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FREEZE DRYER

2022

Quality Instruments, Lifetime Care

Professional service provider in the global laboratory field

ANTECH GROUP INC.


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Company Profile

ANTECH Group is committed to offering high quality laboratory instruments and medical products while matching to the unique needs of customer. Our dedication is to provide quality instruments with lifetime care.
Antech Group sets its production facilities in 5 cities. The product lines include:
Cold storage - Cryogenic freezer, ULT freezer, deep freezer, pharmacy refrigerator, blood bank refrigerator, vaccine refrigerator and cold room
Cryogenic storage - liquid nitrogen freezer, liquid nitrogen container and Dewar vessel
Clean air product - biological safety cabinet, laminar flow cabinet (clean bench), air shower, sample booth, fan filter unit and clean room
Scientific instrument - fermenter, bio-reactor, freeze dryer, glassware washer, incubator
Medical equipment & consumable - washer disinfector and plasma sterilizer
In accordance to our unique business philosophy, we always remind ourselves to avoid any short-sighted activities and to focus on long-term success and growth.
We Antech team treat our customers as long-term partners & life-time friends. We are very clear that any of our success comes and will come from satisfaction of our partners and customers. "Quality instruments, lifetime care" is commitment to our partners, as well as to ourselves.


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Application

The freeze-dryer has been exclusively designed for the freeze-drying of solid or liquid products in ampoules, vials or dishes.
The freeze-dryer is suitable for freeze-drying solid substances and aqueous solutions (e.g. bacteria and virus cultures, blood plasma, serum fractions, antibodies, sera, vaccines and pharmaceutical products such as chloramphenicol, streptomycin, vitamins, ferments and plant extracts for biochemical tests).
The freeze dryer is mainly used in industries such as biomedicine, chemical industry, food and environmental testing.





LyoLab Series Freeze Dryer

Control system
The freezer dryer fits with LCD touch screen and Android system which can display sample temperature, cold trap temperature, vacuum rate, and freeze dryer working condition in real time. Programmable freeze drying process can be switched to mauanl controlled at any time.
The tilted design touch panel is easy for reading and operation.
USB port enable user download the data

Ice condenser chamber
The ice condenser chamber can pre-frozen the products to -55°C, it also captures the gaseous water into ice and collect them in ice trap.
#304 stainless steel chamber is for durable use and easy cleaning.
Optional ice condenser temperature to -80°C
Optional electrical heater in chamber for quick defrost, convenient for next cycle use.

Refrigerant System
Pre-frozen process: The powerful refrigerant system enable samples to be frozen in the low temperature of -60°C （@ambient temperature 20°C）and - 55 °C (@ ambient temperature 32°C).
PT-100 sensor is used to measure samples temperature in real time, which is convenient for checking.
During pre-freezing phase, it takes 30 minutes pulling temperature from 32°C down to -55°C （empty load）

Vacuum system
Reliable and high performance vacuum pump is used in the vacuum drying process, the vacuum pressure rate affects the drying results.

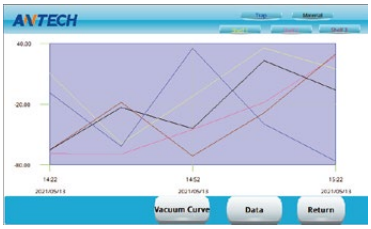
Vacuum-drying process: the whole process of freeze drying can be monitored and checked.

Connections
Water drainage and Gas inlet are the same port, it is for ice condenser water melting and draining out. It is also the air flow inlet after the freeze-drying finished.
International standard vacuum hose port is easy for installation.

