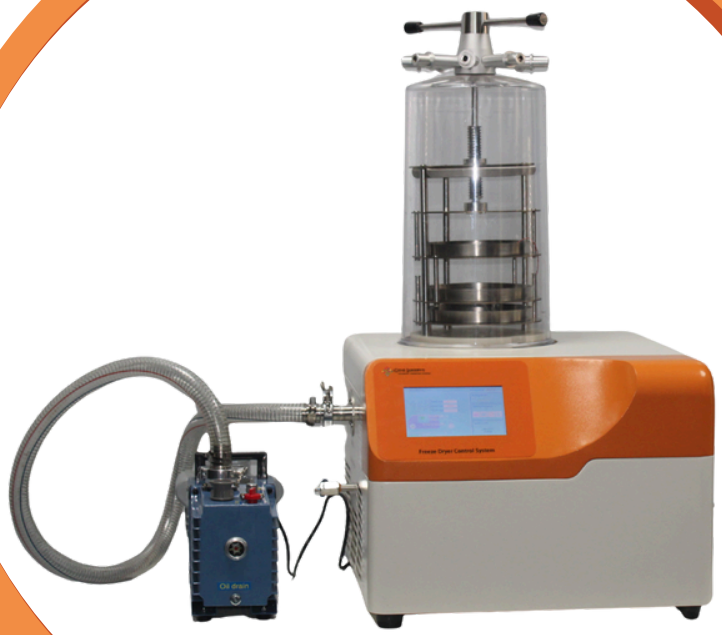
iGENE LABSERVE®
Innovative • Interactive • Intuitive

iGene LyoMatrix

The Complete Spectrum of Freeze-Drying Solutions



SCAN ME
TO VISIT
WEBSITE

SCAN ME
TO VISIT
YOUTUBE

iGENE LABSERVE®
Innovative · Interactive · Intuitive

ABOUT THE COMPANY

iGene Labserve Pvt. Ltd. is gaining recognition by offering resilient, innovative solutions in laboratory instrumentation across healthcare, genomics, drugdiscovery, biopharma, and food & beverage sectors. We strive to enhance lab efficacy and reduce challenges through advanced technologies and a diverse product portfolio tailored to our customers' needs.

DEAR READER

Welcome to the iGene Freeze Dryer Catalogue — your complete guide to our advanced freeze-drying systems designed for diverse laboratory, research, and industrial applications.

In this catalogue, you will find:

- A general overview of freeze-drying (lyophilization) and its significance
- Common key features that make iGene freeze dryers stand out
- Detailed descriptions, key features, and complete technical specifications for each model in our series

Whether you are preserving biological materials, pharmaceuticals, or food samples, this guide will help you select the ideal model for your laboratory or production needs.
iGene Labserve Pvt. Ltd. provides resilient and innovative laboratory instrumentation solutions that enhance productivity across healthcare, genomics, pharmaceuticals, food and beverage, and chemical research sectors.

INSTRUMENT OVERVIEW

Freeze drying, also known as lyophilization or vacuum sublimation drying, is an advanced dehydration process that removes moisture from frozen materials under vacuum conditions. During the process, water in the sample transitions directly from solid ice to vapor without passing through the liquid phase.

This technique preserves the physical structure, biological integrity, and chemical stability of materials, making it ideal for applications in pharmaceuticals, biotechnology, food preservation, and material science.

Freeze dryers are widely used across:

- Pharmaceutical and medical research: vaccines, biological samples, diagnostic reagents
- Biotechnology and biopharma: enzymes, proteins, antibodies
- Food and beverage industries: fruits, vegetables, dairy, and nutritional products
- Chemical and material industries: drying of temperature-sensitive compounds and chemicals

iGene freeze dryers are designed for accuracy, performance, and durability — ensuring reliable, reproducible, and efficient drying results from research-scale to pilot-scale production.

