

FREEZE DRYER



FLOOR TYPE SERIES

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Floor Type Freeze Dryer LFD-FT Series

Labocon offers Floor Type Standing Freeze Dryer LFD-FT Series that maximizes plant reliability and ease of use, reduces energy consumption, optimizes space requirements and minimizes maintenance requirements. The unit is a compact console with casters that make it easy to move.

Features

- ◆ Features vacuum freeze drying technology.
- ◆ Drying curves are displayed on LCD screen.
- ◆ Low noise compressor with long shelf life and high efficiency.
- ◆ Drying chamber is equipped with organic glass for safety and visibility.
- ◆ Condenser, operation panel, shelves and trays are made of stainless steel.
- ◆ Condenser has pre-freezing function.
- ◆ CFC free environment friendly refrigeration.
- ◆ Features nitrogen valve and eutectic test device (optional).
- ◆ Powerful compressor with faster refrigeration functions in LFD-FT-200 Series.

Application

Floor Type Standing Freeze Dryer LFD-FT Series from Labocon is ideally used to freeze dry samples such as plant material, waste products, organic tissues, and polymers. This unit finds use in preservation of perishable material in their original state.



Specification of LFD-FT-100 Series

| MODEL | LFD-FT-101 | LFD-FT-102 | LFD-FT-103 | LFD-FT-104 |
|---|------------------------|---------------------|---------------------|---------------------|
| Type | Standard | Top Press | Manifold | Manifold Top Press |
| Capacity | 1.2 litres | 1.2 litres | 1.2 litres | 1.2 litres |
| Condenser Temperature | -55°C (-80°C optional) | | | |
| Freeze Drying Surface Area | 0.12 m ² | 0.10 m ² | 0.12 m ² | 0.10 m ² |
| Pre-Freeze Shelf Dimension | Ø 200 mm | Ø 180 mm | Ø 200 mm | Ø 180 mm |
| Total no. of Shelves/Trays | 4 | 4 | 4 | 4 |
| Water Removal Capacity/ Water Holding Capacity | 3L/4L per 24 hrs | | | |
| Vacuum Degree | < 10 Pa | | | |
| Pump Flow Rate | 2 Litres / sec | | | |
| Bottle Ø 22 | - | - | 260 | 165 |
| Bottle Ø 16 | - | - | 480 | 285 |
| Bottle Ø 12 | - | - | 920 | 560 |
| Overall Dimension | 560x460x(710/430) mm | | | |
| Power | 1070 W | | | |
| Power Supply | 220V, 50Hz | | | |
| Catalog No. | 9424149427 | 9424150427 | 9424151427 | 9424152427 |



Specification of LFD-FT-200 series

| MODEL | LFD-FT-201 | LFD-FT-202 | LFD-FT-203 | LFD-FT-204 |
|---|-----------------------------|---------------------|-----------------------------|---------------------|
| Type | Standard | Top Press | Manifold | Manifold Top Press |
| Capacity | 2 litres | 2 litres | 2 litres | 2 litres |
| Condenser Temperature | -55°C (-80 optional) | | | |
| Freeze Drying Surface Area | 0.18 to 0.27 m ² | 0.09 m ² | 0.18 to 0.27 m ² | 0.09 m ² |
| Pre-Freeze Shelf Dimension | Ø 240 mm | Ø 200 mm | Ø 240 mm | Ø 200 mm |
| Total no. of Shelves/Trays | 4 | 3 | 4 | 3 |
| Water Removal Capacity/ Water Holding Capacity | 6L per 24 hrs | | | |
| Vacuum Degree | < 10 Pa | | | |
| Pump Flow Rate | 4 Litres / sec | | | |
| Bottle Ø 22 | - | - | 360 | 270 |
| Bottle Ø 16 | - | - | 740 | 555 |
| Bottle Ø 12 | - | - | 1320 | 999 |
| Weight | 120 kg | 125 kg | 120 kg | 125 kg |
| Overall Dimension | 635x540x(970/430) mm | | | |
| Power | 1400 W | | | |
| Power Supply | 220V, 50Hz | | | |
| Catalog No. | 9424154427 | 9424155427 | 9424156427 | 9424157427 |

