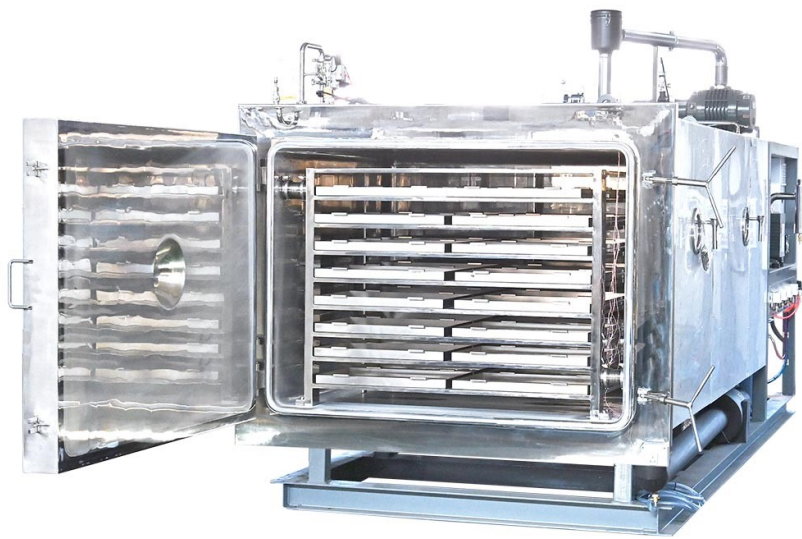


FDL GENERAL PURPOSE FREEZE DRYER



Vikumer's FDL series general purpose freeze dryers are designed fit a wide range of industry applications include bacteria, enzymes, nutraceuticals, biologicals, probiotics, reagents, active ingredients and other heat sensitive products.

Technical Parameters:

	FD-5L			FD-10L				FD-20L			
Shelf Area	5.4m2	6.48m2	7.56m2	9.72m2	10.8m2	11.88m2	12.96m2	19.8m2	21.6m2	23.4m2	25.2m2
No. of Shelves	5+1	6+1	7+1	9+1	10+1	11+1	12+1	11+1	12+1	13+1	14+1
Shelf Spacing	76mm	61mm	50mm	70mm	61mm	54mm	48mm	70mm	62mm	56mm	50mm
Shelf Size	900*1200mm			900*1200mm				1200*1500mm			
Shelf Temp.	-50C ~ +70C			-50C ~ +70C				-50C ~ +70C			
Final Vacuum	<1Pa			<1Pa				<1Pa			
Condenser Capacity	100Kgs			200Kgs				400Kgs			
Condenser Temp.	-75C			-75C				-75C			
Voltage	380V/50Hz/3P			380V/50Hz/3P				380V/50Hz/3P			
Power	25Kwh			50Kwh				75Kwh			
Size	W/1500*L/3500*H/2450mm			W/1500*L/5500*H/2450mm				W/2300*L/7000*H/2650mm			

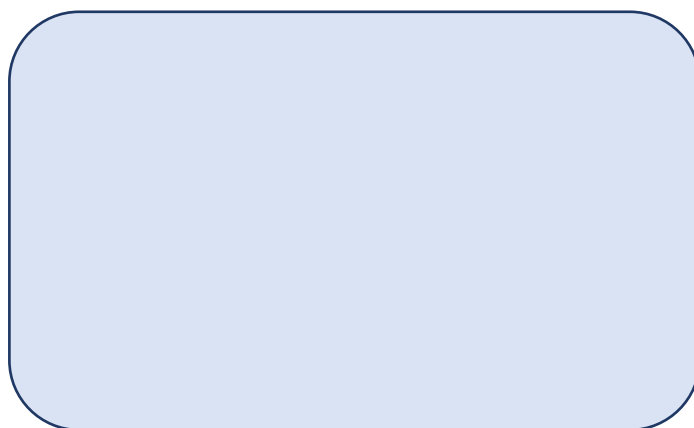
	FD-30L				FD-40L			FD-50L
Shelf Area	29.25m2	31.5m2	33.75m2	36m2	40.5m2	43.2m2	45.9m2	48.6m2
No. of Shelves	13+1	14+1	15+1	16+1	15+1	16+1	17+1	18+1
Shelf Spacing	70mm	63mm	58mm	52mm	63mm	58mm	53mm	50mm
Shelf Size	1500*1500mm				1500*1800mm			1500*1800mm
Shelf Temp.	-50C ~ +70C				-50C ~ +70C			-50C ~ +70C
Final Vacuum	<1Pa				<1Pa			<1Pa
Condenser Capacity	600Kgs				800Kgs			800Kgs
Condenser Temp.	-75C				-75C			-75C
Voltage	380V/50Hz/3P				380V/50Hz/3P			380V/50Hz/3P
Power	85Kwh				125Kwh			135Kwh
Size	W/2300*L/7500*H/2650mm				W/2500*L/9500*H/3200mm			W/2500*L/9500*H/3500mm

Standard Features:

Structure	All-in-one design. All components are mounted on a steel skid.
Drying Chamber	Rectangular shape; Rounded Corners; S/S304 fabricated; Validation port; Viewing port.
Door	Double hinged; S/S304 made; Lubricate-free silicone rubber gasket; DN100 viewing port.
Shelves	S/S304 made; Heat transfer fluid based.
Ice Condenser	Coils type cooled by refrigerant direct expansion; Sloped bottom towards to drain; Validation port; Viewing port.
Refrigeration	Semi-hermetic compressor, water-cooled.
Shelves Heat Transfer	Shelves are cooled and heated with the heat transfer fluid which is force-circulated by a centrifugal pump; Fluid heating by electric heater; Fluid chilling through a heat exchanger; PID control.
Vacuum	2-stage oil sealed vacuum pump, roots pump for larger models; Chamber pressure regulate kit.
Controller	PLC and user-friendly touch screen HMI based; FD-MEGA interface.
Temperature Sensors	PT-100 for shelf, product, fluid and condenser.
Pressure Sensors	Pirani vacuum gauge.
Valves	Pneumatic valves for air and water isolate.

Optional Features:

- S/S316L material
- Split structure
- Condenser and drying chamber isolation valve
- Capacitive vacuum gauge
- Eutectic point detector
- PC control
- Redundant vacuum pump, compressor and fluid pump



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