

# LyoPro series Laboratory freeze dryer

**Optimize and simplify your freeze-drying process**

Antech Scientific offers advanced LyoPro series freeze-drying system with unique LyoSmart operation system, realizing full control of vacuum degree, making the freeze-drying process simpler, faster and better.

LyoPro series freeze dryers are compact in design, high-efficiency in performance, smart in operation, and in daily use.



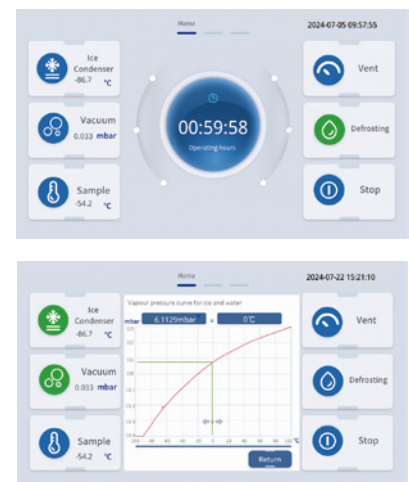
## ► Innovative features

- Compact, high-performance laboratory systems with a small footprint
- 7" touch screen installed with LyoSmart operating system
- Programmable freeze-drying steps
- Controlled vacuum degree for optimized process times
- Built-in ice condenser coils for higher efficiency
- Fast defrost via integrated hot gas
- Automatic non-return venting valve, prevents "vacuum pump" oil mist from entering cold trap
- Pirani vacuum sensor with accuracy 0.001 mbar
- Low noise level: 48~52dB(A)
- High quality vacuum pump
- PTFE coated stainless steel ice condenser

## ► LyoSmart operating system

7" 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
- Manual or automatic mode process optional
- Programmable freeze-drying steps with high flexibility
- Vacuum degree 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



► **Full vacuum degree 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
- Pirani vacuum gauge with accuracy 0.001 mbar



► **Various “one button” mode**

- One-button start: in auto mode, press "START" 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

► **Advanced cooling system**

- Built-in ice condenser coils for higher efficiency
- -60°C: single compressor system, high efficiency
- -90°C: 2-compressor cascade system, cold trap temperature reaches -90°C within 15 minutes
- SECOP brand compressor for durable use

► **Optimized flange seal**

- Flat surface & L-shaped sealing ring design, no need for extra manual pressure
- Vacuum grease not required, easier to use and clean
- Proven excellent sealing performance for long-term use



► **Choose the system fits your application best!**

Product designation format:

**LyoPro**     **4/8/12**     **S/M**  
 Product series   Ice capacity (in kg)   Temperature level

► **Ice capacity**

Max. ice capacity	Performance	Models
4 kg	4 kg/24h	LyoPro 4S, LyoPro 4M
8 kg	6 kg/24h	LyoPro 8S, LyoPro 8M
12 kg	8 kg/24h	LyoPro 12S, LyoPro 12M

► **Temperature level**

Temperature level	Temperature	Cooling system	Typical application area
S	-60°C	1 compressor	Aqueous products
M	-90°C	2 compressors cascade	Products with low freezing points

\*For organic solvent application, please choose LyOrganic series freeze dryers.

**► The UNIVERSAL package with special price**

Start your lyophilization with our universal package, which offers both manifolds and shelves, fulfilling most applications for successful processes every day.

**► The LyoPro series UNIVERSAL package contains**

- LyoPro freeze dryer main machine
- Pirani vacuum gauge
- Pressure control valve
- Acrylic chamber with 8 rubber connection valves
- Rack supporting board
- 250ml & 500ml flask (qty refer to specification sheet)
- 4-layer shelves with unique ShelFlex™ design
- Vacuum pump
- Vacuum hose



**► ShelFlex™ design**

Unique ShelFlex™ design, various configurations with different number of shelves and spacing are available.

Shelves				
Configuration	Number	Φ	Area	Spacing
1	2	265 mm	0.10 m <sup>2</sup>	120 mm
2	3	265 mm	0.15 m <sup>2</sup>	90 mm
3	4	265 mm	0.20 m <sup>2</sup>	70 mm
4*	8	265 mm	0.40 m <sup>2</sup>	45 mm

\*For configuration 4, another 4 pcs of shelves shall be ordered as optional accessories, along with an extended-height drying chamber.

**► Advantages**

- All-inclusive package, avoid confusion in accessory selection
- ShelFlex™ design, adjustable shelf number and spacing with flexibility
- Cost-effective, fulfill more applications with lower cost
- Fast delivery, UNIVERSAL package always in stock for urgent demand

**► Various freeze-drying packages for different applications**



Manifold		Shelves				
No.	Number of connection valves	Number	Φ	Area	Spacing	Stopper
①	8	4	265 mm	0.20 m <sup>2</sup>	70 mm	-
②	8	2	265 mm	0.10 m <sup>2</sup>	120 mm	●
③	-	4	265 mm	0.20 m <sup>2</sup>	70 mm	-
④	-	2	265 mm	0.10 m <sup>2</sup>	120 mm	●
⑤	8	-	-	-	-	-
⑥	12	-	-	-	-	-
⑦	24	-	-	-	-	-

\*Package 1, also named as "universal package", is recommended and supplied as standard configuration.