Specification of LFD-FT-105 and 205

| MODEL | LFD-FT-105 | LFD-FT-205 |
|------------------------|---------------------------|---------------------------|
| Type | T-type | T-type |
| Condenser Temperature | -55°C (-80°C optional) | -55°C (-80 optional) |
| Water Holding Capacity | 3 kg/24 hr | 6 kg/24 hr |
| Vacuum Degree | < 10 Pa | < 10 Pa |
| No. of Sealed Valves | 24 pieces for 24 ampoules | 24 pieces for 24 ampoules |
| Overall Dimension | 560x460x(710+430) mm | 635x540x(970+430) mm |
| Weight | 62 kg | 105 kg |
| Power | 750 W | 1400 W |
| Power Supply | 220V, 50Hz | 220V, 50Hz |
| Catalog No. | 9424153427 | 9424158427 |

Additional Optional Features

- ◆ Low noise compressor: single unit for -50 Degree C condenser temperature (Capacity 1/3hp) and dual unit for -80 Degree C (Capacity 3/4hp)
- ◆ Capacity per Tray: 2L
- ◆ Water Removal Capacity/Water Holding Capacity 6L per 24 hrs.
- ◆ Freeze drying area: 0.09m²(Optional: 0.12m²)
- ◆ Total no. of shelf/trays: 3 (optional-4)
- ◆ Shelf/tray dimension: Φ200mm with 3 nos. trays with Spacing 70mm/4 nos trays with Spacing 50mm
- ◆ These below details are same for all 4 models from LFD FT-201 TO 204
- ◆ Vial capacity Φ12mm of F D area: 0.09m²/0.12m² 615 pcs/820 pcs
- ◆ Vial capacity Φ16mm 345 pcs/460 pcs
- ◆ Vial capacity Φ22mm 183 pcs/244 pcs

Optional Accessories

For Freeze Dryer:

1. Drying Chamber: Acrylic (Standard) / SS304 Stainless Steel (Optional) with or without 8 port manifold for Flask
2. SS Type Manifold with 24 addition point for 24 ampoules
3. RS-232/RS-485 Port along with /without compatible software
4. Audio/Visual Alarms for power failure, voltage fluctuation, and collector temperature reaches above/beyond threshold point, moisture detector/sensor in collector
5. Drainage Valve with or without HEPA (99.9% 0.3μ Efficiency) for disposal of stored water and other solvents
6. Eutectic point/ Sample temperature sensor Probes
7. Electric/Hot Air Gas Defrosting
8. Ampoules: 2ml/5ml as per required number of pieces
9. Electric Heating Shelf
10. Round bottom Flasks with adaptors from wide range of capacity of Flask of: 50ml, 100ml, 250ml, 500ml, 1000ml
11. Sealing Torch and Crimper
12. USB Port for file data transfer to PC/Laptop

For Vacuum Pump:

1. Standard (Comes by default with all our Freeze dryer systems (Vacuum less than 1 Pa with Flow rate from 120L/min to 300 L/min.)
2. Hybrid Chemical Resistant (Optional) which is very resistant to harsh chemicals, less corrosion (Vacuum range up to 0.005 mbar with Flow rate from 120L/min to 300 L/min).
3. Vacuum sensor
4. Vacuum break Valve
5. Vacuum Oil: Available in 1 L & 5L Pack.
6. Freeze dryer and Vacuum Pump Stand
7. Exhaust Filter, Vacuum Controller with set Points with alarms

Labocon Floor Type Freeze Dryer LFD- FT- 1200 Series

Labocon offers Floor Standing Freeze Dryer LFD- FT- 1200 Series that maximizes plant reliability and ease of use, reduces energy consumption, optimizes space requirements and minimizes maintenance requirements. The unit is a compact console with casters that make it easy to move.

Applications :

- ◆ Floor Standing Freeze Dryer Series from Labocon is ideally used to freeze dry samples such as plant material, waste products, organic tissues, and polymers.
- ◆ This unit finds use in preservation of perishable material in their original state.

