC-E x 576	BBC-E x 800	BBC-E x 1240
Rack model x rack qty	CFB-E-4 x 60	CFB-E-5 x 60	CFB-E-3 x 116	CFB-E-4x 116	CFB-E-4 x 144	CFB-E-5 x 160	CFB-E-5 x 248
700ml blood bag (Gambro DF-700, OriGen CS 1000 or CryoMACS 500& 750 &1000)							
Maximum capacity	112	140	192	256	336	480	680
Cassette model x qty	BBC-F x 112	BBC-F x 140	BBC-F x 192	BBC-F x 256	BBC-F x 336	BBC-F x 480	BBC-F x 680
Rack model x rack qty	CFB-F-4 x 28	CFB-F-5 x 28	CFB-F-3 x 64	CFB-F-4 x 64	CFB-F-4 x 84	CFB-F-5 x 96	CFB-F-5 x 136

Specification

Model		CryoMatrix 15K	CryoMatrix 19K	CryoMatrix 28K	CryoMatrix 39K	CryoMatrix 44K	CryoMatrix 55K	CryoMatrix 94K
Maximum Storage Capacity								
1.2 & 2ml vial	1.2 &2ml vial	15600	19500	28000	39200	44200	55500	94875
	Number of large rack (81/100-place box)	12	12	24	24	32	32	60
	Number of small rack (25-place box)	4	4	16	16	8	20	13
	2" Boxes per rack	12	15	10	14	13	15	15
5ml vial	5ml vial (81-place)	5832	6804	9720	13608	15552	18144	34020
	Number of racks	12	12	24	24	32	32	60
	3.75" Boxes per rack	6	7	5	7	6	7	7
Cassette BBC-A	Numbers of blood bag	1316	1692	1780	2848	3052	4192	6840
	Layers per rack	7	9	5	8	7	8	9
	Number of racks	188	188	356	356	436	524	760
Cassette BBC-B	Numbers of blood bag	812	1044	1100	1760	1904	2592	4266
	Layers per rack	7	9	5	8	7	8	9
	Number of racks	116	116	220	220	272	324	474
Cassette BBC-C	Numbers of blood bag	264	352	516	860	848	1160	1890
	Layers per rack	3	4	3	5	4	5	5
	Number of racks	88	88	172	172	212	232	378
Cassette BBC-D	Numbers of blood bag	156	208	336	560	576	780	1240
	Layers per rack	3	4	3	5	4	5	5
	Number of racks	52	52	112	112	144	156	248
Cassette BBC-E	Numbers of blood bag	240	300	348	464	576	800	1240
	Layers per rack	4	5	3	4	4	5	5
	Number of racks	60	60	116	116	144	160	248
Cassette BBC-F	Numbers of blood bag	112	140	192	256	336	480	680
	Layers per rack	4	5	3	4	4	5	5
	Number of racks	28	28	64	64	84	96	136
LN_2 Capacity								
LN_2 capacity (L)		370	460	588	800	890	1162	1854
LN_2 capacity at vapor platform (L)		55	55	125	133	165	200	296
Dimensions								
Neck opening (mm)		317	317	445	445	465	520	635
Usable internal height (mm)		708	914	590	840	765	887	906
Inner diameter (mm)		758	758	1012	1012	1113	1172	1467
External diameter (mm)		820	820	1090	1090	1190	1256	1565
Overall height (mm)		1400	1600	1400	1650	1600	1790	1750
Door width limit (mm)		850	850	1140	1140	1210	1300	1615
Weight empty (kg)		212	264	310	394	400	580	805
Weight full, vapor charged (kg)		513	638	790	1040	1112	1526	2270
Functions								
Controller		Touch screen	Touch screen	Touch screen	Touch screen	Touch screen	Touch screen	Touch screen
Full auto fill		Standard	Standard	Standard	Standard	Standard	Standard	Standard
Data storage / USB port / RS485 port		Standard	Standard	Standard	Standard	Standard	Standard	Standard
Defog		Standard	Standard	Standard	Standard	Standard	Standard	Standard
Foldable step		Standard	Standard	Standard	Standard	Standard	Standard	Standard
Backup battery		Standard	Standard	Standard	Standard	Standard	Standard	Standard
Vacuum jacketed hose		Optional	Optional	Optional	Optional	Optional	Optional	Optional
Inventory rack		Optional	Optional	Optional	Optional	Optional	Optional	Optional
Wi-Fi connection & cloud access		Optional	Optional	Optional	Optional	Optional	Optional	Optional

* **Cassette BBC-A**: Pall MEDSEPTM 25 mL, OriGen CS 25; **Cassette BBC-B**: Fenwal 4R9951, OriGen CS 50;
Cassette BBC-C: Fenwal 4R9953 & 4R5461, OriGen CS 250, CryoMACS 50 & 250, CryoPAC 025B & 050B; **Cassette BBC-D**: Fenwal 4R9955 & 4R5462, OriGen CS 500, CryoPAC 250B & 500B;
Cassette BBC-E: Gambro DF-200 or CryoMACS 50 & 250; **Cassette BBC-F**: Gambro DF-700, OriGen CS 1000, CryoMACS 500 & 750 &1000, CryoPAC 750B.

W Series

Cryogenic Freezer, Wide Open

W series liquid nitrogen storage system provides ideal storage conditions for biological samples. Supported by LN_2 automatic filling system and temperature & LN2 level monitoring system, W series cryogenic 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 cryogenic freezer to meet the user's highest standard of large-capacity storage requirements.

Features

- Multiple capacity freezers, from 175L to 600L, 2.0ml vials storage capacity from 10,000 to 40,500.
- Excellent temperature uniformity and stability, enabling samples to be stored at controlled cryogenic 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.
- The optimized mechanism design realizes high-density storage to save space.

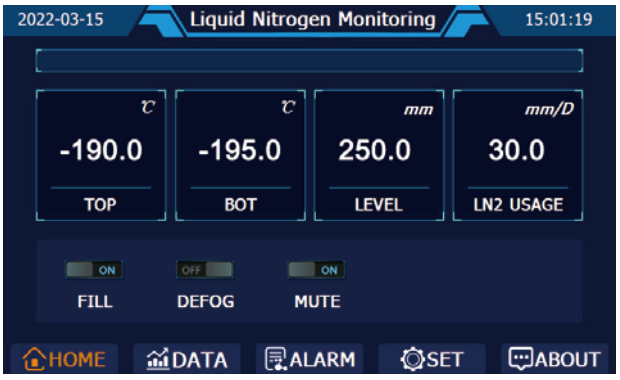
Humanized Design

- Defog function, easier to find samples and shorten lid opening time.
- The remote alarm interface can be connected to the central alarm system.
- Standard backup battery in case of power failure.
- Optional vacuum jacketed hose for lower liquid nitrogen consumption.

Vacuum jacketed hose

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.

Why W Series

- High density storage

  Compared with similar products, W series 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.

- 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 ±1°C. The user can set the alarm point by himself, with the option of alarm mute.

- Automatic LN_2 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

Slim rack/ Vertical rack

Square rack/ Horizontal rack

Slim rack/ Vertical rack	Description	Vial	Dimension, W×D×H(mm)
CFH-5-2	5 layer, for 100/81-well boxes	1.2/2ml	138*58*710
Square rack/ Horizontal rack	**Description**	**Vial**	**Dimension, W×D×H(mm)**
CFC-13-2	13 layer, for 100/81-well boxes	1.2/2ml	139*139*751
CFC-13-2S	13 layer, for 25-well boxes	1.2/2ml	81*81*751

Specification

Model		W100		W240		W380	
Maximum storage capacity		Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
Straw	PETG 1/4cc straw	180400	144320	397700	318160	639600	511680
	PETG 1/2cc straw	80300	64240	177025	141620	284700	227760
	HSV CBS high security straws	80300	64240	177025	141620	284700	227760
	High security CBS straws	49500	39600	109125	87300	175500	140400
	Number of canisters (φ70mm)	44	44	97	97	156	156
	Goblet (φ65mm) per canister	5	4	5	4	5	4
2ml vial	1.2 &2ml vial	10725	9075	26325	22275	41275	34925
	Number of large rack (81/100-place box)	7	7	19	19	30	30
	Number of small rack (25-place box)	5	5	5	5	7	7
	2" Boxes per rack	13	11	13	11	13	11
5ml vial	5ml vial (81-place)	3969	3402	10773	9234	17010	14580
	Number of racks	7	7	19	19	30	30
	3.75" Boxes per rack	7	6	7	6	7	6
Cassette BBC-A	Numbers of blood bag	763	654	1694	1452	2681	2298
	Number of frames	109	109	242	242	383	383
	Bags per frame	7	6	7	6	7	6
Cassette BBC-B	Numbers of blood bag	476	408	1085	930	1715	1470
	Number of frames	68	68	155	155	245	245
	Bags per frame	7	6	7	6	7	6
Cassette BBC-C	Numbers of blood bag	270	216	595	476	970	776
	Number of frames	54	54	119	119	194	194
	Bags per frame	5	4	5	4	5	4
Cassette BBC-D	Numbers of blood bag	210	168	475	380	760	608
	Number of frames	42	42	95	95	152	152
	Bags per frame	5	4	5	4	5	4
Cassette BBC-E	Numbers of blood bag	144	108	332	249	528	396
	Number of frames	36	36	83	83	132	132
	Bags per frame	4	3	4	3	4	3
Cassette BBC-F	Numbers of blood bag	84	63	196	147	312	234
	Number of frames	21	21	49	49	78	78
	Bags per frame	4	3	4	3	4	3
LN2 Capacity							
LN2 capacity (L)		197	36	417	77	653	121
Dimensions							
Inner diameter (mm)		550		800		1000	
Usable height (mm)		800/690		800/690		800/690	
Overall height (mm)		1300		1300		1300	
Weight empty (kg)		160		270		395	
Weight full, liquid phase (kg)		318		606		918	
Functions							
Controller		Touch screen		Touch screen		Touch screen	
Full auto fill		Standard		Standard		Standard	
Data storage/ USB port/ RS485 port		Standard		Standard		Standard	
Defog		Standard		Standard		Standard	
Step		Standard		Standard		Standard	
Acccessories							
Backup battery		Standard		Standard		Standard	
Vacuum jacketed hose		Optional		Optional		Optional	
Vapor platform		Optional		Optional		Optional	
Inventory rack		Optional		Optional		Optional	
Wi-Fi connection & cloud access		Optional		Optional		Optional	

* **Cassette BBC-A**: Pall MEDSEPTM 25 mL, OriGen CS 25; **Cassette BBC-B**: Fenwal 4R9951, OriGen CS 50;
Cassette BBC-C: Fenwal 4R9953 & 4R5461, OriGen CS 250, CryoMACS 50 & 250, CryoPAC 025B & 050B; **Cassette BBC-D**: Fenwal 4R9955 & 4R5462, OriGen CS 500, CryoPAC 250B & 500B;
Cassette BBC-E: Gambro DF-200 or CryoMACS 50 & 250; **Cassette BBC-F**: Gambro DF-700, OriGen CS 1000, CryoMACS 500 & 750 &1000, CryoPAC 750B.