● Basic equipment      - Not available

 **Specification (-60°C)**


Model		LyoPro 4S	LyoPro 8S	LyoPro 12S
Basic	Type	Desktop	Desktop	Floor-standing
Ice condenser	Temperature	-60°C	-60°C	-60°C
	Max. ice capacity	4 kg	8 kg	12 kg
	Chamber volume	6.5 L	15 L	21 L
	Performance	4 kg/24h	6 kg/24h	8 kg/24h
Control	Display	7" touch screen	7" touch screen	7" touch screen
	Operating system	LyoSmart	LyoSmart	LyoSmart
	Ice condenser temperature display	●	●	●
	Product temperature sublimation	●	●	●
	Vacuum degree display	●	●	●
	Vacuum gauge type	Pirani	Pirani	Pirani
	Ultimate vacuum (mbar)	0.020	0.020	0.020
	Vacuum venting	Automatic	Automatic	Automatic
	Controlled gas (N <sub>2</sub> , clean air, etc) backfill	●	●	●
	Hot gas defrosting	●	●	●
Data	Data record	●	●	●
	USB port	●	●	●
Cooling	Compressor	SECOP compressor x 1	SECOP compressor x 1	SECOP compressor x 1
Power	Voltage (V/Hz)	220/50;220/60;120/60	220/50;220/60;120/60	220/50;220/60;120/60
	Rated power	800 W	900 W	1000 W
Noise level	Freeze dryer	48 (dB)	52 (dB)	52 (dB)
Dimensions	Main unit (W x D x H)	455*550*430 mm	800*533*400 mm	700*650*1015 mm
Weight	Main unit	53 kg	69 kg	125 kg
Universal drying package	Drying chamber	Acrylic	Acrylic	Acrylic
	Rack	4-shelf	4-shelf	4-shelf
	Rack supporting board	●	●	●
	Number of rubber connection valves	8	8	8
	Round bottom flask*	250ml*6 & 500ml*6	250ml*6 & 500ml*6	250ml * 6 & 500ml * 6
Vacuum pump	Vacuum pump	●	●	●
	Oil mist filter	●	●	●
	Vacuum pump hose	●	●	●

\*: Flasks are supplied free of charge. Compensation is not applicable in case of damage during transportation.

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

## Specification (-90°C)



Model		LyoPro 4M	LyoPro 8M	LyoPro 12M
Basic	Type	Desktop	Desktop	Floor-standing
Ice condenser	Temperature	-90°C	-90°C	-90°C
	Max. ice capacity	4 kg	8 kg	12 kg
	Chamber volume	6.5 L	15 L	21 L
	Performance	4 kg/24h	6 kg/24h	8 kg/24h
Control	Display	7" touch screen	7" touch screen	7" touch screen
	Operating system	LyoSmart	LyoSmart	LyoSmart
	Ice condenser temperature display	●	●	●
	Product temperature sublimation	●	●	●
	Vacuum degree display	●	●	●
	Vacuum gauge type	Pirani	Pirani	Pirani
	Ultimate vacuum (mbar)	0.015	0.015	0.015
	Vacuum venting	Automatic	Automatic	Automatic
	Controlled gas (N <sub>2</sub> , clean air, etc) backfill	●	●	●
	Hot gas defrosting	●	●	●
Data	Data record	●	●	●
	USB port	●	●	●
Cooling	Compressor	SECOP compressor x 2	SECOP compressor x 2	SECOP compressor x 2
Power	Voltage (V/Hz)	220/50	220/50;220/60;120/60	220/50;220/60;120/60
	Rated power	1300 W	1600 W	1800 W
Noise level	Freeze dryer	48 (dB)	52 (dB)	52 (dB)
Dimensions	Main unit (W x D x H)	455*550*430 mm	800*533*400 mm	700*650*1015 mm
Weight	Main unit	66 kg	82 kg	125 kg
Universal drying package	Drying chamber	Acrylic	Acrylic	Acrylic
	Rack	4-shelf	4-shelf	4-shelf
	Rack supporting board	●	●	●
	Number of rubber connection valves	8	8	8
	Round bottom flask*	250ml*6 & 500ml*6	250ml*6 & 500ml*6	250ml * 6 & 500ml * 6
Vacuum pump	Vacuum pump	●	●	●
	Oil mist filter	●	●	●
	Vacuum pump hose	●	●	●

\*: Flasks are supplied free of charge. Compensation is not applicable in case of damage during transportation.

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