iGENE LABSERVE®

Innovative • Interactive • Intuitive

# iGene LyoMatrix

## Advanced Freeze Drying Platforms

PRECISION | CONTROL | CONFIDENCE

CERTIFIED PRODUCTS

GeM Government e Marketplace

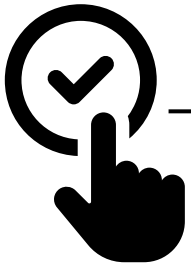
MICRO, SMALL & MEDIUM ENTERPRISES

NSIC ISO 9001 : 2008

STARTUP INDIA

ISO 14644-1:2015

# Selection guide to choose right lyophilizer for your lab



## Basic Laboratory / Academic use

- Small sample volumes
- Sensitive samples
- Routine drying of samples

✅ **IG-LZ Series (Bench-Top Lyophilizers)**
🧪 Manifold / Tray / Combination
❄️ −55°C / −80°C condenser options
🎯 Ideal for teaching labs & routine research

## Need in-built pre freezing & automation?

- GMP-oriented R&D
- Stoppering
- Process optimization

✅ **IG-FD-10PF (Programmable with Prefreezing)**
🧊 Prefreezing up to −75°C
🧠 Advanced multi-program control
🔒 Pneumatic stoppering
🎯 Scale-up ready R&D environments

## Pharmaceutical/ Biotech R&D

- Sensitive samples
- Controlled drying
- Shelf heating required

Do you need shelf heating and programmable recipes?

Yes

✅ **IG-10D (−80°C with Shelf Heating)**
🔥 Heated shelves for vial & bulk drying
⚙️ Programmable control
🎯 Formulation & method development

No

✅ **IG-81FD (High-Performance Freeze Dryer)**
💨 < 5 Pa high-vacuum performance
🧊 Efficient condenser & manifold ports
🎯 Biological & pharmaceutical samples

## Industrial use

- High ice load
- Continuous operation
- Ultra-low temperatures

✅ **IG-DFD12 (Industrial Freeze Dryer)**
❄️ −80°C condenser (optional -110°C)
🧊 High ice-holding capacity
🏗️ Designed for continuous non-stop use

## Required drying area?

➡ Up to 0.6 m²

✅ **IG-20SPA (Compact Benchtop Freeze Dryer)**
📦 5-shelf system
⚙️ Uniform temperature control
🎯 Advanced laboratory research

➡ Up to 1.0 m²

✅ **IG-FD10K (Pilot-Scale Freeze Dryer)**
🖥️ PLC touchscreen control
📊 Multi-segment programs
🎯 Pilot production & scale-up trials

## Freeze drying + Organic solvent concentration

- Dual functionality
- Solvent removal
- Compact system

✅ **Freeze Dryer Cum Vacuum Concentrator**
🔄 Freeze drying + speed-vac centrifuge
❄️ Condenser is organic solvent compatible
🎯 Chemical, biological & solvent-based samples

# Benchtop Lyophilizer (IG-LZ Series)

- Colour LCD touchscreen
- Data logging and USB export for temperature and vacuum curves
- High-speed vacuum system achieving < 5 Pa
- Stainless-steel condenser and T-shelf for durability
- Large-opening condenser with uniform ice capture
- Eco-friendly CFC-free operation
- Quick electric heating defrost system
- Floor-type, compact, and user-friendly design

## Optional Features

- Stainless steel PTFE-coated collector coil
- Condenser temperature: -110°C
- Moisture sensor Vacuum control valve
- High-quality corrosion-resistant vacuum pump
- Stainless Steel Drying Chamber

# IG-LZ Series Chamber options

**Standard chamber with freezing rack (IG-LZ10S)**

**Standard chamber with freezing rack**

- Basic/ Classic design
- Single chamber where material is placed and processed
- Usually has one set of manifolds and 4 plate arrangement

### Best for

- Basic use
- Lower throughput needs


**Standard chamber with 8 manifold (IG-LZ10SM)**

**Standard chamber with 8 manifold**

- Same basic chamber with 8 manifolds
- Multiple injection points ensure better flow distribution
- Reduce cycle time
- Improves consistency across complex or large parts

### Best for

- Materials requiring precise flow balance
- For higher throughput


**Top press model (IG-LZ10T)**

## Top press model

- Press mechanism positioned above the chamber
- Pressure force comes from the top rather than sides or bottom
- For vacuum sealing of samples to improve shelf life and protect them from contamination.
- Enhanced control over force profile

