Haier Biomedical
Intelligent Protection of Life Science

Solar Direct Drive Combined Refrigerator/Freezer

HTCD-90

Scope of Application:

The combined refrigerator with freezer is designed to store vaccines, reagents and to freeze ice packs. Suitable for remote and sunny regions where power shortages are common.

Innovative Design

- Superior Thermal Insulation Performance
- EMS Monitoring System, 4.3-inch Color Screen Supports Multiple Language
- Safe, Secure and Reliable
- Environmentally-friendly
- Solar powered Drive System
- Ergonomic Design
- Intelligent Control

Qingdao Haier Biomedical Co., Ltd.

No.280 Feng Yuan Road, High-tech Zone,
Qingdao, 266111, P.R. China
E-mail: inquiry@haierbiomedical.com
Website: www.haiermedical.com

Jan, 2026

Haier Biomedical | Haier Biomedical International | Haier Biomedical International | Haier Biomedical International | Haier Biomedical International

Product Features

HTCD-90

Dual-zone Cooling and Freezing System Design

• The product features independent cooling and freezing zones; vaccines can be placed in the refrigerator, and coolant packs in the freezer.
• Doors for the refrigerator and freezer can be opened separately, preventing cold air loss.
• Ultra-low power consumption: as low as 0.86 kWh/24 h.
• The refrigerator and freezer compartments are designed independently on the inside.
• Refrigerator net capacity: 37.5 L.
• Freezer net capacity: 32 L; daily ice production: 2.43 L.

Security Guarantee

• Compliant with WHO PQS (WHO/PQS/E003/RF05-VP.6, WHO/PQS/E003/RF05.8) and Vaccine freeze protection classification: Grade A, ensuring that the vaccines inside the refrigerator are within the qualified range;
• Compliant standard to meet electrical safety design requirements.

Superior Reliability

• The whole machine has passed a 10-year accelerated aging test. The outer shell is made of powder coated steel plate, and the inner lining is made of 1.0mm corrosion-resistant alumina.

Efficient Insulation Design

• The 140mm insulation and double sealing strip door design have excellent insulation performance. The temperature inside the cabin will not be lower than 0 °C to prevent vaccine freezing.

Control System

• The refrigeration and freezing areas adopt two independent control systems. Digital electronic temperature controller with an accuracy of 0.1 °C and temperature control range of 2-8 °C;

Ergonomic Design

• EMS system can achieve wireless remote monitoring of temperature, compressor operation, and door opening and closing status; Equipped with a 4.3-inch color LCD screen; Convenient for accessing to vaccines; Equipped with status indicator lights, convienct to operator confirm the operation status in 3 meters; USB interface and MC4 photovoltaic connection port.

Detail Introduction: EMS

Comprehensive Monitoring to Ensure Safety

• Temperature monitor: Real time monitoring of the temperature in the vaccine area to ensure that vaccines are stored at an appropriate temperature.

• Door status monitor: Detect the status of the refrigerator door to prevent temperature fluctuations caused by the door not being tightly closed.

• Power outage monitor: Monitor the power status, promptly detect power outages, and ensure the continuous operation of equipment.

• Voltage and current monitor: Real time monitoring of voltage and current

• Compressor running time monitor: Record the running time of the compressor to provide real-time status of the compressor.

• Multiple alarm : Provide sound and light alarms, SMS alarms, email alarms.

• Operation recording: Record all operation for easy auditing and traceability.

Data Analysis with Optimized Management

• Data recording and analysis: Record historical data, generate KPI statistics.

• Visual interface: Provides intuitive charts and reports for users to easily view temperature and other data trends.

Remote Control

• Wireless data download: In non-subscription situations, it supports wireless transmission and download of data between mobile phones and devices through device WIFI hotspots.

• Remote monitoring and operation: After subscribing, remote access is provided to view device status, set parameters, and configure settings.

• Global SIM card: supporting over 180 countries and regions worldwide.

• Support to replace local SIM cards.

Reliable and StableTemperature Sensor with High Precision Sensor

• Wide measurement range (-50°C~+80°C), high accuracy (± 0.5°C), fast response time.

• Door sensor: Quickly detect the of the door status switch.

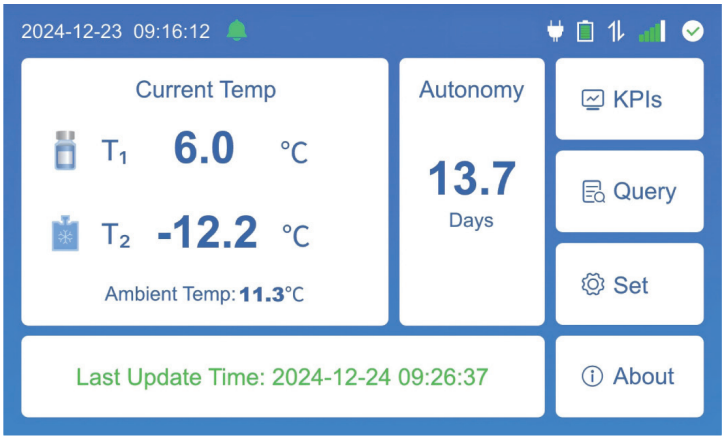
Data Storage and Transmission

• Non volatile storage: Storage time up to 1 year (default collection frequency state)

