## $\epsilon$

# Freeze Dryer



### Introduction

Vacuum freeze-drying technology is also known as sublimation drying. The principle is to freeze a sample containing water in advance, and then sublimate its moisture under vacuum. The original biological, chemical and physical properties of the freeze-dried samples remain basically the same, and they are easy to be stored for a long time. After adding water, the samples can be restored to the state before freeze-drying, and their original biochemical characteristics can be maintained. Therefore, freeze-drying technology is widely used in medicine, food, chemical, biological products and other fields.

- \* Compressor, energy saving and high efficiency, low noise, long life.
- \* Vacuum pump, small volume, pumping speed, low noise, can achieve higher vacuum.
- \* Integrated design, compact structure, easy to use.
- \* Environmentally friendly refrigerant, ODP=0.
- \* With defrosting function, safe and reliable.
- \* The cold trap and operating table are made of stainless steel, corrosion resistant and easy to clean.
- \* The transparent cover of the drying chamber is made of aviation acrylic material, with high strength and no bonding.
- \* Large cold trap opening size, with pre-freezing function, no need for low temperature refrigerator.
- \* Professional gas diversion technology, high freeze-drying efficiency, and uniform ice capture.

### Accessories



Standard









Standard Chamber with 8 Port Manifold

vacuum pump (standard)



