

\* All specifications, dimensions and construction shown in this catalogue are subject to change without prior notice.



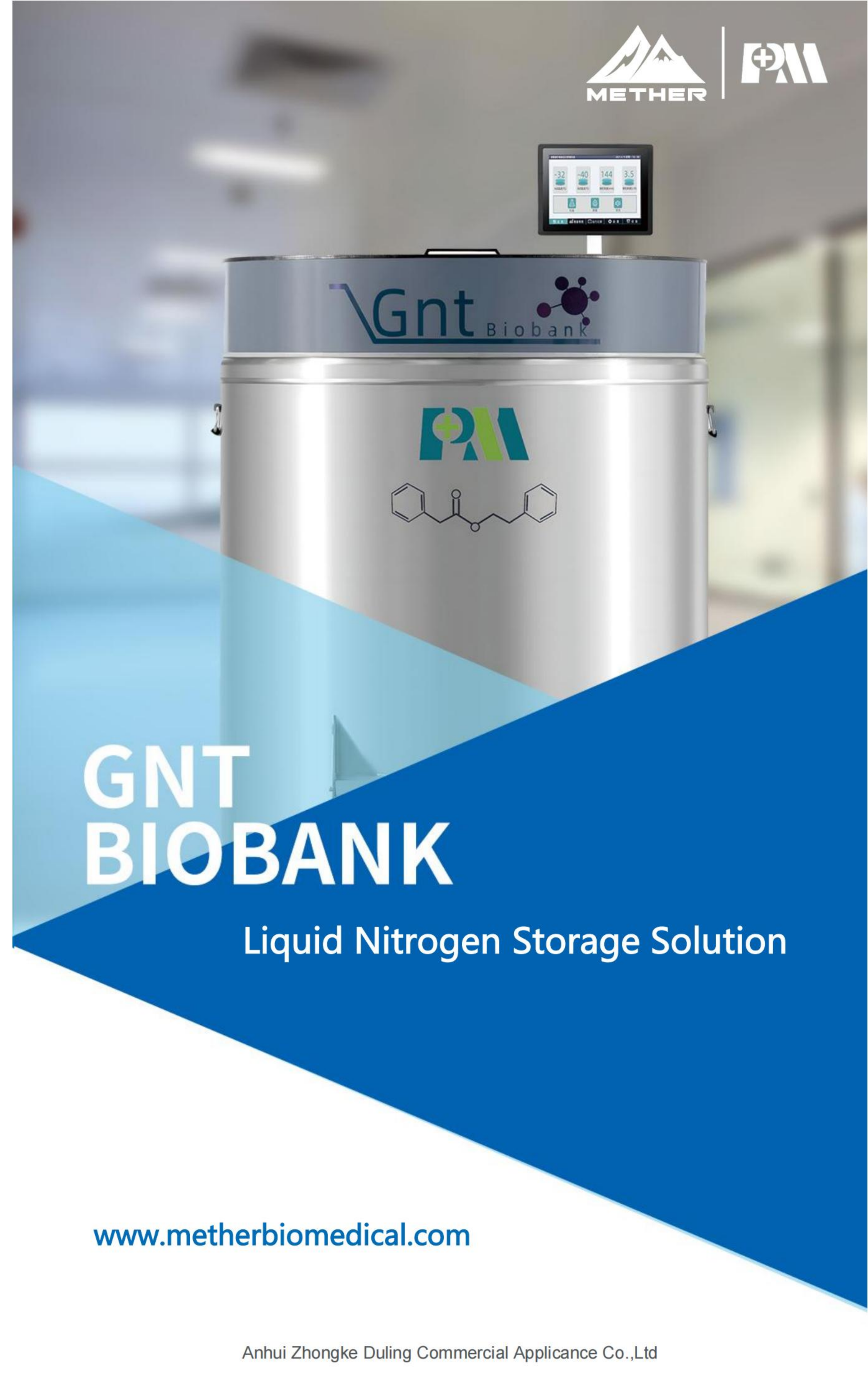
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# GNT BIOBANK

Liquid Nitrogen Storage Solution

[www.metherbiomedical.com](http://www.metherbiomedical.com)

Anhui Zhongke Duling Commercial Appliance Co.,Ltd

## 01 Stainless Steel Vapor Phase Liquid Nitrogen Tanks

The GNTBIO BANK series offers users a safer and smarter ultra-low temperature liquid nitrogen storage system with a capacity of 15,600-9,450 2ml tubes and a large off-bore open-ended design for easy storage of samples. Compatible with both gas phase and liquid phase storage modes, the system ensures uniform and stable temperatures throughout the entire tank, even when the lid is open for long periods of time. The temperature difference between the entire storage area and the top of the freezing rack can be as low as -190°C.

