

# The Vaccine Safety Solutions



Your Haier Biomedical Partner

**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





# CONTENT

● <b>Haier Biomedical's Vaccine Safety Solutions</b>	01
Solar Direct Drive Cold Room	02
Walk-In Cold Room	03
Solar Direct Drive Vaccine Refrigerator	05
Solar Direct Drive Combined Refrigerator/Freezer	08
Solar Direct Drive Water-Pack Freezer	11
Icepack Freezer	13
Ice-Lined Refrigerator/Freezer	15
Combined Refrigerator and Freezer	19
Remote Temperature Monitoring Device	23
Optional Acessories	29
● <b>Residential Energy Storage System Solution</b>	39
● <b>Mobile Energy Storage System</b>	40

**A platform for sharing, an ecosystem of trust.**

# Haier Biomedical's Vaccine Safety Solutions

- Cold Room**
- Walk-In Cold Room**
- Solar Direct Drive Vaccine Refrigerator**
- Solar Direct Drive Combined Refrigerator/Freezer**
- Solar Direct Drive Water-pack Freezer**
- Icepack Freezer**
- Ice-Lined Refrigerator/Freezer**
- Combined Refrigerator and Freezer**
- Humidity Control Vaccine Refrigerator**
- Remote Temperature Monitoring Device**
- Optional Acessories**

## Solar Direct Drive Cold Room

SDD cold room uses solar direct drive cooling technology, combined with ice lined technology, maintains the temperature in the cold room between 2-8 degrees throughout the day; application is used in national or regional vaccine centers, hospitals, and biopharmaceutical industries suitable for immunization projects; used for storing large quantities of temperature-sensitive products, such as vaccines and medications.



### Solar Direct Drive

SDD cold room uses solar direct drive cooling technology

### Low Operating Cost

Low operation cost, annual energy saving is about 8000kwh (10 CMB)

### Long Holdover Capacity

Long holdover during power off (Tested in QingDao), more than 22 days (10 CMB, ambient temperature 20-40°C)

### Remotely Monitored and Controlled

Temperature record and alarm system, door ajar alarm and power failure alarm; monitored & controlled by PC/APP/Web

### Specifications

Model	Solar Direct Drive Cold Room
Cold room Sizes	>10m <sup>3</sup>
Temperature Range (°C)	5-43
Refrigerant	R1234YF
Panel Insulation Material	Polyurethane High Density
Panel Thickness Options (mm)	200
Panel Jointing System	Tongue and Groove, Cam Lock
Wall & Ceiling Panel Finish	1mm Aluminum Sheet
Floor Panel Finish	Anti-slip Aluminum Sheet
Shelving System	Adjustable Shelves
Shelving Material	Steel and Aluminum
Internal Temperature Range (°C)	2-8
Holdover Time at 43°C	More than 7 Days (10 CMB)
Holdover Time at 32°C	More than 15 Days (10 CMB)
Min. Solar Radiation (kWh/m <sup>2</sup> /day)	3.5

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

## Walk-In Cold Room

The complete unit is also designed for installations in housed areas such as warehouses that need to meet specific temperature standards. Previously Haier have already successfully installed these units in India, Guinea, Syria, Pakistan, Burundi, Zimbabwe and other regions across the world.



## Temperature

- Temperature recorder
- Forced air-cooling system

## CFC-free

- CFC-free high-density foam insulation

## Walk-In Cold Store Unit

- The cold room is suitable for a variety of applications: It can be used to freeze or refrigerate samples for healthcare, research, agriculture and biotechnology purposes.
- Walk-In Cold Room (WIC): Interior temperature can be controlled within a range of 2°C to 8°C.
- Walk-In Freezer (WIF): Temperature is set at -20°C.

## Alarm System

- Audible and visual alarm

## Automatic Defrosting

- Dual unit rotating operation

## Specifications



Model	Monobloc						Split						Monobloc HWIC-40- M-AC (290)
	WIC (10 cbm)	WIF (20 cbm)	WIC (30 cbm)	WIC (40 cbm)	Combi. 40 cbm WIC/WIF		WIF (20 cbm)	WIC (30 cbm)	WIC (40 cbm)	Combi. 40 cbm WIC/WIF			
Capacity (m³)	10	20	30	40	WIC (10 cbm)	WIC (10 cbm)	20	30	40	WIC (25 cbm)	WIF (15 cbm)	40	
WHO PQS Code	E001/003												
Refrigerant	R448A												R290
Defrost Mod	Hot gas defrost						Electrical heating						Hot gas defrost
Internal Temperature Range (°C)	2-8	-20	2-8	2-8	2-8	-20	-20	2-8	2-8	2-8	-20	2-8	
Power Supply (V/ph-Hz)	220/1N~/50	380/3N~/50	380/3N~/50	380/3N~/50	380/3N~/50	380/3N~/50	380/3N~/50	380/3N~/50	380/3N~/50	380/3N~/50	380/3N~/50	380/3N~/50	220/1N~/50
Power (W)/Unit	894	1750	1590	1590	1590	1750	1750	1590	1860	1590	1750	2510 (max)	
Refrigeration Output (W) Unit	1425	2580	3700	3700	3700	2580	2580	3700	4600	3700	2580	3367	
Condensation Temperature (°C)	43												
Density (Kg/Cbm)	40+/-2												
U Value (W/m²K)	0.17												
Insulation Thickness (mm)	100	120	100	100	120	120	100	100	120	120	100	120	120

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

## Solar Direct Drive Vaccine Refrigerator



HTC-110(EMS)/HTC-112



HTC-120(EMS)



HTC-240(EMS)

**Long-Lasting Temperature Control (Power-Off) Design**

- Solar-powered cold storage design, max temperature retention  $\geq 120$ h
- Large-capacity water tank for cold storage + heat pipe cooling control
- Stable operation at  $+5$  C  $\sim +43$  C ambient temp, meeting Grade A anti-freezing standards
- Double-door sealing strip design, double-layer cold insulation for enhanced reliability
- Upright models: optional humidity control function

**Integrated Monitoring System (EMS)**

- 4.3-inch color screen supporting one-click language switching among 5 languages: Chinese, English, French, Russian, and Spanish, with concise and easy-to-understand icon display;
- Supports LEVEL 1, LEVEL 2, and remote upgrade to LEVEL 3 functions (LEVEL 2 is standard at delivery);
- 1-year data storage + multi-network upload, enabling remote/offline management and supporting power-off battery life for approximately 10 days;

**People-Oriented Design**

- Multiple upright & chest configurations
- Equipped with shelves & vaccine baskets for easy access
- Button control for simple operation & reduced misoperation
- Upright models fitted with swivel casters for easy mobility
- Upright models with added test ports
- Integrated door safety lock & thermostat password lock function

**Energy-Saving & Eco-Friendly**

- Uses HC green refrigerant
- Solar clean energy direct-drive, battery-free
- Eco-friendly insulation materials (CFC & HFC free)

## Specifications



Model	HTC-110 (EMS)	HTC-112
Technical Data	Vaccine Storage Capacity(L/Cu.Ft)	59/2.08
	Cabinet Type	Chest
	Ambient Temperature (°C)	5~43
	Cooling Type	Direct Cooling
	Defrost Mode	/
	Refrigerant	HC
Performance	Sound Level (dB (A))	<38
	Temperature Range (°C)	2~8
	Vaccine Freeze Protection Classification	Grade A
	Controller	Microprocessor
Control	Display	Solar LCD Temperature Display/ 4.3-inch Color LCD Screen (EMS)
	Power supply(VDC)	24
	Maximal Current(A)	5
	Energy Consumption: stable running (KWh/24h)	0.58
	Energy Consumption: cool down test (KWh/24h)	0.62
	Autonomy Time at 43°C	96hrs24mins
Electrical Data	Autonomy Time at 32°C	/
	At a Solar Radiation Reference Period of (kwh/m <sup>2</sup> /day)	3.5
	Gross Volume (L/Cu.Ft)	110/3.88
	Net/Gross Weight (approx)	75/105
	lbs	165/231.5
	Interior Dimensions (W*D*H)	545*345*555
Construction	mm	545*345*555
	in	21.5*13.6*21.9
	Exterior Dimensions (W*D*H)	1128*654*875
	mm	1128*654*875
	in	44.4*25.7*34.4
	Packing Dimensions (W*D*H)	1190*770*1080
Alarm	mm	1190*770*1080
	in	46.9*30.3*42.5
Accessories	Container Load (20'/40'/40'H)	26/56/56
	High/Low Temperature	Y
	Sensor Error	Y
	Baskets	4
Others	Shelves	/
	CE,WHO/PQS	Y

