

FD-5L

Tray Freeze Dryer



- **100L Ice Capacity**
- **5.25m2 Shelf Area**
- **All-include Structure**
- **Versatile&Economic**

FD-5L shelf freeze dryer designed to fit commercial and industrial freeze drying process, material loading by bulk in trays, the machine designed meet GMP requirements.

The freeze dryers designed consider a lot of factors that will guarantee your success freeze drying result and high dried quality, we provide standard factory models as well as customized configurations to meet your special requirements.

Standard Specification:

| | |
|--------------------|-----------------------------|
| Shelf Area | 5.25m2 |
| Shelf Type | Fixed, Bulk loading |
| Shelves Temp. | -50C to +70C |
| Shelf Size | 1000*750mm |
| Shelves | 7+1 |
| Ice Capacity | 100kgs |
| Condenser Temp. | -45C or -80C |
| Condenser Location | Rear side of drying chamber |
| Defrost | Water soaking |
| Vacuum Degree | <3Pa |
| Vacuum Pump Rate | 64m3 |
| Compressor | Reciprocating |
| Power Install | 25kwh |
| Size | 4000*1500*2500mm |
| Voltage | 380V/50-60Hz/3P |
| Controller | PLC + Touch Screen |
| Main Material | AISI304 or 316L |

Technical Features:

CONTROL SYSTEM:

- PLC + Touch screen system, PC connectivity.
- Automatic and Manual operation selectable.
- System working status diagram display.
- Freeze Drying status & data display.
- Drying data auto storage, could download to U disk.

DRYING HOUSE & DOOR:

- Design according to GB pressure container directives.
- Rectangular or cylindrical chamber with extra thick insulation.
- Mirror finished walls, shelves, doors and accessories.
- Hinged door, in front door and side drying house have viewing ports.
- Plates and drying house inner wall mirror finish.

SHELVES:

- Stainless steel made, Mirror finish.
- Sandwich type plates fill silicone oil, all plates have both freezing and heating function: -50C ~ +70C.
- 5.25m2 useable shelf area, 7 plates (size 750*1000mm) with material loading capacity, 1 for extra radiant temperature.

CONDENSER:

- Condenser house in rear side of drying chamber, Stainless steel material for both coils and walls, surface mirror finish.
- Condenser floor slope design for water thoroughly discharge.
- Exclusive designed coils route, high performance vapor collection.

VACUUM SYSTEM:

- Two stage oil sealed vacuum pump, with vacuum adjust controller.
- Pneumatic isolation valve installed between condenser and pump.

System Performance:

| | |
|--------------------------|-------------------------------|
| Shelves Lowest Temp. | -50C |
| Shelves Temp. Range | -50C to +70C |
| Shelves Cooling Rate | +20C to -40C <60min |
| Shelves Heating Rate | >1C/min |
| Shelves Temp. Uniformity | Freezing: ±2C Heating: ±1C |
| Shelves & Wall Roughness | Ra<0.5 |
| Shelves Flatness | <0.5mm/m |
| Condenser Lowest Temp. | -45C or -80C |
| Condenser Cooling Rate | +20C to -40C <30min |
| Condenser Coil Roughness | Ra<0.5 |
| Vacuum Rate | Atm to 0.1mbar <30min |
| Vacuum Final | <3Pa |
| Vacuum Leakage | < 5x10 ⁻² mbarL/s |

COMPRESSOR SYSTEM:

- Reciprocating compressor, oversized for stable performance.
- 1 stage compressor for -45C condenser, or 2 stage for -80C condenser.
- Water cooled condenser and cooling tower include.
- Brazed plate heat exchanger for shelves cooling, refrigerant direct expand for condenser cooling.

HEATING SYSTEM:

- Heated silicone oil drive by a centrifuge pump recycle inside shelves.
- Individual electric heater provides heating energy.

Vikumer® Freeze Dry designed and manufactured freeze drying machine in China. Quality assured freeze dryer with CE marked.