Liquid Nitrogen Tank Solution

By Antech Scientific

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Product appearance and software interfaces are subject to change without notice, please refer to actual products.

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providing total solution for liquid nitrogen cryogenic storage.

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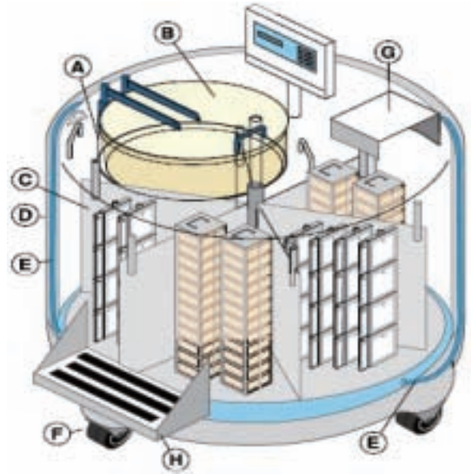
Biobank series

Introduction

Biobank -190℃ stainless steel freezer provides the user with a fully automatic, safe and reliable cryogenic liquid nitrogen storage system.Compared with other brands, Biobank large capacity LN2 freezer can store Max. 125,800 1.2ml /2ml vials, 9,000 25ml blood bags, 5,440 50ml blood bags or 2,694 250ml blood bags with the same foot print, surpassing 40% more capacity. With similar price, We save 40% cost as well as 40% space, so as to reduce the overall operating cost for customers.

Large capacity vapor phase LN2 container

- A The neck design makes sure that the under lid temperature is lower than -180℃ in vapor phase as well as reduces consumption of LN2
- B Optimized lid design extends the using time to the maximum extend.
- C Interior turntable design make it easy to fetch samples. The spindle is gyroscope, avoiding spindle damage.
- D All stainless steel construction, longer using time
- E Annular LN2 filling lines to reduce frost and ice formation
- F Tough, durable casters
- H One-piece foldable stepsflat top design, convenient working surface



Key Features

1. Patented flat top design, convenient working surface-easy to place samples.
2. Patented insulation connection between internal and external layers, avoiding misplace of internal cavity caused by long-term uneven placed samples. Meanwhile, insulation connection can avoid heat conduction, reduce the evaporation rate to the minimum extent.
3. High efficient sample storage design-utilizing the maximum space to store maximum vials and blood bags.
4. High density foam material plug with seal coating- never peeling or cracking.
5. Ultra-low jacket vacuum, maintain superb heat insulation, minimize loss of LN2, ensuring temperature in tank lower than -186℃ and absolute safety of samples.
6. Turntable shaft is strong to make the inner cavity easy to rotate; shaft not easy to get frozen.
7. Aluminum turntable reduces overall weight
8. Equipped with hot gas bypass to keep warm nitrogen gas from impacting samples during fill cycle

Ergonomic Experience

- Top of freezer has rotating handle to rotate the sections of the internal cavity to make target samples available to the opening to fetch samples. The handle can avoid the suffering of turning 500-900KG samples and meanwhile avoid cryogenic burns.

- One-piece foldable single-layer step or one-piece foldable double-layer stainless steel steps
- Forklift can be used to load and unload, convenient to move the freezer.

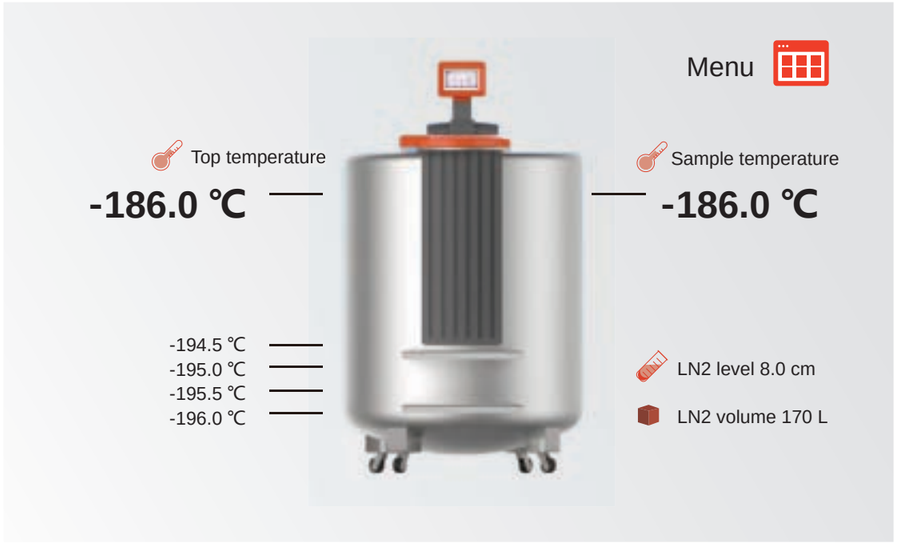
- Back up battery is available for auto-fill control and alarm system, ensuring safety of the system.
- Motor-driven sample withdrawal device is available for automatic withdrawal of cryogenic racks, convenient to operate, avoid frostbite or cryogenic burns.

- The hinge designed lid is equipped with sealing coating and safety lock, better convenience and safety.

Intelligent Monitor & Control System

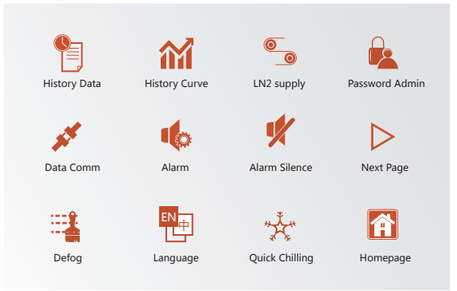
Control system consists of build-in computer and 10 inches touch screen

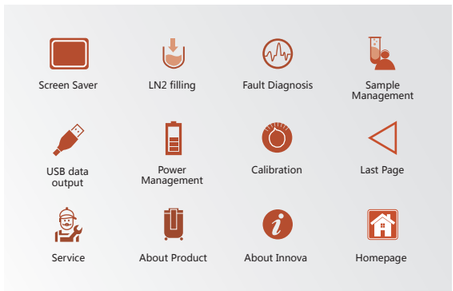
“i time” interface :



Control:

- Four variable level can be set to enhance control ability to alarm system and liquid filling.
- Automatic defrosting system--defrosting time is shortened for faster sample observation.
- Controller with frozen guard sensor can actively control and prevent LN2 overflow.
- Quick chilling function can make it recover to set temperature after lid closure .
- Operator can control and manage LN2 by setting regular filling





Monitor:

- Temperature is monitored via binary channels connected “T” thermocouple
- Temperature is monitored by thermal control group whose level range is 6 inches (150mm), the accuracy is +1/-0.0 inch (+25/-0.0mm)
- Temperature control can be displayed as degrees Celsius, Fahrenheit, Kelvin and scale.
- Vacuum fluorescent display (VFD) improves more angles visibility and provide clearer image display.
- Cryowire safe communication provides a fleible, safe and powerful solution for all alarm conditions

Safety:

- Security is enhanced by password and system access.
- Controller can store up to 500000 recent events, including temperature, LN2 liquid level, system access and system alarm.
- Audible/Visual alarm indicates important operations, ensuring safety.
- Optional backup battery can provide maximum 3 days full-load operation when power failure, enhancing safety of sample.