## Specifications



	Model	HTC-120 (EMS)	HTC-240 (EMS)
Technical Data	Vaccine Storage Capacity (L/Cu.Ft)	100/3.5	200/7.1
	Cabinet Type	Upright	Upright
	Ambient Temperature (°C)	5-43	5-43
	Cooling Type	Direct Cooling	Direct Cooling
	Defrost Mode	/	/
	Refrigerant	HC	HC
	Sound Level (dB (A))	≤43	≤43
Performance	Temperature Range (°C)	2-8	2-8
	Vaccine Freeze Protection Classification	Grade A	Grade A
Control	Controller	Microprocessor	Microprocessor
	Display	Solar LCD Temperature Display/4.3-inch Color LCD Screen (EMS)	
Electrical Data	Power supply (VDC)	24	24
	Maximal Current (A)	5	5
	Energy Consumption: stable running (KWh/24h)	0.44	0.35
	Energy Consumption: cool down test (KWh/24h)	0.48	0.54
	Autonomy Time at 43°C	112Hrs24mins	95Hrs23mins
	Autonomy Time at 32°C	183hrs20mins	151hrs10mins
	At a Solar Radiation Reference Period of (kwh/m²/day)	3.5	3.5
Construction	Gross Volume (L/Cu.Ft)	120/4.2	240/8.5
	Net/Gross Weight (approx)	kg: 130/160 lbs: 286/352	kg: 150/185 lbs: 330/407.9
	Interior Dimensions (W*D*H)	mm: 530*500*530 in: 20.9*19.7*20.9	mm: 530*500*960 in: 20.9*19.7*37.8
	Exterior Dimensions (W*D*H)	mm: 865*825*1422 in: 34*32*56	mm: 865*825*1815 in: 34*32*71
	Packing Dimensions (W*D*H)	mm: 980*920*1585 in: 38.6*36.2*62.4	mm: 980*920*1980 in: 38.6*36.2*78
	Container Load (20'/40'/40'H)	12/24/24	12/24/24
	High/Low Temperature	Y	Y
Alarm	Sensor Error	Y	Y
Accessories	Baskets	/	/
Others	Shelves	3	4
Others	CE, WHO/PQS	Y	Y

## Solar Direct Drive Combined Refrigerator/Freezer



**Modular Refrigeration-Freezer Dual-Zone Design**

- Modular structure, compatible with both vaccine storage and ice pack freezing functions
- Multiple capacity options available for both refrigeration and freezer compartments
- Stable operation at ambient temperatures ranging from +5°C to +43°C, meeting Class A anti-freezing requirements
- Adopts double-layer door gasket design, with dual-layer thermal insulation for improved reliability
- Humidity control function is available as an optional feature for upright cabinets
- Solar-powered cold storage design, max temperature retention ≥ 120h

**Integrated Monitoring System (EMS)**

- 4.3-inch color screen supporting one-click language switching among 5 languages: Chinese, English, French, Russian, and Spanish, with concise and easy-to-understand icon display;
- Supports LEVEL 1, LEVEL 2, and remote upgrade to LEVEL 3 functions (LEVEL 2 is standard at delivery);
- 1-year data storage + multi-network upload, enabling remote/offline management and supporting power-off battery life for approximately 10 days;

**People-Oriented Design**

- Multiple upright & chest configurations
- Equipped with shelves & vaccine baskets for easy access
- Button control for simple operation & reduced misoperation
- Upright models fitted with swivel casters for easy mobility
- Upright models with added test ports
- Integrated door safety lock & thermostat password lock function

**Energy-Saving & Eco-Friendly**

- Uses HC green refrigerant
- Solar clean energy direct-drive, battery-free
- Eco-friendly insulation materials (CFC & HFC free)

## Specifications



Model		HTCD-90 (EMS)
Technical Data	Vaccine Storage Capacity (L/Cu.Ft)	37.5/1.3
	Cabinet Type	Chest
	Ambient Temperature (°C)	5-43
	Cooling Type	Direct Cooling
	Defrost Mode	Manual
	Refrigerant	HC
	Sound Level (dB (A))	< 39
Performance	Temperature Range (°C)	Freezer ≤-10 Refrigerator: 2-8
	Vaccine Freeze Protection Classification	Grade A
Control	Controller	Microprocessor
	Display	Solar LCD Temperature Display/4.3-inch Color LCD Screen (EMS)
Electrical Data	Power supply(VDC)	24
	Maximal Current(A)	7
	Energy Consumption: stable running (KWh/24h)	0.858
	Energy Consumption: cooldown test (KWh/24h)	0.81
	Autonomy Time at 43°C	114hrs 56mins
	Autonomy Time at 32°C	-
	At a Solar Radiation Reference Period of (kwh/m²/day)	3.5
Construction	Gross Volume (L/Cu.Ft)	Refrigerator: 58/2.1 Freezer:32/1.1
	Net/Gross Weight (approx)	kg 83/113
		lbs 183.0/250.0
	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	Waterpack Storage Capacity(kg)	12.52
	Waterpack Freezing Capacity(kg/24h)	2.43
	High/Low Temperature	Y
Accessories	Sensor Error	Y
	Baskets	2 (Refrigerator Parts) & 2 Ice Holder (Freezer Parts)
	Shelves	/
Others	CE, WHO/PQS	Y

## Specifications



	Model	HTCD-160B (EMS)	HTCD-220 (EMS)
Technical Data	Vaccine Storage Capacity (L/Cu.Ft)	100/3.5	146
	Cabinet Type	Upright	Upright
	Ambient Temperature (°C)	5-43	5-43
	Cooling Type	Direct cooling	Direct Cooling
	Defrost Mode	Manual	Manual
	Refrigerant	HC	R600a
	Sound Level (dB(A))	<39	<39
Performance	Temperature Range (°C)	Freezer ≤-10 Refrigerator: 2-8	Freezer ≤-10 Refrigerator: 2-8
	Vaccine Freeze Protection Classification	Grade A	Grade A
	Controller	Microprocessor	Microprocessor
Electrical Data	Display	Solar LCD Temperature Display/4.3-inch Color LCD Screen (EMS)	
	Power supply (VDC)	24	24
	Maximal Current (A)	6	6
	Energy Consumption: stable running (KWh/24h)	0.99	0.9
	Energy Consumption: cooldown test (KWh/24h)	1.1	1.1
	Autonomy Time at 43°C	139hrs27mins	128.3
	Autonomy Time at 32°C	/	/
	At a Solar Radiation Reference Period of (kwh/m²/day)	3.5	3.5
	Gross Volume (L/Cu.Ft)	Refrigerator: 120/4.2 Freezer:40/1.4	180
Construction	Net/Gross Weight (approx)	kg 150/186	195/234
		lbs 330/410	428/515
	Interior Dimensions (W*D*H)	mm Cooling Chamber: 545*500*530 Freezer Chamber: 560*520*150	Refrigerator: 545*500*650 Freezer: 560*520*150
		in Cooling Chamber: 21.1*19.7*20.9 Freezer Chamber: 22.0*20.5*5.9	Cooling chamber: 21.1*19.7*26.3 Freezer chamber: 22.0*20.5*5.9
	Exterior Dimensions (W*D*H)	mm 865*825*1695	920*915*1860
		in 34.1*32.6*66.9	34.1*32.6*73.2
	Packing Dimensions (W*D*H)	mm 985*920*1860	970*950*2015
		in 38.8*36.2*73.2	38.2*37.4*79.3
Alarm	Waterpack Storage Capacity(kg)	22.4	22.4
	Waterpack Freezing Capacity(kg/24h)	2	2.4
	Container Load (20'/40'/40'H)	12/24/24	12/24/24
	High/Low Temperature	Y	Y
	Sensor Error	Y	Y
	Baskets	/	/
	Shelves	2	3
Accessories	CE, WHO/PQS	Y	Y
Others			

## Solar Direct Drive Water-Pack Freezer



HTD-40

**High Performance**

- World Health Organization Certified (PQS certification)
- Equipped with ice pack pressing device, enabling the ice-pack plastered to the liner, speed up the water pack freezing
- The thickness of insulation layer is 140mm to better store the freezed ice-packs
- Broad working ambient temperature range of below 43°C, outstanding performance
- Internal and external double door design, superior insulation performance