Intelligent Control System

The Lyolab series freeze dryer is Android system PLC controller with large LCD touch screen. The intuitive user interface for controlling freeze drying processes. It combines functionality and practical utility:

· Clearly arranged graphic display
· Display of important process parameters
· Vacuum Pump start and stop
· Refrigerant system start dispaly
· Drying process program
· Important data recor
· Android system PLC controller with 5" LCD



Optional Accessories

1, 8-manifold bottle hanging device

2, 12-manifold bottle hanging device

3, Ampoule tube freeze-drying rack

4, Stainless steel cart

Penicillin bottle Loading Quantity

Model		LyoLab 10B	LyoLab 10S	LyoLab 25B	LyoLab 25S
Penicillin bottle	(ф22mm)	212	106	388	291
	(ф16mm)	404	202	756	567
	(ф12mm)	920	1320		

Bench Top Freeze Dryer



	Model	LyoLab 10B	LyoLab 10BH	LyoLab 10S
Feature	Drying Chamber type	Standard type	Manifold type	Stoppering type
	Ice Condenser capacity	3Kg/24h		
	Final condenser temperature	≤-60°C		
	Effective shelf area	0.1m^2	8x250ml flasks	0.05m^2
Shelf	Shelf layers	4	/	2
	Shelf tray dimension	Diameter Φ210 mm Φ180		
	Height between shelves	50mm	/	50mm
	Shelf heater	Optional	/	Optional
Refrigerant system	Refrigerant gas	Mixed CFC free，HCFC-free		
	Number of compressors	1		
	Cold trap cooling rate	20℃ to -40℃≤30min (no load)		
Control System	Controller	5 Inch color touch screen controller with LyoWise operation system		
	Freeze-drying Process	User Programable optional	/	User Programable optional
	Data Storage	Yes		
	USB port	Yes		
	RS232 port	Yes		
	Auto defrost	Yes		
Power	Voltage	220v50hz,220v60hz,110v60hz		
	Current	Main unit 5A		
	Total power	1250W	1400W	1250W
Vacuum pump	Vacuum pump	Yes		
	Vacuum degree	≤5Pa (no load)		
	Vacuum pumping rate	from standard atmospheric pressure to 10Pa≤10min (no load)		
	Vacuum rate	2L/s		
Main unit	Vacuum leakge	3x10^{-2} pa L/S		
	Material	304		
	Condenser trap material	SUS304		
	Sensor type	PT100		
	Material sensor	±4		
	External dimensions (L×W×H)	610*610*460mm		
	Weight	90kg		

Floor-Standing Freeze Dryer



	Model	LyoLab 25B	LyoLab 25BH	LyoLab 25S
Feature	Drying Chamber type	Standard type	Manifold type	Stoppering type
	Ice Condenser capacity	6Kg/24h		
	Final condenser temperature	≤-60°C		
	Effective shelf area	0.25m^2	12x250ml flasks	0.19m^2
Shelf	Shelf layers	4	/	3
	Shelf tray dimension	Diameter Φ300 mm		
	Height between shelves	70mm	/	70mm
	Shelf heater	Optional	/	Optional
Refrigerant system	Refrigerant gas	Mixed CFC free，HCFC-free		
	Number of compressors	1		
	Cold trap cooling rate	20℃ to -40℃≤30min (no load)		
Control System	Controller	5 Inch color touch screen controller with LyoWise operation system		
	Freeze-drying Process	User Programable optional	/	User Programable optional
	Data Storage	Yes		
	USB port	Yes		
	RS232 port	Yes		
	Auto defrost	Yes		
Power	Voltage	220v50hz,220v60hz,110v60hz		
	Current	Main unit 5A		
	Total power	2150W	2300W	2150W
Vacuum pump	Vacuum pump	Yes		
	Vacuum degree	≤5Pa (no load)		
	Vacuum pumping rate	from standard atmospheric pressure to 10Pa≤10min (no load)		
	Vacuum rate	2L/s		
Main unit	Vacuum leakge	3x10^{-2} pa L/S		
	Material	304		
	Condenser trap material	SUS304		
	Sensor type	PT100		
	Material sensor	±4		
	External dimensions (L×W×H)	640*540*845mm		
	Weight	127kg		