Cryogenic Cart

Operation Cold Bench & Transportation Cart

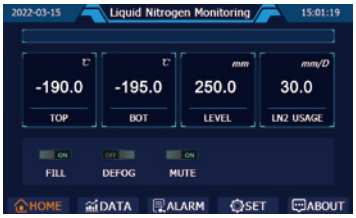
CryoCart-PRO can be used as a portable workbench or transportation cart with -150°C cryogenic vapor protection.

When used as a transportation cart, large quantity of biological products can be transported from one place to another place within the facility. For instance, to move samples from one freezer to another freezer, or to move frozen samples from controlled rate freezer to cryogenic freezer, etc. The monitoring system displays real-time temperature, liquid level and alarm information.

Biological products can be loaded into the cart with canes, cryogenic boxes or cassettes conveniently. Therefore, it can meet space requirements of most of circumstances.

Features

- -150°C vapor phase environment for operation or transportation
- Cover can be magnetically attached on cart for convenient operation
- SUS 304 material for easy cleaning
- Large casters for easy movement
- Equipped with an HMI human-machine interactive touch screen
- Important events such as temperature, alarm, liquid level can be monitored in real time
- Various alarms and the alarm information can be stored and exported via USB port



Specification

Model	CryoCart-PRO
Performance & Dimensions	
Liquid nitrogen capacity below platform (Liter)	34
Holdover time (≤-150) with cover closed (hour)	24
External dimensions, L x W x H (mm)	1567 x 550 x 1012
Internal dimensions, L x W x H (mm)	1000 x 295 x 560
Platform height (mm)	100
Weight empty (kg)	195
Weight full (kg)	223
Cart body material	SUS304
Controller	Touch screen
Liquid nitrogen inflow port	CGA 295
Maximum Capacity	
Number of 81/100-place cryogenic box	30
Number of 2ml vial	3000
Number of Cassette BBC-A	270
Number of Cassette BBC-B	270
Number of Cassette BBC-C	90
Number of Cassette BBC-D	90

Cryogenic Cart

Operation Cold Bench & Transportation Cart

CryoCart-II can be used as a portable workbench or transportation cart with -150°C cryogenic vapor protection.

When used as a transportation cart, large quantity of biological products can be transported from one place to another place within the facility. For instance, to move samples from one freezer to another freezer, or to move frozen samples from controlled rate freezer to cryogenic freezer, etc.

Biological products can be loaded into the cart with canes, cryogenic boxes or inventory racks conveniently. A 15-layer square rack can be loaded into the cart. Therefore, it can meet space requirements of most of circumstances.

Features

- -150°C vapor phase environment for operation or transportation.
- Cover can be magnetically attached on cart for convenient operation.
- Temperature recorder is supplied with cart.
- SUS304 material for easy cleaning.
- Large casters for easy movement

Specification

Model	CryoCart-II
	Performance & Dimensions
Liquid nitrogen capacity below platform (Liter)	34
Holdover time (≤-150) with cover closed (hour)	24
External dimensions, L x W x H (mm)	1434 x 550 x 1012
Internal dimensions, L x W x H (mm)	1000 x 295 x 560
Platform height (mm)	100
Weight empty (kg)	190
Weight full (kg)	218
Cart body material	SUS304
Data logger	Yes
Liquid nitrogen inflow port	CGA 295
	Maximum Capacity
Number of 81/100-place cryogenic box	30
Number of 2ml vial	3000
Number of Cassette BBC-A	270
Number of Cassette BBC-B	270
Number of Cassette BBC-C	90
Number of Cassette BBC-D	90

CryoLite Series

Compact Cryogenic Freezer

Advantages of vapor phase storage have been accepted by more and more users. However, most of existing vapor phase cryogenic freezers are big in size, large in capacity, heavy in weight and expensive in cost. A large part of users are willing to store their samples or products in a vapor freezer, but they do not have so many samples to be stored in a large stainless steel cryogenic freezer. CryoLite series is an ideal solution for these applications.

The innovative capacitance-based level monitoring system allows CryoLite freezers to detect liquid nitrogen level at centimeter accuracy. With auto fill components, it can realize -196°C liquid phase storge or vapor phase storage with -190°C top box temperature.

Features

- Temperature & liquid level monitoring and alarm
- Temperature & level data storage
- Full auto fill
- Compact in size & small footprint
- Light in weight & no floor bearing concerns
- Meets media quantity storage demand, 2ml vials from 2,400 pcs to 6,000 pcs
- Inventory racks for 2ml vials, 5ml vials, 25/50/250ml blood bags
- Lower liquid nitrogen consumption & reduced using cost
- Flexible to store at vapor phase or liquid phase

Advanced Control System

- CryoLite series cryogenic freezer is a compact system integrated with advanced temperature monitoring, liquid nitrogen level monitoring and automatic fill.
- It combines high efficiency of aluminum dewars and advanced touch screen controller.
- Top temperature, bottom temperature, liquid nitrogen level and LN_2 usage is displayed on home page.

Connection (Optional)

- Wi-Fi connection to transfer data to cloud server.
- Global access on a PC, tablet or smartphone.

Wi-Fi Enabled | Cloud Server | Various Devices | Global Access

Specification

Model		CryoLite 24S	CryoLite 36S	CryoLite 48S	CryoLite 60S
Maximum Storage Capacity					
1.2 &2ml vial	1.2 &2ml vial (100-place box)	2400	3600	4800	6000
	Number of racks	6	6	6	6
	2" Boxes per rack	4	6	8	10
5ml vial	5ml vial (81-place box)	972	1458	1944	2430
	Number of racks	6	6	6	6
	3.75" Boxes per rack	2	3	4	5
Cassette BBC-A	Numbers of blood bag	168	252	336	420
	Number of racks	6	6	6	6
	Layers per rack	2	3	4	5
	Blood bags per layer	14	14	14	14
Cassette BBC-B	Numbers of blood bag	84	168	168	252
	Number of racks	6	6	6	6
	Layers per rack	1	2	2	3
	Blood bags per layer	14	14	14	14
Cassette BBC-C	Numbers of blood bag	48	48	96	96
	Number of racks	6	6	6	6
	Layers per rack	1	1	2	2
	Blood bags per layer	8	8	8	8
Cassette BBC-D	Numbers of blood bag	36	36	36	72
	Number of racks	6	6	6	6
	Layers per rack	1	1	1	2
	Blood bags per layer	6	6	6	6
Cassette BBC-E	Numbers of blood bag	30	30	60	60
	Number of racks	6	6	6	6
	Layers per rack	1	1	2	2
	Blood bags per layer	5	5	5	5
Cassette BBC-F	Numbers of blood bag	—	30	30	30
	Number of racks	—	6	6	6
	Layers per rack	—	1	1	1
	Blood bags per layer	—	5	5	5
Dimensions					
LN_2 capacity (L)		65	115	145	175
Neck opening (mm)		216	216	216	216
Overall height (mm)		785	905	1040	1090
Outer diameter (mm)		678	678	678	678
Weight empty/Weight full (KG)		47/100	58/151	63/180	71/213
Inventory rack for cryobox (standard)		6	6	6	6
Functions					
Display & control		Touch screen controller, Full auto, Temperature & liquid level display, Sound & light alarm			
Data		Data storage, USB port, RS485 port			
Power supply		100~240V, 50/60Hz			
Optional Inventory System					
Rack for 3.75" cryogenic box (for 5ml vial)		DVR-2-3	DVR-3-3	DVR-4-3	DVR-5-3
Cassette BBC-A	Rack	DBR-A-14-2	DBR-A-14-3	DBR-A-14-4	DBR-A-14-5
Cassette BBC-B	Rack	DBR-B-14-1	DBR-B-14-2	DBR-B-14-2	DBR-B-14-3
Cassette BBC-C	Rack	DBR-C-8-1	DBR-C-8-1	DBR-C-8-2	DBR-C-8-2
Cassette BBC-D	Rack	DBR-D-6-1	DBR-D-6-1	DBR-D-6-1	DBR-D-6-2
Cassette BBC-E	Rack	DBR-E-5-1	DBR-E-5-1	DBR-E-5-2	DBR-E-5-2
Cassette BBC-F	Rack	/	DBR-F-5-1	DBR-F-5-1	DBR-F-5-1
Optional Accessories					
Backup battery/Vacuum jacketed hose/Wi-Fi connection & cloud access		Optional	Optional	Optional	Optional
Roller base		RB-65	RB-65	RB-65	RB-65

* **Cassette BBC-A**: Pall MEDSEPTM 25 mL, OriGen CS 25; **Cassette BBC-B**: Fenwal 4R9951, OriGen CS 50;
Cassette BBC-C: Fenwal 4R9953 & 4R5461, OriGen CS 250, CryoMACS 50 & 250, CryoPAC 025B & 050B; **Cassette BBC-D**: Fenwal 4R9955 & 4R5462, OriGen CS 500, CryoPAC 250B & 500B;
Cassette BBC-E: Gambro DF-200 or CryoMACS 50 & 250; **Cassette BBC-F**: Gambro DF-700, OriGen CS 1000, CryoMACS 500 & 750 &1000, CryoPAC 750B.

CryoEssence Series

Dewar with Monitoring

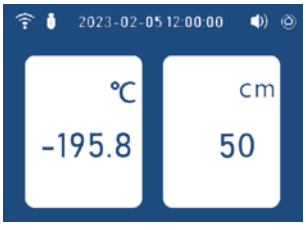
CryoEssence Series Dewars provide secured cryopreservation solution for precious biological samples with real-time monitoring of temperature and liquid nitrogen level. It alarms users with sound & light when working status of container is out of normal range, to avoid irreparable loss of precious samples.