**Temperature Control**

- Electronic temperature controller, digital temperature display, the display precision is 0.1°C, during the day the temperature can reach -10°C
- Solar energy temperature display system, driven by natural light
- High performance key components (compressor, fan, controller, etc.), safe and reliable

**Ergonomic Design**

- Intelligent control
- The height of the temperature display screen is moderate, and the inner temperature can be checked at any time
- Safety door lock
- Low DC voltage ensures personal safety
- Plug-and-play type quick plug, positive and negative pole error-proof
- Built-in handgrips on both sides of the box body facilitate overall movement
- Compressor indicator light, indicating the system work status
- Two-chamber design: Ice pack freezer and ice pack storage chamber

**Environmental Protection**

- Environmentally friendly hydrocarbon refrigerant R600a and foam material LBA
- The shell is coated with cold rolled steel plate, and the inner liner is made of 1.0mm alumina, which is easy to recycle.
- Ultra low GWP value
- Without any battery

## Specifications



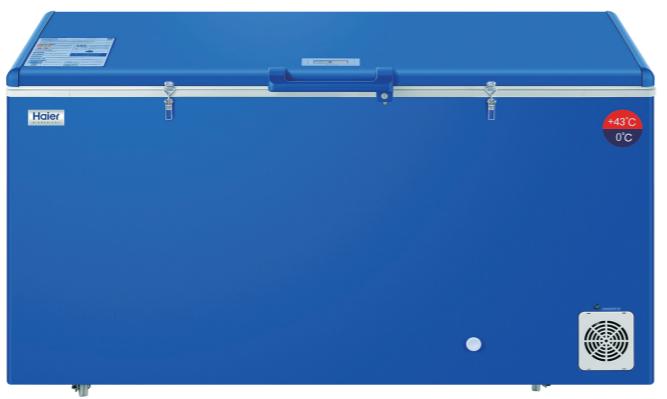
Model		HTD-40
Technical Data	Vaccine Storage Capacity (L/Cu.Ft)	48/1.7
	Cabinet Type	Chest
	Ambient Temperature (°C)	≤43
	Cooling Type	Direct Cooling
	Defrost Mode	Manual
	Refrigerant	HC
Performance	Sound Level (dB (A))	<30
	Temperature Range (°C)	< -10
Control	Controller	Microprocessor
	Display	Solar LCD Temperature Display
Electrical Data	Power supply (VDC)	24
	Maximal Current (A)	5
	Energy Consumption: stable running (KWh/24h)	0.46
	Energy Consumption: cool down test (KWh/24h)	0.50
	Autonomy Time at 43°C	120hrs
	Autonomy Time at 32°C	/
Construction	At a Solar Radiation Reference Period of (kwh/m²/day)	3.5
	Vaccine Storage Capacity (L/Cu.Ft)	/
	Net/Gross Weight (approx)	kg lbs
		65/85 143.0/187.4
	Interior Dimensions (W*D*H)	mm in
		Cooling chamber: 135*370*310 Freezer chamber: 265*370*555 Cooling chamber: 3.3*14.6*12.2 Freezer chamber: 10.4*14.6*21.9
	Exterior Dimensions (W*D*H)	mm in
		788*654*875 31.0*25.7*34.3
	Packing Dimensions (W*D*H)	mm in
		850*770*1080 33.4*30.3*42.5
Alarm	Container Load (20'/40'/40'H)	36/78/78
	High/Low Temperature	N/A
Accessories	Sensor Error	Y
	Baskets	2
	Shelves	/
Others	CE, WHO/PQS	Y

## Icepack Freezer

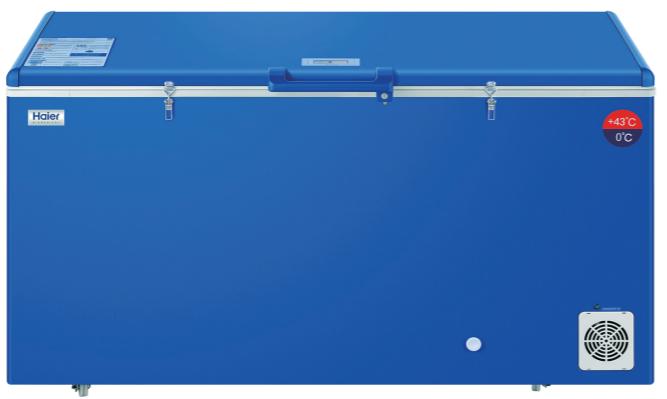
Haier Biomedical's Icepack Freezer is designed to store e.g. vaccines, freeze icepacks, pharmaceuticals between -15°C and -25°C. Application is used within institutes epidemic prevention, clinics, hospitals, research institutes as key examples.



HBD-86



HBD-130



HBD-265

## Refrigeration System

- High quality compressor
- CFC-free high-density foam insulation
- Optimized refrigeration system design

## Ergonomic Design

- Safety lock to safeguard against unauthorized access
- Internal configuration suitable for various sizes of storage baskets
- Drainage port for ease of cabinet cleaning
- LCD temperature display

## Temperature Control

- Electronic temperature controller with digital display
- Internal temperature range is -25°C to -15°C

## Alarms

- Power failure alarm, high temperature alarm, sensor error alarm
- Two alarm modes: sound alarm and light alarm

## Specifications



	Model	HBD-86	HBD-130	HBD-265
Technical Data	Cabinet Type	Chest	Chest	Chest
	Ambient Temperature	0~43	<43	0~43
	Cooling Type	Direct Cooling	Direct Cooling	Direct Cooling
	Defrost Mode	Manual	/	Manual
	Refrigerant	HC	HC	HC
Performance	Sound Level (dB (A))	40.6	40.6	39.3
	Temperature Range (°C)	-25~15	-15~25	-25~15
	Controller	Microprocessor	Microprocessor	Microprocessor
	Display	LCD	LCD	LCD
	Power Supply (V/Hz)	220~240V 50/60Hz	220V~240V(50/60Hz)	220~240V 50/60Hz
Control	Power (W)	120	190	210
	Electrical Current (A)	1.1	1.4	1.6
	Power Consumption: Cool Down Test (kWh/24h)	0.98	0.98	1.43
	Power Consumption: Stable Running (kWh/24h)	0.95	0.95	1.41
	Holdover Time at 43°C	More than 7hrs (up to -5°C)	More Than 6hrs (up to -5°C)	More than 11hrs 25min (up to -5°C)
Electrical Data	Vaccine Storage Capacity(L/Cu.Ft)	61/2.2	118/4.2	211/7.5
	Gross Volume(L/Cu.Ft)	86/3	130/4.5	265/9.4
	Net/Gross Weight (approx)	kg 65/90	50/63	135/160
		lbs 143/198	114/143	297/352
	Interior Dimensions (W*D*H)	mm 500*366*560	580*445*620	1359*366*560
Dimensions		in 19.7*14.4*22	22.8*17.5*24.4	53.5*14.4*22
	Exterior Dimensions (W*D*H)	mm 788*717*872	790*770*950	1647*717*940
		in 31*28.2*34.3	31.1*30.3*37.4	64.8*28.2*37
	Packing Dimensions (W*D*H)	mm 850*770*1080	840*810*1000	1720*770*1080
		in 33.5*30*42.5	33.1*31.9*39.4	67.7*30*42.5
Accessories	Container Load (20'/40'/40'H)	36/78/78	28/56/56	18/38/38
	Waterpack Storage Capacity(kg)	61	/	211
	Waterpack Freezing Capacity(kg/24h)	17.6	15.2	32.4
	Foot/Castor	N/A	/	N/A
	Sensor Error	Y	Y	Y
Others	Baskets	3	3	9
	CE,WHO/PQS	Y	N	Y

## Ice-Lined Refrigerator/Freezer



4.3-inch color LCD screen

HBC-79/80/150/260

**Security Guarantee**

- Compliant with WHO PQS (WHO/PQS/E003/RF03.7, WHO/PQS/E003/RF03-VP.5) and Vaccine freeze protection classification: Grade A, ensuring that the vaccines inside the refrigerator are within the qualified range;
- Compliant with CE standard (IEC 60335-1-2020, IEC 60335-2-24-2020, EN 61000-6-1:2016, EN61000-6-3:2011), 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**

- 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; Adjustable shelf height, convenient for accessing to vaccines; Equipped with status indicator lights, convenient for operator to confirm the operation status in 3 meters.

