

LyoPharma Series Freeze Dryer



Technical features

- The freeze-drying process is automatically controlled by programmable programs, which can be switched to manual operation in real time to realize the whole-process parameter control of the freeze-drying process. During the operation process, the system automatically monitors, detects, records and stores relevant data, and can also be monitored through the standard remote system. Multiple fixed or custom programs can be stored, with optional digital password signature;
- Continuously record real-time data, draw freeze-drying curves, store data every minute, and have a USB data storage serial port;
- The system is equipped with various sensors, which can record and display the vacuum degree, cold trap temperature, material temperature, and shelf temperature in real time. The operation error alarm can immediately alarm and actively protect the operation when the temperature and pressure are abnormal during the operation;
- It has the function of equipment alarm and automatic operation to protect materials after the automatic operation of freeze-drying is completed or during the process of equipment vacuum loss, and has the function of vacuum pump maintenance prompt;
- Freeze-drying automatic control system, the heating and cooling of the freeze-drying process are controlled by PID, which can automatically realize repeated pre-freezing, quick-freezing and slow-freezing of materials;
- Intermediate medium circulation technology: shelf gradient temperature control, special process manufacturing ensures uniform temperature of the board, strong controllability, flat board, good heat conduction, and improved freeze-drying efficiency;
- The external cold trap improves the water trapping ability of the equipment, reduces the interference of the temperature of the cold trap on the material during the freeze-drying process, ensures the consistency of the freeze-drying quality of the material and the stability of the experimental data, improves the freeze-drying efficiency and reduces the energy consumption;
- Adopt imported compressor double-machine cascade refrigeration technology, international standard green environmental protection refrigerant, rapid refrigeration, low cold trap temperature, and strong water capture capacity;
- Prepare the equipment before freeze-drying and close the butterfly valve of the pipeline between the freeze-drying chamber and the water-capturing chamber after the freeze-drying, to ensure that the materials are loaded and unloaded in a clean environment and the products are pre-frozen.
(optional) to improve the freeze-drying efficiency of the equipment;
- With automatic frost function;
- Re-pressure aeration system: to reduce the secondary pollution of the sample, nitrogen or inert gas can be backfilled;
- Pressing method: electric;
- Provide clean room installation solutions;
- Fully automatic control of vacuum degree, optional vacuum degree adjustment function;
- Optional eutectic point and eutectic point test function to better optimize the sample sublimation process;
- Optional host computer control;
- Optional lyophilization endpoint test;
- Optional: imported vacuum pump, high-speed vacuum pump oil.

Performance

- Standard cold trap temperature: $\leq -75^{\circ}\text{C}$ (no load, ambient temperature $\leq 30^{\circ}\text{C}$)
- Vacuum degree: $\leq 10\text{Pa}$ (no load)
- Shelf cooling rate: 20°C to $-40^{\circ}\text{C} \leq 60\text{min}$ (no load)
- Cold trap cooling rate: 20°C to $-40^{\circ}\text{C} \leq 30\text{min}$ (no load)
- Vacuum pumping rate: the standard atmospheric pressure is reduced to $10\text{Pa} \leq 20\text{min}$ (no load)
- Shelf temperature control range: $-50^{\circ}\text{C} \sim +70^{\circ}\text{C}$
- Power requirements: AC380V 50Hz three-phase five-wire system or AC220V 50Hz
- Applicable environment: $\leq 30^{\circ}\text{C}$



Specifications

<i>Model</i>	<i>LyoPharma 50</i>	<i>LyoPharma 80</i>	<i>LyoPharma 100</i>	<i>LyoPharma 120</i>
Effective shelf area m^2	0.5	0.8	1.0	1.2
Shelf number	4	5	5	5
Shelf size mm	300×420	320×500	320×625	320×750
Shelf Gap mm	68	90	76	76
Ice Condenser capacity	15kg	15kg	20kg	20kg
$\phi 22\text{mm}$ Penicillin vials	980	1450	2160	2600
$\phi 16\text{mm}$ Penicillin vials	2050	2800	3800	4400
Size W*D*H, mm	1520×730×1400	1490×780×1710	2000×800×1700	2000×800×1700
Weight kg	460	720	750	770
Power W	4200	4200	8600	8600