

# **FREEZE DRYER**

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*Quality Instruments, Lifetime Care*



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**Professional service  
provider in the global laboratory field**

ANTECH GROUP INC.



## 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 disinfectant 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.



## 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 manual 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 -70°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 -70°C

(@ambient temperature 25°C) and -68°C (@ ambient temperature 30°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 display
- Drying process program
- Important data recorder
- Android system PLC controller with 5" LCD



## Optional Accessories

1, 8-manifold bottle hanging device



2, 12-manifold bottle hanging device



3, Freeze-drying rack



4, Stainless steel cart



## Penicillin bottle Loading Quantity

Model		LyoLab 10B	LyoLab 10S	LyoLab 25B	LyoLab 25S
Penicillin bottle	(φ22mm)	200	150	500	375
	(φ16mm)	384	288	960	720
Optimal handling capacity of solution material		2L	2L	5L	5L

## Bench Top Freeze Dryer



Model		LyoLab 10B	LyoLab 10BH	LyoLab 10S
Feature	Drying Chamber type	Standard type	Manifold type	Stoppering type
	Max Ice Condenser capacity	5Kg/24h		
	Ice condenser temperature	≤-70°C		
	Total loading surface of trays (Thickness 10-15mm)	0.1m <sup>2</sup>	8x250ml flasks	0.075m <sup>2</sup>
	Total loading material capacity	1L	/	0.75L
Shelf	Shelf layers	4	/	3
	Shelf tray dimension	Diameter Φ210 mm		
	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°C to -40°C ≤20min (no load)		
	Cold trap capacity	13L		
Control System	Controller	5 Inch color touch screen controller with LyoWise operation system		
	Freeze-drying Process	User Programmable optional	/	User Programmable optional
	Data Storage	Yes		
	USB port	Yes		
	RS232 port	Yes		
	Auto defrost	Yes		
Power	Voltage	220v50hz,220v60hz,110v60hz		
	Current	10A		
	Total power	1250W	1250W	1250W
Vacuum pump	Vacuum pump	Yes		
	Vacuum degree	≤5Pa (no load)		
	Vacuum pumping rate	from standard atmospheric pressure to 5Pa≤15min (no load)		
	Vacuum rate	2L/s		
Main unit	Vacuum leakage	3x10 <sup>-2</sup> pa L/S		
	Material	304		
	Condenser trap material	SUS304		
	Sensor type	PT100		
	Material sensor	±4		
	External dimensions (L×W×H)	610*610*460mm		
	Weight	85kg		

## Floor-Standing Freeze Dryer



Model		LyoLab 25B	LyoLab 25BH	LyoLab 25S
Feature	Drying Chamber type	Standard type	12 port Manifold type	Stoppering type
	Max Ice Condenser capacity	11Kg/24h		
	Ice condenser temperature	≤-65°C		
	Total loading surface of trays (Thickness 10-15mm)	0.25m <sup>2</sup>	12x250ml flasks	0.19m <sup>2</sup>
	Total loading material capacity	2.5L	/	1.9L
Shelf	Shelf layers	4	/	3
	Shelf tray dimension	Diameter Φ300 mm		
	Height between shelves	76mm	/	70mm
	Shelf heater	Optional	/	Optional
Refrigerant system	Refrigerant gas	Mixed CFC free, HCFC-free		
	Number of compressors	1		
	Cold trap cooling rate	20°C to -40°C ≤15min (no load)		
	Cold trap capacity	35L		
Control System	Controller	5 Inch color touch screen controller with LyoWise operation system		
	Freeze-drying Process	User Programmable optional	/	User Programmable optional
	Data Storage	Yes		
	USB port	Yes		
	RS232 port	Yes		
	Auto defrost	Yes		
Power	Voltage	220v50hz,220v60hz,110v60hz		
	Current	10A		
	Total power	1900W	1900W	1900W
Vacuum pump	Vacuum pump	Yes		
	Vacuum degree	≤5Pa (no load)		
	Vacuum pumping rate	from standard atmospheric pressure to 5Pa≤15min (no load)		
	Vacuum rate	4L/s		
Main unit	Vacuum leakage	3x10 <sup>-2</sup> pa L/S		
	Material	304		
	Condenser trap material	SUS304		
	Sensor type	PT100		
	Material sensor	±4		
	External dimensions (L×W×H)	640*540*845mm		
	Weight	115kg		