Alarm:

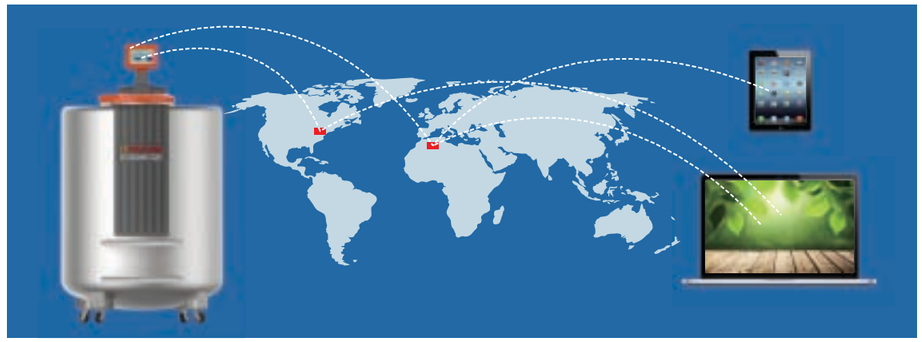
- High temperature alarm
- Extra-high liquid level alarm
- Extra-low liquid level alarm
- Remote alarm
- Sensor faulty alarm
- Audible/visual alarm provides notification for important operations, ensuring safety
- Alarm silence/remote alarm detection circuit
- Low LN2 supply alarm
- Lid opening alarm

Real-time displaying real sample temperature

Biobank series freezer can real-time display top sample temperature as well as freezer top temperature and 4 bottom temperature, showing the real sample temperature, which will dispel customer’s doubt of sample temperature. PT1000 temperature is adopted, accuracy can reach 0.01℃

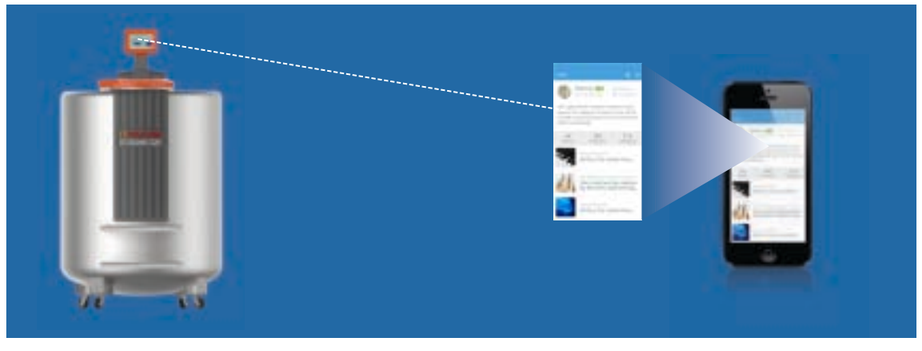
Wireless monitor and worldwide access

You can remote monitor the operating status (freezer top temperature, liquid level, supply tank pressure, liquid level, system event, system access) of your freezer in any country, as long as WIFI is available. This function can be activated or shut down at your options.



Message alarm function worldwide

No need extra hardware or software, message alarm (showing high temperature alarm, extra high/low liquid level alarm, sensor fault alarm, lid open alarm, etc) can be sent to your mobile, technical support and service of manufacturer and any other access staff (max 10 access persons can be set) when freezer fails. Three default alarm temperature can be set: -160℃, -155℃ and -150℃, which has increasing alarm frequency. And when the temperature goes up to -150℃, freezer will call customer automatically, ensuring the absolute safety of samples. You can receive the alarm any where in the world.



Data and curve recording

- Convenient RS232 data port
- 15 years data recording can record max. 500,000 latest event, including temperature, LN2 level, system event, system access and system alarm.
- History curve records freezer temperature, liquid level, etc.

Power supply:

- 110V~240V AC power supply, UL/CSA certificated transformer.
- 12V DC power supply can be connected with main and auxiliary appliances; optional 12V backup power; remote alarm

Auto/manual LN2 filling, providing both convenience and safety

Biobank series freezer has two LN2 filling method: auto and manual. In general condition, auto mode LN2 is filled automatically. When auto mode fails, manual valve can be used to fill LN2 to ensure normal LN2 supply. Customer does not need to pour LN2 into freezer which will cause bad effect to samples. Besides, auto/manual LN2 filling is able to vent warm N2 from the supply line before initiating a fill.

Sample safety

- 4 liquid level sensors to control liquid level alarm and liquid refill, real-time display liquid level and liquid volume.
- Temperature is monitored via binary channels connected “T” thermocouple, whose accuracy is +30/0.0 mm (22K/52K) and +1/0.0 in (126K),temperature can be displayed in Celsius, Fahrenheit, Kelvin and thermometric scale.
- Safety password protection: user can define different levels of password
- Patented bottom LN2-filling design reduces LN2 flow speed and pressure, with freeze protection and splash proof protection, ensuring high sample survival rate.
- The optional backup battery provides power for up to three days of operation including LN2 auto-filling when power failure occurs, thereby enhancing the safety of sample

Auto defog function for quick observation of sample

Auto defog switch will be started automatically when we open the lid, samples will be observed within seconds, which is convenient for fetch of samples. For similar model of other brands, which don’t have this function, nitrogen fog will block observation of sample, you need wait 5~10 min or use a light to provide illumination.

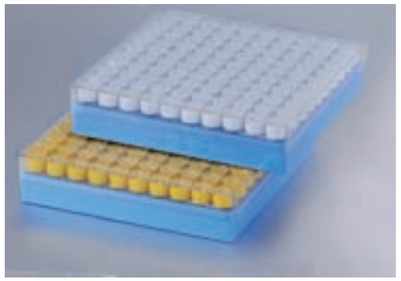
Cryogenic rack

SR13-100	Hold 13 nos. of 100 cell box
SR13-25	Hold 13 nos. of 25 cell box
SR14-100	Hold 14 nos. of 100 cell box
SR14-25	Hold 14 nos. of 25 cell box
SR15-100	Hold 15 nos. of 100 cell box
SR15-25	Hold 15 nos. of 25 cell box
SR16-100	Hold 16 nos. of 100 cell box
SR16-25	Hold 16 nos. of 25 cell box
SR17-100	Hold 17 nos. of 100 cell box
SR17-25	Hold 17 nos. of 25 cell box

Blood bag rack

BR5-250	Hold 5 nos. of 250ml blood bag
BR6-250	Hold 6 nos. of 250ml blood bag
BR8-25	Hold 8 nos. of 25ml blood bag
BR8-50	Hold 8 nos. of 50ml blood bag
BR9-25	Hold 8 nos. of 25ml blood bag
BR9-25	Hold 9 nos. of 25ml blood bag
BR10-25	Hold 10 nos. of 25ml blood bag
BR10-50	Hold 10 nos. of 50ml blood bag