LyoPharma Series Freeze Dryer

Technical features

- The freeze-drying process is automatically controlled by programmable programs, which can be switched to manual operation in real time to realize the whole-process parameter control of the freeze-drying process. During the operation process, the system automatically monitors, detects, records and stores relevant data, and can also be monitored through the standard remote system. Multiple fixed or custom programs can be stored, with optional digital password signature;
- Continuously record real-time data, draw freeze-drying curves, store data every minute, and have a USB data storage serial port;
- The system is equipped with various sensors, which can record and display the vacuum degree, cold trap temperature, material temperature, and shelf temperature in real time. The operation error alarm can immediately alarm and actively protect the operation when the temperature and pressure are abnormal during the operation;
- It has the function of equipment alarm and automatic operation to protect materials after the automatic operation of freeze-drying is completed or during the process of equipment vacuum loss, and has the function of vacuum pump maintenance prompt;
- Freeze-drying automatic control system, the heating and cooling of the freeze-drying process are controlled by PID, which can automatically realize repeated pre-freezing, quick-freezing and slow-freezing of materials;
- Intermediate medium circulation technology: shelf gradient temperature control, special process manufacturing ensures uniform temperature of the board, strong controllability, flat board, good heat conduction, and improved freeze-drying efficiency;
- The external cold trap improves the water trapping ability of the equipment, reduces the interference of the temperature of the cold trap on the material during the freeze-drying process, ensures the consistency of the freeze-drying quality of the material and the stability of the experimental data, improves the freeze-drying efficiency and reduces the energy consumption;
- Adopt imported compressor double-machine cascade refrigeration technology, international standard green environmental protection refrigerant, rapid refrigeration, low cold trap temperature, and strong water capture capacity;
- Prepare the equipment before freeze-drying and close the butterfly valve of the pipeline between the freeze-drying chamber and the water-capturing chamber after the freeze-drying, to ensure that the materials are loaded and unloaded in a clean environment and the products are pre-freezed. (optional) to improve the freeze-drying efficiency of the equipment;
- With automatic frost function;
- Re-pressure aeration system: to reduce the secondary pollution of the sample, nitrogen or inert gas can be backfilled;
- Pressing method: electric;
- Provide clean room installation solutions;
- Fully automatic control of vacuum degree, optional vacuum degree adjustment function;
- Optional eutectic point and eutectic point test function to better optimize the sample sublimation process;
- Optional host computer control;
- Optional lyophilization endpoint test;
- Optional: imported vacuum pump, high-speed vacuum pump oil.

Performance

- Standard cold trap temperature: ≤ -75℃ (no load, ambient temperature ≤ 30℃)
- Vacuum degree: ≤ 10Pa (no load)
- Shelf cooling rate: 20℃ to -40℃≤ 60min (no load)
- Cold trap cooling rate: 20℃ to -40℃≤ 30min (no load)
- Vacuum pumping rate: the standard atmospheric pressure is reduced to 10Pa ≤ 20min (no load)
- Shelf temperature control range: -50℃～+70℃
- Power requirements: AC380V 50Hz three-phase five-wire system or AC220V 50Hz
- Applicable environment: ≤ 30℃

Specifications

Model	LyoPharma 50	LyoPharma 80	LyoPharma 100	LyoPharma 120
Effective shelf area ㎡	0.5	0.8	1.0	1.2
Shelf number	4	5	5	5
Shelf size mm	300×420	320×500	320×625	320×750
Shelf Gap mm	68	90	76	76
Ice Condenser capacity	15kg	15kg	20kg	20kg
φ22mm Penicillin vials	980	1450	2160	2600
φ16mm Penicillin vials	2050	2800	3800	4400
Size W*D*H, mm	1520×730×1400	1490×780×1710	2000×800×1700	2000×800×1700
Weight kg	460	720	750	770
Power W	4200	4200	8600	8600

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