LCD Touch



Wide mouth

### **Technical Parameters**

Standard chamber   Standard chamber with 8 port manifold   Standard chamber   Standard	recillical Falaili	CICIS				
Standard chamber   with 8 port manifold   Stoppering chamber   with 8 port manifold   with 8 port   with 8 port manifold   with 8 port	Model		BK-FD10S	BK-FD10P	BK-FD10T	BK-FD10PT
Tray	Туре		Standard chamber		Stoppering chamber	
Height Between Trays	Freeze Drying Area		0.12m²		0.08m <sup>2</sup>	
Cold Trap Temperature	Tray		4 pcs		3 pcs	
Cold Trap Size (Diameter*H)         Φ219*140mm           Vacuum Degree         45 Pa           Water Capture Capacity         3-4L/24h           Tray Size (D*H)         Φ200*20mm         Φ180*20mm           Freeze Drying Time         24-36h	Height Between Trays		50mm		1	
Cold Trap Size (Diameter*H)         Φ219*140mm           Vacuum Degree         ≤5 Pa           Water Capture Capacity         3-4L/24h           Tray Size (D*H)         Φ200*20mm         Φ180*20mm           Freeze Drying Time         24~36h           Loading Capacity/Shelf (Liquid)         1.2L         0.8L           Total Loading Capacity (Liquid)         2.4L         1.6L           Drying Chamber Size (Diameter*H)         Φ260*420mm         Φ260*455mm           Total City, Of Vial Ф22         /         /         /         147         147           Total Qty, Of Vial Ф16         /         /         /         9297         297           Refrigerant         -60°C: R800a, R23 -80°C: R404a, R23         Standard: Air cooling         Standard: Air cooling           Power Supply         Standard: 220V 50Hz Optional: 220V, 60Hz, 110V, 60Hz         Optional: 250V, 60Hz, 110V, 60Hz           Standard: Accessory         Vacuum pump 2L/S, Material tray*4(Material tray*3 for T/PT), Drying rack*1, Cover*1, Acrylic bucket*1(all models)           Conical-mouth flask100ml*2pcs, 200ml*2pcs, 250ml*2pcs, 500ml*2pcs, Switch valve*8 pcs (only for model BK-FD10P/PT), USB port         Equipment moving frame, vacuum pump of other specifications, oil mist filter, automatic air intake function, automatic water drainage function, and other customization(for all models)           Optional Function & Acc	Cold Trap Temperature		≤-60°C(No load)(-80°C optional)			
Vacuum Degree         ≤5 Pa           Water Capture Capacity         3-4L/24h           Tray Size (D'H)         Φ200°20mm         Φ180°20mm           Freeze Drying Time         24–36h           Loading Capacity/Shelf (Liquid)         1.2L         0.8L           Total Loading Capacity (Liquid)         2.4L         1.6L           Drying Chamber Size (Diameter'H)         Φ260°420mm         Φ260°465mm           Total Oty, Of Vial Φ22         /         /         147         147           Total Qty, Of Vial Φ16         /         /         297         297         297           Total Qty, Of Vial Φ12         /         /         492         492         492           Refrigerant         -60°C: R600a, R23 -80°C: R404a, R23	Cold Trap Capacity		6L			
Water Capture Capacity         3-4L/24h           Tray Size (D'H)         Φ200°20mm         Φ180°20mm           Freeze Drying Time         24-36h	Cold Trap Size (Diameter*H)		Ф219*140mm			
Tray Size (D*H)   P200*20mm	Vacuum Degree		≤5 Pa			
Freeze Drying Time	Water Capture Capacity		3-4L/24h			
Loading Capacity/Shelf (Liquid)   1.2L	Tray Size (D*H)		Ф200*20mm		Ф180*20mm	
Total Loading Capacity (Liquid)   2.4L   1.6L	Freeze Drying Time		24~36h			
Drying Chamber Size (Diameter*H)	Loading Capacity/Shelf (Liquid)		1.2L		0.8L	
Total Qty. Of Vial Φ22	Total Loading Capacity (Liquid)		2.4L		1.6L	
Total Qty. Of Vial Φ16	Drying Chamber Size (Diameter*H)		Φ260*420mm Φ260*465mm			
Total Qty. Of Vial Ф12	Total Qty. Of Vial Φ22			$I = \{ A \} $	147	147
Refrigerant Cooling System Standard: Air cooling Power Supply Standard: 220V 50Hz Optional: 220V, 60Hz,110V, 60Hz  Standard: 220V 50Hz Optional: 220V, 60Hz,110V, 60Hz  Standard Accessory  Vacuum pump 2L/S, Material tray*4(Material tray*3 for T/PT), Drying rack*1, Cover*1, Acrylic bucket*1(all models)  Conical-mouth flask100ml*2pcs, 200ml*2pcs, 250ml*2pcs, 500ml*2pcs, Switch valve*8 pcs (only for model BK-FD10P/PT), USB port  Equipment moving frame, vacuum pump of other specifications, oil mist filter, automatic air intake function, automatic water drainage function, and other customization(for all models) 600ml/1200ml wide-mouth flask(for BK-FD10P/PT) Tray*2(for BK-FD10S/P)  External Size (W*D*H), mm 640*610*550  Package Size Main Body 735*720*760mm  -60*C: 80kg -80*C: 98kg	Total Qty. Of Vial Φ16		1		297	297
Standard: Air cooling	Total Qty. Of Vial Φ12		1	Ī	492	492
Power Supply  Standard: 220V 50Hz Optional: 220V, 60Hz, 110V, 60Hz  1300W  Vacuum pump 2L/S, Material tray*4 (Material tray*3 for T/PT), Drying rack*1, Cover*1, Acrylic bucket*1(all models)  Conical-mouth flask100ml*2pcs, 200ml*2pcs, 250ml*2pcs, 500ml*2pcs, Switch valve*8 pcs (only for model BK-FD10P/PT), USB port  Equipment moving frame, vacuum pump of other specifications, oil mist filter, automatic air lintake function, automatic water drainage function, and other customization(for all models) 600ml/1200ml wide-mouth flask(for BK-FD10P/PT)  Tray*2(for BK-FD10S/P)  External Size (W*D*H), mm  640*610*550  Package Size  Main Body  735*720*760mm  -60*C: 80kg -80*C: 98kg	Refrigerant		-60°C: R600a, R23 -80°C: R404a、R23			
Power Consumption 1300W  Standard Accessory Vacuum pump 2L/S, Material tray*4(Material tray*3 for T/PT), Drying rack*1, Cover*1, Acrylic bucket*1(all models) Conical-mouth flask100ml*2pcs, 200ml*2pcs, 250ml*2pcs, 500ml*2pcs, Switch valve*8 pcs (only for model BK-FD10P/PT), USB port  Equipment moving frame, vacuum pump of other specifications, oil mist filter, automatic air intake function, automatic water drainage function, and other customization(for all models) 600ml/1200ml wide-mouth flask(for BK-FD10P/PT) Tray*2(for BK-FD10S/P)  External Size (W*D*H), mm 640*610*550  Package Size Main Body 735*720*760mm  (W*D*H),mm Accessory 720*605*560mm  -60°C: 80kg -80°C: 98kg	Cooling System		Standard: Air cooling			
Vacuum pump 2L/S, Material tray*4(Material tray*3 for T/PT), Drying rack*1, Cover*1, Acrylic bucket*1(all models)  Conical-mouth flask100ml*2pcs, 200ml*2pcs, 250ml*2pcs, 500ml*2pcs, Switch valve*8 pcs (only for model BK-FD10P/PT), USB port  Equipment moving frame, vacuum pump of other specifications, oil mist filter, automatic air intake function, automatic water drainage function, and other customization(for all models) 600ml/1200ml wide-mouth flask(for BK-FD10P/PT)  Tray*2(for BK-FD10S/P)  External Size (W*D*H), mm 640*610*550  Package Size Main Body 735*720*760mm  (W*D*H),mm Accessory 720*605*560mm  -60°C: 80kg -80°C: 98kg	Power Supply		Standard: 220V 50Hz Optional: 220V, 60Hz,110V, 60Hz			
bucket*1(all models)       Conical-mouth flask100ml*2pcs, 200ml*2pcs, 250ml*2pcs, 500ml*2pcs, Switch valve*8 pcs (only for model BK-FD10P/PT), USB port       Optional Function & Accessory     Equipment moving frame, vacuum pump of other specifications, oil mist filter, automatic air intake function, automatic water drainage function, and other customization(for all models) 600ml/1200ml wide-mouth flask(for BK-FD10P/PT)	Power Consumption		1300W			
Optional Function & Accessory  intake function, automatic water drainage function, and other customization(for all models) 600ml/1200ml wide-mouth flask(for BK-FD10P/PT) Tray*2(for BK-FD10S/P)  External Size (W*D*H), mm 640*610*550  Package Size Main Body (W*D*H),mm Accessory 720*605*560mm  -60°C: 80kg -80°C: 98kg	Standard Accessory		bucket*1(all models)  Conical-mouth flask100ml*2pcs, 200ml*2pcs, 250ml*2pcs, 500ml*2pcs, Switch valve*8 pcs			
Package Size         Main Body         735*720*760mm           (W*D*H),mm         Accessory         720*605*560mm           Gross Weight(kg)         -60°C: 80kg           -80°C: 98kg	Optional Function & Accessory		intake function, automatic water drainage function, and other customization(for all models) 600ml/1200ml wide-mouth flask(for BK-FD10P/PT)			
(W*D*H),mm Accessory 720*605*560mm  -60°C: 80kg -80°C: 98kg	External Size (W*D*H), mm		640*610*550			
Gross Weight(kg)  Main Body -60°C: 80kg -80°C: 98kg	Package Size	Main Body	735*720*760mm			
Gross Weight(kg)  Main Body -80℃: 98kg	(W*D*H),mm	Accessory	720*605*560mm			
Accessory 45kg 49kg 54kg 56kg	Gross Weight(kg)	Main Body				
		Accessory	45kg	49kg	54kg	56kg

62 63