









Bench top freeze dry system offer an economical solution for processing light loads of aqueous samples specially designed for use by researchers small footprint simple operation.

FDL-10N-50-Series, Bench Top Freeze Dryers

FDL-10N-50: 50°C lyophilizer (freeze-dryer)				
	FDL-10N-50-BA	FDL-10N-50-8M	FDL-10N-50-TD	FDL-10N-50-TD-MM
Picture				
Freeze temperature	-50°C			
Vacuum degree	<15Pa			
Freeze-dry area	0.12 m ²		0.07 m ²	
Tray load	1.2L		0.7L	
Water capture	3kg/24h			
Sample tray	Φ200mm x4		Φ180mm x3	
Power supply	220V 50Hz 800W			
Machine size (mm)	L380xW500xH340			
Character	Big cold tray hole, with sample pre-freeze, stainless 304# cold tray, no pipe in cold tray, anti rust transparent plastic cover for dry chamber, security and direct-viewing stainless sample shelf, the distance between trays is adjustable international standard interface to pump.			



FDL-10N-80-Series, Floor Freeze Dryers

FDL-10N-80: 80°C lyophilizer(freeze-dryer)				
	FDL-10N-80-BA	FDL-10N-80-8M	FDL-10N-80-TD	FDL-10N-80-TD-MM
Picture				
Freeze temperature	-80°C			
Vacuum degree	<15Pa			
Freeze-dry area	0.12 m ²		0.07 m ²	
Tray load	1.2L		0.7L	
Water capture	3kg/24h	4kg/24h	3kg/24h	
Sample tray	Φ200mm x4 lays		Φ180mm x3 lays	
Power supply	220V 50Hz 800W	220V 50Hz 1300W	220V 50Hz 800W	
Machine size (mm)	L500xW500xH750	L492xW540xH800	L492xW500xH750	L500xW500xH750
Character	Big cold tray hole, with sample pre-freeze, stainless 304# cold tray, no pipe in cold tray, anti rust transparent plastic cover for dry chamber, security and direct-viewing stainless sample shelf, the distance between trays is adjustable international standard interface to pump.			

FREEZE DRYERS

Economy

FDL-10N-50/80T, Bench Top Freeze Dryers

FDL-10N-50 T type for multi-manifolds		
	FDL-10N-50T	FDL-10N-80T
Picture		
Brief	Basic components: 2L vacuum pump, 24pcs "T" shelf, 24pcs rubber valves. This type can be customized for your request	
Freeze temperature	-50°C	-80°C
Vacuum degree	<15Pa	
Water capture	3kg/24h	
Freeze-dry area	0.12m ²	
Power supply	220V 50Hz 800W	
Machine size (mm)	L380xW500xH340	L500xW500xH750
Character	Big cold tray hole, with sample pre-freeze, stainless 304# cold tray, no pipe in cold tray, anti rust international standard interface to pump	

FDL-18N-70-Series, Floor Freeze Dryers

FDL-18N-70: -70°C lyophilizer(freeze-dryer)					
	FDL-18N-70-NH	FDL-18N-70-BA	FDL-18N-70-TD	FDL-18N-70-8M	FDL-18N-70-TD-MM
Heat	Without heating	Basic type	Top-down stoppering	Multi-manifolds (8 manifolds)	Top-down stoppering & Multi-manifolds
Heating function	No	Yes			
Freeze temperature	< -70°C				
Vacuum degree	<13Pa				
Freeze-dry area	0.27m ²	0.18	0.11	0.18	0.11
Tray load capacity	2.7L	1.8L	1.1L	1.8L	1.1L
Water capture	6kg/24h				
Sample tray	Φ200mm x6	Φ200mm x4	Φ200mm x3	Φ200mm x4	Φ200mm x3
Power supply	220V 50Hz 1800W				
Machine size (mm)	L540xW640xH920				