2D series Cryogenic box & vial kit



Advantage:

- Whole set of vial and box
- With numbered and unique 2D barcode, the whole box can be scanned, easy to use and manage, widely used in various automatic or semi-automatic sample management system
- Small volume, easy to store and transport, saving storage and shipping cost

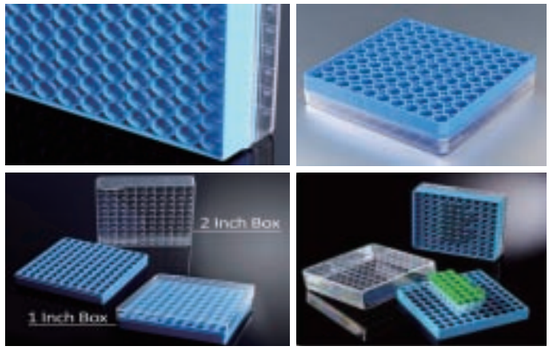
Specification:

BV2DLN05100 2D cryogenic box and 100 nos. of 2D 0.5ml vials
BV2DLN15100 2D cryogenic box and 100 nos. of 2D 1.5ml vials
BV2DLN20100 2D cryogenic box and 100 nos. of 2D 2.0ml vials
BV2DLN05025 2D cryogenic box and 25 nos. of 2D 0.5ml vials
BV2DLN15025 2D cryogenic box and 25 nos. of 2D 1.5ml vials
BV2DLN20025 2D cryogenic box and 25 nos. of 2D 2.0ml vials

Remark:

BV is for cryogenic box & vial kit
2D is for 2D barcode scanning
LN is for kit used in LN2 container
05/15/20 is for vial capacity 0.5/1.5/2.0ml
100 is for 100 cells

Specialized used for 2D series cryogenic vial—cryogenic box



Advantage:

- The whole box can be scanned, compatible
- with 2D barcode scanner and chip scanner as well as other cryogenic scanner
- Made of PC, high temp. & pressure resistant, can be used in cryogenic storage, e.g. LN2
- 10×10 ell design, 23% higher storage than 9×9 cell box
- 80% higher storage space with 1 inch box

Scanner

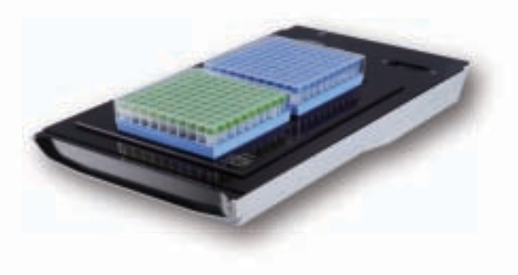
Identification system

- Preset or customize DataMatrix 2D code
- Unique microimaging 2D coding system
- No need label, lifelong information
- Total automation
- 5 seconds quick-scan

2D series cryogenic vials

Specification

V2DLN05:0.5ml 2D cryogenic vial
V2DLN15:1.5ml 2D cryogenic vial
V2DLN20:2.0ml 2D cryogenic vial
6 different colored (white, red, green, blue, yellow, purple) cap for easy identification



Remark:

V is for vial
2D is for 2D barcode
LN is for vials used in LN2 container
05/15/20 is for capacity 0.5ml/1.5ml/2.0ml

Non-2D cryogenic vials

Brady is the most professional supplier for cryogenic labels, which can provide various laboratory labels used in low temperature, high pressure sterilization and corrosive environment.

The label production system IP3000-KIT can identify the matching of label and ribbon, avoid faulty match.

Biobank Series

Technical Parameters

Model/ Specification		Description	Part No.	Applicable model	Dimension
Blood bag rack				Blood bag rack	
25ml		Hold 8 nos. of 25ml blood bag	BR 8 -25		
		Hold 9 nos. of 25ml blood bag	BR 9 -25	Biobank 22K Biobank 52K	
		Hold 10 nos. of 25ml blood bag	BR 10 -25	Biobank 126K	
50ml		Hold 8 nos. of 50ml blood bag	BR 8 -50	Biobank 58K	
		Hold 9 nos. of 50ml blood bag	BR 9 -50	Biobank 22K Biobank 52K	
		Hold10 nos. of 50ml blood bag	BR 10 -50	Biobank 126K	
250ml		Hold 5 nos. of 250ml blood bag	BR 5-250		
		Hold 6 nos. of 250ml blood bag	BR 6-250	Biobank 22K Biobank 52K	
				Biobank 126K	
500ml		Hold 500ml blood bag	BR 500	Biobank all models	
Blood bag box				Blood bag box	
25ml		Hold 25ml blood bag			95mm（90mm）
50ml		Hold 50ml blood bag	BC50	Biobank all models	150mm（145mm）
250ml		Hold 250ml blood bag	BC250	Biobank all models	
Blood bag				Blood bag	
500ml		Hold 500ml blood bag	BC500	Biobank all models	
25ml		25ml blood bag	BB25	Biobank all models	
50ml		50ml blood bag	BB50	Biobank all models	
250ml		250ml blood bag	BB250	Biobank all models	140*137*784mm
500ml		500ml blood bag	BB500	Biobank all models	140*137*898mm
Cryogenic rack				Cryogenic rack	
100 cell		Hold 14 nos. of 100 cell box	SR14-100		75*73*784mm
		Hold 16 nos. of 100 cell box	SR16-100	Biobank 22K Biobank 52K	75*73*898mm
		Hold 17 nos. of 100 cell box	SR17-100	Biobank 126K	75*73*955mm
25cell		Hold 14 nos. of 25 cell box	SR14-25		133*133*52mm
		Hold 16 nos. of 25 cell box	SR16-25	Biobank 22K Biobank 52K	133*133*52mm
Cryogenic box				Cryogenic box	
Non-2D	100 cell	Hold 17 nos. of 25 cell box	SR17-25	Biobank 126K	133*133*52mm
		Hold 100 nos. of 0.5ml vials, non-2D, used in LN2 container	BLN05100	Biobank all models	76*76*52mm
		Hold 100 nos. of 1.5ml vials, non-2D, used in LN2 container	BLN15100	Biobank all models	76*76*52mm
	25 cell	Hold 100 nos. of 2.0ml vials, non-2D, used in LN2 container	BLN20100	Biobank all models	76*76*52mm
		Hold 25 nos. of 0.5ml vials, non-2D, used in LN2 container	BLN05025	Biobank all models	133*133*52mm
		Hold 25 nos. of 1.5ml vials, non-2D, used in LN2 container	BLN15025	Biobank all models	133*133*52mm
2D	100 cell	Hold 25 nos. of 2.0ml vials, non-2D, used in LN2 container	BLN20025	Biobank all models	133*133*52mm
		Hold 100 nos. of 0.5ml vials, with 2D scanning function, used in LN2 container	B2DLN05100	Biobank all models	76*76*52mm
		Hold 100 nos. of 1.5ml vials, with 2D scanning function, used in LN2 container	B2DLN15100	Biobank all models	76*76*52mm
	25 cell	Hold 100 nos. of 2.0ml vials, with 2D scanning function, used in LN2 container	B2DLN20100	Biobank all models	76*76*52mm
		Hold 25 nos. of 0.5ml vials, with 2D scanning function, used in LN2 container	B2DLN05025	Biobank all models	
		Hold 25 nos. of 1.5ml vials, with 2D scanning function, used in LN2 container	B2DLN15025	Biobank all models	
		Hold 25 nos. of 2.0ml vials, with 2D scanning function, used in LN2 container	B2DLN20025	Biobank all models	
Kit	100 cell	One box holding 100 nos. of 1.5ml vials & 100 nos. of 1.5ml vials, non-2D, used in LN2 container	BVLN100	Biobank all models	
		One box holding 100 nos. of 1.5ml vials & 100 nos. of 1.5ml vials, with 2D scanning function ,used in LN2 container	BV2DLN100	Biobank all models	
	25 cell	One box holding 25 nos. of 1.5ml vials & 25 nos. of 1.5ml vials, non-2D, used in LN2 container	BVLN25	Biobank all models	
		One box holding 25 nos. of 1.5ml vials & 25 nos. of 1.5ml vials, with 2D scanning function ,used in LN2 container	BV2DLN25	Biobank all models	
Cryogenic cane				Cryogenic cane	
5 vial		Aluminum cane for 0.5,1.5,2.0ml vials, 5 nos. of vials per cane	SC5	Biobank all models	
6 vial		Aluminum cane for 0.5,1.5,2.0ml vials, 6 nos. of vials per cane	SC6	Biobank all models	
10 vial		Aluminum cane for 0.5,1.5,2.0ml vials, 10 nos. of vials per cane	SC10	Biobank all models	
Cryogenic vial				Cryogenic vial	
Non-2D	0.5ml	0.5ml vial, non-2D	VLN05	Biobank all models	
	1.5 ml	1.5ml vial, non-2D	VLN15	Biobank all models	
	2.0 ml	2.0ml vial, non-2D	VLN20	Biobank all models	
2D	0.5 ml	0.5ml vial, 2D scanning	V2DLN05	Biobank all models	
	1.5 ml	1.5ml vial, 2D scanning	V2DLN15	Biobank all models	
	2.0 ml	2.0ml vial, 2D scanning a	V2DLN20	Biobank all models	
Canister				Canister	
Canisters for straws			CN	Biobank all models	
Strarw				Strarw	
1/2 CC straw			ST	Biobank all models	