## Specifications

	Model	HBC-79 (EMS)	HBC-80(50/60Hz)	HBC-150(50/60Hz)	HBC-260 (EMS)
Technical Data	Cabinet Type	Chest	Chest	Chest	Chest
	Ambient Temperature (°C)	5-43	5-43	5-43	5-43
	Cooling Type	Direct Cooling	Direct Cooling	Direct Cooling	Direct Cooling
	Defrost Mode	Manual	/	/	/
	Refrigerant	HC	HC	HC	HC
Performance	Sound Level(dB(A))	<40	<40	<40	<40
	Temperature Range (°C)	2-8	2-8	2-8	2-8
	Freezer Protection Level	Grade A	A	A	A
	Controller	Microprocessor	Microprocessor	Microprocessor	Microprocessor
Control	Display	Solar LCD Temperature Display/4.3-inch Color LCD Screen (EMS)	Solar LCD Temperature Display	Solar LCD Temperature Display	Solar LCD Temperature Display/4.3-inch Color LCD Screen (EMS)
	Power Supply(V/Hz)	220V-240V/50Hz/60Hz	220-240/50	220V-240V (50/60Hz)	220-240/50
Electrical Data	Power(W)	140	110	140	120
	Electrical Current(A)	1.3	1	1.3	1
	Power Consumption: stable running(KWh/24h)	0.55	0.57	0.55	0.54
	Power Consumption: cool down test(KWh/24h)	0.65	0.63	0.65	0.62
	Holdover Time at 43°C	57hrs34mins	59hrs51mins	57hrs34mins	60hrs50mins
	Holdover Time at 32°C	/	98hrs26mins	/	96hrs23mins
	Vaccine Storage Capacity (L/Cu.Ft)	59/2.2	61/2.2	122/4.3	211/7.5
Dimensions	Gross Volume (L/Cu.Ft)	79/2.8	80/2.8	150/5.3	260/9.2
	Net/Gross Weight (approx)	kg	85/110	85/110	105/140
		lbs	187.6/242.7	187.6/242.7	374.8/467.4
	Interior Dimensions (W*D*H)	mm	500*366*560	500*366*560	840*366*560
		in	19.7*14.4*22	19.7*14.4*22	33.1*14.4*22
	Exterior Dimensions (W*D*H)	mm	788*654*875	788*654*875	1128*654*875
Functions		in	31*25.7*34.4	31*25.7*34.4	44.4*25.7*34.4
	Packing Dimensions (W*D*H)	mm	850*770*1080	850*770*1080	1190*770*1080
		in	33.5*30*42.5	33.5*30*42.5	47*30*42.5
	Container load (20'/40'/40'H)		36/78/78	36/78/78	26/56/56
Accessories	High/Low Temperature (Y/N)		Y	Y	Y
	Power Outage		Y	Y	Y
	Door Opening Alarm		Y	Y	Y
	Compressor Failure		Y	N/A	N/A
Others	Sensor Error		Y	Y	Y
	Foot/Castor		N	N/A	N/A
Others	CE, WHO/PQS		Y	Y	Y



HBC-120 (EMS)

HBC-240 (EMS)

**Security Guarantee**

- Compliant with WHO PQS (WHO/PQS/E003/RF03.7, WHO/PQS/E003/RF03-VP.5) and Vaccine freeze protection classification: Grade A, ensuring that the vaccines inside the refrigerator are within the qualified range;
- Compliant with CE standard (IEC 60335-1-2020, IEC 60335-2-24-2020, EN 61000-6-1:2016, EN61000-6-3:2011), 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.

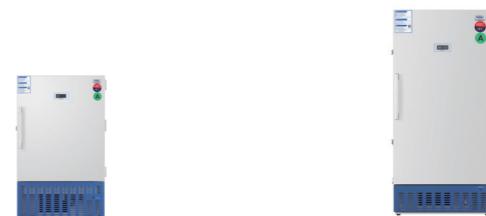
**Control System**

- Digital electronic temperature controller with an accuracy of 0.1°C and temperature control range of 2-8°C. Optional humidity control system can be used to achieve no condensation inside the cabin and prevent the vaccine box from getting wet.

**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; Adjustable shelf height, convenient for accessing to vaccines; Equipped with status indicator lights, convenient for operator to confirm the operation status in 3 meters.

## Specifications



	Model	HBC-120 (EMS)	HBC-240(EMS)
Technical Data	Cabinet Type	Upright	Upright
	Ambient Temperature (°C)	5-43	5-43
	Cooling Type	Direct Cooling	Direct Cooling
	Refrigerant	HC	HC
	Sound Level (dB(A))	<40	<40
Performance	Temperature Range (°C)	2-8	2-8
	Vaccine Freeze Protection Classification	Grade A	Grade A
Control	Controller	Microprocessor	Microprocessor
	Display	4.3-inch color LCD screen/4.3-inch Color LCD Screen	
Electrical Data	Power Supply (V/Hz)	220V-240V (50/60Hz)	220V-240V (50/60Hz)
	Power (W)	145	145
	Electrical Current (A)	1	1
	Power Consumption: stable running (KWh/24h)	0.4	0.44
	Power Consumption: cool down test (KWh/24h)	0.35	0.4
	Holdover Time at 43°C	128hrs48min	87h14min
	Holdover Time at 32°C	185H	165H
Dimensions	Vaccine Storage Capacity(L/Cu.Ft)	100/3.6	200/7.2
	Gross Volume (L/Cu.Ft)	120/4.3	240/8.5
	Net/Gross Weight (approx)	kg	152/186
		lbs	334.4/409.2
	Interior Dimensions (W*D*H)	mm	545*500*530
Functions		in	20.87*19.69*37.8
	Exterior Dimensions (W*D*H)	mm	920*915*1740
		in	890*829*1820
	Packing Dimensions (W*D*H)	mm	35.04*32.64*71.65
		in	980*920*1980
Accessories	Container load (20'/40'/40'H)		38.6*36.2*78
	High/Low Temperature (Y/N)	Y	Y
	Power outage	Y	Y
	Door opening alarm	Y	Y
	Compressor failure	Y	Y
Others	Sensor Error (Y/N)	Y	Y
	Foot (Y/N)	N	4
Others	CE, WHO/PQS	Y	Y

## Combined Refrigerator and Freezer



4.3-inch color LCD screen



HBCD-90/90(EMS)

**Dual Zone and Dual System Design for Refrigeration and Freezing**

- Designed with a dual zone of refrigeration and freezing, with refrigerated storage for vaccines and frozen icepack.

**Security Guarantee**

- Compliant with WHO PQS (WHO/PQS/E003/RF03.7, WHO/PQS/E003/RF03-VP.5) and Vaccine freeze protection classification: Grade A, ensuring that the vaccines inside the refrigerator are within the qualified range;
- Compliant with CE standard (IEC 60335-1-2020, IEC 60335-2-24-2020, EN 61000-6-1:2016, EN61000-6-3:2011), 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 0.1C and temperature control range of 2-8C.

**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; Equipped with status indicator lights, convenient for operator to confirm the operation status in 3 meters.

## Specifications



	Model	HBCD-90	HBCD-90 (EMS)
Technical Data	Cabinet Type	Chest	Chest
	Ambient Temperature	5-43	5-43
	Cooling Type	Direct Cooling	Direct Cooling
	Defrost Mode	Manual	Manual
	Refrigerant	HC	HC
	Sound Level(dB(A))	< 40	≤40
Performance	Temperature Range (°C)	Freezer: ≤-10 Refrigerator: 2-8	Freezer: ≤-10 Refrigerator: 2-8
	Vaccine Freeze Protection Classification	Grade A	Grade A
Control	Controller	Microprocessor	Microprocessor
	Display	Solar LCD Temperature Display	4.3-inch Color LCD Screen
Electrical Data	Power Supply(V/Hz)	220V~240V/50Hz	220V~240V/50Hz
	Power(W)	190	210
	Electrical Current(A)	1.5	1.5
	Power Consumption:stable running(KWh/24h)	0.7	0.7
	Power Consumption: cooldown test (KWh/24h)	0.66	0.66
	Holdover Time at 43°C	63hrs48mins	63hrs48mins
Dimensions	Holdover Time at 32°C	132hrs21mins	/
	Vaccine Storage Capacity(L/Cu.Ft)	30/1.1	30/1.1
	Gross Volume(L/Cu.Ft)	Refrigerator:42/1.5 Freezer:32/1.1	Refrigerator:42/1.5 Freezer:32/1.1
	Net/Gross Weight (approx)	kg: 105/135 lbs: 231/298	kg: 116/146 lbs: 256/322
	Interior Dimensions (W*D*H)	mm: Refrigerator Chamber:279*273*556 Freezer Chamber:166*366*580 in: Refrigerator Chamber:11*10.8*21.9 Freezer Chamber:6.5*14.4*22.8	Refrigerator Chamber: 279*273*556 Freezer Chamber: 166*366*580 in: Refrigerator Chamber:11*10.8*21.9 Freezer Chamber:6.5*14.4*22.8
	Exterior Dimensions (W*D*H)	mm: 1128*654*875 in: 44.4*25.7*34.4	1128*654*875 in: 44.4*25.7*34.4
Functions	Packing Dimensions (W*D*H)	mm: 1190*770*1080 in: 47*30*42.5	1190*770*1080 in: 47*30*42.5
	Container Load(20/40/40H)	26/56/56	26/56/56
	Waterpack Storage Capacity(kg)	16	16
	Waterpack Freezing Capacity(kg/24h)	4	4
	High/Low Temperature(Y/N)	Y	Y
	Power outage	Y	Y
Accessories	Door opening alarm	Y	Y
	Compressor failure	Y	Y
	Sensor Error(Y/N)	Y	Y
	Foot(Y/N)	N	N