### Features

- Compatible with both gas and liquid phase storage modes, with a wide range of volumes available.
- Compatible with both manual and automatic refill control modes for a more flexible operating experience
- Advanced temperature and level monitoring and alarm system for network monitoring
- Hot gas bypass design reduces the effect of temperature fluctuations inside the tank to ensure sample safety
- Support data backup and saving, exportable for printing
- One-touch defogging for easy sample finding and retrieval



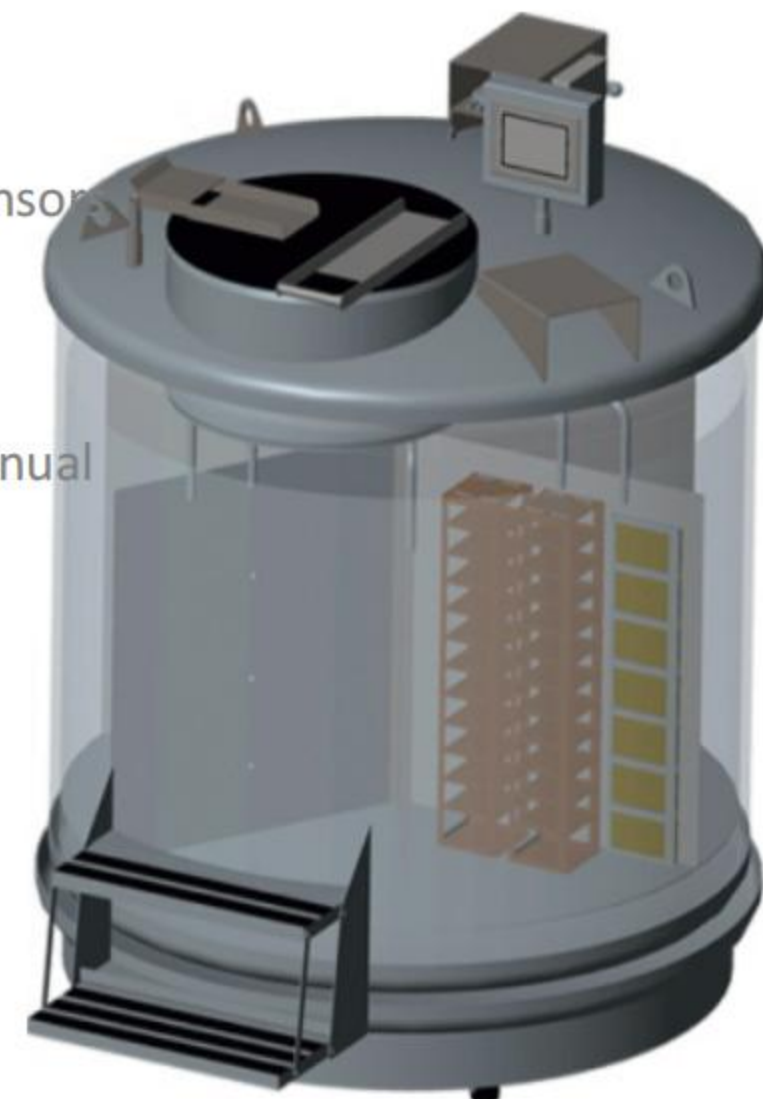
### AI control system

The intelligent monitoring terminal of liquid nitrogen tank has data storage function; supports compatible with various mainstream communication protocols; adopts 10-inch or 7-inch LCD intelligent touch screen to visually display the operating status and parameters of liquid nitrogen tank in the form of chart. Terminal can automatically / manually open the inlet solenoid valve for liquid nitrogen supplement, real-time monitoring level height, tank temperature, solenoid switch status and running time, with authority and security password protection, various alarm functions (level alarm, temperature alarm, over-limit alarm, sensor fault alarm, cover overtime alarm, rehydration alarm, SMS remote alarm, power alarm), more monitoring signal to the central computer unified centralized monitoring and control.