CryoEssence Series Dewars are supplied with round canisters or square racks as standard. Inventory system for 5ml vials and blood bags are optional upon request.

Features

- Temperature & liquid level monitoring
- Ultra-low liquid nitrogen consumption
- Lockable lid to prevent unauthorized access
- Space-saving and light in weight

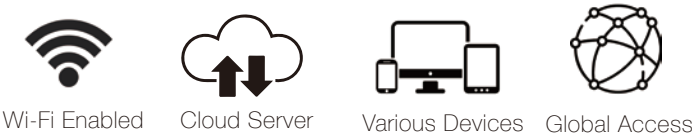
Interface



1. Wi-Fi connection status
2. USB connection status
3. Date & time
4. Sound alarm
5. Power connection status
6. Unit of temperature
7. Temperature display
8. Unit of liquid level
9. Liquid level display

Connection (Optional)

- Wi-Fi connection to transfer data to cloud server.
- Global access on a PC, tablet or smartphone.



Specification

Model		CryoEssence 35C	CryoEssence 47C	CryoEssence 35R	CryoEssence 50R	CryoEssence 65R	CryoEssence120R	CryoEssence175R
Maximum Storage Capacity								
Straw	1/2 cc straw	9360	9360	—	—	—	—	—
	1/4 cc straw	21000	21000	—	—	—	—	—
	Number of canisters	6, standard	6, standard	—	—	—	—	—
	Canister dimensions (mm)	Φ97 x 276	Φ97 x 276	—	—	—	—	—
1.2 & 2ml vial	1.2 & 2ml vial (25/100-place box)	—	—	750	900	2400	3600	6000
	Number of racks	—	—	6, standard	6, standard	6, standard	6, standard	6, standard
	2" Boxes per rack	—	—	5	6	4	6	10
5ml vial	5ml vial (81-place box)	—	—	—	—	972	1458	2430
	Number of racks	—	—	—	—	6	6	6
	3.75" Boxes per rack	—	—	—	—	2	3	5
Cassette BBC-A	Numbers of blood bag	—	—	—	—	168	252	420
	Number of racks	—	—	—	—	6	6	6
	Layers per rack	—	—	—	—	2	3	5
	Blood bags per layer	—	—	—	—	14	14	14
Cassette BBC-B	Numbers of blood bag	—	—	—	—	84	168	252
	Number of racks	—	—	—	—	6	6	6
	Layers per rack	—	—	—	—	1	2	3
	Blood bags per layer	—	—	—	—	14	14	14
Cassette BBC-C	Numbers of blood bag	—	—	—	—	48	48	96
	Number of racks	—	—	—	—	6	6	6
	Layers per rack	—	—	—	—	1	1	2
	Blood bags per layer	—	—	—	—	8	8	8
Cassette BBC-D	Numbers of blood bag	—	—	—	—	—	36	60
	Number of racks	—	—	—	—	—	6	6
	Layers per rack	—	—	—	—	—	1	2
	Blood bags per layer	—	—	—	—	—	6	5
Cassette BBC-E	Numbers of blood bag	—	—	—	—	30	30	60
	Number of racks	—	—	—	—	6	6	6
	Layers per rack	—	—	—	—	1	1	2
	Blood bags per layer	—	—	—	—	5	5	5
Cassette BBC-F	Numbers of blood bag	—	—	—	—	—	30	30
	Number of racks	—	—	—	—	—	6	6
	Layers per rack	—	—	—	—	—	1	1
	Blood bags per layer	—	—	—	—	—	5	5
Monitoring								
Temperature & liquid level display & alarm		Temperature & liquid level display, sound & light alarm						
Data		Data storage & USB port, romote alarm contact，RS485 port						
Wi-Fi connection & cloud access		Optional						
Power supply		100~240V, 50/60Hz; optional backup battery						
Performance								
LN2 capacity (L)		35	47	35	50	65	120	175
Static evaporation rate (L/day)		0.36	0.36	0.36	0.36	0.78	0.85	0.87
Static holdover time (day)		97	131	97	139	83	141	201
Dimensions								
Neck opening (mm)		125	127	125	125	216	216	216
Overall height (mm)		805	730	805	820	785	850	1050
Outer diameter (mm)		451	508	451	508	678	678	678
Weight empty/Weight full (kg)		18/46	19.2/57	20.6/49	28.5/69	49.2/102	58.1/155	72.3/214
Inventroy rack or canister (standard)		6 canisters	6 canisters	6 racks	6 racks	6 racks	6 racks	6 racks
Optional Inventory System								
Cassette BBC-A	Rack	—	—	—	—	DBR-A-14-2	DBR-A-14-3	DBR-A-14-5
Cassette BBC-B	Rack	—	—	—	—	DBR-B-14-1	DBR-B-14-2	DBR-B-14-3
Cassette BBC-C	Rack	—	—	—	—	DBR-C-8-1	DBR-C-8-1	DBR-C-8-2
Cassette BBC-D	Rack	—	—	—	—	—	DBR-D-6-1	DBR-D-5-2
Cassette BBC-E	Rack	—	—	—	—	DBR-E-5-1	DBR-E-5-1	DBR-E-5-2
Cassette BBC-F	Rack	—	—	—	—	—	DBR-F-5-1	DBR-F-5-1
Roller base		RB-30	RB-47	RB-30	RB-47	RB-65	RB-65	RB-65

* **Cassette BBC-A**: Pall MEDSEPTM 25 mL, OriGen CS 25; **Cassette BBC-B**: Fenwal 4R9951, OriGen CS 50;
Cassette BBC-C: Fenwal 4R9953 & 4R5461, OriGen CS 250, CryoMACS 50 & 250, CryoPAC 025B & 050B; **Cassette BBC-D**: Fenwal 4R9955 & 4R5462, OriGen CS 500, CryoPAC 250B & 500B;
Cassette BBC-E: Gambro DF-200 or CryoMACS 50 & 250; **Cassette BBC-F**: Gambro DF-700, OriGen CS 1000, CryoMACS 500 & 750 &1000, CryoPAC 750B.

CryoMaster Series
Dewar with Racks

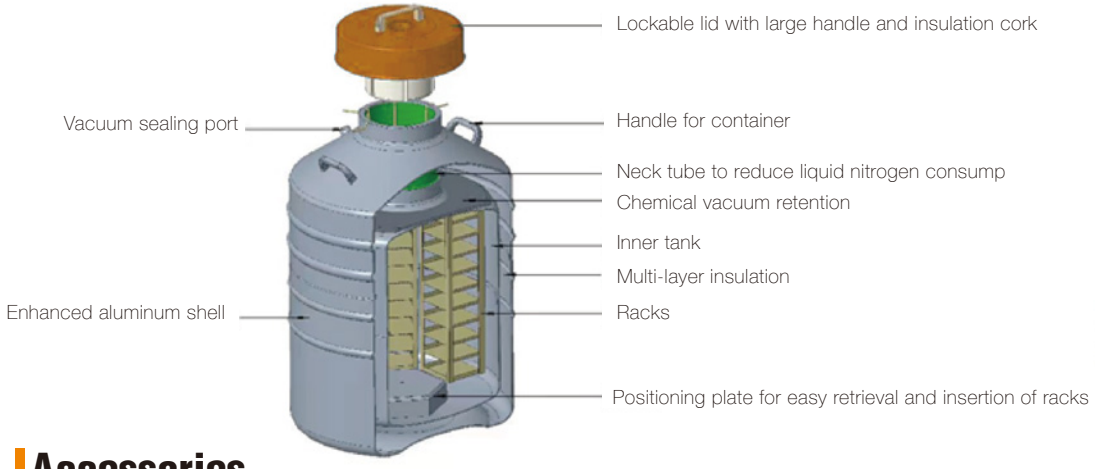
CryoMaster Series Dewars are designed for liquid phase storage of biological samples in cryogenic vials and boxes. The storage capacity range is 750 to 6,000 pcs of 2ml vials.

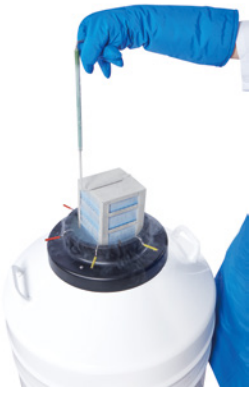
2ml vail inventory racks are supplied as standard. Inventory system for 5ml vials and blood bags are optional upon request.

Features

- Large capacity storage of vials or blood bags
- Ultra-low liquid nitrogen consumption
- Lockable lid to prevent unauthorized access
- Space-saving and light in weight
- TWO Year Parts Warranty, FIVE Year Vacuum Warranty

Structure Diagram





Accessories

- Roller base is supplied as optional, for easy movement of container.
- CryoMonitor 2000TL is optional monitor for liquid nitrogen level and temperature.