HBCD-220 (EMS)



HBCD-160 (EMS)

#### Dual Zone and Dual System Design for Refrigeration and Freezing

- Designed with a dual zone of refrigeration and freezing, with refrigerated storage for vaccines and frozen icepack.
- The effective capacity of refrigeration is 100L, equipped with 2 shelves (HBCD-160)
- The effective capacity of refrigeration is 146L, equipped with 3 shelves (HBCD-220)
- Freezer Gross volume 40L, freezing capacity per 24h is 3.2kg (HBCD-160)
- Freezer Gross volume 40L, freezing capacity per 24h is 3.2kg (HBCD-220)

#### Security Guarantee

- Compliant with WHO PQS (WHO/PQS/E003/RF03.7, WHO/PQS/E003/RF03-VP.5) and Vaccine freeze protection classification: Grade A, ensuring that the vaccines inside the refrigerator are within the qualified range;
- Compliant with CE standard (IEC 60335-1-2020, IEC 60335-2-24-2020, EN 61000-6-1:2016, EN 61000-6-3:2011), 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;
- Optional humidity control system can be used to achieve no condensation inside the cabin and prevent the vaccine box from getting wet.

#### 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; Adjustable shelf height, convenient for accessing to vaccines; Equipped with status indicator lights, convenient for operator to confirm the operation status in 3 meters.

#### Hardware Specification



	Model	HBCD-160 (EMS)	HBCD-220 (EMS)
Technical Data	Cabinet Type	Upright	Upright
	Climate Type	H	H
	Cooling Type	Direct Cooling	Direct Cooling
	Defrost Mode	Manual	Manual
	Refrigerant	HC	HC
	Sound Level (dB(A))	≤43	≤43
	Temperature Range (°C)	Freezer: -25~-15 Refrigerator: 2~8	Freezer: -25~15 Refrigerator: 2~8
Control	Controller	Microprocessor	Microprocessor
	Display	Solar LCD Temperature Display/4.3-inch Color LCD Screen (EMS)	
Electrical Data	Power Supply (V)	220V~240V/50Hz/60Hz	220V~240V/50Hz/60Hz
	Maximal Current (A)	2	2
	Energy Consumption: Stable Running (kWh/24h)	0.75	0.76
	Energy Consumption: Cool Down Test (kWh/24h)	0.88	0.89
	Holdover Time at 43°C	142	141.7
Construction	Vaccine Storage Capacity (L)	100	146
	Gross Volume (L)	120	180
	Net/Gross Weight (kg)	188/228	195/234
	Interior Dimensions (W*D*H) (mm)	Refrigerator: 545*500*530 Freezer: 560*520*150	Refrigerator: 545*500*650 Freezer: 560*520*150
	Exterior Dimensions (W*D*H) (mm)	920*915*1740	920*915*1860
	Packing Dimensions (W*D*H) (mm)	970*950*1910	970*950*2015
	Container Load (20'/40'/40'H)	12/24/24	12/24/24
Functions	High/Low Temperature (Y/N)	Y	Y
	Power outage	Y	Y
	Door opening alarm	Y	Y
	Compressor failure	Y	Y
Accessory	Sensor Error (Y/N)	Y	Y
	Foot (Y/N)	4	4
Others	Certificate	CE,WHO/PQS	CE,WHO/PQS
	Vaccine Freeze Protection Classification	Grade A	Grade A
	Freeze Gross Volume (L)	40	40
	Water Pack Storage Capacity in kg	22.4	22.4
	Freezing Capacity Per 24h in kg	3.2	3.2

## Remote Temperature Monitoring Device



## Innovative Design

- Remote platform monitoring
- LBS base station positioning
- Sensor is user configurable, and automatically uploads data to the online portal
- High accuracy
- User configurable
- Unplug and replace sensors as required

- Support 4G/3G/2G signal
- Live sensor location can be displayed on GoogleMaps
- USB data export
- The device supports a local sound/light alarm
- One full charge, more than 5 days of battery life (In good signal area)

## Specifications

Item	Specifications
Model	U-Cool-Pro
Temperature Sensor	2 Pluggable Digital temperature sensors (or PT100 optional)
Temperature Range	NTC sensor: -40°C~+65°C PT100 sensor(optional): -200°C~+150°C
Accuracy	NTC sensor:±0.5°C within 0°C to +65°C, ±1°C within -40°C to +0°C PT100 sensor (optional) ±0.3°C
Door Sensor	1 Pluggable Reed Switch sensor
Battery	Lithium battery: 4000mAh
Alarm	Audio-visual: buzzer + LED light
Map Location	Google map and LBS (Location Based Service-Mobile Base Station Positioning)
USB	Micro USB: download data /charging
Material	Shell: PC
IP	IP64
Dimension	112mm*75mm*21mm
Communication Network Mode	4G/3G/2G
Charging Voltage	5V~12V
Charging Current	≤1A
Working Current	≤2A
Working Temperature	-10°C~+55°C
SIM Card	Micro SIM Card
USB	Micro USB, supports charging; When the device is turned off, it can be connected to the computer as a Flash drive to export data in PDF/TXT format. When the device is turned on, it can be connected to the computer as a virtual serial port, which can then be configured using the configuration tool.

For the real-time temperature monitoring of activities including the warehousing, distribution and laboratory preparation/storage of medicines, vaccines, blood, reagents, biological products and tissues etc. Primarily focused on cold storage from -196°C to +8°C, they can also be used for incubators, climate chambers and drying ovens up to +150°C. Can also monitor power/door status and humidity.



**YB-HC600-01**  
Temperature Data Logger



**YB-HC600-02**  
Door On-off Monitor



**YB-HC600-03**  
Power Outage Monitor



**YB-HZ600-01**  
Smart Gateway

## Technical Parameters



Product	Temperature Data Logger	Door On-off Monitor	Power Outage Monitor
<b>Model</b>	YB-HC600-01	YB-HC600-02	YB-HC600-03
<b>Sensor</b>	One line (5m) digital sensor	One line (3m) digital sensor	One line (3+3m) digital sensor
<b>Measuring Function</b>	Temperature Range: NTC Sensor: -40°C~+80°C PT100 Sensor (optional): -199°C~+199°C Precision: 0.1°C Accuracy: ±0.5°C	Door open-close monitoring	Power supply monitoring
<b>Dimension (H*W*D mm)</b>	125*73*23		
<b>Battery</b>	3.6V/5400mAh		
<b>Communication</b>	LoRa		
<b>Display</b>	LCD display, real-time display of measured data, such as battery level, signal strength, etc.		
<b>Local-storage</b>	Local storage data of 60000 sets and it supports breakpoint continued transmission		

## Innovative Design



LoRa wireless ad hoc network communication technology, strong adaptability



Smart gateway with backup battery, supports data breakpoint with continued transmission



Sensors are battery powered, with an expected battery life of up to 3 years



Real-time display of measurement data



Suitable for monitoring temperature, door and power status

Product	Smart Gateway
<b>Model</b>	YB-HZ600-01
<b>Transit Network</b>	4G SIM card/LAN
<b>Maximum Number of Transmitters That Can Be Used (pcs)</b>	60
<b>Dimension (W*H*D mm)</b>	160*100*33
<b>Battery</b>	3.7V/10000mAh
<b>Communication</b>	LoRa
<b>Local-storage</b>	60000 sets

## PLM-6 Solar Panel

## Remote Temperature Recording:

- The external temperature sensor measures the temperature, records and stores the measured temperature values automatically, and transmits them to the cloud platform.