### System advantages

- Real-time display of temperature and LN2 level data
- High precision platinum resistance temperature sensors
- Compatible with differential pressure and capacitive LN2 level sensors
- Automatic liquid nitrogen filling function
- Wired/wireless/WiFi/4G communication options
- Choice of three operating modes: gas phase, liquid phase and manual
- Remote alarm function by phone / SMS / WeChat / email
- Local audible and visual alarm function
- System authority hierarchy management
- Automatic recording of operating data
- Local data is stored permanently and can be exported via USB
- Cloud-based data backup function
- Backup power and UPS power



## Parameters

MODEL	YDD-370-320P	YDD-460-320P	YDD-800-445P	YDD-800-445R	YDD-800-465R	YDD-1000-500P	YDD-1800-635R
<b>Maximum storage capacity</b>							
<b>1.2&amp;2mlvials</b>	15600	19500	39200	42000	42900	55500	94500
<b>RACKS (100 per box)</b>	12	12	24	26	32	32	60
<b>RACKS (25 per box)</b>	4	4	16	16	4	20	12
<b>RACK LAYERS</b>	12	15	14	14	13	15	15
<b>Performance</b>							
<b>LN<sub>2</sub> VOLUME (L)</b>	370	460	797	800	890	1000	1800
<b>LN<sub>2</sub> under the tray(L)</b>	55	55	133	133	135	200	295
<b>Static LN<sub>2</sub> retention (Vapo phase)</b>	11	11	20	20	21	25	30
<b>Static LN<sub>2</sub> retention (Liquid phase)</b>	74	92	118	118	120	125	177
<b>Parameters</b>							
<b>Inside Neck Dia. (mm)</b>	320	320	445	445	465	500	635
<b>Effective internal height (mm)</b>	780	875	780	780	830	870	870
<b>Internal diameter (mm)</b>	730	730	980	980	1113	1130	1390
<b>Overall height(mm)</b>	1400	1450	1605	1605	1550	1680	1685
<b>Min, Door width(mm)</b>	815	815	1090	1090	1210	1300	1565
<b>N.W(kg)</b>	258	283	355	358	375	580	805
<b>Full load weight (kg)</b>	559	657	1004	1007	1099	1380	2207
<b>Blood bag/levels of blood bag racks/number of blood bag racks</b>							
<b>7910S/U(25ml)</b>	1104/6/184	1472/8/184	3168/8/396	3184/8/398	3360/7/480	4384/8/548	6432/8/804
<b>4R9951(50ml)</b>	768/6/132	1056/8/132	1888/8/226	1876/8/268	2072/7/296	2656/8/332	3920/8/490
<b>4R9953(250ml)</b>	400/4/100	500/5/104	920/5/184	1020/5/204	944/4/236	1320/5/264	2010/5/402
<b>4R9955(500ml)</b>	328/4/82	410/5/82	608/5/136	791/5/158	640/4/160	1000/5/200	1550/5/310

Remark: 1.All gas phase storage containers can be used as liquid phase storage  
2.Tray with R model in square arrangement

## 02 Mini Vapor LN<sup>2</sup> Tanks

The mini vapour phase liquid nitrogen tank is unique in the market. It realises real-time temperature monitoring, liquid level monitoring, automatic liquid replenishment, remote monitoring and alarm as well as automatic backup storage of monitoring data. Based on the capacitive level sensor, it can easily and automatically control the liquid level to achieve the vapor phase storage at -190°C at the top of the tank, which completely solves the technical problem of applying electronic information technology in low temperature environment of -196°C. It is a perfect combination of advanced liquid nitrogen tank manufacturing technology and intelligent monitoring technology, with light weight, small footprint, large capacity, efficient sample access, real-time monitoring of the liquid nitrogen tank's operating status and timely alarming in case of problems to ensure the safety of sample storage, mainly for users such as biomedical and sample banks.