### Best for

- High force applications needing uniform sealing
- Larger parts where even top-down pressure helps

## Top press with Standard chamber

- Press mechanism positioned above the chamber
- Pressure force comes from the top rather than sides or bottom
- For vacuum sealing of samples to improve shelf life and protect them from contamination.
- Enhanced control over force profile

### Best for

- High force applications needing uniform sealing
- Larger parts where even top-down pressure helps


**Top press with Standard chamber (IG-LZ10PT)**

## Compact Benchtop Freeze Dryer (IG-20SPA)

### Robust Construction

- MS Powder coated exterior
- SS Interior
- Designed Specifically for Food Freezing

### Touch screen control panel

Microprocessor-based control system with real-time display and integrated electric defrosting

### Latch lock mechanism

- Ensures airtight sealing of the chamber door
- Prevents vacuum leaks and maintains stable pressure
- Supports uniform freeze-drying performance
- Enhances operational safety by preventing accidental opening

### Aluminium shelves

5 aluminum shelves for uniform temperature distribution

### Drying area

0.6 m² drying area with a maximum loading capacity of 6 kg

### Shelf temperature range

-30°C to +80°C

### Condenser

High-performance –45°C condenser for efficient and reliable vapor trapping

## Pilot Scale Freeze Dryer (IG-FD10K)

### 1.0 m² Freeze Drying Area

1.0 m² freeze drying area featuring a 6+1 shelf arrangement for enhanced loading flexibility and uniform drying performance

### Shelf temperature range

-50°C to +70°C

### Condenser temperature

-70°C

### Advanced PLC Touch Control System

- PLC-based touchscreen interface with 36-segment programmable control
- Real-time display of temperature and vacuum curves for precise process monitoring

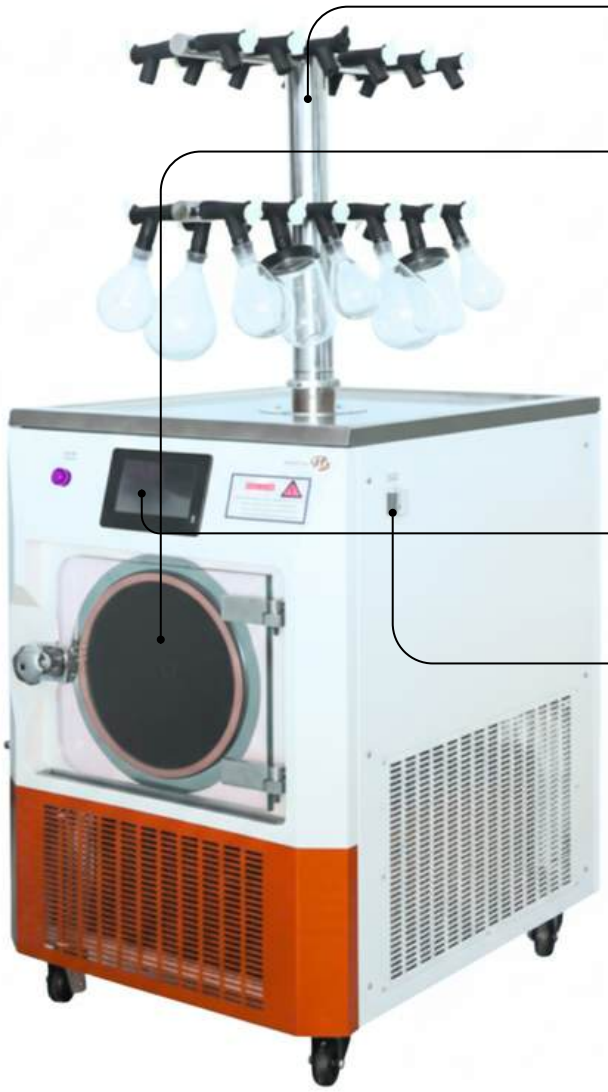
### Precise Eutectic Point Detection

Accurate identification of the eutectic point to ensure optimized and efficient drying performance

### Efficient Air-Cooled Refrigeration System

Air-cooled design integrated with electric defrosting for reliable performance and low maintenance operation

## High Performance Freeze Dryer (IG-81FD)



### Robust T-Shelf Construction

Heavy-Duty T-Shelf Design engineered for long-lasting strength, stability, and reliable performance

