Haier Biomedical
Intelligent Protection of Life Science

Solar Direct Drive Cold Room

Scope of Application:

This product is a complete vaccine storage solution. It consists of a cold room and power supply system. The cold room is powered directly by solar panels and does not require batteries . It uses inexhaustible solar energy to drive energy to the room, which is especially suitable for remote areas, or areas lacking power.

- No electricity bills
- Safety system
- User-friendly design
- Intelligent IoT Module

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Product Advantages

Compared with traditional solar cold rooms, Haier Biomedical's SDD cold room does not use batteries

Traditional solar cold storage solutions: solar panel + battery + controller, high TCO.
Haier Biomedical's SDD cold room refrigeration system and electronic control components are all DC driven and can be directly powered by solar panels. They do not need any batteries.

No electricity bills

Haier Biomedical's SDD cold room completely uses DC power supply and does not use alternating current . It is calculated that a 10 m^3 solar cold room can save 700 USD in electricity bills per year (the electricity bill is based on 0.14 USD/1kWh).

Compared with ordinary cold rooms using generators for power supply, Haier Biomedical's SDD cold room has less noise and no fuel costs.

Large operating voltage range

The solar power supply system has complete lightning protection and grounding devices. It can effectively prevent electrical components from being damaged by lightning strikes. The maximum power voltage of solar panels is 50V, and the working voltage of DC compressors is 32 – 60VDC, which is relatively wide.

The room complies with the requirements of the UN sustainable development strategy

As Haier Biomedical's SDD cold room is fully DC driven and does not use batteries, no fossil energy is used and no harmful gases are produced. In order to reduce our excessive dependence on fossil energy, Haier Biomedical's SDD cold room refrigeration system and electronic control components are all directly driven by solar panels and do not use batteries, truly achieving energy conservation and environmental protection.

Product Features

Temperature control

Electronic thermostat control, temperature digital display, temperature display accuracy 0.1°C, temperature control range is 2°C~8°C.
Large LCD display, 60 days of historical data can be viewed online.
The 7-inch display screen can more intuitively display the temperature, humidity and temperature curve in the warehouse.

Outstanding performance

Ultra-long hold-over time, at an ambient temperature of 32-50°C, the hold-over time is up to 285.16Hrs, ensuring the safety of vaccine storage; Condensed water collection, excellent dehumidification performance, prevents the vaccine box from getting wet; 200mm thick insulation layer is beneficial to heat preservation; Wide ambient temperature design, outstanding performance under ambient temperature of 5°C~43°C;PVC door curtain design to prevent cooling loss.

Safety system

Sensorfailure alarm, high and low temperature alarm, door opening alarm, and personnel safety alarm in the warehouse;Alarm mode:sound buzzer alarm,light fash alarm,Query alarm status,warehouse light status cold storage door status,High-performance key components (compressors, fans, etc.), safe and reliable.

Environmentally friendly design

Uses environmentally friendly refrigerant R1234yf, GWP=4,ODP=0 The main refrigeration system does not use batteries.