### Features

- 1 Real-time liquid nitrogen level and temperature monitoring
- 2 Automatic liquid nitrogen replenishment system, safe and reliable
- 3 Remote alarm function
- 4 Excellent internal temperature uniformity and stability
- 5 Live audible and visual alarm function
- 6 Remote monitoring and communication
- 7 Compatible with vapor phase and liquid phase storage modes
- 8 Real-time display of liquid nitrogen consumption
- 9 Warm air bypass design to reduce internal temperature fluctuations
- 10 Intelligent local and cloud-based data backup



### Parameters

MODEL	YDS-175-216L	YDS-145-216L	YDS-120-216L	YDS-115-216L	YDS-95-216L
<b>Max Storage Capacity</b>					
No. of racks	6	6	4	6	6
1.282.0ml Cryovials(100 per box)	6000	4800	4000	3600	3000
Layers of each rack	10	8	10	6	5
<b>Performance</b>					
Volume of LN <sub>2</sub> (L)	175	145	121	121	95
Static evaporation (L/day)	1.2	0.85	0.85	0.85	0.81
<b>Specifications</b>					
Opening Diameter(mm)	216	216	216	216	216
Height(mm)	1130	1020	1050	860	950
Outside Diameter(mm)	678	678	575	678	678
Empty Weight(kg)	61	53	48.5	50	43

## 03 BIO LN<sub>2</sub> TANK (Canister Series)

The BIO LN<sub>2</sub> TANKS (Canister series) are designed for long-term static storage of samples and are available in large capacity or extra-long shelf-life versions, using canister to store bio-samples in cryovials. Users can choose the right model for freezing biological samples according to their actual needs. They are mainly used for preserving semen, embryos, stem cells, skin, internal organs, vaccines and other active organisms. Internal organs, vaccines and other active biological tissues.

### Features

- 1 Ultra-low liquid nitrogen loss evaporation
- 2 5-year vacuum warranty
- 3 Canister to hold bio-samples
- 4 High strength & light weight aluminium construction for durability
- 5 Narrow neck reduces LN<sub>2</sub> consumption
- 6 Canisters in different colors. Easy identification
- 7 Optional safety lock



### Parameters

Model	YDS 30	YDS-35	YDS-35-80	YDS-47-127/6	YDS-47-127/10	YDS-50B
Capacity(L)	31.5	35.5	35.5	47	47	50
NO. of canister	6	6	6	6	10	6
Canister Dia. (mm)	38	63	63	97	72	38
Canister height(mm)	276	276	276	276	276	276
No. of holder each canister	4	4	16	40	21	4
No. of Straws each holder	144	144	576	1440	1260	144
Static Evaporation(L/day)	0.12	0.12	0.22	0.36	0.36	0.24
Duration of Normal Operation	263	296	161	131	131	208
Opening Diameter(mm)	50	50	80	127	127	50
Height (m m)	648	672	675	730	730	744
Outside Diameter(mm)	451	451	451	508	508	508
Empty Weight(kg)	13.5	13.8	14.2	19	19	21
Gross Weight(kg)	39.1	42.7	43.1	57.3	57.3	61.7

## BIO LN<sub>2</sub> TANK (Portable series)

This series of products is small, light, easy to carry, compact and lightweight, low daily consumption of liquid nitrogen in static storage, economical and practical. They are made of high-strength aircraft aluminum, high vacuum multi-layer insulation design, optional lid lock to protect the safety of storage.

