

Lab/ Pilot/ Process type
Freeze Dryer Lyophilizer

PRODUCTS CATALOGUE



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FD Series Lab Scale Freeze Dryer (Lyophilizer)

DESCRIPTION

Vacuum freezing dryer is widely used in the medical, pharmaceutical, biological, chemical and food and other fields, FD series is suitable for laboratory use or low-volume production to meet the requirements of most laboratories conventional lyophilization.

FEATURES

- Microprocessor control & LCD touch display which can display drying curve, vacuum, condenser temp., run time, ambient temperature.
- Pre-freezing function for samples.
- Large refrigerating capacity and slight noise of DANFOSS (SECOP) compressor with CFC-FREE refrigerant.
- 304 stainless steel of condenser, table-top, racks & shelves to ensure corrosion-resistant and easy to clean; shelves height adjustable.
- Transparent drying chamber is safe and easy to observe;
- Novel design, small size and easy operation;
- For water based samples, the -55°C condenser is the perfect choice with effective cost. For samples containing solvents or with low eutectic points, the -80 C dual cascade refrigeration condenser provides maximum performance (optional).
- For labs that needs quick turn-around, electric heating defrost is optional.
- Nitrogen inflation valve is available.
- It includes the following types: Normal type, Top-press type, multi-manifold T type and multi-manifold Top-press type to meet the various requirements. Normal type suitable for bulk raw products like food, fruit, herbal medicine and other bio material, Top-press (stopping) type suitable for vials comes with cap, to stopping caps into the vials.
- CE/ISO 9001 13485 14001 certificated.



FD-10-MTP








FD-10 Bench-top type

Model	FD-10-R	FD-10-MR	FD-10-TP	FD-10-MTP	FD-10-MT
Image					
Dry chamber size (D*H)	Φ260×430mm	Φ260×465mm	Φ260×490mm	Φ260×540mm	/
Total shelf area	0.12 m ²	0.12 m ²	0.08m ²	0.08m ²	/
Shelf size(mm)	Φ200*4pcs	Φ200*4pcs	Φ180 * 3pcs	Φ180 * 3pcs	/
Shelf space height (mm)	70	70	70	70	/

Shelf number	4 pcs	4 pcs	3 pcs	3 pcs	/
Trays number	4 pcs	4 pcs	3 pcs	3 pcs	/
Vials load capacity	Φ12mm	920 Pcs	920 Pcs	560 Pcs	24 ports 430×480mm (H*L)
	Φ16mm	480 Pcs	480 Pcs	285 Pcs	
	Φ22mm	260 Pcs	260 Pcs	165 Pcs	
Sample load capacity	1.2L	1.2L	0.8L	0.8L	/
Flask	/	8 pcs	/	8 pcs	/
Dry rack	Included	Included	Included	Included	/
Cold trap rack	Included	Included	Included	Included	Included
Condenser Temp.	<-55°C (-80°C or even lower is optional)				
Cold trap size.	Φ215 * 140 mm (Depth * Height)				
Ice remove capacity	3~4kg/24hours				
Cold type	Air-cooled				
Defrost type	Natural (Electric is optional)				
Ultimate Vacuum	<5 Pa (empty)				
Vacuum pump	Included				
Pump rate	2L/S				
Install Power	970W				
Voltage	220v/50Hz or 110v/60Hz				
Dimensions	460*625* (370+430)(mm)				
Weight	100 kg	110kg	105kg	120kg	65kg

FD-12 FLOOR TYPE

Model	FD-12-R	FD-12-MR	FD-12-TP	FD-12-MTP	FD-12-MT
Image					
Dry chamber size (D*H)	Φ260×430mm	Φ260×465mm	Φ260×490mm	Φ260×540mm	/
Total shelf area	0.12 m2	0.12 m2	0.08 m2	0.08m2	/
Shelf size (mm)	Φ200*4pcs	Φ200 * 4pcs	Φ180 * 3pcs	Φ180 * 3pcs	/
Shelf space height (mm)	70	70	70	70	/
Vials load quantity	Φ12mm	920 Pcs	920 Pcs	560 Pcs	24 ports 430×480mm (H*L)
	Φ16mm	480 Pcs	480 Pcs	285 Pcs	
	Φ22mm	260 Pcs	260 Pcs	165 Pcs	
Sample load capacity	1.2L	1.2L	0.8L	0.8L	/
Flask	/	8 pcs	/	8 pcs	/
Dry rack	Included	Included	Included	Included	/
Cold trap rack	Included	Included	Included	Included	Included
Condenser temp.	<-55°C (-80°C or even lower is optional)				
Cold trap size	Φ215 * 140 mm (Depth * Height)				
Ice remove capacity	4 Kg/24h				
Cold type	Air-cooled				