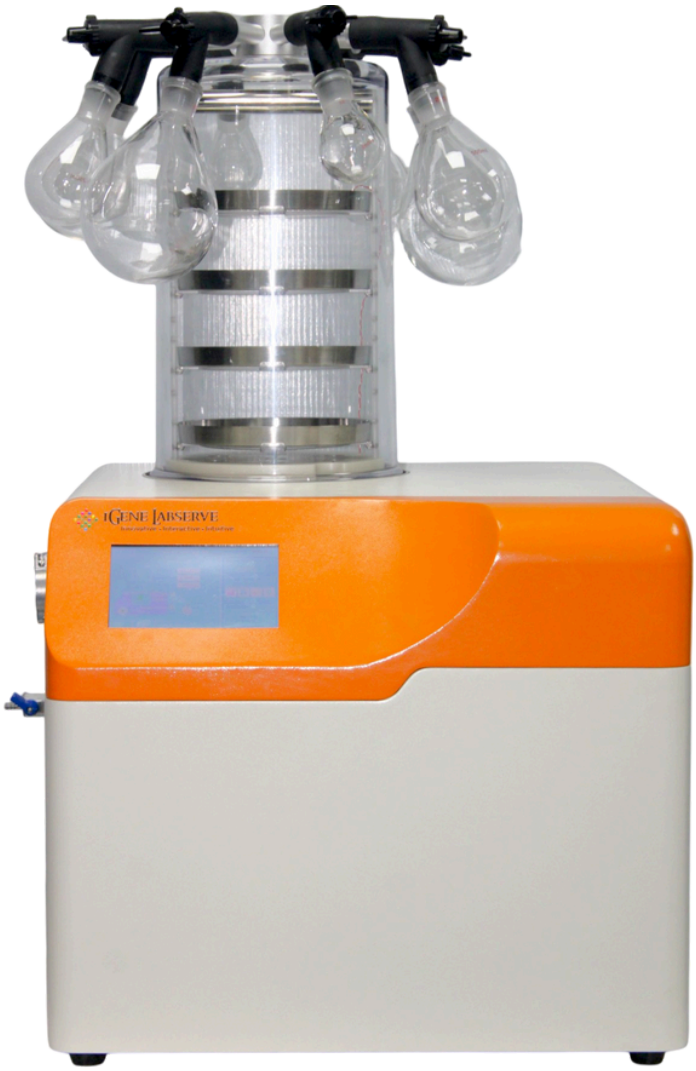
CORE FEATURES

- **Advanced Vacuum Technology:** Ensures rapid and uniform sublimation for optimal drying results.
- **Touchscreen Interface:** Intuitive LCD or capacitive display for real-time monitoring of temperature, vacuum, and system status.
- **Programmable Control:** Multi-segment temperature and vacuum programming for complex drying processes.
- **Efficient Condenser System:** High-capacity condensers with uniform ice trapping and quick defrosting performance.
- **Robust Stainless Steel Construction:** SS304 or SS316 build for corrosion resistance and long-term reliability.
- **Eco-Friendly Operation:** CFC-free refrigerants, air-cooled compressors, and energy-efficient designs.
- **Data Logging and Export:** USB or Ethernet connectivity for exporting temperature and vacuum logs to Excel.
- **Comprehensive Safety Features:** Over-temperature alarms, vacuum leak detection, and historical data query.
- **Modular Range:** Available from benchtop to pilot-scale units to meet laboratory or industrial requirements.
- **Global Standards Compliance:** CE-certified, low-noise, and designed for continuous operation under demanding laboratory environments.

iGENE LABSERVE®
Innovative · Interactive · Intuitive

BENCH-TOP LYOPHILIZERS (IG-LZ SERIES)

Compact and versatile freeze dryers designed for laboratory-scale bulk and vial drying. Ideal for pharmaceutical, food testing, and biological research applications.



