

BFD-10

PILOT FREEZE DRYER



Pilot Freeze Dryer

Laboratory R&D and Scale-up 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

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

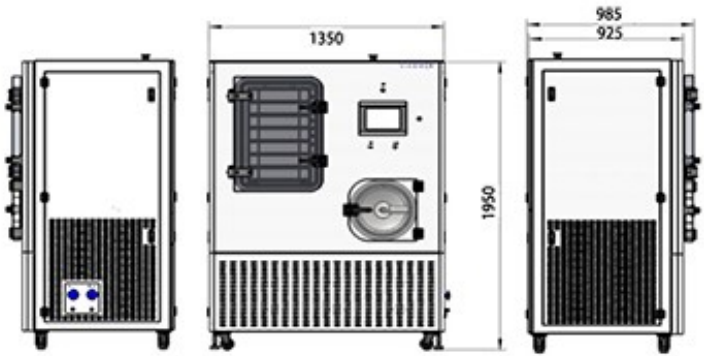
Technical Parameters:

Model	BFD-10
Shelf Area	0.47 ~ 1.26m ²
Shelf Number	3 ~ 8
Shelf Clearance	176 ~ 56mm
Shelf Dimension	W/355*D/455*T/16mm
Condenser Volume	50L
Condenser Performance	>15Kgs/24Hrs
Condenser Capacity	>25Kgs
Power Install	8.5Kwh
Machine Size	W/1350*D/980*H/1950mm
Clean Room Ver.	W/800*D/2300*H/2450mm
Approx. Weight	900Kgs
Voltage	380V/50Hz/3P



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Shelf Configuration:

Tray Size: W/350 * D/450 * H/20mm						
No. of Shelves	3	4	5	6	7	8
Shelf Area	0.47m2	0.63m2	0.78m2	0.94m2	1.1m2	1.26m2
Shelf Clearance	176mm	128mm	99mm	80mm	66mm	56mm

Vials Load:

Shelf No. Vials Size	3	4	5	6	7	8
2R Dia.16	1908	2544	3180	3816	4452	
6R Dia.22	957	1276	1595	1914	2233	
10R Dia.24	810	1080	1350	1620	1890	
20R Dia.30	504	672	840	1008		
30R Dia 30	504	672	840			
50H Dia 43	231	308	385			
100H Dia 52	162	216				

Bulk Load:

Shelf No. Thick In Trays	3	4	5	6	7	8
5mm	2.3L	3.1L	3.9L	4.7L	5.5L	6.3L
10mm	4.7L	6.3L	7.8L	9.4L	11L	12.6L
15mm	7L	9.4L	11.8L	14.1L	16.5L	18.9L
20mm	9.4L	12.6L	15.7L	18.9L		

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
- Scroll vacuum pump
- Capacitive vacuum gauge
- Eutectic detector
- PC control
- S/S chamber door
- S/S316L material
- Reciprocating compressor
- Water cooled compressor



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