Features

1. Microprocessor controller LCD touchscreen display to set the protocol and operate and see the all the running parameters such temperature, Vacuum, Alarms all other running time
2. Low noise compressor-Single unit for -55° C & Double unit for -80°, -90°, -110°C model with a Temperature Accuracy & Uniformity of $\pm 0.5^{\circ}\text{C}$, Inbuilt Pre freezing at desired temperature range:-40/-80
3. Vacuum can be displayed in Pa or mbar
4. Condenser with uniform and good ice capture function
5. Acrylic drying Chamber with Pre-Freezing function (ϕ 200 mm dia.) is safe and easy to view sample status
6. Small and compact structure, with easy and convenient operation
7. Vacuum pump with high pumping speed, to reach good final vacuum
8. Big opening condenser with external coiling tubes, has pre-freezing function
9. Color LCD touch screen displays running time, display sample temperature, condenser temperature, vacuum degree, and save data automatically
10. Display sample temperature curve, condenser temperature curve and vacuum curve
11. CFC-free refrigerant, international famous brand compressor, low noise, good efficiency
12. Automated motor cooling features ensures continuous operation without stopping Vacuum Pump or Freeze dryer
13. High density Polyurethane foam with thickness of 155mm
14. Condenser, trays, drying shelf and pre-freezing shelf made of stainless steel optional 304/316 anti-corrosion with Teflon coating
15. Stainless steel 304 air inlet valve (drain valve) is safe, anti-corrosion, no leak
16. With USB port to output freeze drying data, open and view data in Excel format

Optional Accessories:

- Cold Trap -50°C/-80°C/-110°C
- Vacuum control valve
- Anti-Suck Valve
- Intake backfilling filter
- Air inlet filter for pump
- Nitrogen inflation valve
- Eutectic point test device
- Electric/Hot Gas heating defrosting
- Exhaust filter/oil mist filter for pump
- Cascade refrigeration, condenser temperature -80°C
- Stainless steel (optional 304/316) chamber used for organic solvent sample
- For Vacuum Pump:
 - Standard (Comes by default with all our Freeze dryer systems (Vacuum less than 1 Pa with Flow rate from 120L/min to 300 L/min.)
 - Hybrid Chemical Resistant (Optional) which is very resistant to harsh chemicals, less corrosion (Vacuum range up to 0.005 mbar with Flow rate from 120L/min to 300 L/min).
- Check valve for pump to prevent oil sucked into chamber
- RS232 and software: Check, keep freeze drying data and control freeze dryer through computer
- Audio/Visual Alarms for power failure, voltage fluctuation, collector temperature reaches above/beyond threshold
- Point, moisture detector/sensor in collector, Low/High Vacuum, Compressor overload
- Drainage Valve with or without HEPA (99.9% 0.3μ Efficiency) for disposal of stored water and other solvents
- Petri dishes compatible
- 24 pcs, for 24 ampule connector and Adaptor
- 12 pcs or 24 pcs, for connection of flask: round bottom flask: 50ml, 100ml, 250ml, 500ml and 1000ml
- Wide neck flask: 600ml, 1000ml
- Sealing torch and crimper
- Remote Alarm Port and System.

Specification:

