

# LyoPro series Laboratory freeze dryer

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

Antech Scientific offers advanced LyoPro series freeze-drying system with unique LyoSmart operating 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

## ► 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
- 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**

- -55°C: single compressor system, high efficiency
- -85°C: 2-compressor cascade system, cold trap temperature reaches -85°C within 10 minutes
- -105°C: 2-compressor cascade system, suitable for organic solvents
- 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/L**  
 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, LyoPro 8L
12 kg	8 kg/24h	LyoPro 12S, LyoPro 12M, LyoPro 12L

► **Temperature level**

Temperature level	Temperature	Cooling system	Typical application area
S	-55°C	1 compressor	Aqueous products
M	-85°C	2 compressors cascade	Products with low freezing points
L	-105°C	2 compressors cascade	Products with ultra 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 (flask optional)
- 4-layer shelves with unique ShelfFlex™ design
- Vacuum pump
- Vacuum hose



► **ShelfFlex™ design**

Unique ShelfFlex™ 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>	140 mm
2	3	265 mm	0.15 m <sup>2</sup>	105 mm
3	4	265 mm	0.20 m <sup>2</sup>	70 mm
4	8	265 mm	0.40 m <sup>2</sup>	35 mm

\*For configuration 4, another 4 pcs of shelves to be ordered as optional.

► **Advantages**

- All-inclusive package, avoid confusion in accessory selection
- ShelfFlex™ 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**



No.	Manifold		Shelves				Stopper
	Number of connection valves	Number	Φ	Area	Spacing		
①	8	4	265 mm	0.20 m <sup>2</sup>	70 mm	-	
②	8	2	265 mm	0.10 m <sup>2</sup>	140 mm	●	
③	-	4	265 mm	0.20 m <sup>2</sup>	70 mm	-	
④	-	2	265 mm	0.10 m <sup>2</sup>	140 mm	●	
⑤	8	-	-	-	-	-	

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

● Basic equipment    - Not available

## Specification



Model		LyoPro 4S	LyoPro 4M	LyoPro 8S	LyoPro 8M	LyoPro 8L
Basic	Type	Desktop	Desktop	Desktop	Desktop	Desktop
Ice condenser	Temperature	-55°C	-85°C	-55°C	-85°C	-105°C
	Max. ice capacity	4 kg	4 kg	8 kg	8 kg	8 kg
	Chamber volume	6.5 L	6.5 L	15 L	15 L	15 L
	Performance	4 kg/24h	4 kg/24h	6 kg/24h	6 kg/24h	6 kg/24h
Control	Display	7" touch screen	7" touch screen	7" touch screen	7" touch screen	7" touch screen
	Operating system	LyoSmart	LyoSmart	LyoSmart	LyoSmart	LyoSmart
	Ice condenser temperature display	●	●	●	●	●
	Product temperature sublimation	●	●	●	●	●
	Vacuum degree display	●	●	●	●	●
	Vacuum gauge type	Pirani	Pirani	Pirani	Pirani	Pirani
	Vacuum control	●	●	●	●	●
	Vacuum venting	Automatic	Automatic	Automatic	Automatic	Automatic
	Controlled gas (N <sub>2</sub> , clean air, etc) backfill	●	●	●	●	●
	Hot gas defrosting	●	●	●	●	●
Data	Data record	●	●	●	●	●
	USB port	○	○	○	○	○
	RS232 port	○	○	○	○	○
Cooling system	Number of compressor	1	2	1	2	2
	Compressor brand	SECOP	SECOP	SECOP	SECOP	SECOP
Power	Voltage (V/Hz)	220/50;220/60;120/60	220/50;220/60;120/60	220/50;220/60;120/60	220/50;220/60;120/60	220/50;220/60;120/60
	Rated power	1100 W	1600 W	1200 W	1700 W	1750 W
Noise level	Freeze dryer	48 (dB)	48 (dB)	52 (dB)	52 (dB)	52 (dB)
Dimensions	Main unit (W x D x H)	455*550*430 mm	455*550*430 mm	780*550*430 mm	780*550*430 mm	780*550*430 mm
Weight	Main unit	53 kg	66 kg	69 kg	82 kg	83 kg
Universal drying package	Drying chamber	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic
	Shelves	4	4	4	4	4
	Number of rubber connection valves	8	8	8	8	8
	Flask	○	○	○	○	○
Vacuum pump	Vacuum pump	●	●	●	●	●
	Oil mist filter	●	●	●	●	●
	Vacuum pump hose	●	●	●	●	●

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



Model		LyoPro 12S	LyoPro 12M	LyoPro 12L
Basic	Type	Floor-standing	Floor-standing	Floor-standing
Ice condenser	Temperature	-55°C	-85°C	-105°C
	Max. ice capacity	12 kg	12 kg	12 kg
	Chamber volume	21 L	21 L	21 L
	Performance	8 kg/24h	8 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
	Vacuum control	●	●	●
	Vacuum venting	Automatic	Automatic	Automatic
	Controlled gas (N <sub>2</sub> , clean air, etc) backfill	●	●	●
	Hot gas defrosting	●	●	●
Data	Data record	●	●	●
	USB port	○	○	○
	RS232 port	○	○	○
Cooling system	Number of compressor	1	2	2
	Compressor brand	SECOP	SECOP	SECOP
Power	Voltage (V/Hz)	220/50;220/60;120/60	220/50;220/60;120/60	220/50;220/60;120/60
	Rated power	1300 W	2000 W	2100 W
Noise level	Freeze dryer	52 (dB)	52 (dB)	52 (dB)
Dimensions	Main unit (W x D x H)	900*720*1300 mm	900*720*1300 mm	900*720*1300 mm
Weight	Main unit	105 kg	125 kg	128 kg
Universal drying package	Drying chamber	Acrylic	Acrylic	Acrylic
	Shelves	4	4	4
	Number of rubber connection valves	8	8	8
	Flask	○	○	○
Vacuum pump	Vacuum pump	●	●	●
	Oil mist filter	●	●	●
	Vacuum pump hose	●	●	●

The data provided refers to the base unit with ambient conditions of +10 °C to +25 °C.  
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● Basic equipment ○ Optional