KEY FEATURES

- **Color LCD touchscreen** with real-time monitoring
- **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

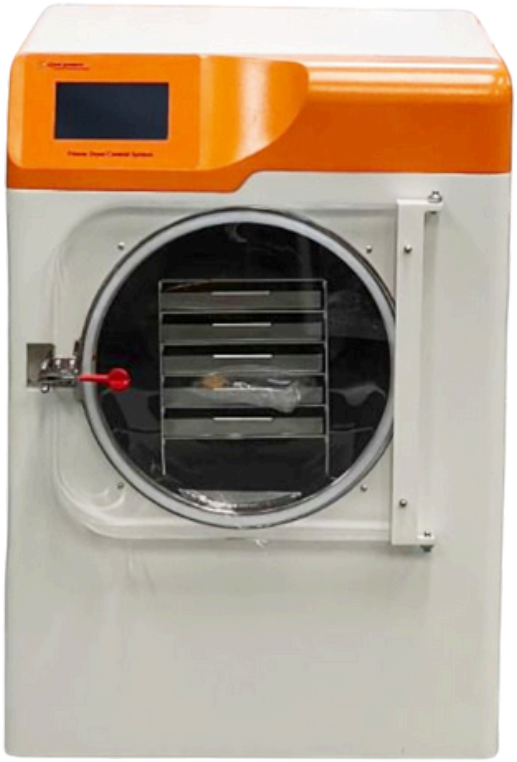
ROTARY VAN VACUUM PUMP

Pumping speed: L/S		2
Ultimate Vacuum (Pa)	**without gas ballast**	≤ 6x10
	with gas ballast	≤ 1.33
Speed: RPM (50 Hz)		1400
Power required: KW		0.37
Oil capacity: L		0.1
Dimensions (L xB x H) mm		514 x 168 x 282 mm
Weight: Kg		20

iGENE LABSERVE®
Innovative · Interactive · Intuitive

COMPACT BENCHTOP FREEZE DRYER (IG-LG06)

The IG-LG06 is a compact, high-capacity benchtop freeze dryer engineered for precision drying of sensitive materials in pharmaceutical, biological, and food research.

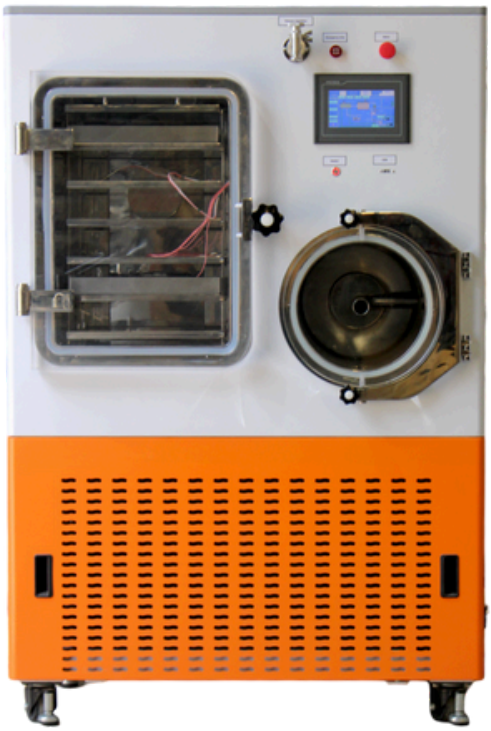


KEY FEATURES

- **0.6 m² drying area** with **6 kg loading capacity**
- **5 aluminum shelves** for uniform temperature distribution
- Shelf temperature range: **-30°C to +80°C**
- **-45°C condenser** for efficient vapor trapping
- Modular design with **separate vacuum pump**
- **Microprocessor-based control** with real-time display and electric defrosting

PILOT SCALE FREEZE DRYER (IG-FD10K)

A pilot-scale freeze dryer ideal for research and small-scale production. It offers high capacity, precise process control, and advanced automation.