Biobank Series

Technical Parameters

Model		BioBank22K	BioBank52K	BioBank126K
Storage capacity			Storage capacity	
Total LN2 capacity	L	430	798	1850
LN2 under truntable	L	48	118	320
S.S. Racks（100-well box）	EA	14	30	70
Layers/rack	EA	14	16	17
Vials of 1.2ml/2ml （100-well box）	EA	19600	48000	119000
S.S. Racks（25-well box）	EA	6	8	16
Layers/rack	EA	14	16	17
Vials of 1.2ml/2ml （25-well box）	EA	2100	3200	6800
Total Number of 1.2ml/2ml	EA	21700	51200	125800
S.S.rack (25ml blood bag)	EA	212	444	900
Layers/rack	EA	8	9	10
Blood bag of 25ml	EA	1696	3996	9000
S.S.rack (50ml blood bag)	EA	128	260	544
Layers/rack	EA	8	9	10
Blood bag of 50ml	EA	1024	2340	5440
S.S.rack (250ml blood bag)	EA	96	208	449
Layers/rack	EA	6	6	6
Blood bag of 250ml	EA	576	1248	2694
Specification			Specification	
Jacket sintering vaccum	Pa	⩽1X10^{-5}		
Temperature	℃	Top: -183～-186 Bottom: -193～-196		
Internal working diameter (step to opening)	In.	32	40	38
	mm	806	1015	957
Step height	In.	23	27	36
	mm	585.5(2 layers)	692(2 layers)	925(2 layers)
Height (floor to opening)	In.	55	67	74
	mm	1391.5	1707	1882
Internal usable height	In.	32	38	40
	mm	810	962	1008
External diamater	In.	34	48	68
	mm	870	1212	1728
Internal working diameter	In.	30	41	59
	mm	750	1050	1500
Neck opening	In.	13	18	26
	mm	330	465	656
Empty weight	lb.	772	1433	2094
	kg	350	650	950
Maximum gross weight	lb.	926	1764	4299
	kg	420	800	1950
Power supply	VAC	110~240V,50Hz/60Hz	110~240V,50Hz/60Hz	110~240V,50Hz/60Hz

Introduction

CryoSmart series realize real-time temperature and liquid level monitoring, remote monitoring, alarming and automatic backup the monitoring data in cold cloud platform. CryoSmart series combined with the advanced manufacturing technology and intelligent monitoring technology to meet different needs of professional users all over the world.

This kind of container provides high efficiency of large capacity sample cryopreservation which with light weight and small space occupying. It monitors the running real time status of containers and notify users once any problems occur ensuring stable running and samples storage security. Mainly apply to medical field and samples bank users who has demand for high-end products.

CryoSmart series have completely solved the technological difficulties of electronics information technology and low power consumption technology in -196℃ low temperature application.

Key Features

1. Intelligent temperature real time monitoring
2. Intelligent liquid level real time monitoring
3. Intelligent remote alarm
4. Running data intelligent backup
5. Low power consumption
6. Replaceable battery
7. Ultra less liquid nitrogen consumption
8. Innovative overall appearance
9. Dual-lock construction
10. 5 year vacuum warranty

Products Details

Steady and Plump Appearance

Professional industrial design, strong elements feature, plump line reflect the stable of device while ensuring the tank structure strength. Reasonable stiffener layouts make the tank more robust and straight.

1. Strong art element features
2. Reasonable stiffener layouts

Professional Functional Design

Unique temperature/liquid level monitor and real-time alarm functions, real-time running data backup ensure more stable. Combining professional intelligent function tank createsperfect user experience.

3. Integrated OLED Intelligent connected functional module
4. Equipped with Intelligent connected locking lid

Ergonomic Experience

Meet the operational needs of professional users and completely eliminate the inconvenience in use. Integrate ergonomics into the design to create overall first-class ergonomic experience.