FD-Series, Professional Freeze Dryers

Automatic Programmable Control System: From drying to defrosting, user-friendly programmable controls enable you to start runs quickly & the microprocessor controls different ramping & holding segments to meet different temp. protocols. Heated Drying system: By programmable controlling temp. by forceful circulation of the heat medium of shelf inside, it obtain a further precise distribution of temperatures. Pre-freeze system: The chamber pre-freezes sample to save money and time, eliminating the need for a separate freezer and product transfer. Defrosting system: Automatically defrosting system is available for ice condenser when defrosting is necessary. Vacuum Backfilling System: As far as the permanent preservation of the sample desiccation is concerned it protects a sample by inserting sterile nitrogen gas with back filling system for preventing contamination of the sample. Safety stoppering System: For the purpose of permanent preservation of a sample after freeze of drying, the stopper system, which seals under a vacuum state, consists an option that installs moving guides shelves delicately & that has a function to seal safely & precisely using a rotating sealing device. Automatic Purge System, It is equipped with an automated purge system to protect samples by preventing of counter-flow of vacuum pump oil. Compressor delayed start function to minimize any damage to compressor. 1.5 km far remote control system.

Model	FD5-3 FD8-3	FD5-4 FD8-4	FD5-5 FD8-5	FD5-6 FD8-6	FD5-8 FD8-8	FD5-10 FD8-10	FD5-12 FD8-12	FD5-15 FD8-15	FD5-19 FD8-19	FD5-25 FD8-25
Compressor (-58°C)	7/8HP	7/8HP	1HP	1HP	1HP	1.5HP	1.5HP	2HP	2HP	3HP
Compressor (-86°C)	2x7/8HP	2x7/8HP	2x1HP	2x1HP	2x1HP	2x1.5HP	2x1.5HP	2x2HP	2x2HP	2x3HP
Max. ice capacity	3L	4L	5L	6L	8L	10L	12L	15L	19L	25L
Ice condenser performance	2L/24h	3L/24h	3.5L/24h	4.5L/24h	5.5L/24h	8L/24h	10L/24h	12L/24h	14L/24h	20L/24h
Ice condenser Ult-temp	-58°C									
Ice condenser Ult-temp	-86°C									
Pump suction capacity	120L	120L	120L	120L	120L	200L	200L	200L	250L	340L
Controller	B T P									
Pump Ult-pressure	2x10 ⁻⁴ Torr									
Defrosting system	Hot gas solenoid system or heater deforsting system									
Gross weight	70/123	70/123	70/123	123	123	123	123	150	150	150
Bench-top/vertical electrical requirement	bench-top/vertical	bench-top/vertical	bench-top/vertical	vertical	vertical	vertical	vertical	vertical	vertical	vertical
220V, 50/60Hz single phase										

T-Controller

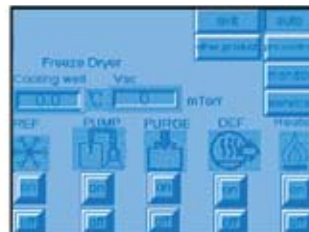
- 2 drying modes: automatic & manual.
- Automatic Purge System.
- Defrosting System.
- Compressor delayed start function to minimize any damage to compressor.
- It is equipped with an automatic purge system to protect samples by preventing of counter-flow of vacuum pump oil.
- Build-in computer and LCD touch screen program controls 5000 Memories.
- Monitoring system, monitoring vacuum pressure, ice condenser temperature and sample temperature.
- Documentation system, data saves per minute, continue 730 days and 526 memories, with a serial communication module.(optional).
- 1.5km far remote control system, easy to monitor and control (optional).
- Temperature and vacuum calibration.
- Alarming function.
- Vacuum Backfilling System(optional).