| Model | LFD FT - 1200A | LFD FT - 1200B | LFD FT - 1200C | LFD FT - 1200D |
|---|--------------------------------------|-------------------------|--------------------------|------------------------------|
| Type | Standard | Top press | Manifold type | Manifold with top press type |
| Freeze Drying area | 0.12/0.18m ² | 0.08/0.1 m ² | 0.12/0.18 m ² | 0.08/0.1 m ² |
| Condenser temperature | -50°C/-80°C/-110°C | | | |
| Vacuum degree | ≤10 Pa | | | |
| Condenser Dimension | 200 mmx200 mm | | | |
| Condenser capacity & Volume | 4 L/24 hours | | | |
| Water Removal Capacity/ Water Holding Capacity | 3.5 L/24 hours | | | |
| Sample Tray | Φ200x 4/6 | Φ180 x3/4 | Φ200x 4/6 | Φ180 x3/4 |
| Shelf spacing | 70/50 mm | | | |
| Bulk liquid capacity (10mm thickness) | 1.2/1.8 | 0.8/1 | 1.2/1.8 | 0.8/1 |
| Vial capacity Φ12mm | 820/1230 | 492/656 | 820/1230 | 492/656 |
| Vial capacity Φ16mm | 460/690 | 279/372 | 460/690 | 279/372 |
| Vial capacity Φ22mm | 244/366 | 147/196 | 244/366 | 147/196 |
| Optional manifold | 8 ports | | | |
| Optional flask | 1000ml, 500ml, 250ml, 100ml and 50ml | | | |
| Vacuum Pump Flow Rate | 2 L/S, 7.2 m ³ /h | | | |
| Voltage | 220V ,50 Hz 110V/120V, 60Hz | | | |
| Power | 1070 W | | | |
| Dimension | 560x460 x (710+430) mm | | | |
| Weight | 100 kg | 105 kg | 100 kg | 105 kg |

Labocon Floor Type Freeze Dryer LFD- FT- 1300 Series

Labocon offers Benchtop/Floor Standing Freeze Dryer is suitable for drying products in bulk and in flask. They can be restored to original state and maintain their chemical and biological characteristics after being watered.

The vacuum freeze-drying technology, which is also called sublimation drying, is a technical method that freezes the samples in advance, and then sublimates its moisture under vacuum state.

Applications :

- ◆ Labocon Floor Standing Freeze Dryer is widely used in medicine, pharmacy, biology research, chemical industry and food production etc. After freeze drying process, a longterm preservation for material is much easier

Features

1. Small and compact structure, with easy and convenient operation
2. Condenser, trays, drying shelf and pre-freezing shelf are made of stainless steel 304/316, anti-corrosion
3. High density Polyurethane foam with thickness of 155mm
4. Advance Microprocessor controller with color LCD touch screen displays running time, display sample temperature, condenser temperature, vacuum degree, and save data automatically
5. Display sample temperature curve, condenser temperature curve and vacuum curve
6. Automated start
7. Vacuum can be displayed in Pa or Mbar
8. Condenser with uniform and good ice capture function
9. Acrylic drying Chamber is safe and easy to view sample status
10. Vacuum pump with high pumping speed, to reach good final vacuum
11. Big opening condenser with external coiling tubes, has pre-freezing function
12. CFC-free refrigerant, international famous brand compressor, low noise, good efficiency
13. Stainless steel air inlet valve (drain valve) is safe, anti-corrosion, no leak with HEPA (99.9% 0.3 μ Efficiency) Filter positioned at front for easy cleaning access
14. With USB port to output freeze drying data, open and view data in Excel format



Ampoule Manifold reference image

Specification:

| Model | LFD -FT-1300 |
|--|---|
| Condenser Temperature: Optional | -50°C / -80 °C/-110°C |
| Temperature Accuracy &Uniformity | ±0.5°C |
| Water Removal Capacity Water HoldingCapacity: | 3.5L/4L per 24 hrs |
| Overall Ice condenser capacity | 8kg/Batch (Optional 9kg, 10kg, 11kg, 12kg) |
| System vacuum | 10mtorr/1.3 Pa |
| Final Vacuum | < 10 Pa |
| Vacuum | 760Torr to 1Millitorr |
| Average time to 100mtorr | Less than 18min |
| Freeze-drying area | 0.27 m ² |
| Bulk Capacity | 2.7L, 10mm thickness |
| Tray | Φ200mm, 4 trays of SS304 |
| Shelf spacing | 60mm |
| Compressor Capacity | 2 x 1/2HP |
| Drying chamber material | Acrylic |
| Drying chamber size | Φ300×460mm |
| Vacuum pump | High vacuum Rotary vane vacuum pump- Vacuum Bleed CONTROLLER Method withconnection vacuum hose and clamps, 1/5L/10L Liter oil |
| Vacuum Pump Flow Rate | 4 L/S, 14.4 m ³ /h, |
| Defrosting | Hot Gas Defrosting |
| SS316 Manifold | with 8/12 ports |
| Cooling | Air cooling, ambient temperature ≤25°C |
| Flasks | |
| Round bottom flask | 1000ml, 500ml, 250ml, 100ml 8pcs in total (Wide-neck flask as option) and adaptor |
| Power Supply | 220V/50 Hz/single phase |
| Power | 1800W |
| Dimension | Approx. 560x460x(710+430)mm |
| Weight | Approx. 105kg |