5. Comfortable operational experience

Perfect Details Design

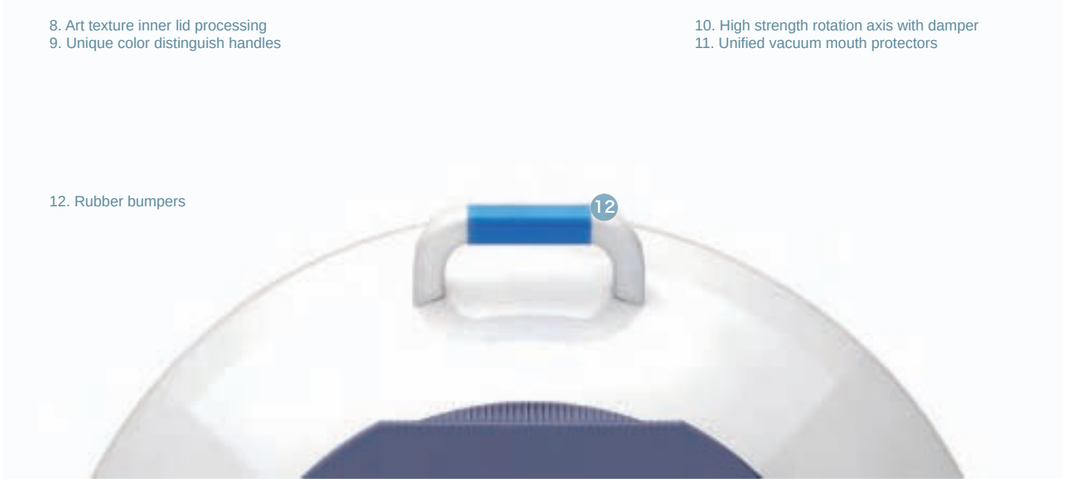
Extreme demanding design requirement, adopting art processes and standards to carve products, every detail is crafted Touching user hearts is our ultimate goal

6. Art texture outer lid processing
7. Dual-lock stainless steel lock

Products Details

8. Art texture inner lid processing
9. Unique color distinguish handles

10. High strength rotation axis with damper
11. Unified vacuum mouth protectors



12. Rubber bumpers

Important Accessories

Roller base RB-216 (left), for tanks ≥ 65L

Roller base RB-65 (right), for tanks ＜ 65L

Technical Parameters

Model	CryoSmart 600	CryoSmart 750	CryoSmart 900
Maximum Storage Capacity			
Number of Racks (EA)	6	6	6
1.2&2ml Vials (25/box)	600	750	900
Number of Boxes per Rack (EA)	4	5	6
Performance			
Liquid Nitrogen Capacity (L)	31.5	35	47
Static Evaporation (L/day)*	0.28	0.29	0.33
Capacity (L)	31.5	35	47
Working Duration (whole day)**	71	76	90
Unit Dimensions			
Neck Diamter (mm)	125	125	127
Overall Height (mm)	659	700	753
External Diameter (mm)	461	461	461
Weight Empty (kg)	14.3	14.5	15.4
Weight Liquid Full* (kg)	38.9	43.2	53.9

Model	CryoSmart 2400	CryoSmart 3000	CryoSmart 3600	CryoSmart 4800	CryoSmart 6000
Maximum Storage Capacity					
Square Canisters (EA)	6	6	6	6	6
1.2&2ml Vials (100/box)	2400	3000	3600	4800	6000
Number of Boxes per Canister (EA)	4	5	6	8	10
5ml Vials (36/box)	648	864	1080	1296	1728
Number of Boxes per Canister (5ML*EA)	3	4	5	6	8
Performance					
Liquid Nitrogen Capacity (L)	65	95	115	140	175
Static Evaporation (L/day)*	0.79	0.81	0.83	0.87	0.87
Capacity (L)	55	85	105	130	165
Working Duration (whole day)**	44	66	80	94	126
Unit Dimensions					
Neck Diameter (mm)	216	216	216	216	216
Overall Height (mm)	710	726	796	910	1026
External Diameter (mm)	681	681	681	681	681
Weight Empty (kg)	27.5	34.5	38.5	42.5	55
Weight Liquid Full* (kg)	80.8	112.4	132.8	157.3	198.5

★Static evaporation rate and static holding time are nominal. Actual rate and holding time will be affected by the nature of container use, atmospheric conditions, and manufacturing tolerances.

★★ Normal Working Duration is an arbitrary reference, to estimate container performance under normal operating conditions. Actual working time may vary due to current atmospheric conditions, container history, manufacturing tolerances and individual patterns of use. Divide static holding days by 1.6, and you get empirical value.

Introduction

CryoMaster series liquid nitrogen container combined with the advantages of little nitrogen consumption and medium range storage capacity, meeting different needs of professionals all over the world.

This kind of container provides high efficiency of large capacity sample cryopreservation with light weight and small space occupying. All models include racks, PC cryoboxes and lockable lids.

Key Features

1. Equip with racks and box
2. Dual-lock construction
3. Durable aluminum construction
4. Larger storage capacity, less liquid nitrogen consumption
5. Compatible with all major storage box brands
6. Liquid level monitoring system optional
7. Mobile roller bases optional
8. 5 year vacuum warranty

CryoMaster series

Real-time Liquid Level Monitoring System

Liquid level monitoring system continuously monitors the temperature inside the container. The liquid level monitoring system matchs all CryoMaster models,optimal choice for long time monitoring of samples storage. It realizes reminding users to add liquid nitrogen timely too. There are Cryomonitor 1000/2000 models.

Cryomonitor 1000 liquid level monitor (left)

This system with real-time temperature display:

1. High/low temperature alarm
2. Sensor fault audible and visual alarm

Cryomonitor 2000 Automatically Filling System

It is very useful to fill liquid nitrogen automatically for long time sample storage. Cryomonitor 2000 constantly monitors temperature inside the container, controlling liquid filling solenoid value open and close, supplying liquid nitrogen timely.

Ultra Low-power Consumption Liquid Level Monitoring System

Data collected by Smart Sensor, and then transferred to cloud storage by Black Box. Users only have to log on Cold Cloud to query and download data. This system is the latest monitoring product easy installation and accurate data.

Biological samples liquid nitrogen storage | Intelligent data collection module Smart Sensor (wireless sensor) | Intelligent data transfer module Black Box -- (1+n Mode) | Data storage platform Cold Cloud -- (More safety)

※Monitoring Temperature: +150℃- -200℃
※Usage: Sensor put into cabinet, device attached outside cabinet by magnetism. No external power supply.

Technical Parameters

Model		CryoMaster 75	CryoMaster 100	CryoMaster 125	CryoMaster 600	CryoMaster 750	CryoMaster 900
Maximum Storage Capacity							
1.2 &2ml Vials (25/box)		75	100	125	600	750	900
Number of Racks		1	1	1	6	6	6
Boxes Per Rack		3	4	5	4	5	6
25ml blood bag	25ml blood bag				36	36	36
	Number of Racks				18	18	18
	No. of Blood bags Per Rack				2	2	2
Performance							
LN2 Capacity (L)		15	20	25	30	35	47
Static Evaporation Rate (L/day)		0.36	0.37	0.37	0.33	0.36	0.36
Static holdover time (day)		42	54	67	90	97	115
Dimensions							
Neck Opening (mm)		125	125	125	125	125	127
Overall Height (mm)		589	670	700	705	748	754
Outer Diameter (mm)		394	394	394	461	461	416
Weight Empty (kg)		8.5	9.7	10.2	12.9	14.2	15.2
Weight Full (KG)		20.8	26.1	30.7	37.5	42.9	53.74