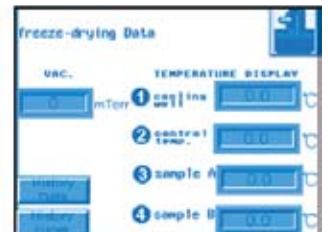
power on interface



manual mode interface



automatic mode interface



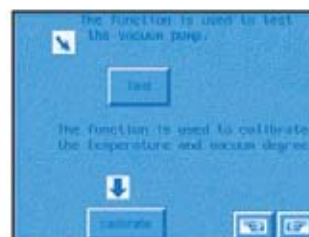
freeze drying data



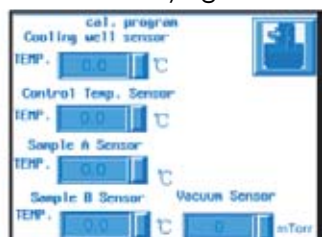
history data of cooling well



history curve of cooling well



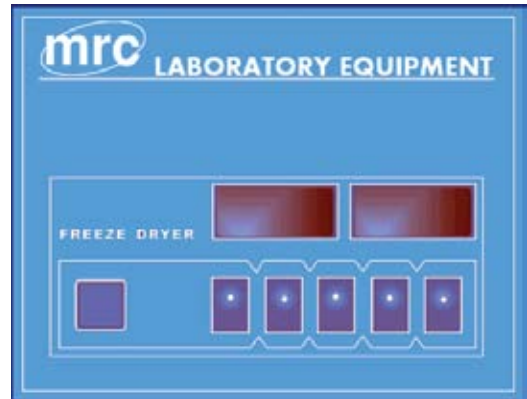
pump testing function



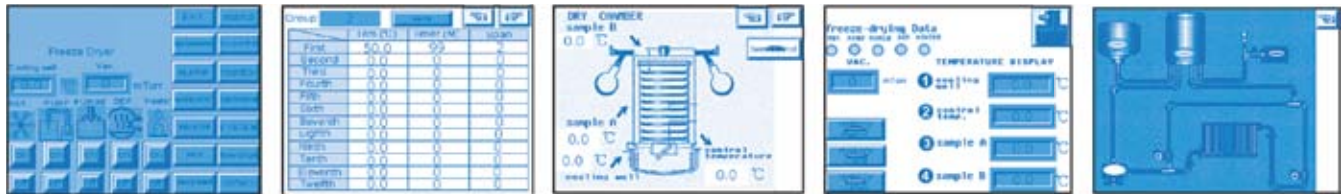
calibration program

B-Controller

- Two drying modes: automatic and manual.
- Automatic purge system, to protect samples by preventing of counter-flow of vacuum pump oil.
- Defrosting system.
- Compressor delayed start function to minimize any damage to compressor.
- Monitoring system, monitoring vacuum pressure, ice condenser temperature & sample temperature (option).
- Vacuum backfilling system.



APCS-Automatic program control system (optional)



mode interface

program memory function

monitoring samples', shelves & cooling well's temp.

monitoring freeze drying data

drying controlling diagram



drying curve of cooling temp.

pressure curve

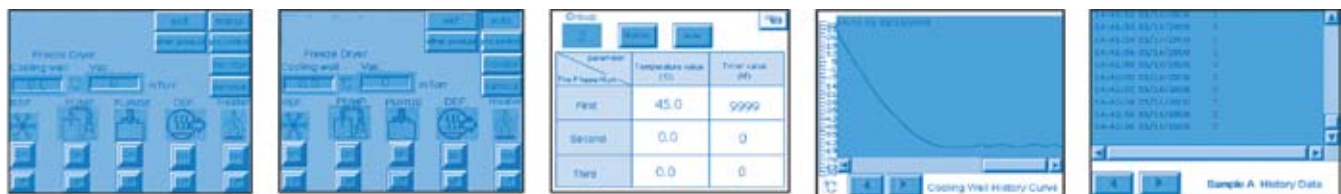
shelf temp. curve

sample A temp. curve

password signature encryption

P-Controller

- Two drying modes: automatic and manual.
- Automatic Purge System.
- Defrosting system.
- Compressor delayed start function to minimize any damage to compressor.
- Automatic purge system protects samples by preventing of counter-flow of vacuum pump oil.
- Build-in computer and LCD touch screen program control, 5000 Memories.
- Monitoring system, monitoring vacuum pressure, ice condenser temperature and sample temperature.
- Documentation system, data saves per minute, continue 730 days and 5,260,000 memories, with a serial communication module(optional).
- 1.5km far remote control system, easy to monitor and control (optional).
- Temperature and vacuum calibration.
- Alarming function.
- Vacuum Backfilling System(optional).
- Simulates industry freeze dryer, realizing program control.
- APCS fully automatic control software from prefreezing to defrosting,digital signature encryption (optional).
- Preset shelf temperature, obtained the eutectic temperature, the triple point temperature, freeze-drying curve.