## Application Scenarios:

- It can be used for real-time monitoring of storage and distribution of medicine, vaccine, blood, reagents, biological products, biological sample tissue, food and other items. The application scenarios include refrigerated trucks, incubators, cold rooms, cold packs, refrigerated cabinets, refrigerators, freezers and so on.

Cloud Platform Website <http://ems.haierbiomedical.com>

## U-COOL



- Once powered on, the device immediately uploads the data automatically to the portal. Plug and play - one simple activation - no technical skills needed, easy and user friendly.
- Remote portal management platform, which can track temperature, signal strength information and has multiple data analysis reports.
- Powered by mains supply with battery back up (10 days) in the event of power failure (In good signal area).
- The device supports sound and visual alarms (Optional function).
- High precision sensors: -40°C ~ +65°C (NTC) -200°C ~ +150°C (PT100).
- High precision, wide range of temperature measurements.
- IP66 protection, waterproof, shockproof and dustproof to fit a variety of complex environments.
- Complies with WHO Standards, WHO prequalified code: E006/060.

## Specifications

Item	Specifications
Temperature sensor	NTC sensor: -40°C~+65°C ( $\pm 0.5^\circ\text{C}$ within 0°C to +65°C, $\pm 1^\circ\text{C}$ within -40°C to +0°C) PT100 sensor (optional): -200°C~+150°C ( $\pm 0.3^\circ\text{C}$ )
Environment Sensor	Temperature: -10°C~+55°C Humidity: 0%RH~99%RH
2G	850M/900M/1800M/1900M
4G	LTE FDD: B1/B3/B5/B8    LTE TDD: B38/B39/B40/B41 WCDMA: B1/B8    TD-SCDMA: B34/B39 CDMA: BC0 GSM: 900/1800MHz
Storage capacity:	60,000 sets of data
Battery	Charging voltage: 5V~12V Charging current: $\leq 1.5\text{A}$
Alarm	Audio-visual: Buzzer + LED light
SIM card	Built-in Nano SIM
Map location	Google map and LBS(Location Based Service)
USB	Micro USB: download data /Charging
Material	Shell: PC / Shell jacket: ABS
IP	IP66
Dimensions	114.5 mm *71.5 mm *22mm

*This product is suitable for daily charging of Haier Biomedical RTMD equipment such as Ucool and Ucool pro using solar modules. It is recommended to be used in remote and sunny areas and areas with power shortage.*

## Product Features:

In order to overcome the situation of long-term power loss, battery damage, inability to charge and equipment failure caused by long-term unmanned management after power failure of equipment in remote areas, solar panels are the best choice.

## Product Advantages

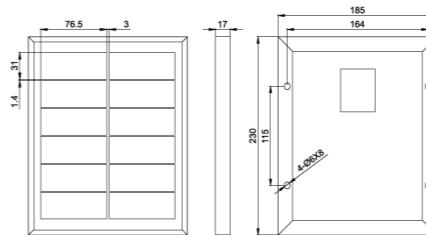
## ➤ Adopt high-efficiency PERC solar cells

High conversion efficiency/Low decay rate/Low temperature coefficient.

## ➤ User Friendly Design

With an integrated adjustable bracket, the inclination angle can be adjusted from 0 to 60°, which is suitable for variety of different installation environments.

## Product Dimensions



## Product Pictures



## Configuration List

Name	Specification	Unit	Quantity	Remark
Monocrystalline Silicon Solar Photo Voltaic Panels	6w	Piece	1	201 stainless steel, with non-slip gasket at the connection
Adjustable Stand	/	Set	1	
Wire	AVVR2*0.3mm <sup>2</sup>	Meter	15	
Nail Line Card	5mm	One	10	
Bulge	6*30	Set	2	

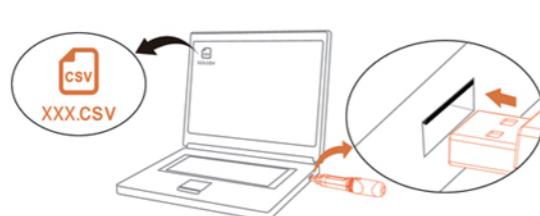
\*Haier Biomedical reserves the right to change products and specifications without prior notice.

## 30 Days Electronic Temperature Logger

## 30-Day Electronic Temperature Logger



HETL-01

WHO Prequalified  
PQS code:E006/042

Easy to download data



Accessory: Bracket

## Product Features

- Approved by WHO's PQS, PQS code:E006/042
- Designed specifically for 2~8°C vaccine storage, equipped with high/low temperature visual alarm to meet the WHO standard
- Recording capacity is over 30 days, recording interval is 6 minutes, outdated data will be overwritten by new one automatically, when the recording volume is full
- LCD screen displays temperature
- Integrated sensor device, dust and water resistant to IP65 protection standard, can be placed in Cold Box or vaccine refrigerator to monitor the temperature
- The logger can be plugged into the USB port of any PC to automatically generate a CSV file including temperature data and temperature graph which can be generated by data management software
- Built-in disposable wide temperature range lithium battery (Non-replaceable) with a minimum operating life of two years after a maximum shelf life of one year
- The bracket is included as standard

## Specifications

Model	HETL-01
Temperature Range (°C)	-20~+50
Main Material	ABS (Transparent Shield: PC)
Data Interface	USB Interface
Display Medium	LCD
Resolution (°C)	0.1
Accuracy	±0.5°C for -20°C~+40°C, ±1°C for the others
Recording Volume	8192 Data Points(34 days)
Logging Interval	6 min
Power Source	Non-Replaceable Battery
Size (Length*Diameter mm)	131*24
Service Life	2~3 years

## IoT Gateway

Making it easy to collect data from different onsite devices, validate data and upload them to the cloud, so as to realize the remote monitoring function. Applicable for the monitoring of the stored items in the Ultra-low temperature refrigerator, Liquid nitrogen containers , Solar power supply system, Oxygen station,cold room and liquid nitrogen containers in hospitals, in disease control centers, blood stations, laboratories, warehouses, pharmacies and machine rooms.



## Product Advantages

## Easy configuration, plug and play

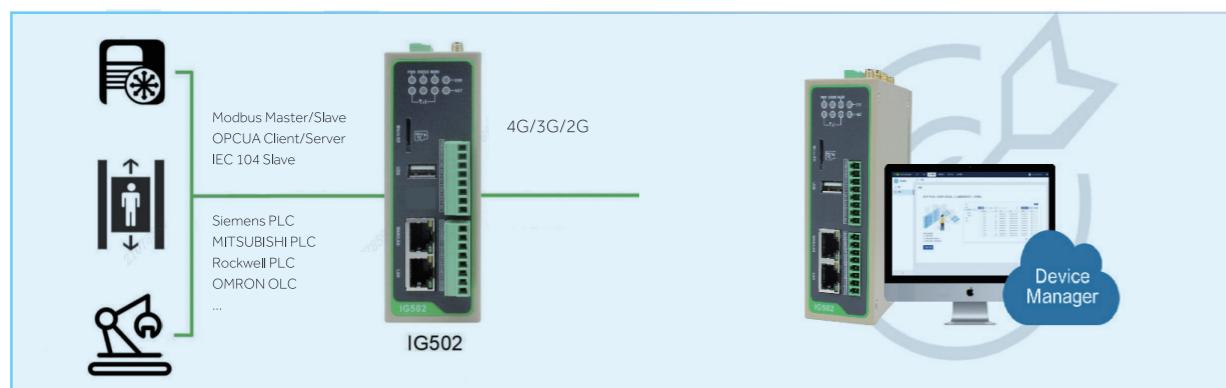
Uninterrupted and highly reliable connectivity through the 2G/3G/4G network, with data uploaded to the cloud-based monitoring platform.

## Easy for Remote Management

Through remote monitoring and centralized management, you can easily track your devices and enjoy better efficiency for large scale deployment and preventive maintenance.