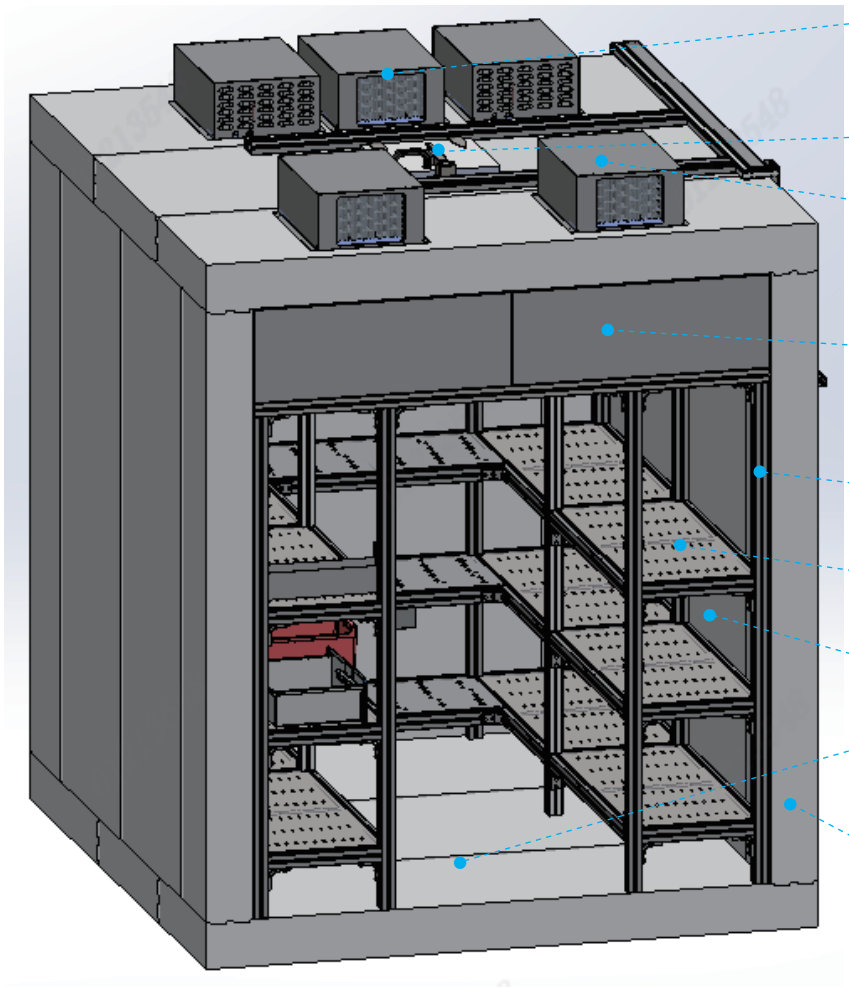
User-friendly design

Intelligent and worry-free control method, no adjustment required Moderate display screen height. Safety locks and other User-friendly designs.Low DC voltage, ensuring personal safety; Plug and play, Positive and negative pole error prevention; Equipped with a remote monitoring system, staff can check the operation, temperature and other parameters on mobile phones, computers and other terminals; Modular design:storage boards, water tanks, units, and shelves are Modularly designed and can be expanded to 10 to 40 cubic meters; Silent design in the cold room; condensation collection design.

Intelligent IoT Module

10 inch intelligent screen displays real-time temperature, humidity, power supply voltage, current and other power information for the past 2 hours, 24 hours, 7 days and one month; Data can also be uploaded to cloud servers.
The IoT module can automatically connect to the network, select time zones and collate times. It also has remote diagnostic function.

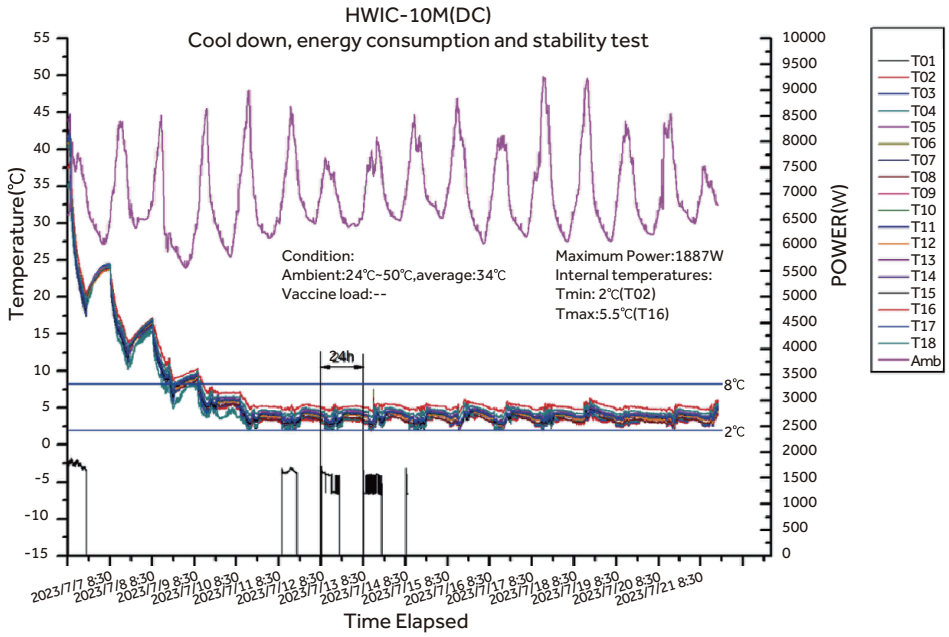
Product Parts



- Dehumidification unit Reduce inside humidity and accelerate cooling process
- Water level observation hole-Easy for observation
- Top compressor unit -Easy to connect with evaperator
- Top mounted cold storage water tank and evaporator inside the cold room-Designed for cold air to flow equally inside the room
- Aluminum support for water tank
- Aluminum and stainless-steel shelves
- 1mm embossed aluminum plate/3mm anti-slip aluminum plate excellent thermal conductivity to support temperature uniformity
- 200mm high-density insulation layer for long insulation performance

