



KLABS Lyophilizer 4L with Standard Chamber



Product Description

The KLABS Lyophilizer 4L with Standard Chamber is a high-performance laboratory freeze dryer designed for efficient dehydration of biological, pharmaceutical, chemical, and food samples. The system utilizes advanced lyophilization technology to remove moisture through sublimation while preserving the structural integrity, stability, and bioactivity of sensitive materials. Equipped with a standard drying chamber, precision vacuum system, touchscreen interface, and intelligent control system, it delivers reliable and reproducible freeze-drying performance for research and industrial laboratories.

Working Principle

Lyophilization (Freeze Drying) is an advanced dehydration process that removes moisture from frozen samples through sublimation, where ice transitions directly into vapor without passing through the liquid phase.

The system operates by:

- Applying controlled heat to convert ice into vapor.
- Using a high-efficiency vacuum system to extract moisture.
- Capturing vapor via a low-temperature condenser, where it re-solidifies into ice. This ensures preservation of structure, stability, and bioactivity of sensitive materials.



Features

- Intuitive Touchscreen Interface for simple and user-friendly operation
- Power Failure Auto-Recovery Function ensures seamless restart after power interruption
- Real-Time Display of condenser temperature, sample temperature, and vacuum level with graphical visualization
- Precision Calibration System for vacuum and temperature, ensuring long-term operational accuracy
- Programmable Restart Function allowing users to define recovery parameters after shutdown
- Intelligent Alarm & Safety Prompts to prevent operational errors
- High-Precision Vacuum Measurement System for accurate process control
- Smart Vacuum Pump Control with temperature-based start/stop automation
- Integrated Oil Mist Filtration System for cleaner and safer operation

Application/Uses

- Universities & Educational Institutions
- Food Research & Quality Control Laboratories
- Biological Research Centers
- Vaccine & Serum Development Laboratories
- Chemical Research Laboratories
- Environmental Testing Laboratories
- Agricultural Research Centers
- Plant Tissue Culture Laboratories

Accessories

Vacuum Pump

Drain Tube

Silicone Vacuum Hose

Vacuum Pump Tool Kit

Funnel

Vacuum Filter

Coupling Set with Seals

Rectangular Trays

Display Stand

Instruction Manual

Touchscreen Display Module

Test Report

Technical Specifications

Model	KFD-460S	KFD-480S
Condenser Temp. Range	-60°C	-80°C
Freeze Drying Area	0.12 m ²	0.12 m ²
Configuration	Standard	Standard
Tray Dimensions	200mm x 4	200mm x 4
Ultimate Vacuum Level	<5Pa	<10Pa
Refrigeration System Type	Single Cascade	Dual Cascade
Display Interface	7" Touch Screen Display	7" Touch Screen Display
Tray Spacing	70mm	70mm
Ice Condenser Capacity	3 to 4 L/24h	3 to 4 L/24h
Operating Ambient Temp.	15 to 25 °C	15 to 25 °C
Permissible R. Humidity	≤ 70%	≤ 70%
Defrost System	Heating Coil	Heating Coil
Vacuum Pump Type	Double Stage Oil-Lubricated Rotary Vacuum Pump	Double Stage Oil-Lubricated Rotary Vacuum Pump
Vacuum Pump Speed	1400 RPM	1400 RPM
Vacuum Pump Oil Capacity	0.8 Liter	0.8 Liter
Vacuum Pump Noise Level	54 dB	54 dB
Power Consumption	950 W	950 W
Power Requirements	AC 220V / 50 Hz	AC 220V / 50 Hz
Device Dimensions	393 x 500 x 450 mm	393 x 500 x 450 mm
Total Shipping Weight	106 kgs	106 kgs