Specification

Model		CryoMaster 750	CryoMaster 900	CryoMaster 2400	CryoMaster 3000	CryoMaster 3600	CryoMaster 4800	CryoMaster 6000
Maximum Storage Capacity								
1.2&2ml vial	1.2 &2ml vial (25/100-place box)	750	900	2400	3000	3600	4800	6000
	Number of racks	6	6	6	6	6	6	6
	2" Boxes per rack	5	6	4	5	6	8	10
5ml vial	5ml vial (81-place box)	—	—	972	972	1458	1944	2430
	Number of racks	—	—	6	6	6	6	6
	3.75" Boxes per rack	—	—	2	2	3	4	5
Cassette BBC-A	Numbers of blood bag	—	—	168	252	252	336	420
	Number of racks	—	—	6	6	6	6	6
	Layers per rack	—	—	2	3	3	4	5
	Blood bags per layer	—	—	14	14	14	14	14
Cassette BBC-B	Numbers of blood bag	—	—	84	126	168	168	252
	Number of racks	—	—	6	6	6	6	6
	Layers per rack	—	—	1	3	2	2	3
	Blood bags per layer	—	—	14	7	14	14	14
Cassette BBC-C	Numbers of blood bag	—	—	48	48	48	96	96
	Number of racks	—	—	6	6	6	6	6
	Layers per rack	—	—	1	1	1	2	2
	Blood bags per layer	—	—	8	8	8	8	8
Cassette BBC-D	Numbers of blood bag	—	—	—	36	36	30	60
	Number of racks	—	—	—	6	6	6	6
	Layers per rack	—	—	—	1	1	1	2
	Blood bags per layer	—	—	—	6	6	5	5
Cassette BBC-E	Numbers of blood bag	—	—	30	30	30	60	60
	Number of racks	—	—	6	6	6	6	6
	Layers per rack	—	—	1	1	1	2	2
	Blood bags per layer	—	—	5	5	5	5	5
Cassette BBC-F	Numbers of blood bag	—	—	—	30	30	30	30
	Number of racks	—	—	—	6	6	6	6
	Layers per rack	—	—	—	1	1	1	1
	Blood bags per layer	—	—	—	5	5	5	5
Performance								
LN_2 capacity (L)		35	50	65	95	120	145	175
Static evaporation rate (L/day)		0.36	0.36	0.78	0.81	0.85	0.85	0.87
Static holdover time (day)		97	139	83	117	141	171	201
Dimensions								
Neck opening (mm)		125	125	216	216	216	216	216
Overall height (mm)		805	820	785	840	905	1040	1090
Outer diameter (mm)		451	508	678	678	678	678	678
Weight empty (KG)		20.6	28.5	49.2	53.3	58.1	67.1	72.3
Weight full (KG)		49	69	102	130	155	185	214
Inventory rack for cryobox (standard)		6	6	6	6	6	6	6
Optional Inventory Rack								
Cassette BBC-A	Rack	—	—	DBR-A-14-2	DBR-A-14-3	DBR-A-14-3	DBR-A-14-4	DBR-A-14-5
Cassette BBC-B	Rack	—	—	DBR-B-14-1	DBR-B-7-3	DBR-B-14-2	DBR-B-14-2	DBR-B-14-3
Cassette BBC-C	Rack	—	—	DBR-C-8-1	DBR-C-8-1	DBR-C-8-1	DBR-C-8-2	DBR-C-8-2
Cassette BBC-D	Rack	—	—	—	DBR-D-6-1	DBR-D-6-1	DBR-D-5-1	DBR-D-5-2
Cassette BBC-E	Rack	—	—	DBR-E-5-1	DBR-E-5-1	DBR-E-5-1	DBR-E-5-2	DBR-E-5-2
Cassette BBC-F	Rack	—	—	N/A	DBR-F-5-1	DBR-F-5-1	DBR-F-5-1	DBR-F-5-1
Optional Accessories								
Roller base		RB-30	RB-47	RB-65	RB-65	RB-65	RB-65	RB-65
Liquid level & temperature monitoring		CryoMonitor 1000TL, CryoMonitor 2000TL, Cloud service						

* **Cassette BBC-A**: Pall MEDSEPTM 25 mL, OriGen CS 25; **Cassette BBC-B**: Fenwal 4R9951, OriGen CS 50;
Cassette BBC-C: Fenwal 4R9953 & 4R5461, OriGen CS 250, CryoMACS 50 & 250, CryoPAC 025B & 050B; **Cassette BBC-D**: Fenwal 4R9955 & 4R5462, OriGen CS 500, CryoPAC 250B & 500B;
Cassette BBC-E: Gambro DF-200 or CryoMACS 50 & 250; **Cassette BBC-F**: Gambro DF-700, OriGen CS 1000, CryoMACS 500 & 750 &1000, CryoPAC 750B.

CryoMajor Series

Dewar with Canisters

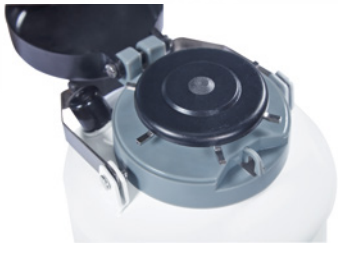
CryoMajor Series Dewars are designed for liquid phase storage of biological samples in straws. The liquid nitrogen storage capacity range is from 2 liters to 50 liters. Round canisters are provided as standard.

CryoMajor series Dewars are space-saving and light in weight. Ultra-low liquid nitrogen consumption is also an advantage of this series.

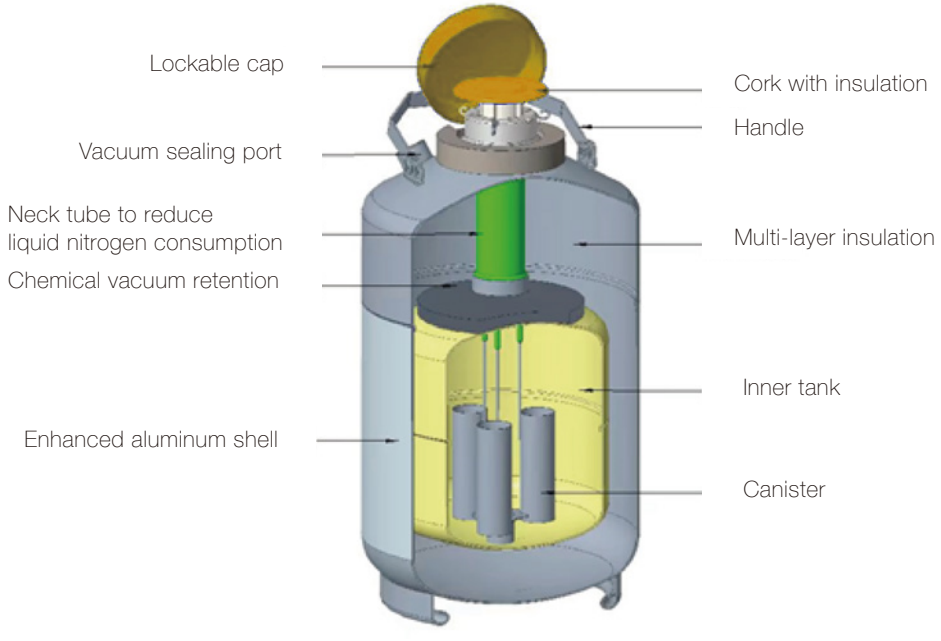
Roller base is available for Dewars capacity not less than 30 liters.

Features

- Supplied with round canisters
- Ultra-low liquid nitrogen consumption
- Space-saving and light in weight
- TWO Year Parts Warranty, FIVE Year Vacuum Warranty



Structure Diagram



Specification

Model	CryoMajor 2/35	CryoMajor 3/50	CryoMajor 6/50	CryoMajor 10/50	CryoMajor 10/80
Maximum Storage Capacity					
Number of canister	3	6	6	6	6
Canister type	1-layer	1-layer	1-layer	1-layer	1-layer
Number of 1.8/2ml vials (3pcs/cane)	9	90	90	90	252
Number of straws, 1/2 cc	159	792	792	792	2250
Number of straws, 1/4 cc	345	1716	1716	1716	4986
Performance					
LN_2 capacity (L)	2	3	6	10	10
Static evaporation rate (L/day)	0.11	0.12	0.12	0.12	0.21
Static holdover time (day)	18	26	52	86	48
Dimensions					
Neck opening (mm)	35	50	50	50	80
External diameter (mm)	195	224	300	300	300
Overall height (mm)	420	441	488	566	557
Canisters diameter (mm)	25	38	38	38	63
Canister height (mm)	120	120	120	120	120
Weight empty (kg)	2.9	3.5	5.3	6.0	6.3
Weight full (kg)	4.5	5.9	10.2	14.1	14.4
Accessories					
Lockable lid	Yes	Yes	Yes	Yes	Yes
Protection suit	—	Yes	Yes	Yes	Yes
Roller base (Optional)	—	—	—	—	—
Liquid level & Temperature Monitor (Optional)	—	—	—	—	—

Model	CryoMajor 13/50L	CryoMajor 15/50	CryoMajor 16/80	CryoMajor 20/50L	CryoMajor 20/80L
Maximum Storage Capacity					
Number of canister	6	6	6	6	6
Canister type	2-layer	1-layer	1-layer	2-layer	2-layer
Number of 1.8/2ml vials (6pcs/cane)	180	180	/	180	504
Number of straws, 1/2 cc	1200	792	2250	1200	3984
Number of straws, 1/4 cc	2580	1716	4986	2580	8532
Performance					
LN_2 capacity (L)	13	15	16	20	20
Static evaporation rate (L/day)	0.12	0.11	0.25	0.12	0.22
Static holdover time (day)	108	136	64	167	89
Dimensions					
Neck opening (mm)	50	50	80	50	80
External diameter (mm)	300	396	451	396	396
Overall height (mm)	630	618	466	688	701
Canisters diameter (mm)	38	38	63	38	63
Canister height (mm)	276	120	120	276	276
Weight empty (kg)	8.4	10	12.8	12.2	12.7
Weight full (kg)	19.0	22.2	25.8	28.5	29.0
Accessories					
Lockable lid	Yes	Yes	Yes	Yes	Yes
Protection suit	Yes	Yes	Yes	Yes	Yes
Roller base (Optional)	—	—	—	—	—
Liquid level & Temperature Monitor (Optional)	—	—	—	CryoMonitor 1000TL	CryoMonitor 1000TL

Specification

Model	CryoMajor 30/50L	CryoMajor 30/80L	CryoMajor 35/50L	CryoMajor 35/80L
Maximum Storage Capacity				
Number of canister	6	6	6	6
Canister type	2-layer	2-layer	2-layer	2-layer
Number of 1.8/2ml vials (6pcs/cane)	180	504	180	504
Number of straws, 1/2 cc	1200	3984	1200	3984
Number of straws, 1/4 cc	2580	8532	2580	8532
Performance				
LN_2 capacity (L)	31.5	31.5	35.5	35.5
Static evaporation rate (L/day)	0.12	0.21	0.12	0.20
Static holdover time (day)	254	147	286	178
Dimensions				
Neck opening (mm)	50	80	50	80
External diameter (mm)	451	451	451	451
Overall height (mm)	681	681	735	760
Canisters diameter (mm)	38	63	38	63
Canister height (mm)	276	276	276	276
Weight empty (kg)	15.3	15.8	16.3	17.2
Weight full (kg)	40.9	41.4	45.2	46.1
Accessories				
Lockable lid	Yes	Yes	Yes	Yes
Protection suit	Yes	Yes	Yes	Yes
Roller base (Optional)	RB-30	RB-30	RB-30	RB-30
Liquid level & Temperature Monitor (Optional)	CryoMonitor 1000TL	CryoMonitor 1000TL	CryoMonitor 1000TL	CryoMonitor 1000TL