Product Performance

Cool down test



Cool down test

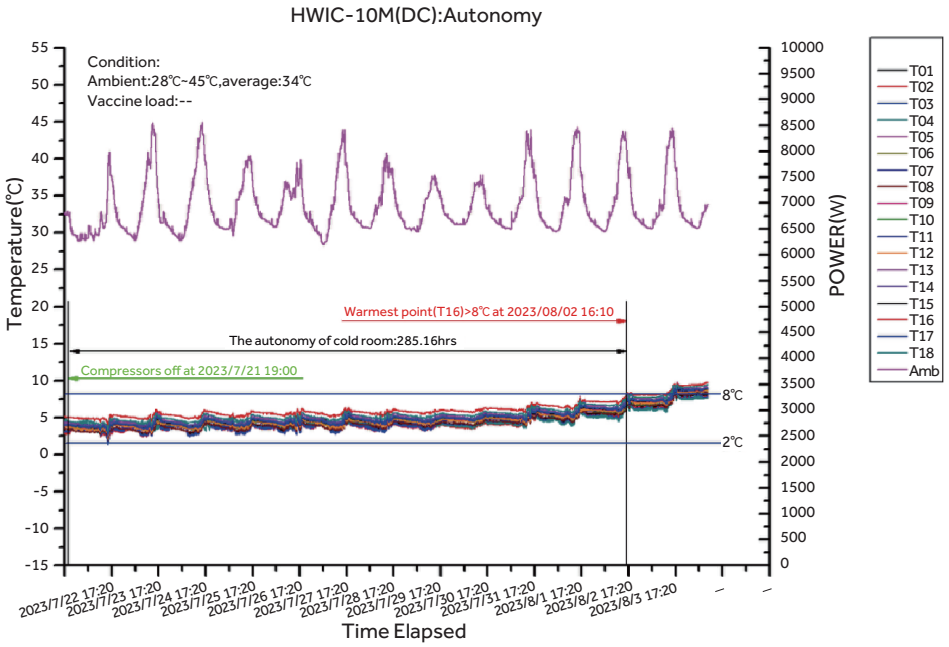
Test Conclusion:

1. Load inside cold room: No load;
2. The cooling time is about 6 days;
3. After stabilization, the temperature inside the cold room is

Tmin=2°C

Tmax=5.5°C

Autonomy



Test Conclusion:

1. Load inside cold room: No load;
2. At this ambient temperature, the time for highest temperature point to raise to 8°C: 285.16 hours (approximately 12 days)

Specifications

Model			HWIC-10M (DC)
Technical Data	Ambient Temperature (°C)		5~43
	Cooling Type		Direct Cooling+forced air cooling
	Refrigerant		HFO
Performance	Temperature Range (°C)		2~8
Control	Controller		Microprocessor
	Display		LCD temperature display
Electrical Data	Power supply (V)		48Vdc*5
	Maximal Current (A)		7A*5
	Energy Consumption: stable running (kWh/24h)		14
	Energy Consumption: cool down test (kWh/24h)		17.5
	Holdover time at 28°C-45°C (Hrs)		285.16
	At a Solar Radiation Reference Period of (kWh/m2/day)		3.5
Dimensions	Gross Volume (L/Cu.Ft)		>10m³
	Interior Dimensions (W*D*H)	mm	2600*2200*2600
		in	102*86.6*102
	Exterior Dimensions (W*D*H)	mm	3000*2600*3250
		in	118*102*128
Alarm	High/Low Temperature		Y
	Sensor Error		Y
	Low Battery		Y
Optional	Shelves		optional
	Number of shelves		3 Levels
Certifications	CE		Y

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