



PILOT-SCALE FREEZE DRYER BFR1L1

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FREEZE DRYER

Command OS2.1 control system was developed to meet the lyophilization requirements of today's pharmaceutical and biotechnology applications.

The system packs the highest level process_x0002_control and flexibility into a software package that is as easy to use as it is multi-functional.

The SCADA system solution to deliver superior functionality, as well as faster, more intelligent control of the freeze-drying process and related functions.



SPECIFICATIONS

Model	BFR1L1
Chamber	AISI 304L /316L
Shelves	AISI 304L /316L
Shelf Size	350 x 400
Chamber Door	Acrylic or stainless door
Door lock system with safe bolt	1set
Product sensors	Pt-100
Temperature sensors(thermal fluid)	Pt-100
Finish	Ra≤0.4μm
Level	0.5mm/m
Shelves temperature Min	< -60°C
Shelves temperature Max	+65°C
Shelves temperature uniformity	±1°C(after balance)
Spacing	100mm (Top stopper type is 80mm)
Chamber type	Rectangular
Insulation	B1 Cotton insulation
Open direction	Left or right
Condenser (with coiled pipe)	
- Condenser	AISI 304, 316 optional
- Condenser coiled pipe	Coil inside or round type (coil outside)
- Temperature sensors(condenser)	Pt-100
- Coiled temperature Min	≤ -85°C
- ice capacity in 24hour	8kg
- Condenser frosting capacity	Max 10kg/batch
- Condenser type	round
Refrigeration system	

- Compressor model and number	2HP Embraco
- Refrigerant	R507+R508B
- Oil separator	Emerson / similar type
- Automatic protective device for pressure	DANFOSS
- Pressure meter	REFCO or similar type
- Expansion valve	DANFOSS
- Shelf cooling time (without load)	+20 ~ -40°C ≤ 60 minutes
- Condenser cooling time(without load)	+20 ~ -40°C ≤ 30 minutes
Vacuum system	
- Vacuum pump	DRV24 (24m³/h)
- Isolation valve of pump well	Electric valve
- Vacuum gauge	Posifa
- Final vacuum	≤1 Pa
- Evacuation time	From atm to 20 Pa ≤ 30 min
- Leakage rate	5x10 ⁻³ Pa·m³/sec
Circulation system	
- Circulation pump	Grundfos
- Thermal fluid	5cs, USA Dowcorning Silicon oil (low viscosity)
- Heater	500w
- Plate heat exchanger	
- Temperature sensors(thermal fluid)	Pt-100
- Heating rate	1°C/min
Electric control system	
- Electric standard	IEEE
- PLC	Siemens S7-200
- Breaker	schneider
- AC contactor	schneider
- Control type	Manual and automatic
Utility list	
- Electricity-total electrical load	5.5Kw (380V, 50Hz, 3Phase) or 220V-240V 3 phaseor
The equipment's main technique parameter	
- Machine construction	Wall mounted ,GMP type
- Weight (approx)	480 kg
- Gross weight (approx)	580kg
- Package size	850 x 1450 x 1980 mm
- Capacity of raw material for freeze drying (suggestive value)	5 kg/batch
Alt Name	Freeze Dryer



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