### Features

- 1 Made of high strength aircraft aluminium
- 2 Easy to carry for long-term storage of biological specimens
- 3 Supplied with a protective sleeve to prevent damage
- 4 Numbered canister for easy identification and independent access to samples
- 5 Optional lid lock to protect the safety of storage
- 6 High vacuum multi-layer insulation design and 5-year vacuum warranty



## Parameters

Model	YDS-1-30	YDS-2-30	YDS-3	YDS-6	YDS-10	YDS-10-80	YDS-10-125	YDS-10-210	YDS-15	YDS-15-80	YDS-15-125	YDS-20	YDS-20-80	YDS-20-125
Capacity(L)	1.6	2.8	3.15	6.7	10.8	10.8	10.5	10.0	16.5	16.5	16.2	21.6	21.6	21.6
NO. of canister	3	3	6	6	6	6	6	6	6	6	6	6	6	6
Canister Dia. (mm)	26	26	38	38	38	38	38	38	38	38	38	38	38	38
Canister height(mm)	80	110	120	120	120	120	120	120	120	120	120	120	120	120
No. of holder each canister	N/A	N/A	5	5	5	5	5	5	5	5	5	5	5	5
No. of Straws each holder	N/A	N/A	150	150	150	150	150	150	150	150	150	150	150	150
Static Evaporation(L/day)	0.07	0.08	0.11	0.11	0.11	0.20	0.44	0.74	0.12	0.21	0.39	0.12	0.21	0.39
Duration of Normal Operation	13	25	35	65	98	50	28	15	150	100	50	175	150	130
Opening Diameter(mm)	35	30	50	50	50	80	125	210	50	80	125	50	80	125
Height (mm)	300	420	450	504	570	550	540	520	600	600	600	640	640	640
Outside Diameter(mm)	180	224	224	284	330	304	304	304	354	354	354	384	384	384
Empty Weight(kg)	1.8	2.3	3.2	4.7	5.8	5.9	6.1	7.6	8.2	8.2	8.3	11.2	11.3	11.3
Gross Weight(kg)	3.0	4.5	5.7	10.1	14.5	14.6	14.6	15.7	21.5	21.5	21.4	28.6	28.7	28.7

## 04 BIO LN<sub>2</sub> TANK (Medical&Lab series)

Low consumption of LN<sub>2</sub>, large opening. Easy access square racks for applications requiring long term storage of bio-samples and frequent sample extraction. The light weight and small footprint of the Medical&Lab LN<sub>2</sub> tanks make them the first choice for small sample banks.



### Features

- 1 Large opening for easy sample access
- 2 Large capacity with low LN<sub>2</sub> consumption
- 3 Multi-layer insulated vacuum design
- 4 Optional lid lock
- 5 Large opening for easy sample access
- 6 Optional intelligent monitoring system
- 7 High strength neck design
- 8 High strength light weight aluminium construction

### Parameters

Model	YDS-35-125	YDS-47-127	YDS-50-125	YDS-65-216	YDS-65-216L	YDS-95-216	YDS-115-216	YDS-120-216	YDS-145-216	YDS-175-216
Max Storage Capacity										
No. of Square rack	6	6	6	4	6	6	6	4/6	6	6
1.2&2ml Cryovials (100 per box)	—	—	—	2000	2400	3000	3600	4000/3600	4800	6000
1.2&2ml Cryovials (25 per box)	750	750	900	—	—	—	—	—	—	—
layers of rack	5	5	6	5	4	5	6	10/6	8	10
Performance										
LN <sub>2</sub> Capacity(L)	35	47	50	65	65	95	121	121	145	175
Static Evaporation(L/day)	0.37	0.45	0.43	0.78	0.78	0.81	0.85	0.85	0.85	0.87
Duration of Normal Operation(day)	97	105	115	83	83	117	142	142	171	202
Specifications										
Opening Dia(mm)	125	127	125	216	216	216	216	216	216	216
Height(mm)	747	716	771	715	700	950	860	1050/860	1020	1130
Outside Diameter(mm)	451	508	508	575	678	678	678	575/678	678	678
Empty Weight(kg)	17	21	22.5	28.5	32	38	45	43.5/45	48	56

## 05 LN<sub>2</sub> DRY SHIPPER

The dry shipper series is suitable for transporting samples in deep cryogenic conditions (vapor phase storage at temperatures below -190°C), avoiding the risk of liquid nitrogen spillage during transport, and used in short time air transport. The internal liquid nitrogen adsorber absorbs and preserves the liquid nitrogen without spilling it, even if the container is tipped over. A special stainless steel mesh sieve separates the storage space from the liquid nitrogen adsorber, which prevents the liquid nitrogen adsorber material from being mixed into the cryovials. It is mainly used for laboratory and users who need to transport small quantities of samples for short periods of time.