Model	CryoMajor 50B/50L	CryoMajor 35/125L	CryoMajor 35/125TL	CryoMajor 47/127L	CryoMajor 47/127TL
Maximum Storage Capacity					
Number of canister	6	6	10	6	10
Canister type	2-layer	2-layer	2-layer	2-layer	2-layer
Number of 1.8/2ml vials (6pcs/cane)	180	1332	1200	1332	1200
Number of straws, 1/2 cc	1200	9360	7300	9360	7300
Number of straws, 1/4 cc	2580	16400	16400	21000	16400
Performance					
LN_2 capacity (L)	50	35.5	35.5	47	47
Static evaporation rate (L/day)	0.24	0.36	0.36	0.36	0.36
Static holdover time (day)	208	99	99	131	131
Dimensions					
Neck opening (mm)	50	125	125	127	127
External diameter (mm)	508	451	451	508	508
Overall height (mm)	777	805	805	730	730
Canisters diameter (mm)	38	97	72	97	72
Canister height (mm)	276	276	276	276	276
Weight empty (kg)	21.0	18.0	18.0	19.2	19.2
Weight full (kg)	61.7	46.9	46.9	57.5	57.5
Accessories					
Lockable lid	Yes	Yes	Yes	Yes	Yes
Protection suit	Yes	Yes	Yes	—	—
Roller base (Optional)	RB-47	RB-30	RB-30	RB-47	RB-47
Liquid level & Temperature Monitor (Optional)	CryoMonitor 1000TL	CryoMonitor 1000TL, CryoMonitor 2000TL			

CryoMonitor 2000TL

Liquid Level & Temperature Monitoring

Liquid level & temperature monitoring system for liquid nitrogen containers. The CryoMonitor 2000TL provides accurate monitoring of liquid nitrogen level & temperature for liquid nitrogen containers storing cells, cord blood, embryo, semen and other biological samples.

CryoMonitor 2000TL records temperature and liquid level data, therefore, traceability is guaranteed. It also alarms users with sound & light when working status of container is out of normal range, to avoid irreparable loss of precious samples.

Furthermore, taking advantages of optional cloud service, data is transferred to and stored on cloud server, which can be visited from a PC or smart phone anywhere of the world. CryoMonitor 2000TL allows users to be completely rest assured with safety of samples.

Features

- Monitoring both temperature and liquid nitrogen level.
- On-site alarm with sound & light.
- Data stored in device & to be downloaded via USB port.
- Wi-Fi connection & cloud data storage, worldwide data visit & alarm.
- Backup battery for monitoring during power failure or movement.

Connection (Optional)

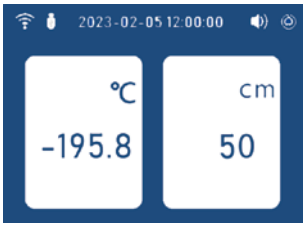
- Wi-Fi connection to transfer data to cloud server.
- Global access on a PC, tablet or smartphone.

Wi-Fi Enabled | Cloud Server | Various Devices | Global Access | Email Alarm | SMS Alarm

Alarms

- High/low temperature alarm
- High/low liquid nitrogen level alarm
- Power failure alarm
- Low battery alarm

Interface



1. Wi-Fi connection status
2. USB connection status
3. Date & time
4. Sound alarm
5. Power connection status
6. Unit of temperature
7. Temperature display
8. Unit of liquid level
9. Liquid level display

Compatibility

CryoMonitor 2000TL offers the widest compatibility with liquid nitrogen dewars in the market, or already in use at customer sites. Customized solution will be provided upon specific circumstances.

CryoMonitor 2000TL is easy to install, no need to drill a whole on plug or cap. Unlike plug type level meter, there is no metal tube on plug, therefore, it is more convenient to work with.

Applications

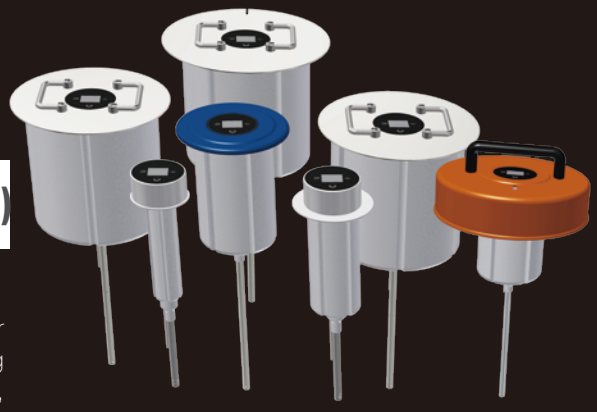
- IVF center
- Cord blood center
- Bio-pharma
- Hospital
- Biobank
- Biological research

Specification

Model	CryoMonitor 2000TL
Temperature monitoring	-200~+70°C
LN2 level monitoring	Yes
Temperature sensor	PT-100
LN2 level sensor	Capacitance
On-site alarm	Sound & light
Dimension (Width x Height x Thickness)	138 x 91 x 42mm
Net weight	330g
Power supply	100~240V, 50/60Hz, AC
Backup battery	Built-in lithium battery, replaceable
Data storage	Yes
USB port for data download	Yes
Romote alarm contact	Yes
RS485 port	Yes
Internet connection	Wi-Fi
Cloud service	Optional
Cloud alarm	Email, SMS
Plug groove cutter	Optional

CryoMonitor 1000TL

Liquid Level & Temperature Monitoring (Smart Plug)



Antech Smart Plug is an advanced liquid level & temperature monitoring system for liquid nitrogen containers. The CryoMonitor 1000TL provides accurate monitoring of liquid nitrogen level & temperature for liquid nitrogen containers storing cells, cord blood, embryo, semen and other biological samples.

CryoMonitor 1000TL is powered by its built-in battery. There is no need to connect external power supply. Taking advantages of cloud service (optional), data is transferred to cloud server via relay and gateway, which can be visited on a PC, pad or smart phone, anywhere and anytime.

Features

- Displaying both temperature and liquid nitrogen level.
- Buit-in battery and long working time.
- Optional could service based on Wi-Fi connection.
- Automatic connection between CryoMonitor 1000TL, relay, gateway & could platform.
- BioExpress cloud platform, email alarm can be set according to demand.
- Optional SMS alarm package, covering most area of the world.

Connection (Optional)

- Wi-Fi connection to transfer data to cloud server.
- Global access on a PC, tablet or smartphone.

Wi-Fi Enabled

Cloud Server

Various Devices

Global Access

Compatibility

CryoMonitor 1000TL offers wide compatibility with liquid nitrogen dewars in the market. Customized solution will be provided upon specific circumstances.

Settings of CryoMonitor 1000TL is completed at factory based on specifications of Dewar. It is a ready-to-use product when customer receive it.

Applications

- IVF center
- Cord blood center
- Bio-pharma
- Hospital
- Biobank
- Biological research

Specification

Model	CryoMonitor 1000TL
Temperature display	-200~+70°C
LN_2 level display	Yes
Temperature sensor	PT-100
LN_2 level sensor	Capacitance
Working temperature	-20～40℃
Working humidity	≤75%
Power input	2.9V～3.6V
Power supply	Built-in lithium battery, replaceable
Communication method	Lora + Wi-Fi
Cloud service	Optional
Cloud alarm	Email, SMS

CryoCarrier Series

Dry Shipper for Transportation

CryoCarrier Series is dry shipper dewars for safe transportation of biological products in vapor phase at cryogenic (-150°C or lower) temperatures.

Taking advantage of innovative absorbing material and optimized construction, Antech CryoCarrier Series dry shippers can be recharged within 2 hours, while new/warm tanks still need a sit time of 24 hours.

Features

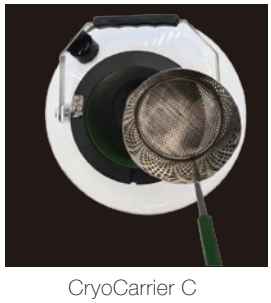
- Vapor phase storage ensures dry and spill-free shipping
- Light in weight and durable to use
- Applicable for various of sample containers, such as vial, straw, blood bag
- Recharged in 2 hours
- Holdover time 2~15 days to meet different requirements
- Protective trolley case as optional

Based on type of products to be transported, Antech offers 3 lines of dry-shippers:

- CryoCarrier R: for biological products stored with cryogenic vials and boxes;
- CryoCarrier B: for biological products stored with 25ml/50ml/250ml blood bags and cassettes;
- CryoCarrier C: for biological products stored with round canister, such as straws, cryogenic vials.


CryoCarrier R


CryoCarrier B


CryoCarrier C

Protective Trolley Case

- Heavy duty case with aluminum frame, durable to use
- Forming material protection for safety
- Trolley for easy movement
- Case lock preventing unauthorized access

Smart Data Logger

- -200~70°C
- Multi-Use, replaceable battery
- USB 2.0 plug, 28800 readings
- Encrypted PDF report embedded with raw data Bluetooth printer connection (200XB)

200X

200XB

Specification

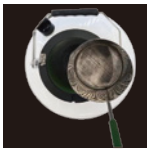
CryoCarrier R: for biological products stored with cryogenic vials and boxes;

Model	CryoCarrier 6R	CryoCarrier 10R	CryoCarrier 15R	CryoCarrier 25R
Maximum Storage Capacity				
2ml vail	200	100	400	600
25-place box	—	4	—	—
81/100-place box, 2 inch height	2	—	4	6
5ml vail	—	50	81	162
81-place box, 3 inch height	—	—	1	2
Peformance				
Container gross capacity, liter	6	10	15	25
LN_2 absorbtion, liter	4	4.7	6	9
Static evaporation rate (L/day)	1.33	0.31	0.71	0.69
Vapor working duration (day)	3	15	8.5	13
Dimensions				
Neck Opening (mm)	190	125	216	216
External diameter (mm)	252	300	396	396
Overall height (mm)	519	584	610	755
Weight empty (kg)	7.5	9.2	16.9	21.2
Weight charged, vapor (kg)	11.1	14.1	21.8	31.0
Accessories				
Protection trolley case, optional	DSC-6	DSC-10	DSC-15	DSC-25
Data logger, optional	200X, 200XB			

CryoCarrier B: for biological products stored with 25ml/50ml/250ml/500ml blood bags and cassettes.

