



# PRODUCT CATALOG



## PILOT-SCALE FREEZE DRYER BFH-301

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## PILOT-SCALE FREEZE DRYER

Pilot-type freeze dryer completely simulates the technical requirements of the industrial freeze dryer, with a compact and reasonable design, a large redundancy range, and conforms to GMP and FDA standards. The ice condensation capacity is 4~18kg, and the WRL controller and liquid temperature control shelf are adopted, so that the process of pre-freezing and freeze-drying can be precisely controlled on the main machine, and the process results are quite comparable with the production machine. In addition to supporting the eutectic point test system, pressure rise and pressure comparison method to determine the freeze-drying end point and freeze-drying curve recording software, Yingtai pilot-type freeze dryer can also be equipped with engineering WRL control software to directly Graphical computer control the freeze-drying process. It can be configured with H2O2 sterilization and high-pressure steam sterilization or integrated glove box system, which can be used for clean room operation through the wall. The cold trap and freeze-drying chamber are all designed with 316L stainless steel to ensure the cleanliness of the chamber and good ultimate vacuum and vacuum leakage rate to the greatest extent.

Pilot-type freeze dryer can be used for freeze drying of bacteria, viruses, plasma, serum components, antibodies, serum and vaccines, pharmaceutical products such as chloramphenicol, streptomycin, vitamins, enzymes, plant extracts for biochemical experiments, etc. And research and development.



### Control System:

1. Control: Automatic/Manual

Can store at least 100 independent freeze-drying programs, each program contains 32 program segments (Can be customized according to user needs), each program segment corresponds to a processing stage (Pre-freezing, main drying, post-drying) and include the following segment values: Cycles, shelf temperature, vacuum and safety pressure for the heating unit.

All The equipment can be recorded in real time and the corresponding freeze-drying curves and data tables can be generated after the end of the process. The records of all data and curves comply with the corresponding regulations and standards. It has hierarchical management authority, hierarchical management allocation aut

## SPECIFICATIONS

Model	BFH-301
Freeze-dried area	0.256 m <sup>2</sup>
Ice condenser capacity	4kg
Shelf temperature	-60°C~+80°C
Ice condenser temperature	-86°C
Cold trap volume	9L
Chamber type	Single
Max number of shelves	2
Shelf size	325*400mm
Shelf spacing	100mm (adjustable)
Number of penicillin bottles(mm)	470
Shelf heating and cooling method	Thermal conducting silicone oil medium(temperature resistance: -100~+600 degree C)
Chamber and shelf surface	Atomization and electrolysis surface treatment, no dead corner residue
Pipeline diameter	-
External valve port	6/
Equipment power	3.8kw
Equipment size	700*588*1600mm
Capping mode	Electric/No capping
Suitable clean room	Suitable
Vacuum sensor type	Pirani Vacuum sensor/capacitive vacuum sensor
Remote control and alarm	Support 2G/4G/GSM/Wi-Fi

Terminal judgment function	Pressure contrast method
Freeze dryer front door cover	Stainless steel/Plexiglass
Inert gas filling	(Optional) Sufficient amount and time for the program to run itself
User function customization	Can be customized and modified according to user needs
Sterilization method	H <sub>2</sub> O <sub>2</sub> /steam sterilization
Voltage(V/Hz)	220V, 50/60Hz
Alt Name	Pilot-scale Freeze Dryer



## FEATURES

### Control System:

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#### 2. Remote System:

Fully support 2G/4G/GSM/Wi-Fi various connection modes.

Users can remotely view all data on the device and operate it.

Technicians can remotely perform maintenance and fault detection on equipment, and can remotely guide and train users.

Can remotely upgrade and change the system of the equipment.



### Working Chamber:

Double-chamber stainless steel system, optional Teflon anti-corrosion treatment.

Material: stainless steel 316L; Each layer is equipped with a standard sample temperature probe.

Built-in condenser, high condensation efficiency.

Plexiglass cold trap window and stainless steel door cover (optional), can observe the ice formation in the cold trap. Applicable to clean room. Refrigerant reverse hot gas defrosting.

Layer temperature: < +1°C; Layer flatness: < +0.5mm /m square.



### Vacuum System:

Vacuum pump: Domestic high-reliability two-stage rotary vane vacuum pump. Optional German Welch corrosion-resistant, anti-oil

backflow vacuum pump. The vacuum pump can be selected according to user requirements.

Pump rate: 9m<sup>3</sup>/h~62m<sup>3</sup>/h, multiple specifications are optional, the ultimate vacuum can reach 2x10<sup>-5</sup> x 10 mbr, and the oil mist filter is standard configuration.

The vacuum pipelines are all high-vacuum stainless steel vacuum tubes, which can effectively prevent vacuum leakage and corrosion.

Double anti-oil return device completely eliminates the damage and pollution caused by the oil return of the vacuum pump pipeline to the equipment and samples.

Automatic backfill air device, the system has a built-in High Efficiency Particulate Air(HEPA) filter to ensure the complete cleanliness of backfill air.

The vacuum stabilization system can stabilize the vacuum degree of the freeze-drying process through the micro-pass vacuum control valve to ensure that the samples will not be affected by excessive fluctuations in the vacuum degree.

Condensed liquid collection and discharge system, automatically completes the collection and discharge of condensed liquid after freeze-drying.

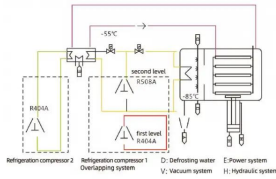
Pirani Vacuum sensor/capacitive vacuum sensor.

#### Refrigeration System:

Dual compressors, Tecumseh special compressors, air cooling(water cooling system is optional)

Refrigeration method: Cascade refrigeration method, high cooling efficiency, good reliability, using CFC-Free environmentally friendly refrigerant.

Silicone oil conducts heat, with uniform temperature and accuracy up to 0.1°C. Silicone oil has a wide temperature range, up to -100°C~+600°C



Note: "/" optional. Pilot models can be customized according to user needs



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