



KLABS Lyophilizer 4L with 8 Manifold & Top Press



Product Description

The KLABS Lyophilizer 4L with 8 Manifold & Top Press is a compact laboratory freeze dryer designed for efficient lyophilization of biological, pharmaceutical, food, and research samples. It combines precise temperature control, intelligent vacuum management, and user-friendly touchscreen operation to deliver reliable and consistent drying performance.



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 convenient operation.
- Intelligent freeze-drying process for efficient sample preservation.
- Real-time monitoring of condenser temperature, sample temperature, and vacuum level.
- High-precision vacuum measurement for accurate process control.
- Automatic power failure recovery for uninterrupted operation.
- Programmable restart function for customized recovery settings.
- Smart vacuum pump control with automatic start and stop operation.
- Precision temperature and vacuum calibration system.
- Integrated alarm and safety protection system.
- Oil mist filtration system for cleaner and safer laboratory operation.
- Compact benchtop design with excellent operational stability.
- Suitable for continuous laboratory and research applications.

Application/Uses

- Pharmaceutical Research Laboratories
- Biotechnology Laboratories
- Universities & Research Institutes
- Food Research & Development
- Vaccine & Biological Sample Preservation
- Herbal & Ayurvedic Research
- Microbiology Laboratories
- Chemical Laboratories
- Medical Research Centers
- Environmental Research 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

Model	KFD-460MT	KFD-480MT
Condenser Temp. Range	-60°C	-80°C
Freeze Drying Area	0.094 m2	0.094 m2
Configuration	Manifold & Top press	Manifold & Top press
Tray Dimensions	200mm x 3	200mm x 3
Ultimate Vacuum Level	<10Pa	<10Pa
Refrigeration System Type	Dual 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 degC	15 to 25 degC
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