Labocon Floor Type Freeze Dryer LFD- FT- 1300 Series

- 1.Drying Chamber: Acrylic / SS304/SS316 Grade (Optional) with or without 8/12/16/24 port manifold for Flask , Ampoule Manifold for 10-T/24-T/32-T Ampoules in single ,double ,triple, tetrad, Penta and hexa nos.
- 2.Audio/Visual Alarms for power failure, Auto-Start after power resume, voltage fluctuation, collector temperature reaches above/beyond threshold point, moisture detector/sensor in collector, Low/High Vacuum, Compressor overload
- 3.Automated motor cooling features ensures continuous operation without stopping Vacuum Pump or Freeze dryer
- 4.Pre-freeing Instrument: Optional Temperature , -50°C, , -80°C, , -90°C, , -110°C
- 5.Also available with Water removal /Water Holding capacity : 3.5L/4L, 4L/5L, 5L/6L,6L/7L
- 6.Ice Condenser capacity: 9kg./10kg,12kg
- 7.Drainage Valve with or without HEPA (99.9% 0.3μ Efficiency) for disposal of stored water and other solvents
- 8.Vacuum sensor (Pirani Gauge),Oil mist Filter, Odour control Filter
- 9.Vacuum break Valve/Anti-Suck Vacuum Pump Filter to prohibit vacuum pump oil come back to sample chamber & nitrogen Valve, Solvent trap, Cold trap(--50°C /-80 °C/- 110°C), Vacuum Control
- 10.Eutectic point/ Sample temperature sensor Probes
- 11.Electric/Hot Air Gas Defrosting
- 12.RS-232 PC Connectivity Port and software
- 13.Motor Power: Starts from 0.25 HP to 1HP depend upon optional feature addition to main Freeze dryer unit
- 14.Vacuum Pump:
 - Double stage Rotary Direct Driven (Comes by default with all our Freeze dryer systems) For aqueous and organic solvents (0.1Pa Maximum / 0.001mbar with Flow rate from 120L/min to 300 L/min.)
 - Hybrid Chemical Resistant (Optional) which is very resistant to harsh chemicals, less corrosion (Vacuum range up to 0.005 mbar with Flow rate from 120L/min to 300 L/min.
 - Anti-suck back Valve
- 15.Vacuum Oil: Available in 1 L & 5L Pack
- 16.Freeze dryer and Vacuum Pump Stand
- 17.Featued with Automatic & Manual Vacuum ON/OFF
- 18.Auto restart on power resume
- 19.For Manifold:Flaskcapacityavailablefrom50
- 20.ml, 100ml, 150ml, 200ml, 250ml, 500ml, 1000ml, 1200ml, 1500ml, 2000ml to 3000 ml Flask
- 21.Remote Alarm Port and System.
- 22.Tray Dryer version:
 - 1.Model: Tray type
 - 2.Chamber size mm: 450 (L)x400(W)x400(H)
 - 3.Chamber Volume: ≥ 8L
 - 4.Ice Condenser Capacity: 5 kg
 - 5.Tray Capacity: ≥1.5Litres
 - 6.Tray Dimension(mm) : 260x395x25mm
 - 7.Shelf spacing: 70mm
 - 8.Tray Spacing: 70mm
 - 9.Defrost: : off cycle defrost
 - 10.Trays (minimum): 2 Nos

Touch Screen Images :



Main Interface



"Real-time curve" interface



"History select" interface

Touch Screen Images :



"History curve" interface



"Delete" Interface



"Export to USB" Interface

Labocon Floor Type Freeze Dryer LFD- FT- 1400 Series

Labocon offers Floor Standing Freeze Dryer LFD FT 1400 Series that maximizes plant reliability and ease of use, reduces energy consumption, optimizes space requirements and minimizes Maintenance requirements. The unit is a compact console with casters that make it easy to move.