Model		CryoMaster 2400	CryoMaster 3000	CryoMaster 3600	CryoMaster 4800	CryoMaster 6000
Maximum Storage Capacity						
1.2 &2ml Vials	1.2 &2ml Vials (100/box)	2400	3000	3600	4800	6000
	Number of Racks	6	6	6	6	6
	Boxes Per Rack	4	5	6	8	10
25ml blood bag	25ml blood bag	60	90	120	120	150
	Number of Racks	30	30	30	30	30
	No. of Blood bags Per Rack	2	2	3	4	5
50ml blood bag	50ml blood bag		60	120	120	150
	Number of Racks		30	30	30	30
	No. of Blood bags Per Rack		2	3	4	5
Performance						
LN2 Capacity (L)		65	95	115	140	175
Static Evaporation Rate (L/day)		0.78	0.97	0.94	0.96	0.95
Static holdover time (day)		83	98	122	146	184
Dimensions						
Neck Opening (mm)		216	216	216	216	216
Overall Height (mm)		765	790	870	960	1060
Outer Diameter (mm)		681	681	681	681	681
Weight Empty (KG)		38.3	41.3	42.3	48.9	53.8
Weight Full (KG)		91.6	119.2	136.6	163.7	197.3

★Static evaporation rate and static holding time are nominal. Actual rate and holding time will be affected by the condition of container usage, atmospheric conditions, and manufacturing tolerances.

★★ Normal Working Duration is an arbitrary reference,applying to estimate container performance under normal operating conditions. Actual working time may vary due to atmospheric conditions, container usage history, manufacturing tolerances and individual patterns of usage. Divide static holding days by 1.6, and you get empirical value.

CryoMajor series

Introduction

CryoMajor series are economical small and medium size liquid nitrogen containers for long term static state storage. CryoMajor series are made of high strength and lightweight aluminum alloy. There is multilayer superior performance thermal insulation inside.

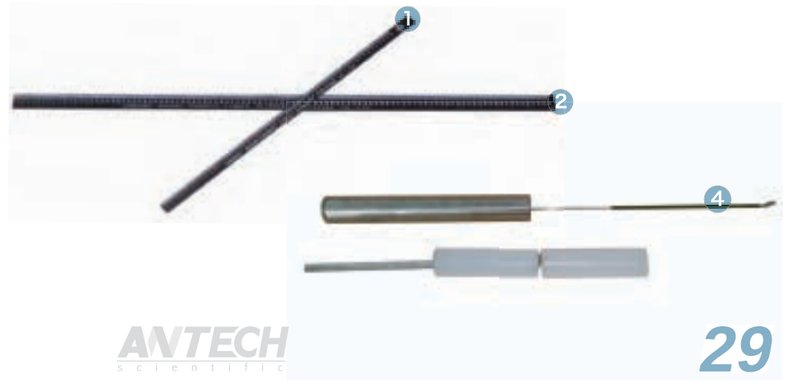
Various accessories are optional.Mainly apply to animal husbandry and laboratories.

Key Features

1. High strength and lightweight aluminum construction
2. Ultra-low evaporation losses
3. Numbered index location points for canisters
4. Mobile roller bases optional
5. Lockable lids
6. Straw storage
7. LN_2 pump optional
8. 5 year vacuum warranty

Important Accessories

1. 600mm Liquid Level Ruler
2. 1000mm Liquid Level Ruler
3. LN_2 Dispenser
4. 2-level canister



Technical Parameters

Model	CryoMajor 2/30	CryoMajor 3/50	CryoMajor 6/50	CryoMajor 8/80	CryoMajor 10/50
Maximum Storage Sapacity					
Number of Canisters	3	6	6	6	6
Number of Straws (0.5ml)	165	792	792	2244	792
Number of Straws (0.25ml)	330	1788	1788	5022	1788
Performance					
Liquid N2 Capacity(L)	2	3.1	6	8	10
Static Evaporation(L/D)	0.08	0.12	0.12	0.21	0.12
Static Holdover time(Day)	24	26	52	38	86
Unit Dimensions					
Neck Diameter (mm)	35	50	50	80	50
Overal Height(mm)	428	435	482	502	552
External Diameter (mm)	204	223	300	300	300
Canister Diameter(mm)	25	38	38	63	38
Canister Height (mm)	120	120	120	120	120
Weight Empty (KG)	2.6	3.1	4.8	5.9	5.9
Weight Full (KG)	4.2	5.6	9.7	12.5	14.1

Model		CryoMajor 10/80	CryoMajor13/50L	CryoMajor15/50	CryoMajor15/80	CryoMajor 20/50(L)
Maximum Storage Capacity						
No. of Canister		6	6	6	6	6
No. of Straws	0.5ml	2244		792	2244	792
(1-level Canister)	0.25ml	5022		1788	5022	1788
No.of Straws	0.5ml		1284			1284
(2-level Canister)	0.25ml		2832			2832
Performance						
Liquid Nitrogen Capacity (L)		10	13	15	15	20
Static Evaporation (L/day)		0.21	0.12	0.11	0.21	0.12
Static Holdover time(Day)		48	109	134	71	168
Unit Dimensions						
Neck Opening (mm)		80	50	50	80	50
Overall Height (mm)		557	623	591	595	672
External Diameter (mm)		300	310	394	394	394
Canister External Diameter (mm)		63	38	38	63	38
Canister Height (mm)		120	276	120	120	120/276
Weight Empty (kg)		5.9	6.3	8.5	8.6	9.5
Weight Liquid Full (kg)		14.1	16.6	18.2	18.2	22.3

Technical Parameters

Model		CryoMajor 20/80(L)	CryoMajor 25/50(L)	CryoMajor 25/80(L)	CryoMajor 30/50(L)	CryoMajor 30/80(L)
Maximum Storage Capacity						
No. of Canister		6	6	6	6	6
No. of Straws	0.5ml	2244	792	2244	792	2244
(1-level Canister)	0.25ml	5022	1788	5022	1788	5022
No.of Straws	0.5ml	3624	1284	3624	1284	3624
(2-level Canister)	0.25ml	8460	2832	8460	2832	8460
Performance						
Liquid Nitrogen Capacity (L)		20	25	25	31.5	31.5
Static Evaporation (L/day)		0.21	0.12	0.21	0.12	0.21
Static Holdover time(Day)		95	208	119	254	147
Unit Dimensions						
Neck Opening (mm)		80	50	80	50	80
Overall Height (mm)		676	700	705	706	710
External Diameter (mm)		394	394	394	462	462
Canister External Diameter (mm)		63	38	63	38	63
Canister Height (mm)		120/276	120/276	120/276	120/276	120/276
Weight Empty (kg)		9.5	10.7	10.9	12.9	13.1
Weight Liquid Full (kg)		22.3	26.4	26.4	31.7	31.7

Model		CryoMajor 30/125(L)	CryoMajor 35/50(L)	CryoMajor35/125(L)	CryoMajor47/127(L)	CryoMajor47/127T(L)	CryoMajor50B/125(L)
Maximum Storage Capacity							
No. of Canister		6	6	6	6	10	6
No. of Straws	0.5ml	5124	792	5124	5124	4310	5124
(1-level Canister)	0.25ml	11952	1788	11952	11952	10320	11952
No.of Straws	0.5ml	9048	1284	9048	9048	8200	9048
(2-level Canister)	0.25ml	19944	2832	19944	19944	17810	19944
Performance							
Liquid Nitrogen Capacity (L)		31.5	35.5	35.5	47	47	50
Static Evaporation (L/day)		0.35	0.12	0.37	0.36	0.36	0.45
Static Holdover time(Day)		90	286	97	130	130	110
Unit Dimensions							
Neck Opening (mm)		125	50	125	127	127	125
Overall Height (mm)		705	750	748	718	718	818
External Diameter (mm)		462	462	462	508	508	462
Canister External Diameter (mm)		97	38	97	97	71	97
Canister Height (mm)		120/276	120/276	120/276	120/276	120/276	120/276
Weight Empty (kg)		12.9	14.2	14.2	15	15	15.2
Weight Liquid Full(kg)		38.7	35.0	43.31	53.54	53.54	56.2

Remark:

1.Model number end without "L" are supplied with 120ml length canister. One layer of straws can be loaded.

