

LyOrganic series

Freeze dryer for organic solvent

LyOrganic series freeze drying system is specially designed for applications dealing with organic solvent. Typical applications include organic dyes and pigments, polymers in benzol, organic substances in solvents, preparative HPLC fractions, solvent removal after chromatography.

Condensor chamber temperature reaches -105°C , vacuum degree is controlled during the process, oil-free vacuum pump is supplied as standard, meeting high requirement of organic solvent drying.

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



► Specially designed for organic solvent drying

LyOrganic series freeze drying system is designed for applications dealing with organic solvent. Typical examples include HPLC fractions with organic or inorganic solvents, such as acetonitrile, TFA and other alcohols, or other products with t-butanol, DMSO, etc.

► Special system configurations for safety:

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

- Safe: no sources of ignition, such as commonly used Pirani vacuum sensors
- Durable: high-quality materials for excellent chemical resistance, such as coated stainless steel ice condenser, mineral glass drying chamber, and solvent-resistant seals
- High performance internal condenser; most solvents are frozen or liquefied in the chamber at -105°C
- Solvent-resistant oil-free vacuum pump

► 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
- Capacitive vacuum sensor
- Low noise level: 54 dB(A)
- Solvent-resistant oil-free 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
- Indirect product temperature determination based on vapor pressure curve
- Manual or automatic drying process optional
- Programmable freeze-drying steps
- Vacuum degree of each step can be set and controlled independently
- Historical data recorder for convenient analysis of processing
- Password access protection



▶ 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
- Capacitive vacuum sensor

▶ 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 automatically
- One-button vent: aeration valve controls vacuum vent gradually
- One-button defrosting: hot air defrosting of cold trap, to enter a new process faster

▶ Advanced cooling system

- -105°C: 2-compressor cascade system, suitable for organic solvents with ultra low freezing points
- 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

LyOrganic **8/12** **L** **Drying Package**
 Product series Ice capacity (in kg) Temperature level F/U

► **The various models have different maximum ice capacities:**

| Max. ice capacity | Performance | Ice condenser temperature | Models |
|-------------------|-------------|---------------------------|--------------------------------|
| 8 kg | 6 kg/24h | -105°C | LyOrganic 8LF, LyOrganic 8LU |
| 12 kg | 8 kg/24h | -105°C | LyOrganic 12LF, LyOrganic 12LU |

The LyOrganic series are available in two defined packages, fully aligned to the requirements of freeze drying with organic solvents.

► **Organic solvent package – manifold**

- LyOrganic freeze dryer main machine
- Drying manifold with 12 chemical-resistant connection valves for flasks (flask optional)
- Capacitive vacuum sensor
- Vacuum control to reduce drying times by up to 40%
- Drain valve
- Internal condenser, stainless steel with solvent-resistant material coating
- Oil-free vacuum pump
- Stainless steel vacuum hose



► **Organic solvent package – manifold and shelves:**

- LyOrganic freeze dryer main machine
- Mineral glass drying chamber
- 4-layer shelves with unique ShelFlex™ design
- 12 chemical-resistant connection valves for flasks (flask optional)
- Capacitive vacuum sensor
- Vacuum control to reduce drying times by up to 40%
- Drain valve
- Internal condenser, stainless steel with solvent-resistant material coating
- Solvent-resistant seals and connectors
- Oil-free vacuum pump
- Stainless steel vacuum hose



| Manifold | Shelves | | | |
|----------|---------|--------|---------------------|---------|
| | Number | Φ | Area | Spacing |
| 12 | 4 | 265 mm | 0.20 m ² | 70 mm |

► **ShelFlex™ design**

Taking advantage of unique ShelFlex™ design, various configurations with different layers and spacing are available.

| Configuration | Shelves | | | |
|---------------|---------|--------|---------------------|---------|
| | 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.

Specification



| Model | | LyOrganic 8LT | LyOrganic 8LU | LyOrganic 12LT | LyOrganic 12LU |
|-----------------------------|--|----------------------|----------------------|----------------------|----------------------|
| Basic | Type | Desktop | Desktop | Floor-standing | Floor-standing |
| Ice condenser | Temperature | -105°C | -105°C | -105°C | -105°C |
| | Max. ice capacity | 8 kg | 8 kg | 12 kg | 12 kg |
| | Chamber volume | 15 L | 15 L | 21 L | 21 L |
| | Performance | 6 kg/24h | 6 kg/24h | 8 kg/24h | 8 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 | Capacitive | Capacitive | Capacitive | Capacitive |
| | Vacuum control | ● | ● | ● | ● |
| | Vacuum venting | Automatic | Automatic | Automatic | Automatic |
| | Controlled gas (N2, clean air, etc) backfill | ● | ● | ● | ● |
| | Hot gas defrosting | ● | ● | ● | ● |
| Data | Data record | ● | ● | ● | ● |
| | USB port | ○ | ○ | ○ | ○ |
| | RS232 port | ○ | ○ | ○ | ○ |
| Cooling system | Number of compressor | 2 | 2 | 2 | 2 |
| | Compressor brand | 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 |
| | Rated power | 1750 W | 1750 W | 2100 W | 2100 W |
| Noise level | Freeze dryer | 52 (dB) | 52 (dB) | 52 (dB) | 52 (dB) |
| Dimensions | Main unit (W x H x D) | 780*550*430 mm | 780*550*430 mm | 900*720*1300 mm | 900*720*1300 mm |
| Weight | Main unit | 83 kg | 85 kg | 128 kg | 130 kg |
| Manifold package for flasks | Manifold type | T-type | - | T-type | - |
| | Number of vessel ports | 12 | - | 12 | - |
| | Flask | ○ | - | ○ | - |
| Universal drying package | Drying chamber | - | Mineral glass | - | Mineral glass |
| | Shelves | - | 4 | - | 4 |
| | Number of vessel ports | - | 12 | - | 12 |
| | Flask | - | ○ | - | ○ |
| Vacuum pump | Vacuum pump, oil-free | ● | ● | ● | ● |
| | 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 - Not available