### Advanced Condenser Performance

- Stainless-Steel Condenser & T-Shelf for durability and corrosion resistance
- Wide-Opening Design for uniform ice capture
- CFC-Free Operation for eco-friendly performance

### Rapid Electric Defrost Technology

Quick electric heating defrost system for fast and efficient ice removal, minimizing downtime and ensuring consistent performance

### Smart Touch Control Interface

Color LCD touchscreen with real-time monitoring for precise and intuitive operation

### Advanced Data Logging & Export

Integrated data logging with USB export port for temperature and vacuum curve analysis

### High-Performance Vacuum System

Powerful vacuum technology achieving pressures below 5 Pa for efficient processing

### Compact Floor-Standing Design

Space-efficient, floor-type construction with a user-friendly interface for effortless operation and convenience

## Freeze dryer (IG-81FD2T)

### Robust Heavy-Duty T-Shelf Construction

- Engineered for long-lasting strength and stability
- Designed to deliver reliable, consistent performance
- Accommodates up to 12 flasks simultaneously
- Equipped with 12 independent manifold ports

### Advanced Touchscreen Control & Data Management

- Intuitive LCD touchscreen interface for easy operation
- Automatic data storage during each run
- Data visualization available as graphical curves
- USB port for quick and convenient data export

### Dual Ice Condenser System with Intelligent Control

- Equipped with two ice condensers for efficient operation
- Condensers are automatically controlled by the system
- Automatic switching between condensers ensures uninterrupted performance
- Minimum condenser temperature: -80°C (no-load)

### High-Performance Refrigeration & Vacuum System

- SECOP compressor for rapid refrigeration
- Maintains low condenser temperature
- Achieves final vacuum < 10 Pa (no load)

## Industrial Freeze Dryer (IG-DFD12)

### Robust 12-Port Manifold Construction

- 12-port manifold design for multi-sample processing
- High-grade SS304 trays for strength and durability
- Corrosion-resistant SS316L condenser coils for long-lasting performance

### Convenient USB Data Export Port

- Built-in USB port for easy data transfer
- Quick export of run parameters and process logs
- Simplifies documentation and record keeping

### Advanced LCD Touchscreen Interface

Intuitive LCD touchscreen for seamless operation and precise control

### Ultra-Low Temperature Condenser Performance

- -80°C minimum condenser temperature (optional -110°C)
- Efficient vapor trapping
- CFC-free compressor system

### Precision Vacuum Control System

Electromagnetic control valve for accurate and stable vacuum regulation

## Programmable freeze dryer with pre freezing (IG-FD-10PF)

### Wide Temperature Operating Range

–55°C to +50°C

### Seamless Data Logging & Connectivity

- Export data easily via USB and Ethernet
- Reliable process record keeping and monitoring

### Smart Programmable Control

- Up to 100 programs × 36 segments for flexible process customization
- 7-inch capacitive touchscreen interface
- PLyo-Works™ OS for multilingual interface intuitive and intelligent operation

### Ultra-Low Collector Temperature

–85°C for efficient vapor condensation and moisture capture

### Optional Advanced Stoppering & Defrosting System

- Pneumatic stoppering mechanism (gas-free operation)
- Efficient hot gas defrosting

### Optional Parameters

- 4 pcs of Manifold ports (with 4 rubber valves and 4 flasks)
- Oil-free scroll pump
- Condenser -70°C
- Tray, vacuum pump, pump connection tube, clamp, rubber valve and flask

# Freeze dryer with Shelf heating (IG-10D)

## Bench-Top Design with Ultra-Low Prefreezing

Compact bench-top model featuring integrated prefreezing capability down to –80 °C for efficient and reliable sample preparation

## Programmable Heated Shelf System

Heated shelves adjustable from room temperature up to +70 °C for precise and controlled drying performance

## Advanced 8-Port Manifold Design

- 8-port manifold configuration for multi-sample processing
- MS powder-coated exterior for durability and corrosion resistance

## Efficient Cooling & Defrost System

- Stainless-steel condenser for effective vapor trapping
- CFC-free refrigeration for eco-friendly operation
- Electric defrost for quick ice removal

## Advanced PLC Control & Safety System

- Real-time temperature and vacuum display
- 36 programmable recipes with up to 40 segments each
- Inert gas protection with integrated safety alarms

