

Pilot Freeze Dryer

Scope of Application

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



Precise Temperature Control



Excellent Refrigeration Technology



PLC Control, User-friendly
Control Interface



HDG-85Z10-50

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Jan, 2026



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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.



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.



Efficient Refrigeration Technology

- Experience rapid cold trap pull down from $+20^{\circ}\text{C}$ to -45°C in just 30 minutes, with the ability to reach ultimate temperatures of -85°C .
- Achieve simultaneous cabinet and cold trap cooling, reducing wait times and enhancing efficiency.



Comprehensive Documentation

- Ensure compliance with FDA 21 CFR part 11, optional featuring e-signature capabilities for robust documentation. Optional 3Q verification function.

Product Features



Suitable for Small Batch Production & Pilot Run

- Shelf total size: 0.54m^2
- Capacity: Circa. 3,600 Penicillin bottles $\Phi 12\text{mm}$
Circa. 2,000 Penicillin bottles $\Phi 16\text{mm}$
Circa. 1,000 Penicillin bottles $\Phi 22\text{mm}$



Automatic Stoppering Function

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



Professional Applications Service

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



Sample Safety

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



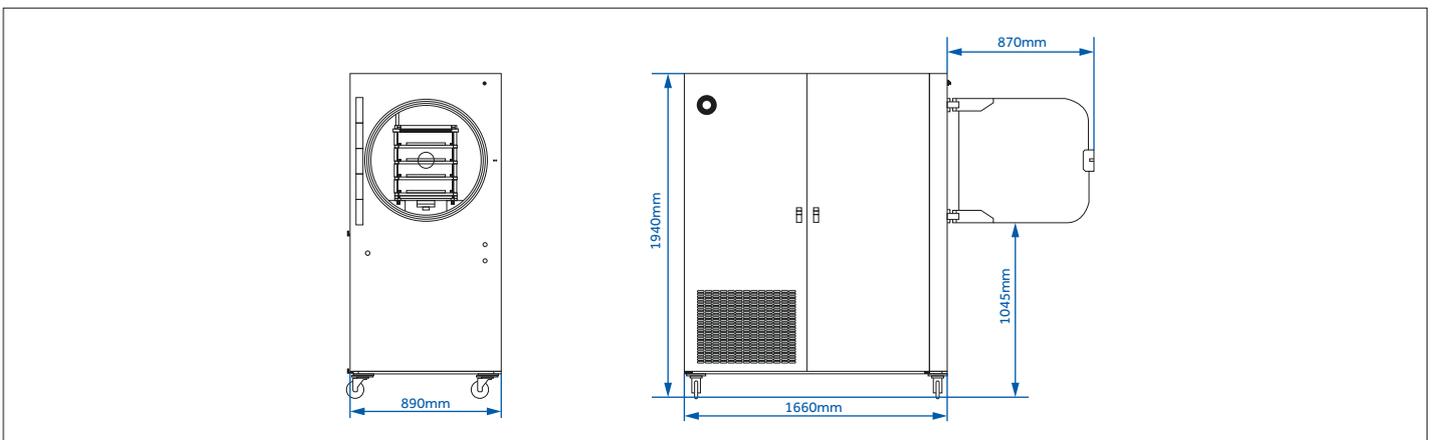
Custom Design Options

- $0.2\text{m}^2 / 1\text{m}^2$ 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.



Cascade Refrigeration System

- Two independent single-stage vapor compression systems: high-temp compressor 1969W, low-temp 1245W. High-temp evaporator and low-temp condenser form an intermediate heat exchanger. High-temp with air-cooled condenser; low-temp uses intermediate plate heat exchanger. Low-temp refrigerant is first pre-cooled via part of the air-cooled condenser pipeline, then enters the intermediate heat exchanger for optimal cooling effect.



Product Performances

Model	HDG-85Z10-50
Shelf Size	0.54m ²
	Penicillin Φ12mm: Circa. 3600pcs
	Penicillin Φ16mm: Circa. 2000pcs
	Penicillin Φ22mm: Circa. 1000pcs
Cold Trap Temperature (°C)	-85
Sound Level (dB)	65
Cold Trap Cooling Speed	From +20°C to -45°C in 30 min
Cooling Rate (k/min)	4.9
Ice Condenser Capacity (kg)	10
Condensation Efficiency (kg/24h)	8
Ice Condenser Volume (L)	90
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)	-60°C~60°C
Power (W)	5000
Exterior Dimension (W*D*H)(mm)	890*1660*1940
Weight (kg)	800
Power Supply (V/Hz)	220-240/50
Control System	PLC control (Touch screen 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
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 ₂ O ₂ Sterilizer
IQ/OQ Confirmation	Optional
Certification	CE

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

