

## **BFD30/50/100/200P**

### ***Economic Pilot Freeze Dryer***



## **An Economic Equipment**

### *Help You Start Lyophilization Subject*

When freeze drying study finished and need move towards to clinical trial or pilot production, prepare for commercial productions, the PROFESSIONAL freeze dryer is needed, it requests smaller size to save laboratory valuable space, but also need combine as more functions as production freeze dryers so that help you accumulate data.

The BFD freeze dryers are the right equipment you are looking for, integrate almost all industry freeze dryers' functions into one smaller package, as well, its system performance even better than industrial dryers.

The BFD freeze dryers are designed and manufactured by Vikumer Freeze Dry, we aim to provide you the inexpensive freeze dryers help your project start and business growth.



## **Multi Applications**

### *Bulk or Stoppering*



Whether your material request bulk loading or stopper in vials, the BFD freeze dryers have a model fit your requirement.

The shelves, trays, chamber and condenser walls, all made by AISI304 or AISI316L, as per your raw material features, also we could coated treatment to them to fit.

On freeze dryer lateral, also reserve flask holder connector, in case you need the function. Temperature and vacuum validation port also reserved help you do annually calibration.

## *Considered Design*

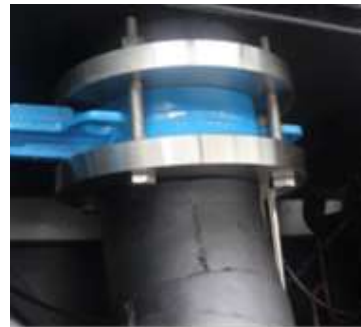
The BFD freeze dryers are designed self-contained body, compact size with casters for move, vacuum pump set besides or out of laboratory, connect freeze dryer by quick loop, enable quick start your lyophilization.

### *Reliable Systems*

All parts installed in BFD freeze drying system have been carefully select from world famous brand, right model select, highest quality, entire system assembled go through years' lasting to verify its reliability and stability. Temperature probes, vacuum pressure gauges, parts that have variable and will influence the drying result have go through strict validation and test, the sensors installed in BFD freeze dryer, its accuracy is warranted. Ensure you a precision data and procedure.



### *Rich Configurations*



- External Flask Holder.
- Condenser isolation.
- Hydraulic Stoppering.
- Drying end judgement.
- Freezing point detector.
- Data Recorder.
- PC Suit.
- Mobile Suit.

And many other functions could be custom.

### ***Precise and Uniform Temperature Control***

Fluid recycle system used for shelves cooling or heating, all shelves are sandwich structure, inside have channels for fluid recycle, heating by individual electric heater, cooling indirect through plate heat exchanger, shelves temperature balance system allow the tolerance  $< \pm 1\text{C}$  during sublimation.

Fluid temperature probe installed, real time display the fluid set temperature and real temperature, vacuum sensor in the drying chamber monitoring vacuum degree change and assist electric heater working, support/avoid overheating during sublimation.



## ***Advanced Control system***

### ***PLC + Touch Screen***



BFD freeze dryers control system adopt PLC and user-friendly Touch Screen controller, its same function as industrial units, which include:

- ◆ Log in and authority management.
- ◆ Parts/valves working status.
- ◆ Freeze drying recipes management.
- ◆ Drying curve display.
- ◆ Drying data export by batches.
- ◆ Automatic or semi-automatic working select.
- ◆ Alarm information.
- ◆ Data download.

Optional, PC suit and mobile control provide more convenient freeze drying operation and data storage.

## Excellent System Performance

Designed to meet user requirement, BFD freeze dryer delivered with excellent system performance:

Shelves cooling from +20C to -40C within 60min.

Shelves lowest temperature -50C (accuracy 2C).

Shelves heating from -40C to +20C within 60min.

Shelves Max temperature +70C (accuracy 1C).

Ice condenser cooling from +20C to -40C within 30min.

Ice condenser lowest temperature -80C.

Ice condenser defrosting time within 60min.

Vacuum pump from atmosphere to 10Pa within 30min.

System final vacuum 0.01mbar, leakage  $\leq 5 \times 10^{-2}$  mbarL/s.

## Data Sheet:

Model	BFD-50P	BFD-50P-TP	BFD-100P	BFD-100P-TP	BFD-200P
Shelf Area	0.69m <sup>2</sup>	0.51m <sup>2</sup>	1.04m <sup>2</sup>	1.15m <sup>2</sup>	2.25m <sup>2</sup>
Ice Capacity	10L	10L	15L	15L	25L
Shelves	4+1	3+1	6+1	4+1	5+1
Trays	4EA	3EA	6EA	4EA	10EA
Shelf Temp.	-50 to +70C°	-50 to +70C°	-50 to +70C°	-50 to +70C°	-50 to +70C°
Condenser Temp.	-80C°	-80C°	-80C°	-80C°	-80C°
Vacuum	<3Pa	<3Pa	<3Pa	<3Pa	<3Pa
Defrosting	Electric	Electric	Electric	Electric	Electric
Power Install	5.5kw	6.5kw	6.5kw	7.5kw	13.5kw
Size (mm)	1000*800*1450	1000*800*1450	1200*850*1700	1650*1100*2000	1200*2100*1700
Vials Capacity (φ22)	/	1000Pcs	/	2400Pcs	/