Freeze dryer is widely used in medicine, pharmacy, biology research, chemical industry and food production ,etc. After freeze drying process, a long term preservation for material is much easier. They can be restored to original state and maintain their chemical and biological characteristics afterbeing watered.

The vacuum freeze drying technology, which is also called sublimation drying, is a technical method that freezes the samples in advance, and then sublimates its moisture under vacuum state.

The model is a floor type machine, suitable for drying products in bulk.
If equipped with tree type vertical manifold assembly, then flasks can be connected.



Applications :

Floor Standing Freeze Dryer Series from Labocon is ideally used to freeze dry samples such as plant material, waste products, organic tissues, and polymers. This unit finds use in preservation of perishable material in their original state.

Features :

- Control panel display
- Vacuum can be displayed in Pa or mbar
- Condenser with uniform and good ice capture function
- Acrylic drying Chamber is safe and easy to view sample status
- Small and compact structure, with easy and convenient operation
- Vacuum pump with high pumping speed, to reach good final vacuum
- Big opening condenser with external SS 304 coiling tubes, has pre-freezing function
- Color LCD touch screen displays running time, display sample temperature, condenser temperature, vacuum degree, and save data automatically
- Display sample temperature curve, condenser temperature curve and vacuum curve
- CFC-free refrigerant, international famous brand compressor, low noise, good efficiency
- Condenser, trays, drying shelf and pre-freezing shelf made of stainless steel 304, anti-corrosion
- Stainless steel air inlet valve (drain valve) is safe, anti-corrosion, no leak
- With USB port to output freeze drying data, open and view data in Excel format

Optional Accessories

- Vacuum control valve
- Vacuum Break Valve
- Drain Valve
- Electric/Hot gas Defrosting
- Intake backfilling filter
- Air inlet filter for pump
- Nitrogen inflation valve
- Eutectic point test device
- Electricity heating defrosting
- Exhaust filter/oil mist filter for pump
- Cascade refrigeration, condenser temperature -80°C
- Stainless steel chamber used for organic solvent sample
- Check valve for pump to prevent oil sucked into chamber
- Leybold pump or another international brand vacuum pump
- RS232 and software: Check, keep freeze drying data and control freeze dryer through computer
- Tree type manifold assembly with 12 ports, to connect wide neck flask (150ml, 300ml, 600ml, 1200ml, each with 2pcs) with adaptors /connectors
- Vacuum Oil
- Audio/Visual Alarms for power failure, Auto-Start after power resume, voltage fluctuation, collector temperature reaches above/beyond threshold point, moisture detector/sensor in collector, Low/High Vacuum, Compressor overload
- Remote Alarm Port and System.
- Optional condenser temperature From : -55°C /-80°C /-110°C

Specification:

| | |
|------------------------|--|
| Freeze drying area | 0.18 m ² |
| Ice Condenser Capacity | 9.5Kg |
| Ice condenser capacity | 6.5 kg /24h |
| Condenser temperature | -55°C /-80°C /-110°C |
| Final vacuum | < 10 Pa |
| Tray | Φ240mm ,4 layers, Spacing 70mm |
| Bulk capacity in trays | 1.8L, 10mm thickness 3.6L, 20mm thickness |
| Condenser size | Φ270mm, 400mm deep |
| Drying chamber size | Φ300×450mm |
| Vacuum Pump Flow Rate | 4 L/S, 240 Liter / minute |
| Defrosting | Off Cycle Defrosting |
| Cooling | Air cooling, ambient temperature≤25°C |
| Voltage | 220V/50 Hz/single phase |
| Power | 1400W |
| Dimension | Approx. 810x580x(950+450)mm |
| weight | Approx. 185 kg |