Model	CryoCarrier 4B	CryoCarrier 6B	CryoCarrier 25B
Maximum Storage Capacity			
Cassette BBC-A	6	5	16
Cassette BBC-B	6	5	11
Cassette BBC-C	—	5	11
Cassette BBC-D	—	5	11
Peformance			
Container gross capacity, liter	6	6	25
LN_2 absorbtion, liter	3.5	4	9
Static evaporation rate (L/day)	0.39	1.33	0.69
Vapor working duration (day)	9	3	13
Dimensions			
Neck Opening (mm)	125	190	216
External diameter (mm)	300	252	396
Overall height (mm)	520	519	755
Weight empty (kg)	7.8	7.5	21.2
Weight charged, vapor (kg)	11.1	11.1	31.0
Accessories			
Protection trolley case, optional	DSC-4	DSC-6	DSC-25
Data logger, optional	200X, 200XB		

CryoCarrier C: for biological products stored with round canister, such as straws, cryogenic vials;



Model	CryoCarrier 2C	CryoCarrier 3C	CryoCarrier 4C	CryoCarrier 6C	CryoCarrier 10C	CryoCarrier 25C
Maximum Storage Capacity						
1/4 cc straw	115	451	1422	1065	2046	11584
1/2 cc straw	53	181	664	492	942	5456
2ml vail	3	21	84	66	132	678
Peformance						
Container gross capacity, liter	1.5	3	4	6	10	25
LN_2 absorbtion, liter	0.9	1.8	3.0	3.4	4.5	5.7
Static evaporation rate (L/day)	0.2	0.23	0.28	0.28	0.3	0.81
Vapor working duration (day)	4.5	8	10	12	15	7
Dimensions						
Neck Opening (mm)	30	50	70	80	80	216
External diameter (mm)	180	224	224	300	300	396
Overall height (mm)	398	441	540	492	584	755
Canisters diameter (mm)	25	47	67	76	76	190
Canister height (mm)	120	200	276	200	276	276
Weight empty (kg)	3.0	3.9	5.4	7.2	7.6	20.8
Weight charged, vapor (kg)	3.7	5.0	7.8	9.2	12.3	26.5
Accessories						
Protection trolley case, optional	—	DSC-4	DSC-4	DSC-6	DSC-10	DSC-25
Data logger, optional	200X, 200XB					

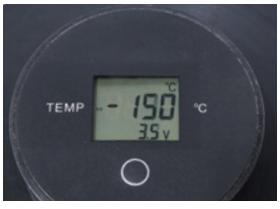
Cryo Carrier

CryoAir 2

CryoAir 2 cryogenic carrier is used to transport small amount of biological samples for a limited period. The constuction is compact. It is small in size and light in weight. Samples are stored in a vapor cryogenic environment, therefore, it is safe in usage.

Features

- Temperature display: real-time temperature display for easy monitoring
- Light in weight: empty weight 3kg only
- Compact in size: 156mm external diameter for convenient carry
- Safe in use: vapor phase storage of biological samples, no risk of LN2 spillover
- Long holdover time: holdover time up to 4 hours
- Flexible space: adjustable racking system to load both 2ml vails and 5ml vials
- Stainless steel container: durable to use and easy cleaning



Specification

Model	CryoAir 2
External diameter(mm)	156
Internal diameter(mm)	125
Depth(mm)	190
Height(mm)	262
Empty weight (kg)	3
Volume of LN2(L)	2
Holdover time in vapor phase (hour)	4
2/5 vial capacity	54
Temperature display	Yes

CryoTrans Series

Dewar for LN_2 Storage

CryoTrans Series dewars provide a convenient and economical way to store and dispense liquid nitrogen. 50mm narrow neck reduces liquid nitrogen consumption.

KF NW50 is supplied as standard for convenient connection with other devices, such as Antech manual dispens CryoPump1000M or automatic LN2 dispenser CryoPump2000A.

Features

- Efficient storage of liquid nitrogen
- Ultra-low liquid nitrogen consumption
- KF NW50 for fast connection with Antech LN_2 pump
- Space-saving and light in weight
- TWO Year Parts Warranty, FIVE Year Vacuum Warranty

Specification

Model	CryoTrans 3	CryoTrans 6	CryoTrans 10	CryoTrans 16	CryoTrans 20	CryoTrans 30	CryoTrans 35	CryoTrans 35P	CryoTrans 50
Performancce									
LN_2 capacity (L)	3	6	10	16	20	30	35	35	50
Neck diameter (mm)	50	50	50	50	50	50	50	50	50
Static evaporation rate (L/day)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.15	0.23
Dimensions									
Overall height (mm)	441	468	546	618	668	661	760	580	757
Outer diameter (mm)	224	300	300	396	396	451	451	508	508
Weight empty (KG)	3.5	4.8	6.5	11	12	16	16.4	18	21
Weight full (KG)	6	10	15	22	28	40	45	46	62
Accessories									
KF 50 connection	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Roller base (Optional)	—	—	—	—	—	RB-30	RB-30	RB-30	RB-47
LN_2 dispenser (Optional)	—	—	—	—	CryoPump 1000M (manual)			CryoPump 1000M (manual); CryoPump 2000A (auto)	
LN_2 dipper	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional

CryoPump 1000M

Manual LN_2 Dispenser

CryoPump 1000M is a manual pump to discharge liquid nitrogen from liquid nitrogen dewar.

Features

- Foot pressing for fast creation of initial pressure.
- Liquid nitrogen vaporization chamber, made in aluminum alloy for high efficiency heat exchange, to build inner pressure in short time.
- Continuous liquid nitrogen flow once starting discharging, no need pressing the pump all the time.
- Unique design to avoid risk of explosion caused by inner pressure built.

Specification

Model	CryoPump 1000M
Connection port	KF NW50
Type	Foot press
Material	SUS304 & aluminum
Dewar applicable	CryoTrans 35 (standard), CryoTrans 50 (upon request)
Weight empty (kg)	7.9

CryoPump 2000A

Automatic LN_2 Dispenser

CryoPump 2000A is an automatic liquid nitrogen dispenser, to discharge liquid nitrogen from dewar to the application.

CryoPump 2000A is an ideal device to cool detectors of Bruker or Shimadzu Fourier Transform Infrared Spectrometer (FTIR), and compatible with most FTIR detectors.

Features

- Time interval can be preset for automatic fill
- Gentle liquid nitrogen flow, free of splashing or vibration
- No direct contact with liquid nitrogen for safety
- Full automatic control for easy operation
- Low evaporation rate during standby
- Can be connected to a computer for monitoring and data record
- Compatible with Antech CryoTrans 35P (standard) or CryoTrans 50 (customized) liquid nitrogen dewar

Working principle

By heating liquid nitrogen in bottom of the dewar, an overpressure is built inside of dewar, to allow liquid nitrogen rise out of the pipeline and create a gentle liquid flow.

Filling time interval is adjustable, to match holdover time of detector. The filling flow is stable and gentle. As soon as the detector is full, the filling stops.

Controlling System

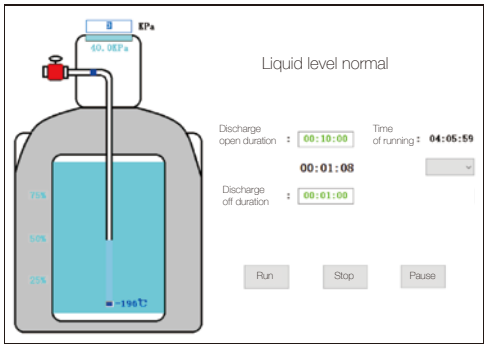
Touch screen controller on top of pump, displaying running status. All parameters can be set on touch screen, which is convenient to use.

- 1.Td: temperature of Dewar (liquid nitrogen source)
- 2.Setting
- 3.Pressure value
- 4.Liquid lever value
- 5.Wi-Fi status
- 6.Temperature sensor failure
- 7.Running information

Control on PC:

CryoPump 2000A is also supplied with controlling program for computer, to monitor its working status and make settings according to the demand.

Therefore, CryoPump 2000A offers the remote control without operater on site.



Specification

Model	CryoPump 2000A
Static evaporation rate	< 0,5 liters per day
Flow rate	Pre-set on 4KPa (adjustable)
Maximum working pressure	< 300 KPa
Reaction time	+/- 1 minutes for cooling down the fill line (with 1.6 meters fill line)
Power connection	100-240V AC with supplied power supply, the operating voltage is 24V
Power consumption	average 10W, during pumping 50W
Standard fill line	6.25 mm OD, 4 mm ID PTFE tube, with 32mm foam insulation
System includes	Pump, fill line 1.6 m, phase separator, power supply, cables, 1 level sensor 1 temperature sensor, PC software.
Working modes	Automatic fill control with timer (1 sensor)
External control	5 volt signals for ON, OFF and RS232 signals for ON, OFF
PC software	Monitor software, to monitor pump and data logging
Alarms/warning acoustical/ visual / mechanical	Dewar empty, Dewar 5 liters LN_2 left, broken sensor(s), frozen alarm, mechanical overpressure protection valve.
Net weight(kg)	3.5
Dimensions(mm)	210*240*750

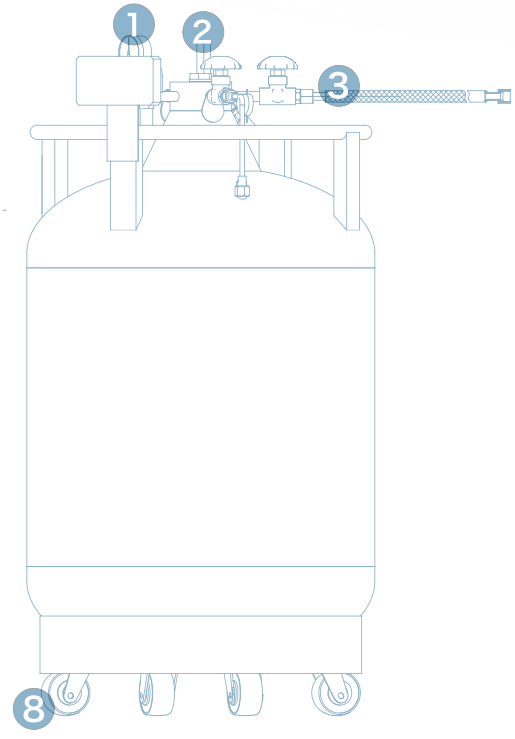
CryoCenter Series

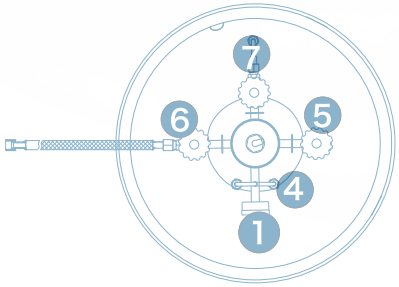
Self-pressurized Container

CryoCenter Series are high efficiency storage containers of liquid nitrogen. It is made in high quality stainless steel SUS304, ensures them to be used in most rigorous environment for long time.

