LyoDuo Series

Laboratory freeze dryer



Equipped with an electrically heated shelf system. It offers an exceptionally large freeze-drying shelf area and can accommodate a wide range of freeze-drying needs. Equipped with the Lyo Smart system, it supports program editing, precisely controls vacuum levels, simplifies the freeze-drying process, improves efficiency, and enables precise process control.

This series meets the highest requirements for laboratory freeze dryers and is particularly suitable for the freeze-drying of soil and environmental samples, food science samples, Chinese medicinal materials, plant extracts, and other materials, meeting the diverse application needs of laboratory research.

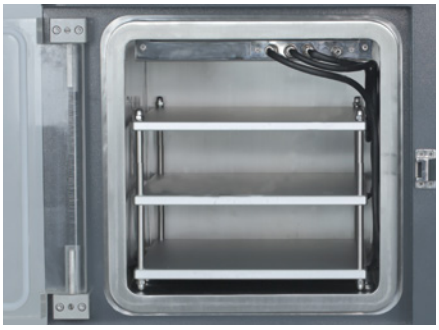
Innovative features



- Compact design with highly efficient and economical operation
- Extra-large shelf area, adaptable to various freeze-drying applications
- 7-inch touch screen installed with smart operating system
- Programs run automatically with programmable freeze-drying steps
- Pirani vacuum sensor with accuracy 0.001 mbar
- Built-in ice condenser coils for higher efficiency and optimal vapor transport
- Side-opening ice condenser for easier observation and cleaning
- SECOP brand compressor for durable use

Refrigeration & ice condenser

- 2-compressor cascade system, , ice condenser temperature reaches -105°C
- Cold trap temperature reaches -90°C within 15 minutes
- Optional -105°C cold trap, meeting the high requirements for organic solvent drying
- Hot gas defrosting, quickly proceed to the next freeze-drying process
- Built-in ice condenser coils for higher efficiency
- Side-opening ice condenser for easier observation and cleaning



Shelves

- Three shelves as standard, shelf size: 300 × 480 mm
- Shelf area up to 0.43 m², compatible with a wide range of freeze-drying needs
- Standard shelf heating system for enhanced freeze-drying efficiency
- Shelf temperature control accuracy: ±1 °C

High-Precision Vacuum Measurement & Control

- The vacuum degree and duration of each step can be set and controlled at auto mode
- Vacuum control to reduce drying times by up to 40%
- Real-time vacuum degree is displayed on the screen
- 0.001~1000 mbar high-accuracy Pirani sensor for precise, reliable data
- Full-range, adjustable and controllable vacuum degree
- High quality vacuum pump



Unique LyoSmart Control System

7-inch touch screen controller, installed with advanced LyoSmart operating system, assisting users to optimize the freeze-drying process.

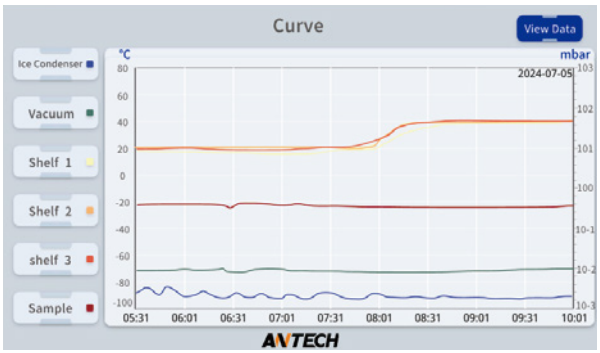
- Display of ice condenser temperature and vacuum degree
- Product temperature display according to sublimation pressure curve
- Two automatic process modes: Simple mode and Program mode
- Programmable freeze-drying steps with high flexibility
- Vacuum degree and shelf temperature of each step can be set and controlled independently
- Historical data recorder for convenient analysis of processing
- USB port to download data
- Password access protection





Various “one button” modes

- One-button start: in auto mode, press "RUN" to start process according to preset program
- One-button stop: vacuum valve shut off, preventing product polluted due to vacuum back suction of pump oil
- One-button vent: aeration valve controls vacuum vent gradually, preventing product polluted due to vacuum back suction of pump oil
- One-button defrosting: hot air defrosting of cold trap, to enter a new process faster



Specification

	Model	LyoDuo 12M	LyoDuo 12L
Basic	Type	Floor-standing	Floor-standing
Ice condenser	Temperature	-90°C	-105°C
	Max. ice capacity	12 kg	12 kg
	Chamber volume	25 L	25 L
	Performance	8 kg/24h	8 kg/24h
Shelf	Shelf Heating	●	●
	Dimensions (W x D)	300 x 480 mm	300 x 480 mm
	Number of shelves	3	3
	Shelf area	0.43 ㎡	0.43 ㎡
	Shelf spacing	80 mm	80 mm
	Temperature range	0~50°C	0~50°C
	Temperature accuracy	0.1°C	0.1°C
Control	Display	7" touch screen	7" touch screen
	Ice condenser temperature display	●	●
	Product temperature sublimation	●	●
	Vacuum degree display	●	●
	Vacuum gauge type	Pirani	Pirani
	Ultimate vacuum (mbar)*	0.01	0.01
	Vacuum control range (mbar)	0.001~1000	0.001~1000
	Vacuum venting	Automatic	Automatic
	Controlled gas (N2, clean air, etc) backfill	●	●
	Hot gas defrosting	●	●
Data	Data record	●	●
	USB port	●	●
Cooling	Number of compressor	2	2
	Compressor brand	SECOP	SECOP
Power	Voltage (V/Hz)	220/50; 220/60; 120/60	220/50; 220/60; 120/60
	Rated power	2200 W	2300 W
Noise level	Freeze dryer	58 dB(A)	60 dB(A)
Dimensions	Main unit (W x D x H)	860 x 770 x 1280 mm	860 x 770 x 1280 mm
Weight	Main unit	280 kg	280 kg
Vacuum pump	Vacuum pump	○	○
	Oil mist filter	●	●
	Vacuum pump hose	●	●
Shipment Package	Gross weight (with universal package)	360kg	360kg
	Dimension (with universal package)	940x890x1680	940x890x1680

*: The ultimate vacuum 0.01 mbar is achieved when working with vacuum pump NDD12 (NAVAC brand).

The data provided refers to the base unit with ambient conditions of +10 °C to +25 °C. Subject to change without prior notice.

● Basic equipment ○ Optional