2.Model number end with "L" are supplied with 276ml length canister. Two layers of straws can be loaded.

3.For example, CryoMajor30/50 is supplied with canister height 120mm, while CryoMajor 30/50L is supplied with canister height 276mm.

Cane

CryoMajor series will be also used to store 0.5ML-5ML vials with cane.The storage quantity shown in the table below:

Cane Parameters

Canister Model	Length 120mm, Diameter 38mm (50 neck opening)				Length 276mm, Diameter 38mm (50 neck opening)			
Vials Model	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank
0.5ml	3	3	9	54	3	6	18	108
1.5ml	3	3	9	54	3	6	18	108
2ml	3	3	9	54	3	6	18	108
3ml	3	3	9	54	3	6	18	108
5ml	3	1	3	18	3	3	9	54

Canister Model	Length 120mm, Diameter 63mm (80 neck opening)				Length 276mm, Diameter 63mm (80 neck opening)			
Vials Model	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank
0.5ml	11	3	33	198	11	6	66	396
1.5ml	11	3	33	198	11	6	66	396
2ml	11	3	33	198	11	6	66	396
3ml	11	3	33	198	11	6	66	396
5ml	11	1	11	66	11	3	33	198

Canister Model	Length 120mm, Diameter 97mm (125 neck opening)				Length 276mm, Diameter 97mm (125 neck opening)			
Vials Model	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank	Number of Cane/ Canister	Number of Vials/ Cane	Number of Vials/ Canister	Number of Vials/ Tank
0.5ml	27	3	81	486	27	6	162	972
1.5ml	27	3	81	486	27	6	162	972
2ml	27	3	81	486	27	6	162	972
3ml	27	3	81	486	27	6	162	972
5ml	27	1	27	162	27	3	81	486

Introduction

CryoTrans series is designed for storage and short-distance transportation of small amount of liquid nitrogen. It is equipped with rubber protection rings and prefixed bottom pad for safety. Stainless steel roller base is optional for convenient transportation. CryoTrans series is widely used in animal husbandry and laboratories.

Key Features

1. Strong, lightweight aluminum construction
2. Low liquid nitrogen evaporation
3. Special liquid nitrogen transportation design
4. CE Certificate
5. 5-year vacuum warranty
6. Equipped with rubber protection rings & prefixed bottom pad

Important Accessories

1. Liquid nitrogen level ruler
2. Liquid nitrogen dispenser
3. Roller base.

Technical Parameters

Model	CryoTrans 3	CryoTrans 6	CryoTrans 10	CryoTrans 20	CryoTrans 30	CryoTrans 35	CryoTrans 50
Performance							
Capacity (L)	3	6	10	20	30	35	50
Neck Diameter (mm)	50	50	50	50	50	50	50
Static Evaporation Rate (L/day)	0.12	0.12	0.12	0.12	0.12	0.12	0.23
Unit Dimensions							
Overall Height (mm)	435	482	552	672	706	750	811
External Diameter (mm)	223	300	300	394	462	462	462
Weight Empty (KG)	3.1	4.8	5.9	9.5	12.9	14.2	15.4
Weight Full (KG)	5.56	9.72	14.1	25.9	37.5	42.9	56.4

CryoTrans series

CryoCarrier series

Introduction

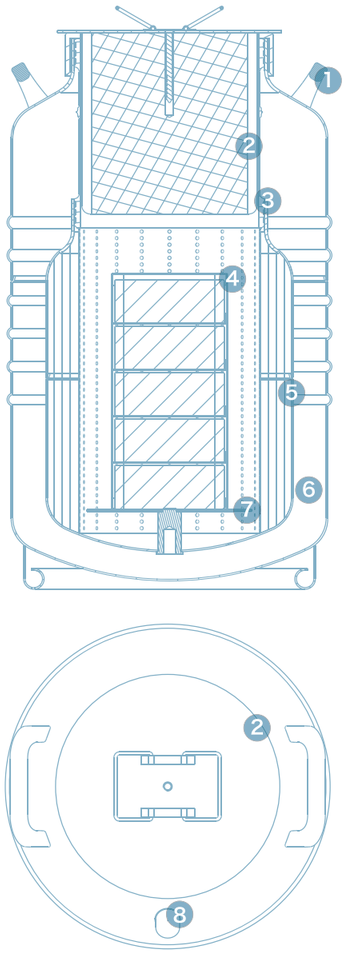
CryoCarrier series is dry shipper containers. It is designed for biology, livestock breeding, research and medical fields and enables the biological samples, straws, cryovials or blood bags to transport below-150℃ environment. There is liquid nitrogen absorbent materials placed in the inner tank, which avoids the risk of outflow of liquid nitrogen. The CryoCarrier dry shipper meets the IATA and protect your valuable samples in safe conditions for both users and transporters during transportation.

Key Features

1. Vapor phase cryogenic storage
2. Robust and durable aluminum construction
3. Lockable lids
4. No spillage of liquid nitrogen
5. Available for biological samples straws, cryovials or blood bags
6. 3 years vacuum warranty

Advantages

1. Reliable absorption materials, rapid absorption of liquid N2
2. Meet the standard of IATA (The international Transport Association)
3. Excellent products construction and superior vacuum performance to ensures the maximum storage time
4. Unique stainless steel screen construction ensures samples storage space clean
5. All models optional equipped with liquid level monitor



1. Handles
2. Cap Plug
3. Neck Tube
4. Canister
5. Liquid Nitrogen Absorption Layer
6. Vacuum Jacket
7. Stage
8. Vacuum Sealing Joint

Technical Parameters

Model		CryoCarrier 3	CryoCarrier 5	CryoCarrier 8	CryoCarrier 10	CryoCarrier 15	CryoCarrier 20	CryoCarrier 25
Maximum Storage Capacity								
Straws	Number of Canister	1	1	1	1			1
	Number of Straws (0.5ml)	132	214	820	1508			
	Number of Straws (0.25ml)	298	472	1780	3324			
Vials	No. of Rack				1	1	1	1
	Layer of Rack				4	3	4	5
	1.2ml/2ml Vials				100	300	400	500
Blood Bags (25ml)	No. of Rack				1	1	1	1
	Layer of Rack				2	1	2	3
	Number of 25ml bags				6	15	30	45
Blood Bags (50ml)	No. of Rack				1	1	1	1
	Layer of Rack				1	1	1	2
	Number of 50ml bags				3	15	15	30