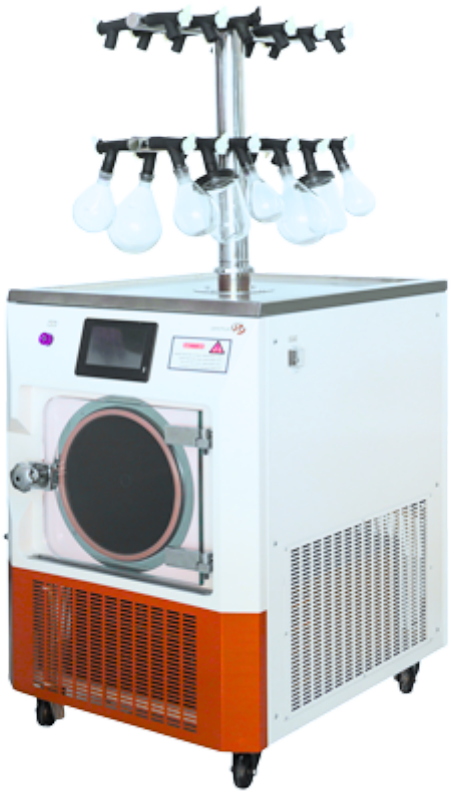
KEY FEATURES

- **1.0 m² freeze drying area** with **6+1 shelf design**
- Shelf temperature range: **-50°C to +70°C**
- **Condenser temperature: -70°C**
- Advanced PID control with **36-segment programmable interface**
- **Real-time temperature and vacuum curve** display
- **Eutectic point detection** for optimized drying
- Air-cooled system with **electric defrosting** and **PLC touchscreen**

iGENE LABSERVE®
Innovative · Interactive · Intuitive

HIGH-PERFORMANCE FREEZE DRYER (IG-81FD)

The iGene IG-81FD Freeze Dryer is a high-performance system for precise and efficient drying of biological, pharmaceutical, and chemical samples.

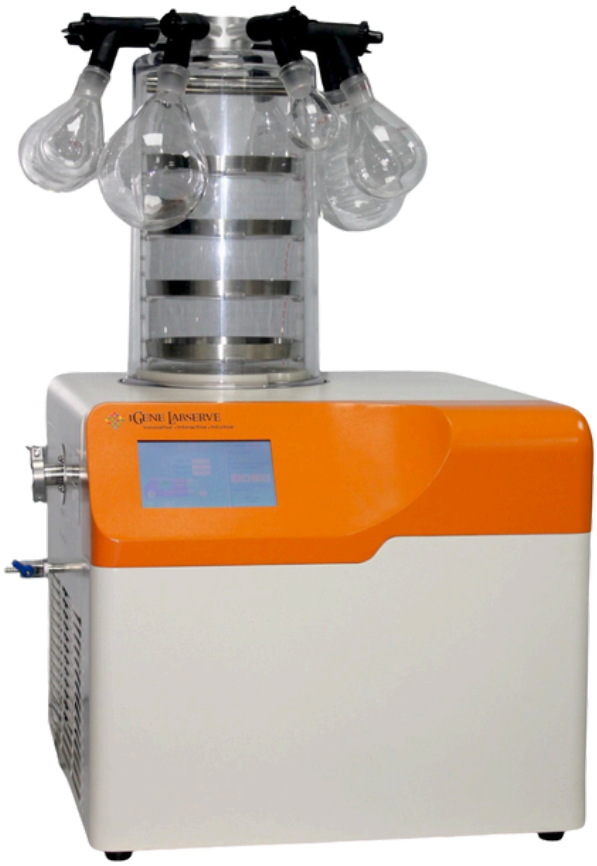


KEY FEATURES

- **Color LCD touchscreen** with real-time monitoring
- **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

FREEZE DRYER (-80) WITH SHELF-HEATING (IG-10D)

Designed for laboratory research applications requiring precise drying and shelf heating functionality. Ideal for bulk, vial, or flask drying.