# Lyophilizer (Freeze Dryer) Technical Specification

| Parameter | IG-LZ Series | IG-20SPA | IG-FD10K | IG-81FD | IG-81FD2T | IG-10D (-80 with Shelf-Heating) | IG-DFD12 | IG-FD-10PF (Programmable with Prefreezing) |
|---|---|---|---|---|---|---|---|---|
| **Freeze Drying Area** | 0.12 m² | 0.6 m² | 1.0 m² | — | — | 0.09 m² | 0.08 m² | — |
| **Ice Condenser Capacity** | 3–4 kg / 24h | Max 15Kg | Max 15Kg | Max. 12 kg | Unlimited quantity, continuous freeze-drying | 4–6 kg / 24h | 3–4 kg / 24h | Max 2Kg |
| **Condenser Temperature** | -50°C / -80°C | -45°C | -70°C | -80°C (optional -110°C) | -80°C | -80°C | -80°C (optional -110°C) | -85°C/-60 |
| **Shelf Temperature Range** | — | -30°C to +80°C | -50°C to +70°C | — | — | Room Temp. to +70°C | — | –55°C to +50°C |
| **Prefreezing Temperature** | -40°C/-60°C | -30°C | -50°C | — | — | — | — | –75°C/-50 |
| **Temperature Control Accuracy** | — | — | ±1°C (PID Control) | — | — | ±1°C | — | ±1°C |
| **Program Memory / Segments** | — | — | 36 segments | — | — | 36 segments (36 recipes × 40 steps) | — | 100 programs × 36 segments |
| **Display / Interface** | LCD Touchscreen | Microprocessor Display | PLC Touchscreen | LCD Touchscreen | LCD Touchscreen | Real-Time Display | LCD Touchscreen | 7" Touchscreen (Lyo-Works™ OS) |
| **Data Logging / Export** | USB Export | USB Export | USB Export | USB Export | USB Export | USB Export | USB Export | USB / Ethernet |
| **Vacuum Pump Capacity / Flow Rate** | 2 L/s (7.2 m³/h) | 2 L/s (7.2 m³/h) | 8 L/s (30 m³/h) | 4 L/s | 4 L/s | 2 L/s | 2 L/s | 120 L/min |
| **Vacuum Display** | Dual (Pa / mBar) | Pa / mBar | Real-Time | Touchscreen | Touchscreen | Pa Display | Pa / mBar | Real-Time Display |
| **Tray Size / Shelf Size** | Φ200 mm, 4 layers（No Top Press）Φ180 mm, 3layers（Top Press） | 225 × 600 mm | 480 × 360 mm | — | — | Ø180 mm, 3 layers | Ø180 mm, 3 layers | 270 × 400 mm |
| **Number of Shelves** | 4 layers（No Top Press）3 layers（Top Press） | 5 | 6 + 1 | — | — | 3 layers | 3 | 1 |

# Lyophilizer (Freeze Dryer) Technical Specification

| Parameter | IG-LZ Series | IG-20SPA | IG-FD10K | IG-81FD | IG-81FD2T | IG-10D (-80 with Shelf-Heating) | IG-DFD12 | IG-FD-10PF (Programmable with Prefreezing) |
|---|---|---|---|---|---|---|---|---|
| **Bulk Capacity** | 1.2 L (10 mm thick) （No Top Press） 0.8 L (10 mm thick) （Top Press） | 6L (10 mm thick) | 10L (10 mm thick) | — | — | 900 mL (10 mm thick) | 0.8 L (10 mm thick) | 1L (10 mm thick) |
| **Vial Capacity (Φ12 mm / Φ16 mm / Φ22 mm)** | 820 / 460 / 244 pcs （No Top Press） 492 / 273 / 147 pcs （ Top Press） | — | — | — | — | 492 / 279 / 147 pcs | — | 777 / 434 / 220 pcs （Top Press） |
| **Stoppering System** | — | — | — | — | Optional | Manual Top Press | — | Pneumatic |
| **Eutectic Point Detection** | — | — | Yes Optional | — | — | — | — | — |
| **Shelf Material / Tray Material** | SS304 SS316 (Optional) | Aluminum | SS316 | SS304 | SS304 | SS304 | SS304 | SS304 |
| **Condenser / Coil Material** | SS304 SS316 (Optional) | SS304 | SS316 | SS304 | SS304 | SS304 | AISI 316L | Stainless Steel |
| **Manifold Ports** | — | — | — | 24 Ports (SS) | 12 ports | 8 Ports | 12 Ports | — |
| **Flask Compatibility** | — | — | — | 100–1200 mL | 100–1200 mL | 100–1200 mL | 600–1200 mL | ½" and ¾" Flask Adapters |
| **Cooling System** | Air-Cooled | Air-Cooled | Air-Cooled | Air-Cooled | Air-Cooled | Air-Cooled | Air-Cooled | Integrated Cooling |
| **Dimensions (L × W × H)** | 610×450×(370+430) mm (-50°C); 850×680×(400+430) mm (-80°C) | 885 × 550 × 930 mm | Pilot Scale | 810 × 580 × (950 + 570) mm | — | 850 × 680 × (400 + 430) mm | 850 × 680 × (700 + 460) mm | — |
| **Weight** | 70 kg (-50°C); 130 kg (-80°C) | 132 kg | 680Kg | 200 kg | 280Kg | 125 kg | 120KG | 120KG |
| **Certification** | CE Compliant | CE Compliant | CE Compliant | CE Compliant | CE Compliant | CE Compliant | CE Compliant | CE Compliant |
| **Construction Material** | SS304/SS316 | SS304 | SS316 | SS304 | SS304 | SS304 | SS304/316L | SS304 |