### Features

- 5 Year Vacuum Warranty
- Large opening for easy sample access
- No LN<sub>2</sub> Spillage
- Cryo adsorbant
- High strength light weight aluminium construction
- Vapor phase cryogenic storage
- Optional lockable lids
- Multi-layer insulated vacuum design



### Parameters

Model	YDH-3	YDH-4-125	YDH-6-80	YDH-10-125	YDH-20-216	YDH-25-216
Tank Capacity(L)	3	4	6	10	20	25
LN <sub>2</sub> Adsorption(L)	1.5	2	2.4	4	8	10
No. of Canister	1	N/A	1	1	N/A	1
Dimensions of Canister(mm)	Ø38*120	N/A	Ø70*276	N/A	N/A	N/A
No. of Holders each canister(mm)	3	N/A	21	N/A	N/A	N/A
No. of 2ml cryovial each holder	3	N/A	6	N/A	N/A	N/A
No. of 2ml cryovial	9	N/A	126	100	N/A	400
25 well box	N/A	N/A	N/A	4	N/A	N/A
100 well box	N/A	N/A	N/A	N/A	N/A	4
50ml blood bag	N/A	4	N/A	N/A	N/A	N/A
250ml blood bag	N/A	N/A	N/A	N/A	8	N/A
Static Evaporation(L/day)	0.12	0.45	0.21	0.55	0.89	0.89
Duration of Normal Operation(day)	13	4	11	7	9	11
Opening Dia.(mm)	50	125	80	125	216	216
Height(mm)	435	615	435	530	650	650
Outside Diameter(mm)	224	224	300	300	396	396
Empty Weight(kg)	4.7	8	5.5	6.8	12	12.5
Gross Weight(kg)	6.0	11.3	10.4	14.9	28.3	32.9

## 06 LN<sub>2</sub> refill tanks

The self-pressurising series of liquid nitrogen replenishment tanks are used for transporting and storing low temperature liquid nitrogen, and are high performance storage containers for low temperature liquid nitrogen media, manufactured from high quality stainless steel. The self-pressurising series of liquid nitrogen tanks consist of a control structure and a tank body. The control components are mainly inlet (discharge) valves, emptying valves, pressurisation valves, safety valves, level gauges, pressure gauges and castors. All models in this series are equipped with four mobile universal castors to facilitate the use and movement of the containers in different places. They are currently widely used in industries and fields such as the mould industry, animal husbandry, pharmaceuticals, semiconductors, food, aerospace, military and cryogenic chemicals.

### Features

- Unique neck design to reduce the evaporation rate of liquid nitrogen.
- Well-established safety structures
- Easy to move with universal castors
- Optional automatic refill system
- 5-year vacuum warranty
- Protective operating ring
- Unique polishing stainless steel tank polishing
- Low temperature pressure stabilisation valve
- Optional intelligent monitoring system for remote monitoring



### Parameters

Model	Unit	YDZ-30	YDZ-50	YDZ-100	YDZ-200	YDZ-230	YDZ-300	YDZ-500
Capacity	L	32	55	110	220	250	330	530
Effective volume	L	30	50	100	200	230	300	500
Outer diameter	mm	404	455	556	656	656	806	958
Height	mm	850	960	1100	1300	1400	1410	1500
N.W.	kg	42	50	68	125	140	205	265
Calibre	mm	50	50	50	50	50	50	50
Static LN <sub>2</sub> daily evaporation rate	%	3	2	1.2	1	1	0.8	0.8
Standard working pressure	Mpa	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Maximum working pressure	Mpa	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Volume of infusion	L/min	>5L/Min	>5L/Min	>5L/Min	>10 L/Min	>10L/Min	>15L/Min	>15L/Min
Primary safety valve opening pressure	Mpa	0.099	0.099	0.099	0.099	0.099	0.099	0.099
Secondary safety valve opening pressure	Mpa	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Pressure gauge indication range	Mpa	0~0.25	0~0.25	0~0.25	0~0.25	0~0.25	0.15	0~0.25

## 07 Controlled-rate Freezer

This series of programmable cryoboxes is a high performance, safe and reliable freezing system with adjustable temperature change rate, which is now widely used in various fields such as light industry, agriculture, medicine and basic biological research for freezing and storage of lymphocytes, tissue banks, bone marrow cells, tumour cells, animal and plant cells, cardiomyocytes, etc. The newly designed integrated Cryobox system uses the latest temperature control technology and liquid nitrogen dispersion technology to make the programmed cooling process homogeneous and stable, allowing IO/00 operation, effectively meeting the needs of GLP laboratories.?