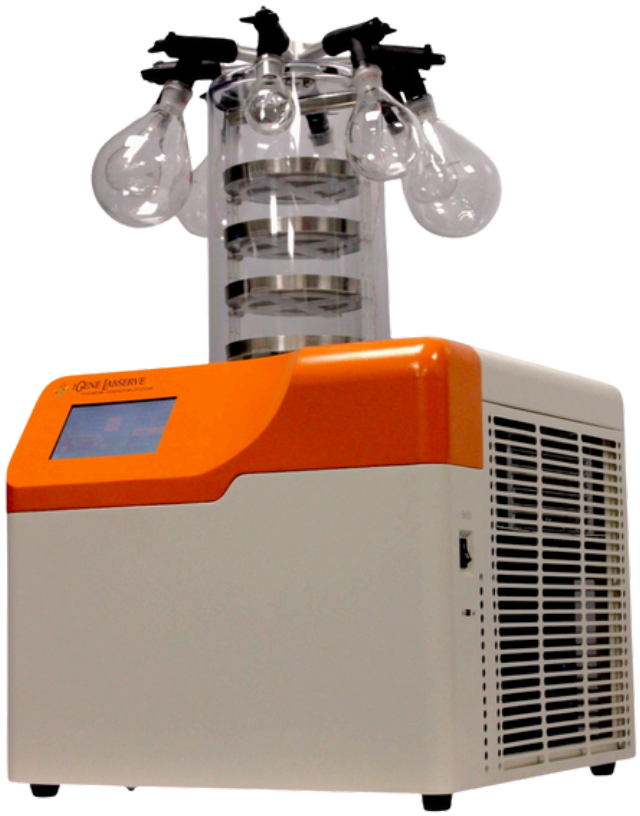
KEY FEATURES

- Bench-top type with **prefreezing capability to -80°C**
- **Heated shelf programmable** from room temperature to +70°C
- **Real-time display** of temperature and vacuum
- **36 programmable recipes** with 40 segments each
- **Inert gas protection** and safety alarms
- **CFC-free,** stainless-steel construction
- **Electric defrosting** and **8-port manifold**

iGENE LABSERVE®
Innovative · Interactive · Intuitive

INDUSTRIAL FREEZE DRYER (IG-DFD12)

A floor-type freeze dryer engineered for large-batch processing and industrial applications.

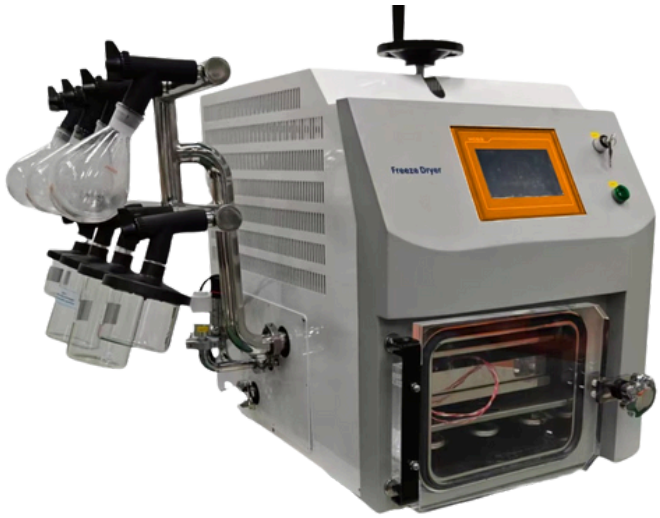


KEY FEATURES

- **LCD touchscreen**
- Uniform condenser with **–110°C minimum temperature**
- **12-port manifold** with SS304 trays and **316L condenser coils**
- **USB data export** and **automatic leakage test**
- **Electromagnetic control valve** for precise vacuum regulation
- **Low-noise,** CFC-free compressor system

PROGRAMMABLE FREEZE DRYER WITH PREFREEZING (IG-FD-10PF)

A high-performance benchtop freeze dryer featuring advanced programmable temperature control and integrated prefreezing capability.