## Purposely Designed for Industrial Scenarios

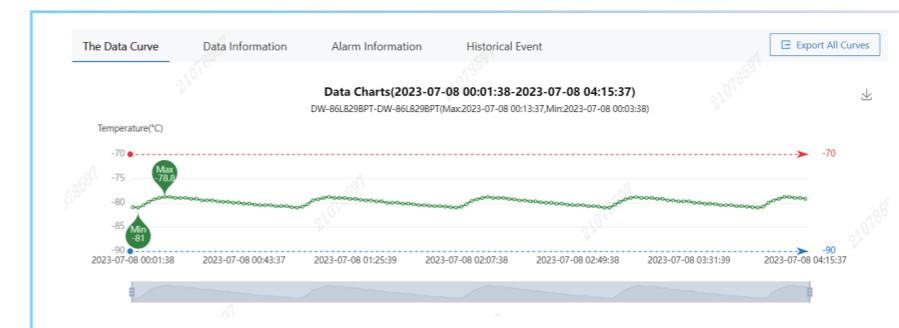
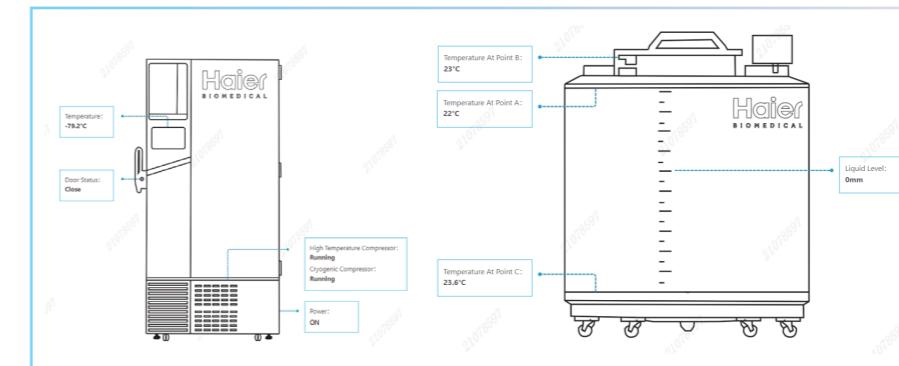
EMC level 3, IP30 protection rating, and wide temperature and voltage ranges make it enduring in challenging environments.



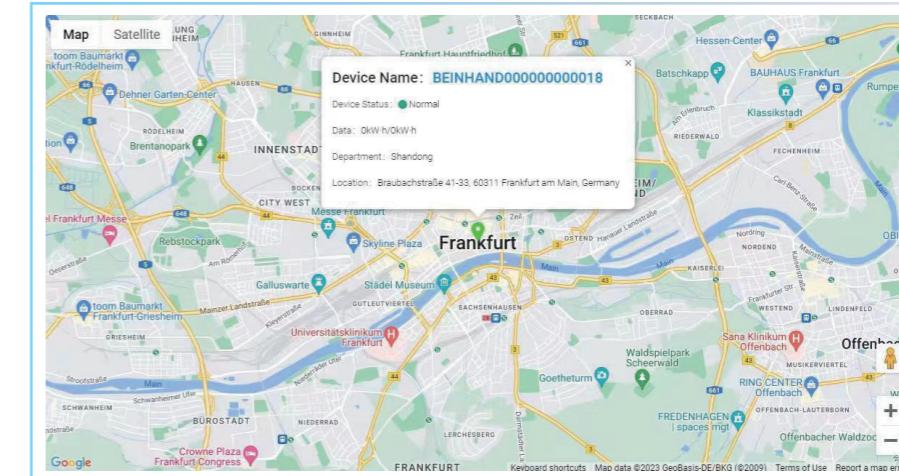
## Equipment Management

## User can monitor data in real time

(Ultra-low temperature refrigerator,Liquid nitrogen tank, etc)



## Map Display



## Hardware Specifications

	Model	IG502
Hardware Platform	CPU	ARM Cortex-A8
	Memory Capacity	512MB
	FLASH	8GB eMMC
Port	Ethernet Port	2*10/100Mbps fast Ethernet port, 1*WAN+1*LAN or 2*LAN
	Serial Port (optional)	RS485*1, RS232*1 or RS485*2
	Wi-Fi (optional)	2.4G (802.11/b/g/n)
	GPS (optional)	GPS, SMAx1
	USB	USB2.0x1
	IO Port (optional)	4*DI, 4*DO
	Reset Key	Pinhole reset button
	TF	Support MicroSD
	Bluetooth (optional)	BLE4.0
Mechanical Features	Installation Methods	Rail, wall hanging, ear hanging
	Cooling Type	Fan-free cooling
	Shell	Metal shell
	IP Grade	IP30
Power Supply	Power Input	DC12-48V, Anti-reverse protection
	Standby Power Loss	200mA@12V
	Peak Power	500mA@12V
	Power Port	CLIPLINE
	Working Power Consumption	250mA@12V
Environment	Working Temperature	-20~70°C
	Environment Humidity	5~95% (Frost-free)
	Storage Temperature	-40~85°C
Indicator Light	LED	PWR, STATUS, WARN, ERR, Signal strength indicator lamps (3), LTE
	Static Electricity	EN61000-4-2, level3
EMC	Radiation Electric Field	EN61000-4-3, level3
	Pulsed Electric Field	EN61000-4-4, level3
	Surge	EN61000-4-5, level3
	ducted Emission	EN61000-4-6, level3
	PFMF	EN61000-4-8, Horizontal direction/vertical direction 400A/m (>level3)
	Oscillation Wave Immunity	EN61000-4-12, level3
	Quakeproof	IEC60068-2-27
Physical Characteristics	Drop	IEC60068-2-32
	Vibration	IEC60068-2-6
Others	Authentication Certificate	CE/UKCA/FCC/PTCRB/UL/C1D2 (Class 1Division 2)/VerizonWireless/AT&T/IC/RCM/NBTC/ANATEL

	Model	IG502
Operating System	Operating System	Customized Linux
	Network Access	APN/VPDN
Network Interconnection	Access Authentication	CHAP/PAP/MS-CHAP/MS-CHAPV2
	Network Standard	5G SA/NSA /LTECat4/LTECat1
	LAN Protocol	ARP/Ethernet
	WAN Protocol	Support static IP/DHCP
Network Protocol	IP Application	ICMP/DNS/TCP/UDP/TCPserver/DHCP
	IP Routing	Support static routing
Network Security	Multilevel User	Support multi-level administrative permissions
	Data Security	Support OpenVPN, support IPSecVPN
Reliability	Backup Function	Support dual SIM cards
	Link Online Detection	Heartbeat packet detection is sent, and the disconnection is automatically reconnected.
	Embedded Watchdog	Self-inspection technology of equipment operation, self-repair of equipment operation failure
Open Platform	Open Platform	Support Python development platform
	Access Cloud Platform	Support cloud platforms such as AWS, Azure and Ali
Protocol Type	Protocol Type	Modbuster/slave, Modbuster/slave, EtherNet/IP, ISOonTCP, OPCUAClient/Server, MitsubishiMC 3C/3E/3CoverTCP, MitsubishiCPUPort, FINSUDP, HostLink, PPI, DLT645-2007, IEC104Server and other protocols.
	Collocation Method	Configuration of Web interface
Maintenance Management	Configure Backup	Support the import and export of configuration files
	Upgrade Mode	Support proprietary upgrade mechanism, and upgrade firmware locally or remotely.
	Log Function	Support local system logs and remote logs, and save important logs in case of power failure.
	Remote Administration	Support InHand Device Manager network management cloud platform, InConnet platform and iSCADA cloud platform; HTTPS, Telnet, SSH, etc.

## Voltage Stabilizer

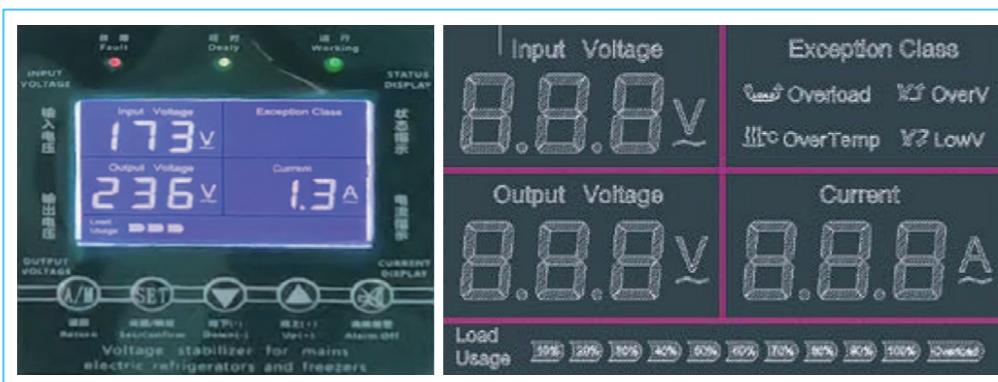
The HVS-1000U voltage stabilizer is developed, designed and manufactured according to the latest PQS standards. The product consists of single-phase multi-tap dry type transformer, relay integrated board, single-chip intelligent detection board and supporting display, external protection and control circuit. The voltage stabilizer central control system adopts single-chip intelligent control, which highlights the safety, reliability and stability of the voltage stabilizer under bad power supply conditions. With intelligent control, high safety, high reliability and other significant advantages! IoT modules can be selected to remotely view the power supply and power quality analysis, and achieve remote alarm of abnormal situations.