# Integrated Refrigerated Vacuum Concentrator

## Advanced Refrigeration & Cooling System

- High-capacity compressor ensures powerful and reliable cooling
- Double-stage cascade refrigeration achieves condenser temperature of -110°C
- Enables superior moisture freezing and efficient removal
- Uses CFC/HFC-free refrigerants (R507/R1150) for eco-friendly operation
- Maintenance-free and easy to operate

## Stainless-Steel Condenser System

- AISI 316 stainless steel with large cooling surface
- Condenser temperature: -30°C/ -50°C/ -80°C/ -110°C
- Ice capacity: 3 kg/24 h, total 4 kg for efficient moisture removal

## Advanced Microcomputer Control System

- Microcomputer-controlled color touch display
- Real-time monitoring of condenser temperature and vacuum
- Displays key operational parameters
- Easy and efficient operation

## Integrated Vacuum & Safety System

- In-built vacuum valve for precise vacuum control
- Drainage valve for smooth operation and easy maintenance
- Shut-off valve prevents pump oil backflow, ensuring safe operation

## Integrated Vacuum & Safety System

- Guards against voltage, current, and pressure issues
- Ensures equipment safety and longevity

## Quiet Operation

- Operates below 55 dB
- Ideal for noise-sensitive laboratory environments

## Built-In Status Indicators

- Light, alarm, weight, and status alerts
- Guides flask placement for efficient freeze drying

## Compact Design

- Total volume: 9 liters
- Space-efficient with high performance

## Speed Vacuum Centrifuge

- Efficient concentration with exhaust filter and adapter
- Enhanced performance and functionality