KEY FEATURES

- Temperature range: **–55°C to +50°C** (Prefreezing to –75°C)
- **Collector temperature: –85°C**
- Programmable control with up to **100 programs × 36 segments**
- **7-inch capacitive touchscreen** with Lyo-Works™ OS
- **Data logging** via USB and Ethernet
- **Pneumatic stoppering mechanism** (no gas required)
- **Hot gas defrosting** and multilingual interface
- **CE certified** and designed for precise laboratory operation

iGENE LABSERVE®
Innovative · Interactive · Intuitive

OPTIONAL PARAMETERS IG-FD-10PF

IG-FD-10PF	Standard type / Top press type
Optional Parameters	1. 4 pcs of Manifold ports (with 4 rubber valves and 4 flasks) 2. Oil-free scroll pump 3. Condenser -70°C 4. tray, vacuum pump, pump connection tube, clamp, rubber valve and flask

TECHNICAL SPECIFICATIONS

Parameter	IG-LZ Series	IG-LG06	IG-FD10K	IG-81FD	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. 12 kg	4–6 kg / 24h	3–4 kg / 24h	—
Condenser Temperature	-50°C / -80°C	-45°C	-70°C	–80°C	–80°C	–110°C	–85°C
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	—	—	—	—	—	—	–75°C
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	Real-Time Display	LCD Touchscreen	7" Touchscreen (Lyo-Works™ OS)
Data Logging / Export	—	—	—	USB Export	USB Export	USB Export	USB / Ethernet

Parameter	IG-LZ Series	IG-LG06	IG-FD10K	IG-81FD	IG-10D (-80 with Shelf-Heating)	IG-DFD12	IG-FD-10PF (Programmable with Prefreezing)
Vacuum Pump Capacity / Flow Rate	2 L/s (7.2 m^3/h)	—	—	4 L/s	2 L/s	—	120 L/min
Vacuum Display	Dual (Pa / mBar)	Pa / mBar	Real-Time	Touchscreen	Pa Display	Pa / mBar	Real-Time Display
Tray Size / Shelf Size	Φ200 mm, 4 layers	225 × 600 mm	480 × 360 mm	—	Ø200 mm, 3 layers	Ø180 mm, 3 layers	—
Number of Shelves	4 layers	5	6 + 1	—	3 layers	3	—
Bulk Capacity	1.2 L (10 mm thick)	—	—	—	900 mL (10 mm thick)	0.8 L (10 mm thick)	—
Vial Capacity (Φ12 mm / Φ16 mm / Φ22 mm)	820 / 460 / 244 pcs	—	—	—	492 / 279 / 147 pcs	—	—
Stoppering System	—	—	—	—	Manual Top Press	—	Pneumatic
Eutectic Point Detection	—	—	Yes	—	—	—	—
Shelf Material / Tray Material	SS316	Aluminum	SS316	SS304	SS304	SS304	SS304
Condenser / Coil Material	SS316	SS304	SS316	SS304	SS304	AISI 316L	Stainless Steel
Manifold Ports	—	—	—	24 Ports (SS)	8 Ports	12 Ports	—
Flask Compatibility	—	—	—	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	Integrated Cooling

Parameter	IG-LZ Series	IG-LG06	IG-FD10K	IG-81FD	IG-10D (-80 with Shelf-Heating)	IG-DFD12	IG-FD-10PF (Programmable with Prefreezing)
Defrosting Method	—	Electric Heating	Electric Heating	Electric Heating	Electric Heating	Electric Heating	Hot Gas Defrost
Refrigerant Type	CFC-Free	CFC-Free	CFC-Free	CFC-Free	CFC-Free	CFC-Free	CFC-Free
Power Consumption	970 / 1400 W	2000 W	6500 W	1800 W	1500 W	1900 W	—
Voltage / Frequency / Phase	220V / 50Hz / 1 Phase	220V / 50Hz / 1 Phase	380V ±10%, 3 Phase	220V / 50Hz / 1 Phase	220V / 50Hz / 1 Phase	220V / 50Hz	220V / 50Hz
Operating Temperature	—	—	10°C – 30°C	Ambient ≤ 28°C	≤25°C Ambient	≤25°C Ambient	—
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	—	200 kg	125 kg	—	—
Construction Material	SS304/SS316	SS304	SS316	SS304	SS304	SS304/316L	SS304
Certification	CE Compliant	CE Compliant	CE Compliant	CE Compliant	CE Compliant	CE Compliant	CE Certified