Performance							
Capacity (L)	3	5	7.5	10	15	20	25
Static Evaporation Rate (L/Day)	0.16	0.17	0.20	0.43	0.84	0.84	0.84
Static holdover time (Day)	20	31	37	23	18	25	29

Unit Dimensions							
Neck Diameter (mm)	50	50	80	125	216	216	216
Overall Height (mm)	428	495	487	555	580	660	678
External Diameter (mm)	223	223	300	300	394	394	394
Canister Diameter (mm)	38	38	63	97			
Canister Height (mm)	120	276	120	276			
Weight Empty (KG)	3.2	3.4	4.9	5.9	8.5	9.7	11.2
Weight Full (KG)	4.3	6.5	7.3	8.7	13.8	17.1	19.0

★Static evaporation rate and static holding time are nominal. Actual rate and holding time will be affected by the condition of container usage, atmospheric conditions, and manufacturing tolerances.

★★ Normal Working Duration is just an arbitrary reference,applying to estimate container performance under normal operating conditions. Actual working time may vary due to atmospheric conditions, container usage history, manufacturing tolerances and individual patterns of usage. Divide static holding days by 1.6, and you get empirical value.

CryoCenter series

Introduction

CryoCenter series is a high performance liquid nitrogen storage container. The pressure is generated by liquid nitrogen vaporization, then it forces the container discharge the liquid nitrogen.

The CryoCenter series liquid nitrogen container is more safe and durable use . It is made of stainless steel and equipped with fill and withdraw valve, safety valve, pressure building valve, pressure relief valve, pressure gauge and mobile castors. Above the capacity 200L container is equipped with bursting disc as double safety.

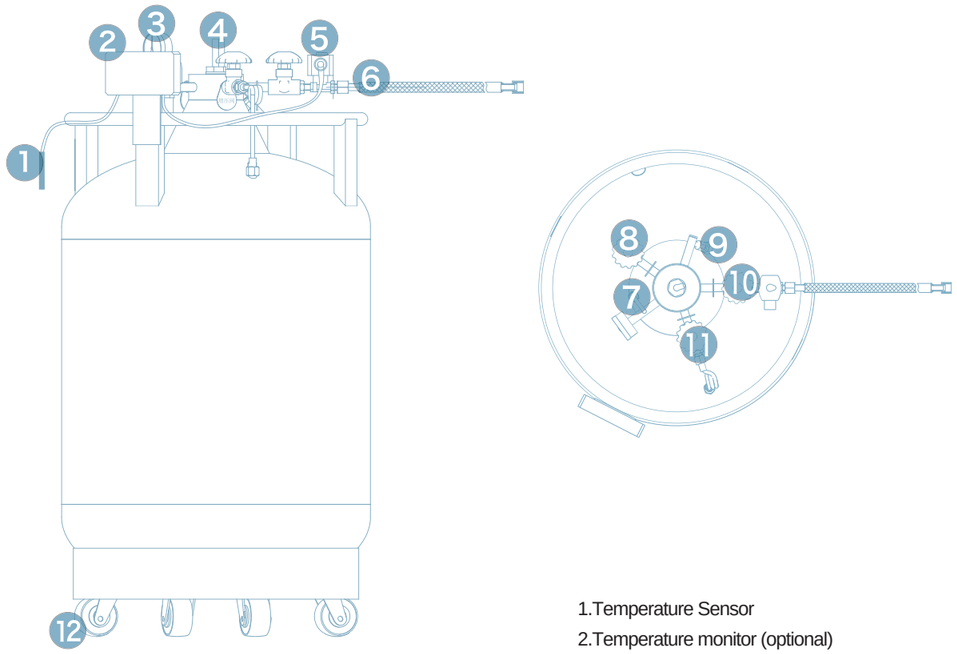
Compared with traditional welded insulated cylinder largely reduces the evaporation loss, increases the safety and use more convenient.

Key Features

1. 5 year vacuum warranty
2. Stainless steel tanks
3. Automatic caster wheel for easy mobility
4. Low liquid N2 evaporation
5. Safety design and mutual protection

Back-up System

The CryoCenter series is a reliable device for liquid nitrogen storage and transportation. Its professional design reduces the liquid nitrogen evaporation consumption and guarantee users' safety. It can be optional for the solenoid valve, inner temperature monitor and liquid nitrogen level indicator to realize the auto supply of liquid nitrogen.



1.Temperature Sensor
2.Temperature monitor (optional)
3.Pressure gauge
4.Liquid nitrogen level indicator (optional)
5.Solenoid valve (optional)
6.Transfer hoses (optional)
7.First Safety valve,
8.Pressure relief valve
9.Second Safety valve
10.Fill and withdraw valve
11.Pressure building valve
12.Mobile castors.

Remarks:
If you need one Cryocetner to supply more than one tank, please contact your Key account manger.

Technical Parameters

Model	CryoCenrter 5	CryoCenrter 15	CryoCenrter 30	CryoCenrter 50	CryoCenrter 100
Performance					
Liquid Nitrogen Capacity (L)	5	15	30	50	100
Static Evaporation (L/day)*	0.15	0.38	0.75	1	1.3
Infusion Volumes (L/min)	2	2	3	3	4
Unit Dimensions					
Overall Height (mm)	510	750	879	991	1185
External Diameter (mm)	329	404	454	506	606
Weight Empty (kg)	15	23	32	54	75
Weight Liquid Full* (kg)	19.1	35.3	56.6	95	157
Standard Working Pressure (mpa)	0.05				
Highest Working Pressure (mpa)	0.09				
Primary Relief Value Opening Pressure (mpa)	0.099				
Secondary Relief Value Opening Pressure(mpa)	0.15				
Pressure Gauge Indicating Range (mpa)	0~0.25				

Model	CryoCenrter 150	CryoCenrter 175	CryoCenrter 200	CryoCenrter 300	CryoCenrter 500
Performance					
Liquid Nitrogen Capacity (L)	150	175	200	300	500
Static Evaporation (L/day)*	1.95	2.1	2.4	3.3	5.5
Infusion Volumes (L/min)	6	6	8	8	10
Unit Dimensions					
Overall Height (mm)	1188	1298	1265	1459	1576
External Diameter (mm)	706	706	758	857	1008
Weight Empty (kg)	102	120	130	202	255
Weight Liquid Full* (kg)	225	264	294	448	665
Standard Working Pressure (mpa)	0.05				
Highest Working Pressure (mpa)	0.09				
Primary Relief Value Opening Pressure (mpa)	0.099				
Secondary Relief Value Opening Pressure(mpa)	0.15				
Pressure Gauge Indicating Range (mpa)	0~0.25				

★ Static evaporation rate and static holding time are nominal. Actual rate and holding time will be affected by the condition of container usage, atmospheric conditions, and manufacturing tolerances.