# Integrated Refrigerated Vacuum Concentrator models

## 1. Vacuum Concentrator with Cooling

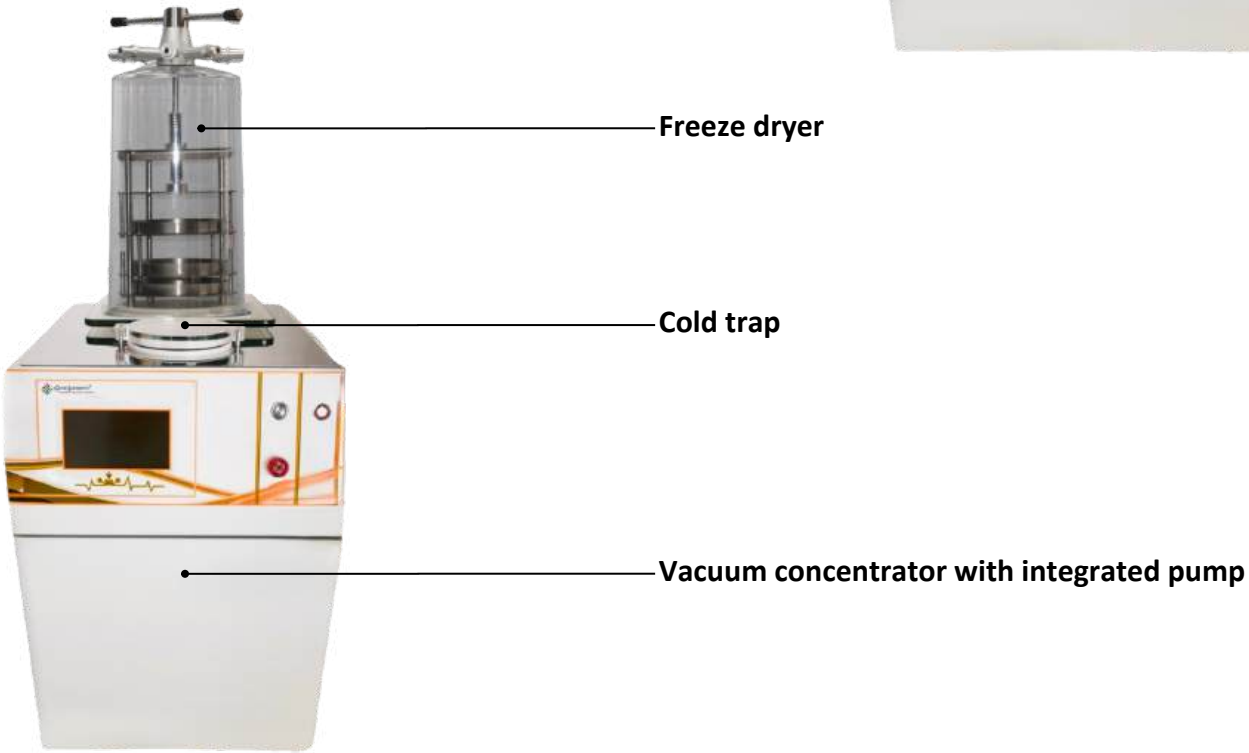
- Integrated cooling system to protect temperature-sensitive samples during concentration
- Wide temperature control range from −10°C to 80°C for versatile sample processing
- High-speed centrifugal concentration up to 1800 RPM for efficient solvent removal
- Stable vacuum performance reaching minimum 10 Pa for rapid evaporation
- Precision temperature control with ±1°C accuracy for reproducible results
- Tempered glass door for safe observation during operation
- Programmable timer from 0–99 hours for unattended operation
- Compact benchtop design suitable for molecular biology, chemical analysis, and pharmaceutical research

## 2. Vacuum Concentrator with Cooling + Cold Trap

- Integrated refrigerated cold trap for efficient solvent vapor capture
- Enhanced vacuum stability and improved solvent recovery
- Protection of vacuum pump from solvent backflow and contamination
- Cold trap condenser temperature options: -30°C/ −50°C / −80°C
- High-efficiency ice capture capacity up to 2 kg
- LCD touchscreen display with real-time temperature monitoring
- Electric heating defrost system for fast and convenient maintenance
- CFC-free refrigeration system for eco-friendly operation


## 3. Vacuum Concentrator with Cooling + Cold Trap + Freeze Dryer

- Dual functionality: Vacuum concentration and freeze drying in one system
- Ultra-low condenser temperature up to -30°C/−50°C / −80°C (−110°C optional) for efficient vapor trapping
- Integrated cold trap system for solvent recovery and pump protection
- High-performance refrigeration system with cascade cooling technology
- Microcomputer-controlled touchscreen interface for easy operation
- Real-time monitoring of vacuum, temperature, and process parameters
- Compact, space-saving design for multifunction laboratory workflows



## Integrated Refrigerated Vacuum Concentrator models
## Technical Specification

| Parameter | Vacuum Concentrator with Cooling | Vacuum Concentrator with Cooling + Cold Trap | Vacuum Concentrator with Cooling + Cold Trap + Freeze dryer |
|---|---|---|---|
| **Working Voltage** | 220V | 220V | 220V |
| **Power** | 2 kW | 2.6 kW | 1000 W |
| **Vacuum Level** | Min 10 Pa | <10 Pa | ≤0.002 mBar |
| **Temperature Control Range** | −10°C to 80°C | −10°C to 80°C | -10°C to 80°C |
| **Temperature Control Accuracy** | ±1°C | ±1°C | ±1°C |
| **Speed (RPM)** | Max 1800 RPM | Max 1800 RPM | 0–2000 RPM |
| **Timer Range** | 0–99 h | 0–99 h | Built-in timer |
| **Cold Trap Temperature** | — | -30°C/−50°C / −80°C | −50°C / −80°C (−110°C optional) |
| **Ice Capture Capacity** | — | 2 kg | 3 kg / 24 h |
| **Door Material** | Tempered Glass | Tempered Glass | Tempered Glass |
| **Rotor Capacity** | 1.5 ml × 100 tubes | 1.5 ml × 100 tubes | 100 × 1.5–2 ml, 6 x 100ml, 8 x 50ml, 12 x 15ml tubes |
| **Vacuum Pump** | 2 L/s | 2 L/s | Two-stage rotary vane |
| **Control Interface** | Digital controller | LCD Touchscreen | Microcomputer Touchscreen |
| **Refrigerant** | CFC-Free | CFC-Free | R507 / R1150 |