iGENE LABSERVE®
Innovative · Interactive · Intuitive

SPECIAL ADVANCED COMBINATION UNIT – FREEZE DRYER CUM VACUUM CONCENTRATOR

The Freeze Dryer Cum Vacuum Concentrator is an advanced laboratory instrument designed to efficiently remove moisture from samples while preserving their integrity. Combining freeze drying and vacuum concentration technologies, this machine ensures optimal performance in a variety of applications, including organic solvent concentration, biological sample preservation, and more.

KEY FEATURES

- **Microcomputer Controller with Color Touch Screen:** The device is equipped with an intuitive color touch screen that displays real-time data, including condenser temperature, vacuum degree, and other important parameters, making operation and monitoring easy and efficient.
- **Imported Brand Compressor:** Featuring a high-capacity compressor with exceptional reliability, the Freeze Dryer Cum Vacuum Concentrator delivers powerful cooling performance, ensuring smooth operation even under challenging conditions. It provides faster drying and moisture trapping, coupled with easy, maintenance-free operation.
- **Seamless Stainless-Steel Condenser:** The condenser is made from high-quality AISI 316 stainless steel with an external cooling coil and a larger surface area for superior moisture trapping efficiency. This design improves performance and longevity.
- **In-built Vacuum and Drainage Valve:** The machine is equipped with an in-built vacuum valve to precisely control the vacuum level, and a drainage valve for smooth operation and easy maintenance.
- **Double-Stage Cascade Refrigeration Technology:** The system utilizes a double-stage cascade refrigeration system (hermetically sealed compressor) to achieve a condenser temperature of -110°C, allowing for superior moisture freezing and removal. CFC/HFC-free refrigerants (R507/R1150) ensure environmental safety while maintaining high performance.

