

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
- 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 | -55°C | 1 compressor | Aqueous products |
| M | -85°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
- 250ml & 500ml flask (qty refer to specification sheet)
- 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 ² | 140 mm |
| 2 | 3 | 265 mm | 0.15 m ² | 105 mm |
| 3 | 4 | 265 mm | 0.20 m ² | 70 mm |
| 4 | 8 | 265 mm | 0.40 m ² | 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



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

| Model | | LyoPro 4S | LyoPro 4M | LyoPro 8S | LyoPro 8M |
|--------------------------|---|----------------------|-------------------|----------------------|----------------------|
| Basic | Type | Desktop | Desktop | Desktop | Desktop |
| Ice condenser | Temperature | -55°C | -85°C | -55°C | -85°C |
| | Max. ice capacity | 4 kg | 4 kg | 8 kg | 8 kg |
| | Chamber volume | 6.5 L | 6.5 L | 15 L | 15 L |
| | Performance | 4 kg/24h | 4 kg/24h | 6 kg/24h | 6 kg/24h |
| Control | Display | 7" touch screen | 7" touch screen | 7" touch screen | 7" touch screen |
| | Operating system | LyoSmart | LyoSmart | LyoSmart | LyoSmart |
| | Ice condenser temperature display | ● | ● | ● | ● |
| | Product temperature sublimation | ● | ● | ● | ● |
| | Vacuum degree display | ● | ● | ● | ● |
| | Vacuum gauge type | Pirani | Pirani | Pirani | Pirani |
| | Ultimate vacuum (mbar) | 0.02 | 0.01 | 0.02 | 0.01 |
| | Vacuum control range (mbar) | 0.001~1000 | 0.001~1000 | 0.001~1000 | 0.001~1000 |
| | Vacuum venting | Automatic | Automatic | Automatic | Automatic |
| | Controlled gas (N ₂ , clean air, etc) backfill | ● | ● | ● | ● |
| | Hot gas defrosting | ● | ● | ● | ● |
| Data | Data record | ● | ● | ● | ● |
| | USB port | ○ | ○ | ○ | ○ |
| | RS232 port | ○ | ○ | ○ | ○ |
| Cooling system | Number of compressor | 1 | 2 | 1 | 2 |
| | Compressor brand | SECOP | SECOP | SECOP | SECOP |
| Power | Voltage (V/Hz) | 220/50;220/60;120/60 | 220/50 | 220/50;220/60;120/60 | 220/50;220/60;120/60 |
| | Rated power | 800 W | 1300 W | 900 W | 1600 W |
| Noise level | Freeze dryer | 48 (dB) | 48 (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 |
| Weight | Main unit | 53 kg | 66 kg | 69 kg | 82 kg |
| Universal drying package | Drying chamber | Acrylic | Acrylic | Acrylic | Acrylic |
| | Shelves | 4 | 4 | 4 | 4 |
| | Number of rubber connection valves | 8 | 8 | 8 | 8 |
| | Round bottom flask* | 250ml*6 & 500ml*6 | 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



| Model | | LyoPro 12S | LyoPro 12M |
|--------------------------|---|-----------------------|-----------------------|
| Basic | Type | Floor-standing | Floor-standing |
| Ice condenser | Temperature | -55°C | -85°C |
| | Max. ice capacity | 12 kg | 12 kg |
| | Chamber volume | 21 L | 21 L |
| | Performance | 8 kg/24h | 8 kg/24h |
| Control | Display | 7" touch screen | 7" touch screen |
| | Operating system | LyoSmart | LyoSmart |
| | Ice condenser temperature display | ● | ● |
| | Product temperature sublimation | ● | ● |
| | Vacuum degree display | ● | ● |
| | Vacuum gauge type | Pirani | Pirani |
| | Ultimate vacuum (mbar) | 0.02 | 0.01 |
| | Vacuum control range (mbar) | 0.001~1000 | 0.001~1000 |
| | Vacuum venting | Automatic | Automatic |
| | Controlled gas (N ₂ , clean air, etc) backfill | ● | ● |
| | Hot gas defrosting | ● | ● |
| Data | Data record | ● | ● |
| | USB port | ○ | ○ |
| | RS232 port | ○ | ○ |
| Cooling system | Number of compressor | 1 | 2 |
| | Compressor brand | SECOP | SECOP |
| Power | Voltage (V/Hz) | 220/50;220/60;120/60 | 220/50;220/60;120/60 |
| | Rated power | 1000 W | 1800 W |
| Noise level | Freeze dryer | 52 (dB) | 52 (dB) |
| Dimensions | Main unit (W x D x H) | 700*650*1015 mm | 700*650*1015 mm |
| Weight | Main unit | 125 kg | 125 kg |
| Universal drying package | Drying chamber | Acrylic | Acrylic |
| | Shelves | 4 | 4 |
| | Number of rubber connection valves | 8 | 8 |
| | Round bottom flask* | 250ml * 6 & 500ml * 6 | 250ml * 6 & 500ml * 6 |
| Vacuum pump | Vacuum pump | ● | ● |
| | Oil mist filter | ● | ● |
| | Vacuum pump hose | ● | ● |

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