## Rotary Vane Vacuum Pump

A high-performance positive-displacement vacuum pump that uses precision-machined vanes rotating inside an eccentric chamber to efficiently evacuate air and gases. Available in single and two-stage designs, these pumps deliver reliable vacuum levels, smooth operation, and long service life. Ideal for laboratory, industrial, HVAC evacuation, packaging, freeze-drying, and general vacuum applications.

## Scroll Pump

An oil-free, dry vacuum pump that delivers clean, stable vacuum with low noise and minimal maintenance. Ideal for laboratory and industrial applications requiring contamination-free operation and reliable performance.

## Hybrid Pump

A compact, high-performance vacuum pump combining oil-sealed and dry technologies to deliver stable high vacuum, low noise, and reduced oil backstreaming—ideal for lyophilizers and sensitive laboratory applications.

## Ordering Information

### Bench-Top Lyophilizers – IG-LZ Series

| Model No. | Description | Unit |
|---|---|---|
| **IG-LZ10S** | Benchtop lyophilizer with standard chamber supplied complete with Main Body, Power Cord, 1.5 m Pipe with Pipe Clamps (3 Pcs), Standard Chamber, Chamber Trays (4 Pcs) with Tray Holder, Storage Chamber Tray Holder, Vacuum Pump with 1 L Vacuum Pump Oil, Temperature Sensor, Grease Box, Gasket, and 5 kVA Stabilizer. | 1 |
| **IG-LZ10SM** | The Benchtop Lyophilizer with standard chamber and integrated 8-port manifold system is supplied complete with Main Body, Power Cord, Black Adapters (8 Pcs), Flasks in 100 ml, 250 ml, 500 ml and 1000 ml capacities (2 Pcs each), 1.5 m Pipe with Pipe Clamps (3 Pcs), Manifold Chamber, Manifold Trays (4 Pcs) with Manifold Tray Holder, Storage Chamber Tray Holder, Vacuum Pump with 1 L Vacuum Pump Oil, Temperature Sensor, Grease Box, Gasket, and 5 kVA Stabilizer. | 1 |
| **IG-LZ10T** | The Bench-top Lyophiliser with top press chamber is supplied complete with Main Body, Power Cord, Black Adapters (8 Pcs), Flasks in 100 ml, 250 ml, 500 ml and 1000 ml capacities (2 Pcs each), 1.5 m Pipe with Pipe Clamps (3 Pcs), Manifold Chamber, Manifold Trays (4 Pcs) with Manifold Tray Holder, Storage Chamber Tray Holder, Vacuum Pump with 1 L Vacuum Pump Oil, Temperature Sensor, Grease Box, Gasket, and 5 kVA Stabilizer. | 1 |
| **IG-LZ10PT** | The Bench-top Lyophiliser with top press standard chamber is supplied complete with Main Body, Power Cord, 1.5 m Pipe with Pipe Clamps (3 Pcs), Top press standard Chamber, Trays (4 Pcs) with Tray Holder, Storage Chamber Tray Holder, Vacuum Pump with 1 L Vacuum Pump Oil, Temperature Sensor, Grease Box, Gasket, and 5 kVA Stabilizer. | |

### Compact & Pilot Scale Freeze Dryers

| Model No. | Description | Unit |
|---|---|---|
| **IG-20SPA** | Compact benchtop freeze dryer, 0.6 $m^2$ drying area, −45 °C condenser, 5-shelf system | 1 |
| **IG-FD10K** | Pilot-scale freeze dryer, 1.0 $m^2$ drying area, PLC touchscreen, complete with vacuum pump, trays & stabilizer | 1 |

# Ordering Information

## Laboratory Freeze Dryers

| Model No. | Description | Unit |
|---|---|---|
| **IG-81FD** | High-performance laboratory freeze dryer, manifold type, <5 Pa vacuum, SS condenser | 1 |
| **IG-81FD2T** | Freeze dryer with 12-port manifold configuration, dual ice condenser system, and touchscreen control option. | |
| **IG-10D** | −80 °C freeze dryer with heated shelves, programmable control & 8-port manifold | 1 |