Defrost type	Natural (Electric is optional)				
Ultimate Vacuum	<5 Pa				
Vacuum pump	Included				
Pump rate	2L/S				
Install Power	970 W				
Voltage	220v/50Hz or 110v/60Hz				
Dimensions	460×556×(720+465)(mm)				
Weight	120 kg	135kg	130kg	140kg	76 kg






FD-18 FLOOR TYPE

Model		FD-18-R	FD-18-MR	FD-18-TP	FD-18-MTP	FD-18-MT
Image						
Dry chamber size (D*H)		Φ300×445mm	Φ300×465mm	Φ300×540mm	Φ300×570mm	/
Total shelf area		0.18 m ² 0.27 m ²	0.18 m ² 0.27 m ²	0.09 m ²	0.09 m ²	/
Shelf size (mm)		Φ240 * 4pcs Φ240 * 6pcs	Φ240 * 4pcs Φ240 * 6pcs	Φ200 * 3pcs	Φ200 * 3pcs	/
Shelf space height (mm)		70 50	70 50	70	70	/
Vials load capacity	Φ12mm	1320 Pcs 1980 pcs	1320 Pcs 1980 pcs	990 Pcs	990 Pcs	24 ports T-manifold 430×480mm (H*L) Flask rack: 610×600mm
	Φ16mm	740 Pcs 1110 pcs	740 Pcs 1110 pcs	555 Pcs	555 Pcs	
	Φ22mm	360 Pcs 540 pcs	360 Pcs 540 pcs	270 Pcs	270 Pcs	
Sample load capacity		1.8L 2.7L	1.8L 2.7L	0.9L	0.9L	
Flask		/	8 pcs	/	8 pcs	/
Dry rack		Included	Included	Included	Included	/
Cold trap rack		Included	Included	Included	Included	Included
Condenser Temp.		<-60°C (-80°C or even lower is optional)				
Cold trap size		Φ270 * 400 mm (Depth * Height)				
Ice capture capability		6 Kg/24h				
Cold type		Air-cooled				
Defrost type		Natural (Electric is optional)				
Ultimate Vacuum		<5 Pa				
Vacuum pump		Included				
Pump rate		4L/S				
Power		1400W				
Voltage		220v/50Hz or 110v/60Hz				

Dimensions	540×610×(963+445)(mm)				
Weight	170 kg	185kg	185kg	195kg	105 kg

Standard Configuration

- Stainless steel condenser with opening, stainless steel operation tops, seamless welding with round corner which is anti-corrosion and easy to clean
- Stainless steel shelf & rack, 4 or 6 pcs shelves optional, shelf removable and spacing height adjustable
- Stainless steel pre-cooling rack with metal cover
- Integrally molded glass dried barrel adopted special plastic will not break
- Used SECOP (DANFOSS) quality compressor, high performance condenser fan, LCD touch display, history data can be stored, searched and exported to computer.

Model	R	TP	MR	MTP	MT
Image					
Description	Normal type	Stoppering	8 port manifold	Stoppering + 8 ports manifold	Multi-ports manifold
Freeze Dryer	•	•	•	•	•
Transparent dry chamber	•	•	•	•	
Vacuum pump	•	•	•	•	•
Stoppering device		•		•	
Manifold Ports			8 ports (28/ 32mm)	8 ports (28/ 32mm)	24 ports
Freezing rack	•	•	•	•	•
Drying rack	•	•	•	•	
Tray	4 pcs	3 pcs	4 pcs	3 pcs	

Optional items

Item No.	Item Name	Item No.	Item Name
FD1001	-80°C Condenser	FD10091000	1000ml flask
Fd1002	Defrost device	FD1010	Eutectic point test device
FD1003	Refrigerant R404a, R502, R23 and etc	FD1011	Vacuum regular device
FD1004	Oil mist filter	FD1012	Jar bottle
FD1005	Shelves heating & Program segment control <i>Can stored 16 programs, each program can be set up 36segments, correct program data in computing, memorize the drying curve</i>	FD1013	Change to SS316 condenser & shelves
FD1006	6pcs shelves instead of 4 pcs	FD1014	Capacitance type vacuum gauge
FD1007	Leybold vacuum pump	FD1015	Backfill filter
FD1008	Anti-back oil device	FD1016	Auto backfill / drainage system
FD1009100	100ml flask		
FD1009250	250ml flask		
FD1009500	500ml flask		