A low pressure is generated by vaporizing small amount of liquid nitrogen, to discharge LN_2 & supply LN_2 to other containers or equipment, such as dewar, vapor freezer, or controlled rate freezer.

The CryoCenter Series containers are supplied with filling/discharge valve, pressure relief valve and vaporize valve. Dual pressure relief valve design for safety. All models are supplied with casters for convenient movement.

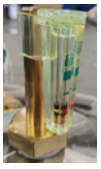




1.Pressure gauge
2.Liquid nitrogen level indicator
3.Transfer hose
4.Dual pressure relief valve
5.Vent valve
6.Fill/discharge valve
7.Pressure building valve
8.Castors

Pressure building regulator (Supplied with CryoCenter M & CryoCenter S)

Electric digital level meter (Supplied with CryoCenter S)



Float level meter (Supplied with CryoCenter & CryoCenter M)

Features

- Ultra-low liquid nitrogen consumption
- SUS304 construction & durable for long term use
- Advanced digital display liquid level meter available
- Pressure building regulator available for automatic filling applications
- All models supplied with casters for convenient movement

Specification

CryoCenter M Series:

Supplied with pressure building regulator & float type liquid level meter, for auto filling of cryogenic freezer & controlled rate freezer

Model	CryoCenter 200M	CryoCenter 240M	CryoCenter 300M	CryoCenter 500M
Liquid nitrogen capacity (L)	200	240	300	500
Infusion volumes (L/min)	≥10	≥10	≥10	≥10
Static evaporation (L/d)	2.2	2.5	3	5
Overall height (mm)	1280	1580	1410	1500
External diameter (mm)	656	656	806	958
Weight empty/full (kg)	98/261	138/333	144/388	192/599
Standard working pressure (psig/bar/MPa)	13/0.9/0.09	13/0.9/0.09	13/0.9/0.09	13/0.9/0.09
Relief valve pressure (psig/bar/MPa)	14/0.97/0.097 * 1pc + 22/1.5/0.15 * 1pc			
Pressure regulator (psig/bar/MPa)	10 /0.69 / 0.069 * 1pc			
Pressure gauge indicating range (MPa)	0~0.25	0~0.25	0~0.25	0~0.25
Fill/discharge valve, vent valve, pressure building valve	Yes	Yes	Yes	Yes
Pressure building regulator	Yes	Yes	Yes	Yes
Pressure relief value (Safety valve)	Yes, 2 pcs	Yes, 2 pcs	Yes, 2 pcs	Yes, 2 pcs
Liquid level meter, float type	Yes	Yes	Yes	Yes
Liquid level meter, electronic digital display type	—	—	—	—
Connection port	CGA295	CGA295	CGA295	CGA295
Caster & hose (2 meter)	Yes	Yes	Yes	Yes

CryoCenter S Series:

Supplied with pressure building regulator & electric digital liquid level meter, for auto filling of cryogenic freezer & controlled rate freezer

Model	CryoCenter 200S	CryoCenter 240S	CryoCenter 300S	CryoCenter 500S
Liquid nitrogen capacity (L)	200	240	300	500
Infusion volumes (L/min)	≥10	≥10	≥10	≥10
Static evaporation (L/d)	2.2	2.5	3	5
Overall height (mm)	1280	1580	1410	1500
External diameter (mm)	656	656	806	958
Weight empty/full (kg)	98/261	138/333	144/388	192/599
Standard working pressure (psig/bar/MPa)	13/0.9/0.09	13/0.9/0.09	13/0.9/0.09	13/0.9/0.09
Relief valve pressure (psig/bar/MPa)	14/0.97/0.097 * 1pc + 22/1.5/0.15 * 1pc			
Pressure regulator (psig/bar/MPa)	10 /0.69 / 0.069 * 1pc			
Pressure gauge indicating range (MPa)	0~0.25	0~0.25	0~0.25	0~0.25
Fill/discharge valve, vent valve, pressure building valve	Yes	Yes	Yes	Yes
Pressure building regulator	Yes	Yes	Yes	Yes
Pressure relief value (Safety valve)	Yes, 2 pcs	Yes, 2 pcs	Yes, 2 pcs	Yes, 2 pcs
Liquid level meter, float type	—	—	—	—
Liquid level meter, electronic digital display type	Yes	Yes	Yes	Yes
Connection port	CGA295	CGA295	CGA295	CGA295
Caster & hose (2 meter)	Yes	Yes	Yes	Yes

Specification

CryoCenter Series:
Supplied with float type liquid level meter, without pressure building regulator, for liquid nitrogen storage.

Model	CryoCenter 30	CryoCenter 50	CryoCenter 100
Liquid nitrogen capacity (L)	30	50	100
Infusion volumes (L/min)	≥5	≥5	≥5
Static evaporation (L/d)	0.75	1	1.2
Overall height (mm)	850	960	1120
External diameter (mm)	404	455	556
Weight empty/full (kg)	29/53	40/81	62/143
Standard working pressure (psig/bar/MPa)	13/0.9/0.09	13/0.9/0.09	13/0.9/0.09
Relief valve pressure (psig/bar/MPa)	14/0.97/0.097 * 1pc + 22/1.5/0.15 * 1pc		
Pressure gauge indicating range (MPa)	0～0.25	0～0.25	0～0.25
Fill/discharge valve, vent valve, pressure building valve	Yes	Yes	Yes
Pressure building regulator	—	—	—
Pressure relief value (Safety valve)	Yes, 2 pcs	Yes, 2 pcs	Yes, 2 pcs
Liquid level meter, float type	Yes	Yes	Yes
Liquid level meter, electronic digital display type	—	—	N/A
Connection port	CGA295	CGA295	CGA295
Caster & hose (2 meter)	Yes	Yes	Yes

Model	CryoCenter 200	CryoCenter 240	CryoCenter 300	CryoCenter 500
Liquid nitrogen capacity (L)	200	240	300	500
Infusion volumes (L/min)	≥10	≥10	≥10	≥10
Static evaporation (L/d)	2.2	2.5	3	5
Overall height (mm)	1280	1580	1410	1500
External diameter (mm)	656	656	806	958
Weight empty/full (kg)	98/260	138/293	144/382	192/551
Standard working pressure (psig/bar/MPa)	13/0.9/0.09	13/0.9/0.09	13/0.9/0.09	13/0.9/0.09
Relief valve pressure (psig/bar/MPa)	14/0.97/0.097 * 1pc + 22/1.5/0.15 * 1pc			
Pressure gauge indicating range (MPa)	0～0.25	0～0.25	0～0.25	0～0.25
Fill/discharge valve, vent valve, pressure building valve	Yes	Yes	Yes	Yes
Pressure building regulator	—	—	—	—
Pressure relief value (Safety valve)	Yes, 2 pcs	Yes, 2 pcs	Yes, 2 pcs	Yes, 2 pcs
Liquid level meter, float type	Yes	Yes	Yes	Yes
Liquid level meter, electronic digital display type	—	—	—	—
Connection port	CGA295	CGA295	CGA295	CGA295
Caster & hose (2 meter)	Yes	Yes	Yes	Yes

Bulk Storage Tank

The unique internal heat insulation structure design and advanced vacuum pumping technology can ensure long-lasting vacuum life of the storage tank. The innovative modular piping system is used to ensure that the static evaporation rate of the storage tank is better than the industry standard requirements.

- Applicable medium: LO_2, LN_2, LAr, LNG, LCO_2
- Working pressure: 0.2-3.0 MPa
- Insulation: vacuum powder, multi-layer winding high vacuum insulation

Features

- Long design service life up to 20 years
- Compact structure
- Manufactured in strict accordance with national standards:
  GB150-2011: Pressure Vessels;
  JB4730-2005: Nondestructive Testing of Pressure Vessels;
  JB/T4711-2003: Pressure Vessel Coating and Transport Packaging;
  GB18442-2011: Stationary Vacuum Insulated Cryogenic Pressure Vessel
- Easy to operate and convenient to maintain

Specification

Model	CFC-3/0.8		CFC-5/0.8		CFC-10/0.8		CFC-15/0.8	
Parameters	Inner container	Jacket layer	Inner container	Jacket layer	Inner container	Jacket layer	Inner container	Jacket layer
Working pressure (Mpa)	0.8	0.1	0.8	0.1	0.8	0.1	0.8	0.1
Designed pressure (Mpa)	0.84	0.1	0.84	0.1	0.84	0.1	0.84	0.1
Operating temperature (°C)	-196	0-50	-196	0-50	-196	0-50	-196	0-50
Designed temperature (°C)	-196	50	-196	50	-196	50	-196	50
Storage medium	LN_2, LO_2, LAr	Perlite	LN_2, LO_2, LAr	Perlite	LN_2, LO_2, LAr	Perlite	LN_2, LO_2, LAr	Perlite
Main material	O6Cr19Ni10	Q245R	O6Cr19Ni10	Q245R	O6Cr19Ni10	Q245R	O6Cr19Ni10	Q245R
Full volume (m^3)	3.16	6.2	5.26	8.23	10.56	12.44	15.83	16.12
Loading coefficient	95%	100%	95%	100%	95%	100%	95%	100%
Effective volume (m^3)	3	6.2	5	8.23	10	12.44	15	16.12
Cylinder thickness (mm)	5	6	5	6	6	6	6	6
Head thickness (mm)	6	8	5	8	7	8	7	8
Weight (kg)	~2895		~3648		~5650		~7373	
Overall dimensions (OD × H)	DN1200/DN1800×4580		DN1400/DN2000×5165		DN1800/DN2400×6035		DN1900/DN2500×7450	
Container type	class II		class II		class II		class II	
Form of installation	Vertical		Vertical		Vertical		Vertical	
Designed life (years)	20		20		20		20	
Liquid level meter	Electric digital display level meter							
Inlet/outlet valve	Dual valve design							
Pressure building device	Yes							
Standard	GB150-2011 (Pressure Vessels); JB4730-2005 (Nondestructive Testing of Pressure Vessels); JB/T4711-2003(Pressure Vessel Coating and Transport Packaging); GB18442-2011 (Stationary Vacuum Insulated Cryogenic Pressure Vessel)							