## Industrial & Advanced Freeze Dryers

| Model No. | Description | Unit |
|---|---|---|
| **IG-DFD12** | Industrial freeze dryer, −80 °C (optional -110 °C) condenser temperature, 12-port manifold, SS trays & coils | 1 |
| **IG-FD-10PF** | Programmable freeze dryer with pre-freezing (−75 °C), pneumatic stoppering, hot-gas defrost | 1 |

## Special Combination System

| Model No. | Description | Unit |
|---|---|---|
| **Freeze Dryer Cum Vacuum Concentrator** | Combination system with -30 °C /-50 °C /-80 °C /−110 °C condenser, speed-vacuum concentrator, organic solvent compatibility | 1 |

**Notes (Standard for All Models)**

- Supplied with standard accessories as per respective model configuration
- Vacuum pump, trays, flasks, pipes, clamps, oil & stabilizer included where applicable
- Power supply: 220 V / 50 Hz (unless specified otherwise)

# 1. Single-Station Rotary Flask Freezing System (IG-50FS)

## Automatic Rotation System

The automatic rotation system, with adjustable speed control, ensures uniform thickness of the product inside the flask, enabling consistent and efficient processing.

## Gentle Freezing Process

The product is slowly frozen inside the flask, minimizing the impact of rapid freezing on the glass and reducing the risk of flask cracking or damage.

## SS304 Contact Material

## Cooling Circulation System

- Circulating fluid capacity: 6 L
- Minimum circulating fluid temperature: −50°C / −70°C options available
- Designed to maintain efficient and stable cooling performance during operation

## Efficient Internal Coil Cooling System

The internal coil system directly cools the cooling liquid, achieving lower temperatures and minimizing the loss of cooling capacity for improved cooling efficiency.

## Digital Temperature Display System

- Digital display for clear and easy temperature monitoring
- High precision temperature control with an accuracy of ±0.5°C
- Ensures reliable and stable temperature readings during operation

## High-Efficiency Compressor & Eco-Friendly Refrigerant

- High-efficiency enclosed compressor with large refrigerating capacity
- Ensures high reliability and low-noise operation
- Uses non-fluorinated refrigerant for environmentally friendly performance

## Electrical & Physical Specifications

- Power supply: 220 V, 50/60 Hz
- Power consumption: 600 W
- Dimensions: 700 mm × 400 mm × 430 mm
- Weight: 55 kg

## 2. Dual-Station Rotary Flask Freezing System (IG-50DFS)

### Automated Operation System

- Automatic lifting system for convenient loading and unloading of products
- Automatic rotation system with adjustable speed for uniform product thickness inside the flask

### Dual Station Freezing System

- Dual-station design allows two flasks to be frozen simultaneously, improving efficiency
- The product is slowly frozen inside the flask to minimize the impact of rapid freezing
- Reduces the risk of flask cracking during the freezing process

### Cooling Circulation & Temperature Control System

- Circulating fluid capacity: 10 L
- Minimum circulating fluid temperature: −50°C / −70°C options available
- Built-in magnetic stirring function ensures more uniform temperature of the circulating liquid
- Enhances cooling stability and overall system performance

### Touchscreen Control & Smart Scheduling

- Touchscreen display system provides real-time information such as system temperature and runtime
- User-friendly interface for easy monitoring and operation
- Appointment start function allows users to schedule the system to start automatically for convenient operation

### SS304 Stainless Steel Contact Part

- Ensures excellent corrosion resistance and durability
- Provides hygienic and safe contact with the product during operation

### Advanced Internal Coil Cooling System

- Internal coil system directly cools the circulating liquid
- Achieves lower cooling liquid temperatures for improved performance
- Reduces loss of cooling capacity and enhances overall cooling efficiency

### Electrical & Physical Specifications

- Power supply: 220 V, 50/60 Hz
- Power consumption: 600 W
- Dimensions: 750 mm × 450 mm × 430 mm
- Weight: 60 kg

### High-Efficiency Compressor & Eco-Friendly Refrigerant

- High-efficiency enclosed compressor with high cooling capacity
- Ensures high reliability and low-noise operation
- Uses non-fluorinated refrigerant for environmentally friendly performance

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