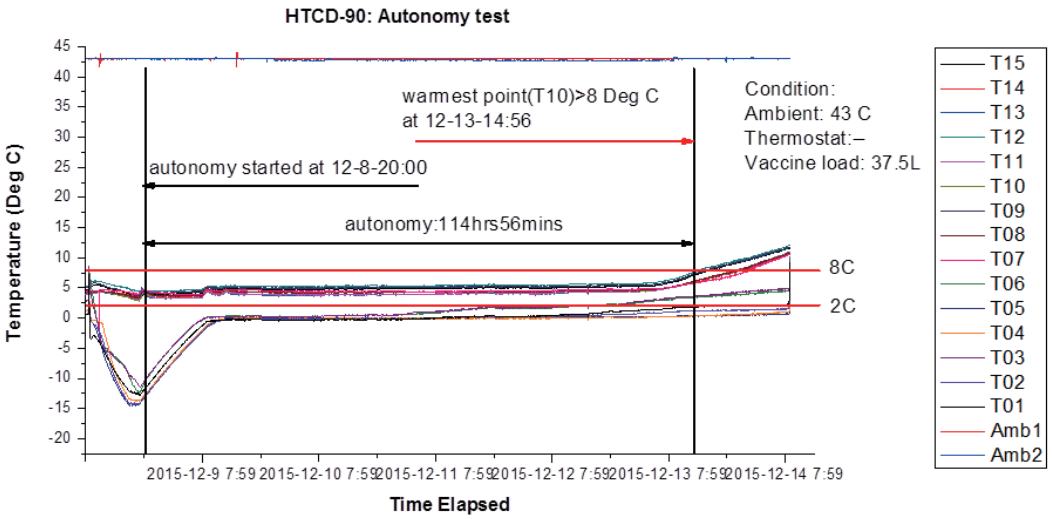
• Multiple communication protocols: Supports 2G/3G/4G and other communication methods to ensure stable and reliable data transmission.

OTA Update

• EMS meets Level 2 requirements as standard and can be upgraded to Level 3 through remote operation without the need for any additional hardware.



Autonomy Test



Specifications

Model			HTCD-90
Technical Data	Cabinet Type		Chest
	Ambient Temperature (°C)		5~43
	Cooling Type		Direct Cooling
	Defrost Mode		Manual
	Refrigerant		HC
	Sound Level (dB(A))		＜38
Performance	Temperature Range (°C)		Freezer ≤-10　Refrigerator: 2~8
Control	Controller		Microprocessor
	Display		Solar LCD Temperature Display　4.3-inch Color LCD Screen
Electrical Data	Power Supply (V)		24
	Maximal Current (A)		7
	Energy Consumption: stable running (KWh/24h)		0.858
	Energy Consumption: cool down test (KWh/24h)		0.81
	Holdover Time at 43°C		137hrs47mins
	Holdover Time at 32°C		169hrs6mins
	Autonomy Time at 43°C		114hrs 56mins
	Autonomy Time at 32°C		-
	At a Solar Radiation Reference Period of		3.5kwh/㎡/day
Dimensions	Vaccine Storage Capacity (L/Cu.Ft)		37.5/1.3
	Gross Volume (L/Cu.Ft)		Refrigerator: 58/2.1　Freezer: 32 /1.1
	Net/Gross Weight (approx)	kg	83/113　94/124
		lbs	183.0/250.0　207.23/273.37
	Interior Dimensions (W*D*H)	mm	Cooling chamber: 270*345*555　Freezer chamber: 170*370*555
		in	Cooling chamber: 10.6*13.6*21.9　Freezer chamber: 6.7*14.6*21.9
	Exterior Dimensions (W*D*H)	mm	1128*654*875
		in	44.4*25.7*34.3
	Packing Dimensions (W*D*H)	mm	1190*770*1080
		in	46.9*30.3*42.5
	Container Load (20'/40'/40'H)		26/56/56
Alarm	High/Low Temperature		Y
	Sensor Error		Y
	Power Outage		Y
	Door Opening Alarm		Y
	Compressor Failure		Y
Accessories	Baskets		2
	Shelves		-
Others	Certification	CE	Y
		WHO/PQS	Y
	Data Logger		Y　N
	Vaccine Freeze Protection Classification		A
	Freezer Gross Volume (L/Cu.Ft)		32/1.1
	Waterpack Storage Capacity (kg)		12.52
	Waterpack Freezing Capacity (kg/24h)		2.43
	Optional		①. Tag 2E; ②. Remote Temperature Monitoring Device (RTMD)

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