Specification

Model	CFC-3/1.6		CFC-5/1.6		CFC-10/1.6		CFC-15/1.6	
Parameters	Inner container	Jacket layer	Inner container	Jacket layer	Inner container	Jacket layer	Inner container	Jacket layer
Working pressure (Mpa)	1.6	0.1	1.6	0.1	1.6	0.1	1.6	0.1
Designed pressure (Mpa)	1.68	0.1	1.68	0.1	1.68	0.1	1.68	0.1
Operating temperature (℃)	-196	0-50	-196	0-50	-196	0-50	-196	0-50
Designed temperature (℃)	-196	50	-196	50	-196	50	-196	50
Storage medium	LN_2, LO_2, LAr	Perlite	LN_2, LO_2, LAr	Perlite	LN_2, LO_2, LAr	Perlite	LN_2, LO_2, LAr	Perlite
Main material	O6Cr19Ni10	Q245R	O6Cr19Ni10	Q245R	O6Cr19Ni10	Q245R	O6Cr19Ni10	Q245R
Full volume (m3)	3.16	6.2	5.26	8	10.53	11.8	15.8	16.2
Loading coefficient (%)	0.95	1	0.95	1	0.95	1	0.95	1
Effective volume (m3)	3	6.2	5	8	10	11.8	15	16.2
Cylinder thickness (mm)	7	6	8	6	10	6	10	6
Head thickness (mm)	8	8	9	8	12	8	12	10
Weight (kg)	~3050		~4081		~6454		~8772	
Overall dimensions (OD × H)	DN1200/DN1800×4580		DN1400/DN2000×5145		DN1800/DN2400×5950		DN1800/DN2400×8020	
Container type	class II		class II		class II		class II	
Form of installation	Vertical		Vertical		Vertical		Vertical	
Designed life (years)	20		20		20		20	
Liquid level meter	Electric digital display level meter							
Inlet/outlet valve	Dual valve design							
Pressure building device	Yes							
Standard	GB150-2011 (Pressure Vessels); JB4730-2005 (Nondestructive Testing of Pressure Vessels); JB/T4711-2003(Pressure Vessel Coating and Transport Packaging); GB18442-2011 (Stationary Vacuum Insulated Cryogenic Pressure Vessel)							

CryoBlaster Series

Cryogenic Blast Freezer

By using a blast freezer, the temperature of the foods can be rapidly reduced. The blast freezing cycle transforms the liquid present in the foods into microcrystals (tiny crystals) which do not damage the tissue structure of the product and ensures the food does not lose its consistency and integrity.Blast freezing can also be applied for raw materials and semi manufactured products.

CryoBlaster series cryogenic blast freezer are supplied with smart control system, humanized design and robust construction, meeting highest requirement for food treatment.

Performance

- Temperature range -100°C～room temperature (temperature controllable)
- Temperature control accuracy ±2°C
- Temperature Uniformity ±3°C
- Cooling rate 1～20°C/min, temperature controllable

Constructions

- Opening method of the box door: adopt horizontal upper opening cover, and use gas spring to assist opening and closing the door.
- Door seal: special low-temperature resistant sealing device to ensure that the door can be opened freely under ultra-low temperature
- Freezing medium: liquid nitrogen (user-provided, non-recyclable)
- Exhaust system: when the pressure in the box is slightly positive, it will be automatically discharged

Controller

The touch screen provides programmable control & makes the operation and input more convenient. It adopts human-machine interface, programmed intelligent control, and has PID automatic adjustment function. It can set multi-stage cooling and heating programs. After all programs are completed, it will automatically alarm and power off.

The system also has its own process curve saving function, and the process curve can be downloaded via USB-disk.

Safety

- Electrical interlock.
- With phase sequence protection function.
- With over-temperature protection function.
- With process curve setting function.
- With timing function.
- Equipped with equipment grounding protection function.
- With safety pressure relief function.
- Equipped with equipment caster movement and braking functions.

Specification

Model	CryoBlaster 400	CryoBlaster 2700	CryoBlaster 4000	CryoBlaster 4800
Volume Inside[L]	400	2700	4000	4650
Inner Dimension(W×D×H)[mm]	700×820×700	1150×1150×2050	1260×1550×2050	1460×1550×2055
Dimensions(W×D×H)[mm]	1280×1120×914	1730×1450×2050	1840×1850×2265	2040×1850×2265
Door Opening Size(W×H)[mm]	550×700	900×2000	1050×2000	1250×2000
Weight[kg]	400	770	900	1000
Rated Power(380V/50Hz,3-phase)[W]	3000	6500	6500	6500
Trolley Maximum Size (W×D×H)[mm]	540×800×680 (Not for trolley, Trays only)	870×1150×1980	1020×1550×1980	1220×1550×1980
Liquid Nitrogen Supply [kg/h]	380kg/h	1750kg/h	1750kg/h	1750kg/h

CryoFiller Series

Automatic LN_2 Doser

CryoFiller automatic liquid nitrogen filling system is designed to inject LN_2 into containers at required pace. After filling into container, liquid nitrogen vaporizes to nitrogen gas and expel air out of container. As a result, oxygen and humidity concentration are reduced, and a suitable pressure is built in container.

Features

- Siemens touch screen controller and PLC platform, fully automatic operation.
- Adjustable filling pace, up to 600 CPM in discrete dosing mode or 2000 CPM in continuous injection mode.
- Speed sensor: real-time detection of bottle movement speed, filling speed will be adjusted accordingly.
- Product sensor: installed at upstream of the filling machine, detecting whether bottle is coming. If no bottle coming, liquid nitrogen will not be injected to avoid waste.
- ±5% accuracy of dose weight.
- Electric heating at nozzle, prevent condensation water and freezing ice.
- Various sizes nozzles are supplied as standard, customized nozzle available.
- Gas-liquid separator to guarantee liquid nitrogen is injected.
- Vacuum insulation for low liquid nitrogen consumption.
- Imported high quality electromagnetic valve for high reliability.
- Stainless steel SUS304 material for easy cleaning and no rust.

Benefits

- Inert packaging (low oxygen concentration) maintains product freshness and extends product shelf life.
- Reduce the gram weight of PET, lower cost and more environmentally friendly.
- Maintain the original shape of lightweight bottle, keep the hardness of the bottle wall consistent, and improve labeling efficiency.
- Build a suitable bottle pressure and eliminate the problem of flat bottles.
- Enhance product stacking capacity and improve warehouse space utilization.
- Maintain the high quality of organic products.

Containers applicable

- Plastic bottle: soft drink, edible oil, mineral water
- Aluminum can: soft drink
- Steel can: milk powder, protein powder, organic supplement powder
- Glass bottle: wine

Specification

Model	CryoFiller-L	CryoFiller-H
Type	Low speed	High speed
Maximum Discrete Dosing Speed (CPM)	200	600
Continuous Stream Dosing Speed (CPM)	N/A	600~2000
Dose Duration	15 ~ 1000 ms	15 ~ 1000 ms
Nozzle Size	1.5mm, 2.0mm, 2.5mm, 3.0mm	1.0mm, 1.2mm, 1.5mm, 1.8mm, 2.5mm
Accuracy by Dose Weight	±5%	±5%
LN_2 per Dose	0.01-14 g	0.01-14 g
Touch Screen Display	Siemens	Siemens
PLC Platform	Siemens	Siemens
Speed Sync Compensation	√	√
Injection Positioning Tech	√	√
Fixed Delayed Injection	√	√
Constant Speed Mode	√	√
Vacuum Insulation	√	√
LN_2 Consumption	0.20 L/h	0.20 L/h
Material	SUS304	SUS304
Weight	15Kg	12Kg
Power	100W	100W
Power Supply	110~240V,50/60Hz	110~240V,50/60Hz
LN_2 Supply Pressure	≤0.15Mpa	≤0.15Mpa
Pressurized Air Pressure (N_2 recommended)	0.5~0.65Mpa	0.5~0.65Mpa

Cryogenic Preservation Accessories

1 Polycarbonate boxes & vials
2 Cryo cane
3 Visotube
4 CryoClip
5 Liquid nitrogen measuring stick
6 Roller base
7 Flexible metal hose without vacuum insulation
8 Flexible metal hose with vacuum insulation
9 Cryogenic gloves
10 Cryogenic apron
11 Cryogenic face shield
12 Cryogenic suit
13 Cryogenic shoes

Specification

Part Number	Description
Polycarbonate cryo box	
5211110	25-place box, 2" height, for 1.5~2.0ml vials
5211120	81-place box, 2" height, for 1.5~2.0ml vials
5211130	100-place box, 2" height, for 1.5~2.0ml vials (internal thread)
5211140	81-place box, 3.75" height, for 5ml vials
Cryo Cane	
5251000	Φ13*290mm, for 5 pcs of Φ13 vials, aluminum original color, 10 EA/bag
5252000	Φ13*290mm, for 2 pcs of Φ13 visotubes, aluminum original color, 10 EA/bag
5253000	Φ10*290mm, for 2 pcs of Φ10 visotubes, aluminum original color, 10 EA/bag
5254000	Φ10*290mm, for 2 pcs of Φ10 visotubes, 5 colors, 10 EA/bag
Visotube	
5261000	Φ13*108mm, white color, 100 EA/bag
5262000	Φ10*108mm, white color, 200 EA/bag
5263000	Φ10*108mm, white color, 20 EA/bag
Roller base	
2421000	For dewars 30 liter & 35 liter
2422000	For dewars 47 liter & 50 liter
2423000	For dewars 65 liter ~ 175 liter
Liquid nitrogen measuring stick	
2431000	Measuring length 100cm
CryoClip	
2415000	Retrieve fallen object in LN_2 containers
Flexible metal hose	
2413000	Flexible metal hose without vacuum insulation, 2 meter length
2414000	Flexible metal hose with vacuum insulation, 2 meter length
Cryogenic gloves	
4122000	38cm, mid-arm length, size M
4124000	38cm, mid-arm length, size XL
4132000	48cm, elbow length, size M
4134000	48cm, elbow length, size XL
4142000	68cm, shoulder length, size M
4144000	68cm, shoulder length, size XL
Cryogenic apron	
4211000	90cm length
4212000	105cm length
4213000	120cm length
4214000	130cm length

ANTECH

Qingdao Antech Scientific Co., Ltd.
Tel: +86 532 87890321
Email: info@antechscientific.com
Web: www.antechscientific.com