

# Pilot Freeze Dryer



Precise  
Temperature  
Control



Excellent  
Refrigeration  
Technology



PLC Control,  
User-friendly  
Control Interface

## Scope of Application

The pilot freeze dryer is a smaller-scale freeze-drying system used in research, product development, and small-scale production processes.



**HDG-70Z10-50**

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 **Product Advantages**



**Precise Temperature Control**

- The  $\pm 0.5^{\circ}\text{C}$  shelf temperature accuracy allows precise adjustments tailored to your sample's needs and freeze-drying conditions.
- Benefit from  $\pm 1^{\circ}\text{C}$  cabinet temperature accuracy, ensuring consistent freeze-drying quality across your samples.



**Efficient Refrigeration Technology**

- Experience rapid cold trap pull down from  $+20^{\circ}\text{C}$  to  $-45^{\circ}\text{C}$  in just 30 minutes, with the ability to reach ultimate temperatures of  $-70^{\circ}\text{C}$ .
- Achieve simultaneous cabinet and cold trap cooling, reducing wait times and enhancing efficiency.



**PLC Control, User-friendly Control Interface**

- Utilize editable automatic programs and multi-temperature segment control, meeting fine process requirements effortlessly.
- Navigate easily through operations with the touchscreen interface, which can connect to a PC, enabling multi-user applications.



**Comprehensive Documentation**

- Ensure compliance with FDA 21 CFR part 11, featuring e-signature capabilities for robust documentation.

 **Product Features**



**Suitable for Small Batch Production & Pilot Run**

- Shelf total size:  $0.54\text{m}^2$
- Capacity: Circa. 3,690 Penicillin bottles  $\Phi 12\text{mm}$   
Circa. 2,046 Penicillin bottles  $\Phi 16\text{mm}$   
Circa. 1,056 Penicillin bottles  $\Phi 22\text{mm}$



**Custom Design Options**

- $0.2\text{m}^2 / 0.4\text{m}^2 / 1\text{m}^2$  can be customized according to customer demand.
- Optional eutectic point test, drying end point judgment, can be connected to the sterilizer and gas backfill system, semi-customized to meet a variety of needs of users.



**Automatic Stoppering Function**

- Experience automatic stoppering functionality, facilitated by a customized hydraulic system, ideal for small batch production needs.



**Sample Safety**

- Rest assured, with emergency protection functions and IoT monitoring, ensure the safety of your valuable samples.



**Professional Applications Service**

- Access a professional freeze-drying team and laboratory support network, offering process development services to aid in production research and development.

 **Product Performances**

Model	HDG-70Z10-50
Shelf Size	0.54m <sup>2</sup>
	Penicillin Φ12mm: Circa. 3690pcs
	Penicillin Φ16mm: Circa. 2046pcs
	Penicillin Φ22mm: Circa. 1056pcs
Cold Trap Temperature (°C)	-70°C
Cold Trap Cooling Speed	From +20°C to -45°C in 30min
Ice Condenser Capacity (kg)	10
Shelf Temperature Uniformity (°C)	±0.5°C On same shelf
	±1°C For all shelves
Ultimate Vacuum (mbar)	0.005
Shelf Dimension (mm)	300*450
Shelf Qty	4+1
Shelf Distance (mm)	80
Shelf Temperature (°C)	-50°C~60°C
Power (W)	5000
Exterior Dimension (W*D*H)(mm)	890*1660*1940
Weight (kg)	800
Power Supply (V/Hz)	220V/50/60Hz
Control System	PLC control (Touchscreen as standard, can connect with PC)
Vacuum Control	Leak control valve
Freeze Drying Curve & Records	Yes
Automated Program	Yes (Manually)
Penicillin Lid Press	Yes (Hydraulic)
N2 Back Fill System	Optional
Automatic Drainage	Yes
Frost Function	Heated water frost
IoT Monitoring	Yes
Sample Emergency Protection	Constantly cooling the sample when vacuum exceeds limit
FDA 21 CFR Part 11	Compliance
Drying End Point Judgment	Optional
Eutectic Point test	Optional
Sterilization	Optional for H <sub>2</sub> O <sub>2</sub> sterilizer
IQ/OQ Confirmation	Optional

\*Haier Biomedical reserves the right to change products and specifications without prior notice.