

FD-20L

Tray Freeze Dryer



- **300L Ice Capacity**
- **19.8m2 Shelf Area**
- **All-include Structure**
- **Versatile&Economic**

FD-20L shelf freeze dryer designed to fit commercial and industrial freeze drying process, material loading by bulk in trays, the machine designed meet GMP requirements.

The freeze dryers designed consider a lot of factors that will guarantee your success freeze drying result and high dried quality, we provide standard factory models as well

Standard Specification:	
Shelf Area	19.8m2
Shelf Type	Fixed, Bulk loading
Shelves Temp.	-50C to +70C
Shelf Size	1200*1500mm
Shelves	11+1
Ice Capacity	300kgs
Condenser Temp.	-45C or -80C
Condenser Location	Rear side of drying chamber
Defrost	Water soaking
Vacuum Degree	<3Pa
Vacuum Pumps	Rotary Pumps + Roots Blower
Compressor	Reciprocating
Power Install	60kwh
Size	6000*2100*2500mm
Voltage	380V/50-60Hz/3P
Controller	PLC + Touch Screen
Main Material	AISI304 or 316L

Technical Features:	System Performance:																										
<p>CONTROL SYSTEM:</p> <ul style="list-style-type: none"> ● PLC + Touch screen system, PC connectivity. ● Automatic and Manual operation selectable. ● System working status diagram display. ● Freeze Drying status & data display. ● Drying data auto storage, could download to U disk. <p>DRYING HOUSE & DOOR:</p> <ul style="list-style-type: none"> ● Design according to GB pressure container directives. ● Rectangular or cylindrical chamber with extra thick insulation. ● Mirror finished walls, shelves, doors and accessories. ● Hinged door, in front door and side drying house have viewing ports. ● Plates and drying house inner wall mirror finish. <p>SHELVES:</p> <ul style="list-style-type: none"> ● Stainless steel made, Mirror finish. ● Sandwich type plates fill silicone oil, all plates have both freezing and heating function: -50C ~ +70C. ● 19.8m2 useable shelf area, 11 plates (size 1500*1200mm) with material loading capacity, 1 for extra radiant temperature. <p>CONDENSER:</p> <ul style="list-style-type: none"> ● Condenser house in rear side of drying chamber, Stainless steel material for both coils and walls, surface mirror finish. ● Condenser floor slope design for water thoroughly discharge. ● Exclusive designed coils route, high performance vapor collection. <p>VACUUM SYSTEM:</p> <ul style="list-style-type: none"> ● Roots blower and backing pump combination, with vacuum adjust controller. ● Pneumatic isolation valve installed between condenser and pump. 	<table border="1"> <tbody> <tr> <td>Shelves Lowest Temp.</td> <td>-50C</td> </tr> <tr> <td>Shelves Temp. Range</td> <td>-50C to +70C</td> </tr> <tr> <td>Shelves Cooling Rate</td> <td>+20C to -40C <60min</td> </tr> <tr> <td>Shelves Heating Rate</td> <td>>1C/min</td> </tr> <tr> <td>Shelves Temp. Uniformity</td> <td>Freezing: ±2C Heating: ±1C</td> </tr> <tr> <td>Shelves & Wall Roughness</td> <td>Ra<0.5</td> </tr> <tr> <td>Shelves Flatness</td> <td><0.5mm/m</td> </tr> <tr> <td>Condenser Lowest Temp.</td> <td>-45C or -80C</td> </tr> <tr> <td>Condenser Cooling Rate</td> <td>+20C to -40C <30min</td> </tr> <tr> <td>Condenser Coil Roughness</td> <td>Ra<0.5</td> </tr> <tr> <td>Vacuum Rate</td> <td>Atm to 0.1mbar <30min</td> </tr> <tr> <td>Vacuum Final</td> <td><3Pa</td> </tr> <tr> <td>Vacuum Leakage</td> <td>< 5x10⁻²mbarL/s</td> </tr> </tbody> </table> <p>COMPRESSOR SYSTEM:</p> <ul style="list-style-type: none"> ● Reciprocating compressor, oversized for stable performance. ● 1 stage compressor for -45C condenser, or 2 stage for -80C condenser. ● Water cooled condenser and cooling tower include. ● Brazed plate heat exchanger for shelves cooling, refrigerant direct expand for condenser cooling. <p>HEATING SYSTEM:</p> <ul style="list-style-type: none"> ● Heated silicone oil drive by a centrifuge pump recycle inside shelves. ● Individual electric heater provides heating energy. 	Shelves Lowest Temp.	-50C	Shelves Temp. Range	-50C to +70C	Shelves Cooling Rate	+20C to -40C <60min	Shelves Heating Rate	>1C/min	Shelves Temp. Uniformity	Freezing: ±2C Heating: ±1C	Shelves & Wall Roughness	Ra<0.5	Shelves Flatness	<0.5mm/m	Condenser Lowest Temp.	-45C or -80C	Condenser Cooling Rate	+20C to -40C <30min	Condenser Coil Roughness	Ra<0.5	Vacuum Rate	Atm to 0.1mbar <30min	Vacuum Final	<3Pa	Vacuum Leakage	< 5x10 ⁻² mbarL/s
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Vikumer® Freeze Dry designed and manufactured freeze drying machine in China. Quality assured freeze dryer with CE marked.