



# ***LARGE SCALE VACUUM FREEZE DRYER LLFD-B10***

# Large Scale Vacuum Freeze Dryer LLFD-B10

Large Scale Vacuum Freeze Dryer LLFD-B10 is vertical type, cylindrical compact structure. It offers manual and auto control mode, sensor calibration, intelligent temperature control, freeze drying termination reminding and other functions. The temperature ranges from  $-50^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  and offers 5+1 layers of shelf. Material used AISI 304 stainless steel, top and bottom plate thickness 5 mm. Features CFC Free refrigerant and PT-100 platinum resistance temperature sensor. Designed with refrigeration system, shelf, condenser, vacuum system and liquid circulation system. The heat is transferred to the inner space of the vacuum chamber and absorbed heat during sublimation efficiently. The product is dried completely and evenly.

## FEATURES

- Designed with freeze drying area  $2.25\text{m}^2$
- It has automatic and manual control
- Offers vertical type, cylindrical compact structure
- Roughness of inner wall is  $Ra \leq 0.6\mu\text{m}$
- Opening direction clockwise or anticlockwise
- Material used AISI 304 stainless steel and door material ACRYLIC
- Working temperature ranges from  $-50^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$
- Thermal insulation material used is Polyurethane foams
- Equipped with PT-100 platinum resistance temperature sensor
- Designed with refrigeration system, shelf, condenser, vacuum system and liquid circulation system
- Adopts defrosting water soaking mode

## APPLICATIONS

Large Scale Vacuum Freeze Dryer is used in Bio-Pharma industry to freeze dry and store drug and medicinal product, materials, other biomaterials. Also used in food industry to freeze dry fruits and vegetables, fish and meat, Processed and raw food material to increase their shelf life and maintain quality.



## SPECIFICATION

Model	LLFD-B10	
Drying Chamber	Freeze-drying area	2.25 m <sup>2</sup>
	Layers of shelf	5 + 1
	Temperature scope of shelf	-50°C to +70°C(no-load)
	Shelf temperature error	±1°C (in balance)
	Shelf spacing	80 mm
	Size of shelf	500 mm × 900 mm
Condenser	Min. Temperature of condenser	≤-70°C (no-load)
	Water-capture capability	>30 kg
	Liquid material	22 (Thickness: 10 mm )
	Defrosting	Water soaking
	Final Vacuum degree	≤ 5Pa
	Style of cooling	Fan cooling
Shelf	Shelf effective area	2.25 m <sup>2</sup>
	Shelf size	500 mm × 900 mm
	Shelf numbers	5+1 Top shelf as temperature compensating plate
	Material number plate	10 pcs
	Shelf spacing	80 mm
	Shelf material	AISI 304 stainless steel, Top and bottom plate thickness 5 mm
CondenserDesign	Condenser Shape	Vertical type, cylindrical
		Compact structure, better water capture ,easy to clean and defrosting
	Condenser material	AISI 304 stainless steel
	Coiling pipe material	AISI 304 stainless steel
	Condenser water capture	≥ 30 kg
	Condenser Temperature Decreasing	+20°C to 40°C, within 30 minutes
	Condenser Min. temp.	≤ -70°C
	Defrosting	Water soaking
Thermal insulation material	Polyurethane foams	
Refrigeration System	Refrigerator	France Imported full closure compressor
	Refrigerant	CFC Free refrigerant
	Refrigerator number	2 sets
	Shelf refrigeration	1 sets (shelf refrigeration at same time, indirect refrigeration)
	Condenser refrigeration	1 set (shelf refrigeration at same time, direct refrigeration)

<b>Vacuum System</b>	Double stage rotary vane pump	World famous brand
	Quantity	1 set
	Vacuum gauge	Reborn
	Chamber pumping rate	Atmosphere 10 Pa ≤30 minutes (in dry condition)
	System Maximum vacuum	≤ 5Pa
	System leaking rate	≤ 10 Pa·l / sec
<b>Liquid Circulation System</b>	Liquid	Low viscosity silicon oil( 25°C, 5cst )National qualified product
	Liquid tubing material	AISI 304, welding, heat keeping
	Circulation pump	Web rotor canned pump, from internally famous brand
	Circulation pump quantity	1 set
	Heating rate	2 kW
	Heating control style	Solid-state relay
	Stainless steel plate heat exchanger	Well-known brands
	Temperature sensor	PT-100 platinum resistance
Control style	Automatic and manual control	
Noise	≤ 80 dB	
Installation Power	13.5 kW	
Dimension	1200 × 2100 × 1700 mm	
Weight	1200 kg	

