

BFD-20

PILOT FREEZE DRYER

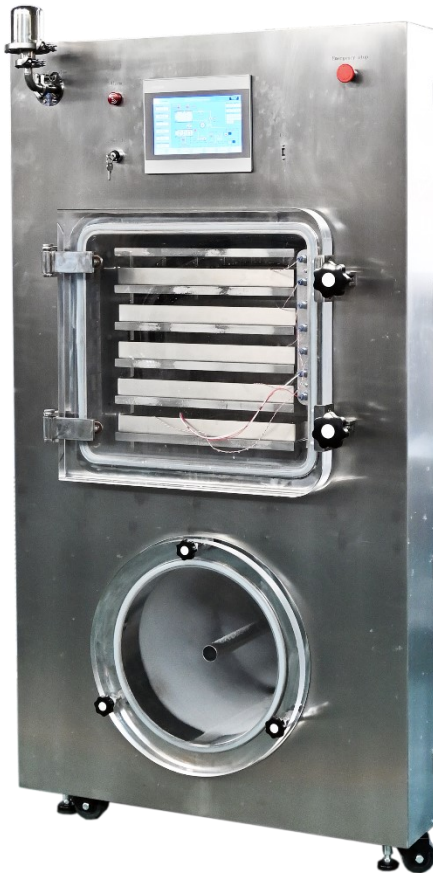


Pilot Freeze Dryer

Small-scale Production Freeze Dryer

Key Features:

- All-in-one design
- 2-chamber system
- Stainless steel shelves, trays, condenser
- Acrylic door, observable freeze drying process
- Heat transfer fluid based shelf system
- Optional pneumatic, top-bottom stoppering
- Condenser isolate by butterfly valve
- 2-stage oil sealed rotary vane vacuum pump inbuilt
- Pirani vacuum gauge
- PLC based controller
- Lyo-pilot control interface



Technical Parameters:

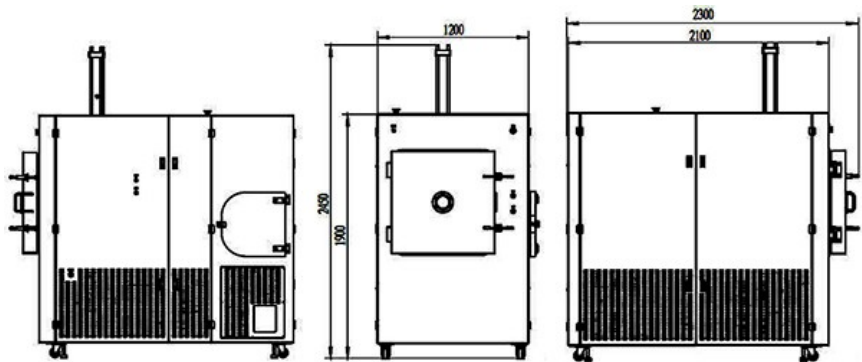
Model	BFD-20
Shelf Area	1.21 ~ 2.83m2
Shelf Number	3 ~ 7
Shelf Clearance	144 ~ 52mm
Shelf Dimension	W/455*D/910*T/16mm
Condenser Volume	100L
Condenser Performance	>30Kgs/24Hrs
Condenser Capacity	>50Kgs
Power Install	14.5Kwh
Machine Size	W/1200*D/2300*H/2450mm
Approx. Weight	1400Kgs
Voltage	380V/50Hz/3P

Performance Parameters:

Lowest Shelf Temperature	-55C
Shelf Temperature Control Range	-50C ~ +70C
Shelf Temperature Control Accuracy	<+/-1C
Shelf Temperature Uniformity	<+/-1C
Shelf Cooling Rate +20C to -40C	<60Min
Shelf Heating Rate	>1C/Min
Lowest Condenser Temperature	-85C
Condenser Cooling Rate +20C to -40C	<15Min
Condenser Defrost Time	<60Min
System Final Vacuum	<1Pa
Vacuumize To 133Pa	<60Min
Vacuum Control Accuracy	+/-5Pa
Leak Rate	<5Pa L/Sec
Compressor Configuration	Cascade, Air Cooling
Refrigerant	R404a, R508b

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Shelf Configuration:

Tray Size: W/450 * D/450 * H/20mm (2 Trays Per Shelf)					
No. of Shelves	3	4	5	6	7
Shelf Area	1.21m2	1.62m2	2.02m2	2.43m2	2.83m2
Shelf Clearance	144mm	104mm	80mm	64mm	52mm

Vials Load:

Shelf No. Vials Size	3	4	5	6	7
2R Dia.16	4932	6576	8220	9864	
6R Dia.22	2508	3344	4180	5016	
10R Dia.24	2100	2800	3500		
20R Dia.30	1344	1792	2240		
30R Dia 30	1344	1792			
50H Dia 43	630	840			
100H Dia 52	408				

Bulk Load:

Shelf No. Thick In Trays	3	4	5	6	7
5mm	6L	8.1L	10.1L	12.1L	14.1L
10mm	12.15L	16.2L	20.25L	24.3L	28.35L
15mm	18.22L	24.3L	30.3L	36.45L	42.5L
20mm	24.3L	32.4L	40.5L		

- Remarks:
- 1) Vials load: calculate by using loading frame.
 - 2) Bulk load: example of fluid products.

Optional Features:

- Vials closing under vacuum
- Scroll vacuum pump
- Capacitive vacuum gauge
- Eutectic detector
- PC control
- S/S chamber door
- S/316L material
- Reciprocating compressor
- Water cooled compressor



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