KEY FEATURES

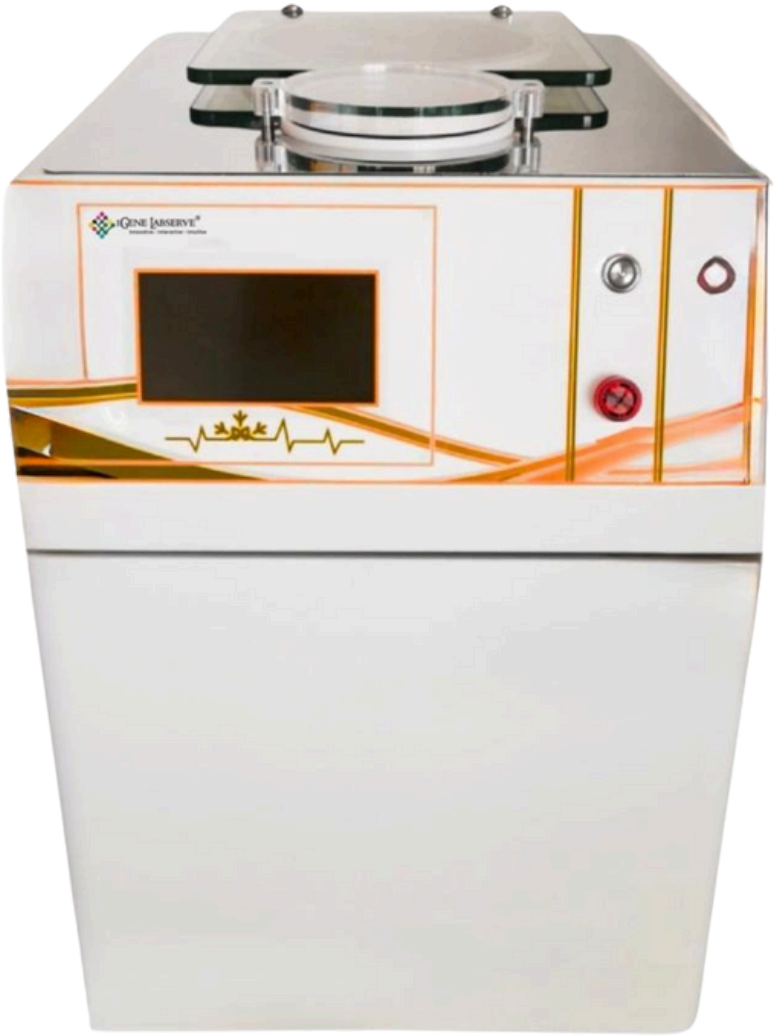
- **Protection Measures:** High and low voltage, current, and pressure protection measures are built into the system, ensuring the longevity and safety of the refrigeration system and preventing equipment damage.
- **Low Noise Operation:** The machine operates at a noise level of less than 55 dB, making it suitable for quiet laboratory environments.
- **Built-In Status Indicator:** Equipped with light, alarm, weight, and status indicators, the machine offers visual cues to indicate system status and the ideal time to adjust flask placement for efficient freeze drying.
- **Shut-off valve:** The built-in shut-off valve device prevents the backflow of pump oil in case of power failure, protecting the vacuum pump and ensuring safe operation.
- **Condenser Temperature Range:** The condenser temperature can range from -110°C to -120°C, making it suitable for processing organic solvents and other delicate materials.
- **Ice Holding Capacity:** The machine is capable of holding up to 3 kg of ice per 24 hours, with a total ice holding capacity of 4 kg, ensuring efficient moisture removal for large volumes of samples.
- **Compact Total Volume:** With a total volume of 9 liters, the machine offers a balance between space efficiency and high-performance capabilities.
- **Speed Vacuum Centrifuge:** The machine is equipped with a speed vacuum centrifuge for efficient concentration, complete with an exhaust filter and adapter for enhanced functionality and performance.

iGENE LABSERVE®
Innovative · Interactive · Intuitive

TECHNICAL SPECIFICATIONS

Specification	Details
Cooling Media (CFC-Free)	R507 / R1150
Condenser Temperature	-110°C (for organic solvents)
Condenser Dimension	220mm x 240mm
Ice Holding Capacity (per 24 hours)	3 kg
Total Ice Holding Capacity	4 kg
Total Volume	9 liters
Insulation thickness of condenser	9 cm
Power Consumption	1000 W
Pump Type	Two-stage oil-sealed, rotary vane vacuum pump
Vacuum Level	Ultimate vacuum ≤ 0.002 mBar
Pressure (vacuum) Readout	atm to 0.001mbar
Stainless Steel Manifold Joint	12 interfaces
Flask Types & Adapters	250 ml flasks (06 no.) and adapters, 500ml flasks (07 no.) and adapters, 6 ampoule adapters (each capable of connecting 10 ampoules)
Rotor Type (Speed Vacuum Centrifuge)	Stand-alone 32 standard Teflon coating rotor for 48 × 1.5-2.0 mL and 76 x 0.5 mL Eppendorf tubes
RPM Adjustable	0-2000 RPM
Auto Start/Stop	Yes
Timer Function	Built-in timer for precise control
Heat Temperature Range	+5°C to +80°C
Noise Level	≤55 dB
Controller	Microcomputer controller with color touch screen
Pressure Readout	1-1000mbar
USB Port	Yes
Power Supply	220V / 50Hz (single-phase)

iGENE LABSERVE®
Innovative • Interactive • Intuitive



CONTACT US :-

TOLL FREE NO.: 1800572 0603

Email: info@igenels.com

Website: https://www.igenels.com/