

# **FREEZE DRYER**

## **2021**

*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 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.



## 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.



## Freeze dryer introduction



### 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 -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

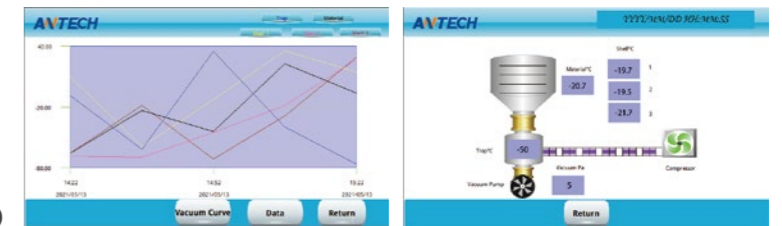
Water drainage and Gas inlet are the same port, it is for ice condenser water melting and draining out. It is also the air flow inlet after the freeze-drying finished. International standard vacuum hose port is easy for installation.

## 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 display
- Drying process program
- Important data record
- 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 | (φ22mm) | 212        | 106        | 388        | 291        |
|                   | (φ16mm) | 404        | 202        | 756        | 567        |
|                   | (φ12mm) | 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 <sup>3</sup>  | 8x250ml flasks | 0.05m <sup>3</sup>        |
| 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°C to -40°C ≤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 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                      | 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 <sup>3</sup>   | 12x250ml flasks | 0.19m <sup>3</sup>        |
| 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°C to -40°C ≤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 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                      | 127kg  |                 |                           |