

BFD-5

PILOT FREEZE DRYER



Pilot Freeze Dryer

Laboratory R&D and Small-scale Trial 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, bottom-top 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:

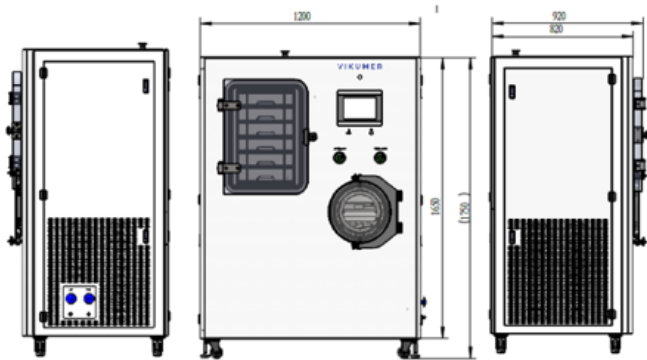
Model	BFD-5
Shelf Area	0.32 ~ 0.64m2
Shelf Number	3 ~ 6
Shelf Clearance	116 ~ 50mm
Shelf Dimension	W/275*D/405*T/16mm
Condenser Volume	35L
Condenser Performance	>10Kgs/24Hrs
Condenser Capacity	>15Kgs
Power Install	7.5Kwh
Machine Size	W/1200*D/920*H/1750mm
Clean Room Ver.	W/700*D/2000*H/2350mm
Approx. Weight	700Kgs
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/270 * D/400 * H/20mm				
No. of Shelves	3	4	5	6
Shelf Area	0.32m2	0.43m2	0.54m2	0.64m2
Shelf Clearance	116mm	83mm	63mm	50mm

Vials Load:

Shelf No.	3	4	5	6
Vials Size				
2R Dia.16	1257	1676	2095	
6R Dia.22	660	880	1100	
10R Dia.24	540	720		
20R Dia.30	336	448		
30R Dia 30	336			
50H Dia 43	165			
100H Dia 52	96			

Bulk Load:

Shelf No.	3	4	5	6
Thick In Trays				
5mm	1.62L	2.16L	2.7L	3.24L
10mm	3.24L	4.32L	5.4L	6.48L
15mm	4.86L	6.48L	8.1L	9.72L
20mm	6.48L	8.64L	10.8L	12.96L

Remarks:

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

Optional Features:

- Clean room configuration
- Vials closing under vacuum
- Solvent package
- Scroll vacuum pump
- Capacitive vacuum gauge
- Eutectic detector
- PC control
- Water cooled compressor
- S/S chamber door
- S/S316L material



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