### Features

- Microprocessor controlled, high precision control
- Good thermal insulation performance.
- Dual probes for precise temperature control with simultaneous touch screen display.
- Curve display of cavity and sample temperature and other parameters.
- Automatic data saving and backup to ensure traceability.
- Powder coated chamber construction for durability.
- Stainless steel interior for silent operation and quiet operation
- Front opening door for easy access to samples.
- Uniform dispersion of liquid nitrogen to ensure temperature uniformity



### Parameters

Models	CDG-17	CDG-34	CDG-51
Temp. Range	50°C to -190°C		
External dimensions (mm)	810*540*790	960*540*790	1110*540*790
Internal dimensions (mm)	180*305*330	330*305*330	485*305*330
Capacity (L)	17	34	51
N.W (kg)	73	86	97
Cooling rate	0.1-50°C/min		
Heating rate	0.1-10°C/min		
Temp. variation control method program control	<2°C (Temperature difference between two points in the chamber during cooling)		
Control mode	Microprocessor controlled		
Program control	Sample temperature/chamber temperature		
Display screens	10" Touch Screen		
Available programs	6 preset programs, 20 user set programs		

## 08 Liquid level monitoring CORK

The liquid nitrogen tank cork monitor is a product specially developed and produced for measuring the liquid level and temperature of aluminum liquid nitrogen tanks. Using ultra-low temperature monitoring technology and Internet of Things communication technology, real-time monitoring of the temperature and liquid level in the liquid nitrogen tank can be uploaded to the system platform through various communication methods such as LORA and NB-IOT. The monitor adopts an ultra-low power consumption design scheme, and the built-in high-efficiency nickel battery can maintain the operation of the instrument for 1-2 years.

### Features

#### ALL-IN-ONE Design

The integrated structure design of monitoring equipment, cork and sensor, the monitoring equipment is embedded in the body of the cork

#### Data collection

Real-time liquid level and temperature data collection in liquid nitrogen tanks via level and temperature sensors

#### Alarms

Alarm data (liquid level alarm, temperature alarm, power alarm, fault alarm, etc.) are transmitted to the cloud platform in real time

#### Ultra low power consumption

The built-in high-efficiency nickel battery can keep running for 1-2 years, and it can automatically detect the remaining battery capacity.

#### Real-time display

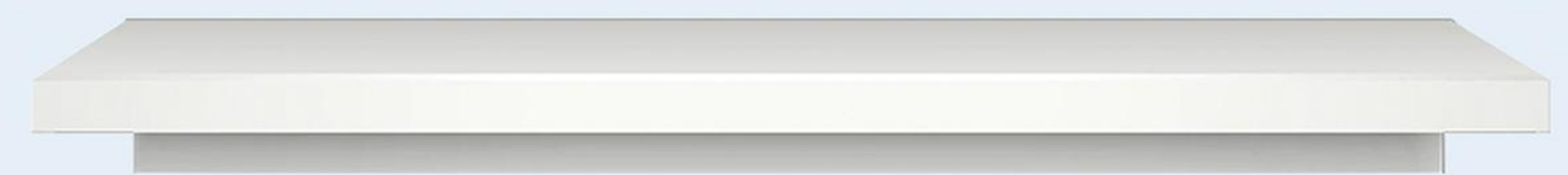
24h real time display of liquid level and temperature data, data is regularly transferred to the cloud platform and saved as historical records



## 09 Accessories

		
Locking Cover	Level measuring Scale	Intelligent monitoring terminal
		
Caster Base	Racks	Box
		
Cork	LN <sub>2</sub> Pump	Alarm
		
Blood bag rack	Canister	Gloves

## Product Portfolio



For more details