Vacuum Pump for FD series freeze dryer



Adapter



Quick-release pipe



Small-bore pipe



Oil mist collector

Specifications of vacuum pump

Model	2XZ-0.5	2XZ-1	2XZ-2C	2XZ-4C	2XZ-6C	2XZ-8C	2XZ-15C
Pumping Speed: L/S	0.5	1	2	4	6	8	15
Ult. Vacuum Pa	Without gas ballast	$\leq 6 \times 10^{-2}$					
	With gas ballast	≤ 6.5	≤ 1.33				
Speed: r/min(50HZ)	1400						
Power Required: Kw	0.18	0.25	0.37	0.55	0.75	1.1	1.5
Diameter of inlet port: mm	16	16	25	25	40	40	40
Temp. rise of pump oil: °C	≥ 40		≥ 45		≥ 45	≥ 65	≥ 70
Oil capacity: L	0.60	0.70	0.10	1.2	2.0	3.0	4.0
Overall Dimensions: mm	447	469	514	514	565	650	770
	168	168	168	168	200	240	240
	260	260	282	282	342	430	430
Weight: kg	16	17	20	22	40	60	75

LAB-Series LabFreeze Dryer (Lyophilizer)

Features

- Touch LCD display with microprocessor controller, easy to use.
- Dry chamber using aircraft grade acrylic materials, non-adhesive, high strength, and no leaks.
- Condenser pre-cooling function.
- Used DANFOSS compressor.
- Vacuum pump in Japan or Korea brand, with oil-mist filter can trapping oil mist in the exhaust gas, reduce environmental and health hazards.
- Can charge nitrogen or inert gas to save after drying.
- Programmable, freezing, drying and defrosting will be program controlled.
- Automatic control system: Temperature heating control for each shelves, heating circulation monitoring protect, fuzzy PID control algorithm.
- Defrost system: Auto Non-electric heating defrost, more safety and fast.
- Vacuum regular system: vacuum degree regular in sublimation and drying process to avoid special material foaming or blowing, accelerate lyophilized efficiency (Optional)
- Pulse backfill system: slow, medium, fast three kinds of backfilling mode selection, avoiding the granular material and flocculent material being blown out effective loss problem inflatable produce. (Optional)
- Automatic drainage system: interlock with vacuum system after draining to prevent any failure in vacuum system. (Optional)
- Can be work in automatic or manual operation, manual mode is used to explore the process parameters, automatic mode for process maturity.
- Data recording system: 1) data can be stored in machine in 3 months; 2) External U-disk storage (Optional); 3) PC-database storage (Optional)
- Monitoring system: real time system temperature and vacuum degree monitored, acquisition frequency 50ms / time.
- Lyophilization process recipe storage function: can store 500 set of fixed or user-defined lyophilized formulation process.
- PC remote monitor system: remote monitor working status of machine, max 1.5km distance (Optional)
- Eutectic point test function (Optional)
- Calibration function: temperature and vacuum calibration ensures long-term accuracy of the measured values.
- Freeze-drying curve searchable.

Safety Protection

- Over-current protection
- Over-load protection
- Over-heating of temperature
- Vacuum defense in processing
- 36V safety voltage for heating system
- Vacuum pump protection







Configuration Instruction



Freeze dryer with manifold & stopping system



Freeze dryer with -80°C condenser

 <p>Normal type(R): suitable for bulk material</p>	 <p>Stoppering type(S): suitable for sealing vials material</p>
 <p>Flask-mount type(F): suitable for external flask material</p>	 <p>Stoppering with flask-mount type(FS): suitable for bulk, external flask and vials material</p>
 <p>T-manifold type(T): Suitable for external vials or flasks material</p>	 <p>-80°C condenser type</p>