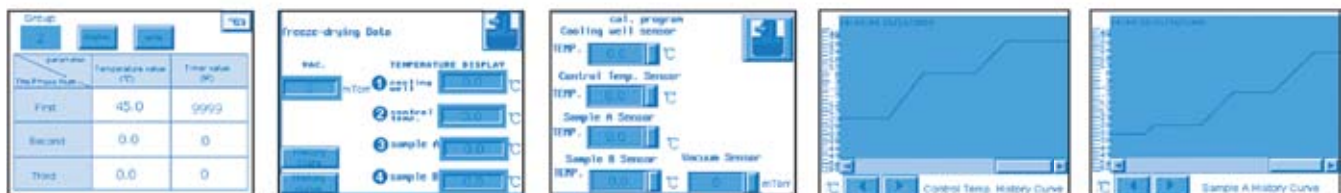
manual mode interface

automatic mode interface

self-programming

curve of control temp. & pressure

history data



program storage & documentation

freeze-drying data

calibration program

curve of shelf temp.

curve of sample temp.

Accessories:

1. Drying Chambers



Clear Drying Chamber CDC18x06/H

Model	CDC18x06 / CDC18x06H
Shelf diameter	23CM
Tray diameter	18CM
Number of shelf	6
Amount of 7ml serum bottle	6x50=300

Explanation:

CDC: Clear Drying Chamber
23: shelf diameter 23cm

06: number of shelves

H: heated shelves, displaying the curve



Clear Drying Chamber & Valves CDC18x06x12/H

Model	CDC18x06x12 / CDC18x06x12H
Shelf diameter	23CM
Tray diameter	18CM
Number of shelf	6
Number of flask	12
Amount of 7ml serum bottle	6x50=300

Explanation:

CDC: Clear Drying Chamber
23: shelf diameter 23cm

06: number of shelves

12: number of flask

H: heated shelves, displaying the curve

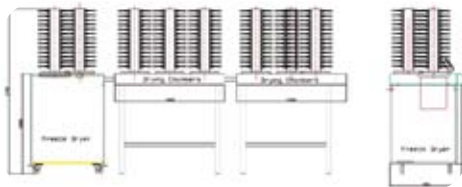


Clear Stopping Chamber & Valves CSC18x03x12/H

Model	CSC18x03x12 / CSC18x03x12H
Shelf diameter	23CM
Tray diameter	18CM
Number of shelf	6
Number of flask	12
Amount of 7ml serum bottle	3x50=150

Explanation: **S:** Stopping

2. Manifold



Generally the freeze dryer body connect 1 or 2 manifolds, more external groups of manifold are available with special external vacuum stand, each external group includes 3 manifolds

Model	Description
MF52	52-Port manifold for lyophilizing small samples in vials
MF104	104-Port manifold for lyophilizing small samples in vials
MF16	16-Port manifold for lyophilizing smaller in vials
MF24	24-Port manifold for lyophilizing smaller flasks

4. Flasks:

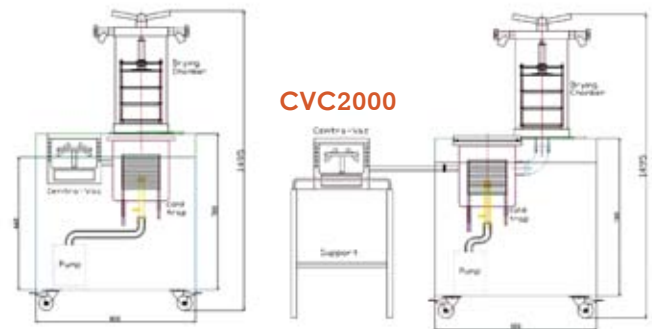


Capacity	Model
50 ml	CF050R, CF050F
100ml	CF100R, CF100F
250ml	CF250R, CF250F
500ml	CF500R, CF500F

Explanation: **50:** Capacity 50ml flask •

F: Flat bottom • **R:** Round bottom

3. Centrifugal vacuum concentrator and freeze fryer with centrifugal vacuum concentrator



CVC2000

Freeze dryer with built in centrifugal vacuum concentrator

Freeze dryer with separate centrifugal vacuum concentrator

5. Serum Bottles:

Capacity	Model
2ml	SB02
5ml	SB05
7ml	SB07
10ml	SB10
15ml	SB15
20ml	SB20
30ml	SB30
50ml	SB50

Explanation: **02:** 2ml Serum bottle