HVS-1000U

## Fundamental Functions

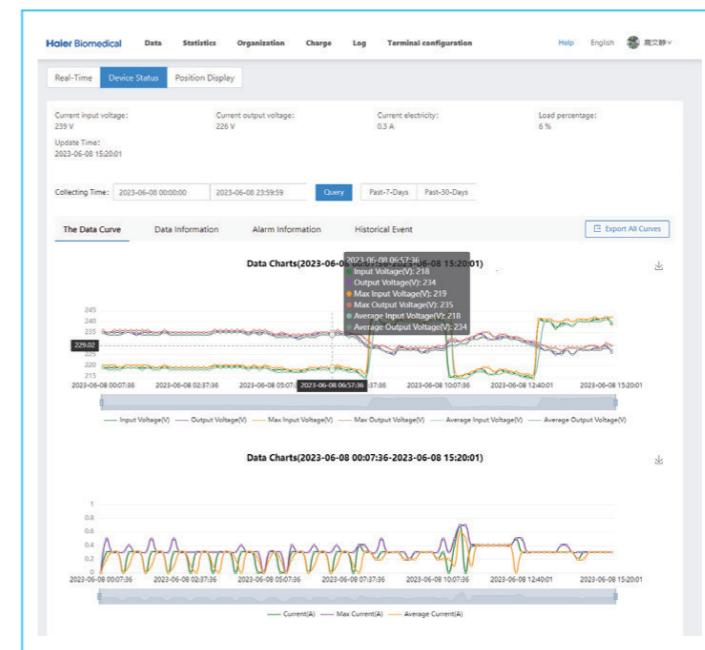
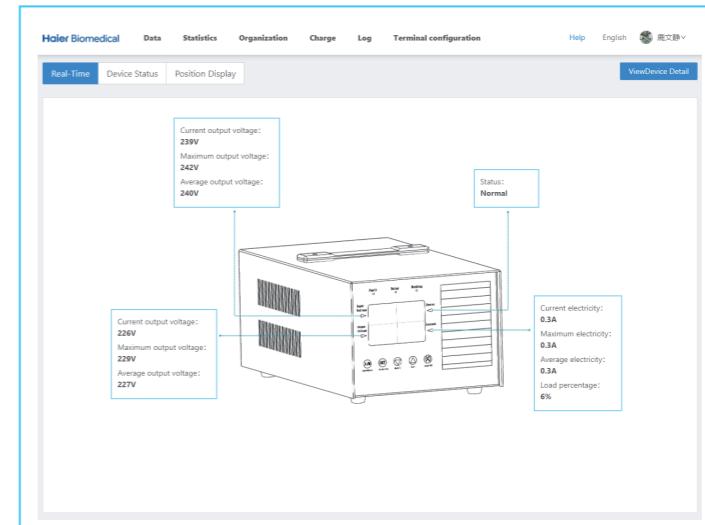
- Requires no maintenance
- Microprocessor controlled stabiliser
- Very wide input withstand range (0-500V)
- Meet the latest WHO/PQS standards (VS01.6)
- With LCD screen, display input/output/working status information
- Fault record/protection record, can be viewed locally
- Frequency real-time detection, out of range protection
- Record the number of relay actions, which can be viewed locally
- The IoT function is optional to remotely view and analyze power supply information
- The product integrates a microcontroller-based intelligent detection board and a display, and the operation panel has been equipped with parameter setting buttons so that users or technicians can modify the working parameters of the voltage stabilizer.



## Specifications

Model	HVS-1000U
Output Voltage Range (V)	230 ±10%
Input Voltage Range (V)	110-264 AC
Continuous Input Withstand Range (V)	0-500 AC
Input Frequency (Hz)	47-63
Display	Output Voltage/Input Voltage/Current Value/Alarm State
Protection Function	Overvoltage, overcurrent, undervoltage, overload, over frequency, under frequenc; Short circuit, high temperature
Packing Dimension (W*D*H)(mm)	450*370*300
Gross Weight (kg)	11

IoT modules can be selected to remotely view the power supply and power quality analysis, and achieve remote alarm of abnormal situations.



## Refrigerated Vaccine Vehicle

This product is suitable for cold chain transportation of drugs, vaccines, biological products, medical raw materials, fresh food and other products with strict requirements on temperature control.



- Firm structure, suitable for complex road conditions
- Low fuel consumption, high horsepower and low transportation cost
- Strong after-sales service capability, after-sales network all over the world
- Complies with WHO PQS Specification E002/RV01.2
- Double drive refrigeration system, can be powered by diesel generator or 220V AC
- Safe and reliable
- +2°C~+8°C accurate temperature control, high uniformity
- Thickened insulation layer, excellent insulation performance
- International brand refrigeration machine, high quality, strong performance

## Specifications

Model	VR-23	VR-3
Refrigerated Vehicle	Combustion types	Diesel
	Engine emission	EURO VI (EURO V/ EURO IV/ EURO III is optional)
	Steering wheel position	Left hand (Right hand is optional)
	Transmission	4*2
	Gearbox	Manual
	Seats	3
	Color	White
	Cabin air condition	Air condition + Heating
	Gross volume (m³)	5m³~25m³
	Customized mutiple capacities based on users' specific requirements	/
Refrigerated Body	Standard configuration	Dual rear door
		LED lighting
		PVC curtain
		Foldable ladder
		Side door
Optional	Lifting gear	/
	Shelves	Shelves
	Air supply system	/
Refrigeration Unit	Brand	Carrier (Thermo King or other Chinese brands is optional)
	Temperature range	+2°C~+8°C
	Refrigerant	R452A or R404A
	Climate zone	Hot zone: 0°C~+50°C
		Cold zone: -20°C~+32°C
Temperature Monitoring and Control Device	Others	The refrigeration unit with 220V~240V stand-by power device and heating device
	Temperature monitoring range	+2°C~+8°C
	Data recording frequency	5 min
	Sensor type	Wireless transmission (Wire transmission is optional)
	Alarm type	Voice alarm

Temperatures can be recorded electronically, downloaded and printed

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

### Scenario Construction Plan

**Electricity x Energy**

**01 PV Module** (3-30kWp)

**02 Heat Pump** (5-16kW)

**03 Solar Collector** (up to 60°C)

**04 Hybrid Inverter** (3-12kW/1P&3P)

**05 Battery System** 5-20kWh up to 60kWh

Smart Home & Energy Manage System  
Android/iOS/Web

### Mobile Energy Storage System

**HLP-1X**

Product Advantages	Conventional	HLP-1X
<b>Ideal Power Supply for Outdoor Activities</b> Lightweight, durable and portable power supply for travel, has multiple uses and strong compatibility to charge digital products such as laptop, Tablet, phone, drone, Bluetooth headphones, lamp etc.		
<b>Long-lasting Battery Cells</b> Batteries with lithium iron phosphate (LiFePO4) have a 6 times longer life and can survive 3000 cycles compared to the average battery of similar portable charging stations.		
<b>LED Light Design</b> Features a built-in LED light to protect you and your family and friends during a power outage in the dark. 5 LED light modes include SOS, Warning and 3 different brightness.		
<b>Excellent Pass-through Charging</b> This allows you to charge your power station while connecting important devices at the same time. Allows you to charge all your devices quickly and conveniently.		
<b>Smart BMS Management</b> The battery management system (BMS) can stop charging to avoid over-current, overload, over-temperature and short circuit.		

**System Schematic Diagram**

Legend: DC (green line), AC (purple line), Backup (blue line), Com (dashed line), Warm Water (orange line).

**Product Advantages**

- Extreme Safety**  
Batteries active and passive safety design
- UPS Level Switch**  
Automatic on/off grid switching time 4ms
- Easy To Install**  
Modular wiring-free design, 1 person installation
- Flexible Parallel**  
Flexible Inverter & Batteries parallel
- Lower Cost**  
Higher efficiency of RESS and heat pump
- Multi Inputs**  
Grid/PV/Diesel GEN Standard
- Wide Range Operation**  
Full power operation down to -30°C
- One-Stop Service**  
All new/Retrofit one-stop Service