SmartFrequency Conversion ULT Freezer

Scope of Application

It can be used for products which require strict storage conditions such as viruses, pathogens, red blood cells, white blood cells, skin, bones, bacteria, semen, biological products, ocean products, electronic devices and special materials. Suitable for long term storage, meeting the cold storage requirements found in hospitals, disease control and prevention centres, scientific research institutions biomedical engineering institutes, agriculture/fishery companies as well as the electronics and chemical industry.

Advanced Hardware System

Smart Full-size Touch Screen
10 inch capacitive touch screen, state-of-art UI design coupled with sample management system, optimal user experience
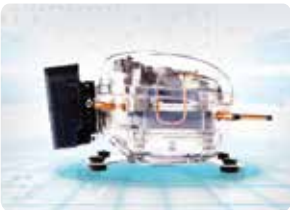
Hc & Variable Frequency Drive Refrigeration System for Additional Energy Saving
Advanced innovative design delivers excellent energy saving performance. Energy consumption is down to a single digit

IoT Software System

Simplified Sample Management Experience
Barcode scanner for simple, effortless and precise identification.
Input and retrieve your samples with higher precision and efficiency

Wireless Monitoring Connectivity
Check the real-time operating status via mobile phones or palmtop, simple and reliable

A **Quicker product access, identification and retrieval**
Instead of a manual system, the one-gun, one-code and one-key operation plus touch screen synchronization means you can access and retrieve your samples within seconds

B **24-hour sample protection**
Using Haier's app and IoT technology the unit can be monitored and can self-diagnose faults, ensuring you are always aware of your unit's status and able to make real-time and informed choices to protect your samples

C **Super energy efficient with three environmentally friendly innovations**
Ultra-low power consumption, down to less than 10kWh/day, ensuring a world leading energy saving performance

Friendly Design

Safe and secure
Standard equipped with key lock, padlock and electromagnetic lock with optional fingerprint lock, providing multiple safeguards for sample safety

Low noise design, reducing the noise down to 53dB
Special noise-reduction design plus super silent compressor technology and energy-saving fan, considerably lowers noise level

Cloud data storage available
Store hundreds of millions of scientific research and sample information in the cloud server

Optimized insulation
Double foaming for both inner and outer doors and five-layer sealing design and optimized super-thick VIP thermal insulation technology, extends temperature holdover time during power failure and increases insulation efficiency by 20%

Specifications

	Model		DW-86L579BPT	DW-86L729BPT	DW-86L829BPT	DW-86L959BPT
Technical Data	Cabinet Type		Upright	Upright	Upright	Upright
	Climate Class		N	N	N	N
	Cooling Type		Direct Cooling	Direct Cooling	Direct Cooling	Direct Cooling
	Defrost Mode		Manual	Manual	Manual	Manual
	Refrigerant		HC	HC	HC	HC
	Sound Level(dB(A))		43.5	43.5	43.5	47
Performance	Cooling Performance(°C)		-86	-86	-86	-86
	Temperature Range(°C)		-40~-86	-40~-86	-40~-86	-40~-86
Control	Controller		Microprocessor	Microprocessor	Microprocessor	Microprocessor
	LCD Touch Screen		LCD Touch Screen	LCD Touch Screen	LCD Touch Screen	LCD Touch Screen
Electrical Data	Power Supply(V/HZ)		100～230/50/60	100～230/50/60	208～230/50/60	208～230/50/60
	Power(W)		1100	1100	1100	1300
	Electrical Current(A)		6	6	6	7
Dimensions	Capacity(L/Cu.Ft)		579/20.4	729/25.7	829/29.2	959/33.9
	Net/Gross Weight(approx)	kg	325/355	350/385	380/415	450/485
		lbs	716.5/782.6	771.6/848.8	837.7/914.9	992.1/1069.2
	Interior Dimension(W*D*H)	mm	620*716*1310	766*716*1310	870*716*1310	1016*716*1310
		in	24.4*28.2*51.6	30.2*28.2*51.6	34.3*28.2*51.6	40.0*28.2*51.6
	Exterior Dimension(W*D*H)	mm	895*998*1980	1046*998*1980	1145*998*1980	1296*998*1980
		in	35.2*39.3*78.0	41.2*39.3*78.0	45.1*39.3*78.0	51.0*39.3*78.0
	Packing Dimension(W*D*H)	mm	950*1055*2150	1100*1105*2150	1190*1045*2150	1365*1105*2150
		in	37.4*41.5*84.6	43.3*43.5*84.6	46.9*41.1*84.6	53.7*43.5*84.6
	Container load(20'/40'/40'H)		12/24/24	10/20/20	8/20/20	8/16/16
Alarms	High/Low Temperature		Y	Y	Y	Y
	Hot Condenser		Y	Y	Y	Y
	Power Failure		Y	Y	Y	Y
	High/Low Voltage		Y	Y	Y	Y
	Sensor Error		Y	Y	Y	Y
	Low Battery		Y	Y	Y	Y
	High Ambient Temperature		Y	Y	Y	Y
	Door Ajar		Y	Y	Y	Y
Accessories	Caster		Y	Y	Y	Y
	Foot		Y	Y	Y	Y
	Porthole		Y/2	Y/2	Y/2	Y/2
	Shelves/Inner Doors		3/4	3/4	3/4	3/4
	USB Interface		Y	Y	Y	Y
	Remote Alarm		Y	Y	Y	Y
	5V Power Supply Port		Y	Y	Y	Y
	Temperature Recorder		Optional	Optional	Optional	Optional
	Rs232/485 Port		Optional	Optional	Optional	Optional
	CO$_2$ Backup System		Optional	Optional	Optional	Optional
	LN$_2$ Backup System		Optional	Optional	Optional	Optional
Others	Certification		CE,UL,ENERGY STAR	CE,UL,ENERGY STAR	CE,UL,ENERGY STAR	CE,UL,ENERGY STAR

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SmartFrequency Conversion ULT Freezer

Haier Biomedical's SmartFrequency technology manages the compressor speeds on demand. The ultra-low temperature freezers can thus achieve the world-leading energy efficiency in ultra-low temperature.