Specifications

Model	LAB-1R-50 LAB-1R-80	LAB-1S-50 LAB-1S-80	LAB-1F-50 LAB-1F-80	LAB-1FS-50 LAB-1FS-80	LAB-1T-50 LAB-1T-80
Type	Normal	Stoppering	Flask-manifold	Stoppering & Flask-manifold	T-manifold
Control	Programmed	Programmed	Programmed	Programmed	Programmed
Display	LCD touch	LCD touch	LCD touch	LCD touch	LCD touch
Condenser temperature	-55°C -85°C	-55°C -85°C	-55°C -85°C	-55°C -85°C	-55°C -85°C
Water/ice capture	3L 4L	3L 4L	3L 4L	3L 4L	3L 4L
Compressor power	7/8HP 2/3HP * 2	7/8HP 2/3HP * 2	7/8HP 2/3HP * 2	7/8HP 2/3HP * 2	7/8HP 2/3HP * 2
Defrost	Yes	Yes	Yes	Yes	Yes
Dry area (m ²)	0.12	0.08	0.12	0.08	-
Shelf	4 pcs	3 pcs	4 pcs	3 pcs	-
Vacuum	< 8 Pa	< 8 Pa	< 8 Pa	< 8 Pa	< 8 Pa
Power	900W 1400W	900W 1400W	900W 1400W	900W 1400W	900W 1400W
Voltage	220/50 110/60	220/50 110/60	220/50 110/60	220/50 110/60	220/50 110/60

Dimensions	470*600*400	470*600*400	470*600*400	470*600*400	470*600*400
(W*D*H)mm	640*640*1000	640*640*1000	640*640*1000	640*640*1000	640*640*1000

Optional

Item ref.	Item name	Item ref.	Item name
LAB10001	Vacuum regular system, Vacuum trimming needle * 1 + vacuum solenoid valve +1	LAB10024	Paperless recorder, with USB interface
LAB10002	Eutectic point tester (economic type), measuring temperature & resistance value	LAB10025	Remote controlling & monitoring system, RS485
LAB10003	Eutectic point tester (standard), measuring temperature & resistance value online & offline, with software	LAB10026	Anti-back oil solenoid valve, SEGV brand
LAB10004	T type 16 port manifold	LAB10027	6 shelves with tray dry chamber
LAB10005	T type 24 port manifold	LAB10028	8 shelves with tray dry chamber
LAB10006	T type 52 port manifold	LAB10029	4 shelves with trays, 12 port manifold-flasks
LAB10007	T type 104 port manifold	LAB10030	6 shelves with trays, 12 port manifold-flasks
LAB10008	Ampoules sealer, sealing torch with tank	LAB10031	8 shelves with trays, 12 port manifold-flasks
LAB10009	Vial capper, suitable for 12-30mm	LAB10032	3 shelves with trays, 12 port manifold-flasks with stopping device
LAB10010	Jars adapter (Wide neck)	LAB10033	Auto water drain device, include solenoid valve, drain pipe & interface
LAB10011	Pulse backfill system, Backfill solenoid valve *1+ pipe and adapter	LAB10034	Mini dot matrix printer
LAB10012	Backfill filter, 0.2u filter	LAB10035	Oil mist filter, SEGV
LAB10013	Backfill interface, USA APG, 8mm	LAB10036	Oil mist filter, BWVAC
LAB10014	PC-database storing system	LAB10037	Oil mist filter, ULVAC
LAB10015	U-disk data recording system, for online/offline analysis	LAB10038	Oil mist filter, Leybold
LAB10016	BWVAC Vacuum pump 1.5L/S	LAB10039	ULVAC Vacuum pump 1L/S
LAB10017	BWVAC Vacuum pump 3L/S	LAB10040	ULVAC Vacuum pump 2L/S
LAB10018	BWVAC Vacuum pump 6L/S	LAB10041	ULVAC Vacuum pump 4L/S
LAB10019	BWVAC Vacuum pump 8L/S	LAB10042	Sample temperature monitor, display range -50-100°C
LAB10020	Leybold Vacuum pump 2L/S		
LAB10021	Leybold Vacuum pump 4L/S		
LAB10022	Leybold Vacuum pump 6L/S		
LAB10023	Leybold Vacuum pump 8L/S		



Built-in freezing container



Ampoules sealer



Oil-mist filter



6-8 shelves with dry chamber

 <p>Eutectic point tester</p>	 <p>Vial capper</p>	 <p>Leybold vacuum pump</p>	 <p>6-8 shelves with dry chamber and flaks mount</p>
 <p>T- 16/24/52/104 manifold</p>	 <p>Jars adapter</p>	 <p>Oil anti-back system</p>	 <p>Backfill filter</p>



LABFREEZ

I N S T R U M E N T S