DW-86L829BP

Smarter by Design

The SmartFrequency Conversion range of ultra low temperature freezers have been designed and developed at the Haier Biomedical R&D Institute. They are certified by one of the world's leading energy conservation and environmental protection organisations.

Intelligent frequency Conversion technology

Two variable speed compressors are controlled for optimal freezer performance. Low energy consumption is achieved.

Maximum energy efficiency

Our SmartFrequency Technology, coupled with our environmentally safe and friendly hydrocarbon refrigeration system, allows the Haier freezers to operate at a low level of energy of 8.2 kWh/day.
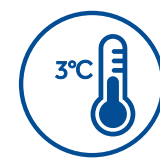
Precise temperature control

The innovative control algorithm balances the effects of temperature loss with the unique frequency conversion refrigeration system, ensuring the cabinet temperature stability of ±3℃.

Frequency conversion Adaptive technology

Variable speed compressors in Haier Biomedical freezers are operated to produce the capacity that matches the demand of the load. The control system automatically tunes the speed of the compressors to optimize the operation.

World-leading energy saving Refrigeration technology

Our hydrocarbon refrigeration technology can save energy by 50%, significantly reducing operator's cost. The refrigerants do not contain fluoride and chloride. The global warming potential is extremely low at 3. Thus they are very friendly to the environment.

Minimal sound level output

Adaptive control technology controls the fans and compressors to reduce the sound level to 43.5 dB(A).

Energy Saving Refrigeration
High efficiency cooling fans and compressors, combined with hydrocarbon refrigerants, ensure energy savings and long-term sample security

Pressure Equalisation Port
Heated port with spring assisted mechanism to prevent icing on the vent allows users to reopen the main door soon after entering

USB Interface
Enables users to download historical temperature data for compliance/auditing purposes

DW-86L829BP

Multilayered Sealing Structure
Triple layer of gaskets split between main and inner doors decreases heat loss and guarantee excellent warm up times in the event of a power failure

Improved Handle Design
Lockable handle with unique key prevents other Haier freezer owner's access to your precious samples, also comes with space for a padlock for that extra security

Multilevel Alarms
Alarming functions that include high and low temperature, sensor error, power failure, high ambient,clean filter and door ajar

DW-86L829BP │ TYPICAL PERFORMANCE CHARACTERISTICS IN 25°C AMBIENT

Temperature Cool Down Curve

Temperature Recover Curve

Comprehensive Curve

— center air temp
— amb temp
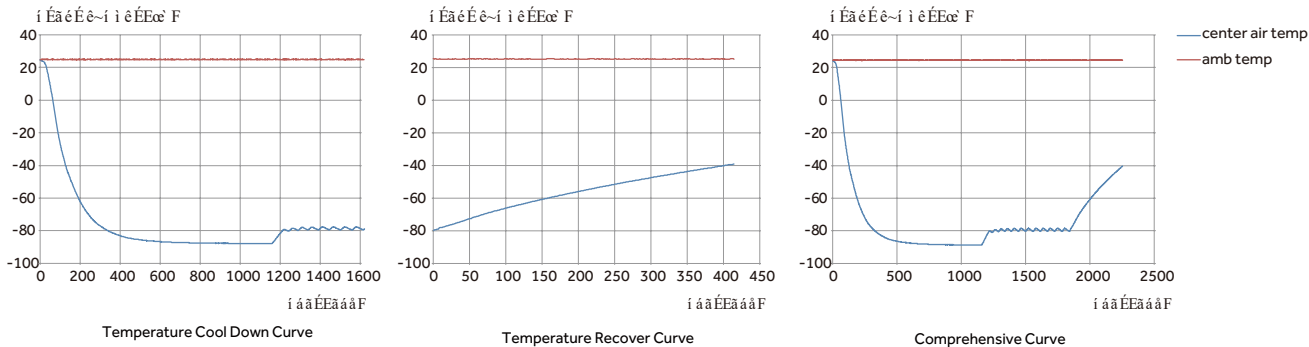
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Control	Controller		Microprocessor	Microprocessor	Microprocessor	Microprocessor
	Display		LED	LED	LED	LED
Electrical Data	Power Supply(V/Hz)		100～230/50/60	100～230/50/60	208～230/50/60	208～230/50/60
	Power(W)		1100	1100	1100	1300
	Electrical Current(A)		6	6	6	7
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	Shelves/ Inner Doors		3/4	3/4	3/4	3/4
	USB Interface		Y	Y	Y	Y
	5V Power Supply Port		Y	Y	Y	Y
	Temp Recorder		Optional	Optional	Optional	Optional
	RS232/485 Port		Optional	Optional	Optional	Optional
	CO₂ Backup System		Optional	Optional	Optional	Optional
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