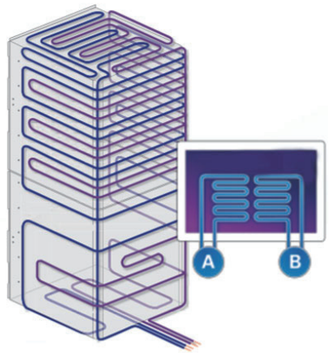
Haier Biomedical
Intelligent Protection of Life Science

TwinCool Frequency Conversion ULT Freezer

Product Advantages



Dual refrigeration system for optimal reliability and security

Two independent hydrocarbon (HC) refrigeration systems, each can maintain -80°C ensuring the safety of stored samples

World-leading Energy Saving Refrigeration Technology

Intelligent frequency conversion technology and HC refrigeration system delivers a 50% reduction in energy usage when compared to traditional HFC refrigeration systems

Environmental Protection

Environmentally friendly hydrocarbon refrigerant and LBA foam material

Optional IoT System

The optional IoT monitors the operating status of the equipment in real time. Equipped with multiple alarm functions and a self-diagnostics system to identify and warn users to ensure sample safety

Ergonomic Design

Low Noise Design

Optimised systems and noise-reducing cabinet design lower noise out to 43dB for a quieter working experience

Adjustable Sample Loading Tray (Optional)

The adjustable height sample load tray provides users with a convenient place to hold samples while opening and accessing storage compartments

Large loading capacity

Maximum Capacity: 600 boxes
(2 inch boxes with 10*10 configuration) 60,000 samples can be stored

Intelligent Control

10.1-inch high-performance touch screen, sensitive touch operation.
Using the optional IoT module, users can check the real-time operating status from an App

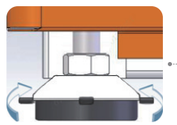
Ergonomic design
Document holder for easy storage of documents

Microcomputer control
Microcontroller with 10.1 inch LCD touch screen displays temperature and other important data. Temperature display precision is 0.1℃

Multiple alarms
Including high/ low temperature alarm, sensor error alarm, hot condensor alarm, power failure alarm, low battery alarm, door ajar alarm, high ambient temperature alarm, etc

High quality door opening experience
The ergonomic chamfer design of the handle ensures smooth operation and maximum durability

Multiple safety lock
Standard mechanical lock, optional electromagnetic lock
Optional fingerprint lock and NFC for optimal security and access



Adjustable feet
For easy positioning and levelling

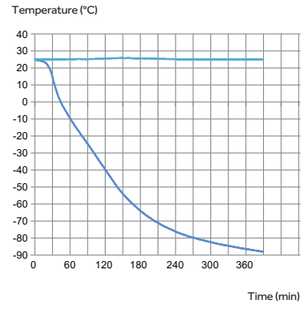
Networking function
Equipped with RS485 interface to connect multiple freezers

Magnetic filter screen
Filter screen is easy to clean

DW-86L828BPST

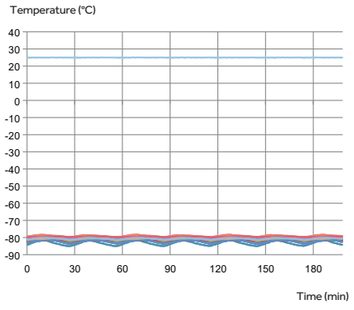
Temperature Curve

Temperature Cool Down Curve



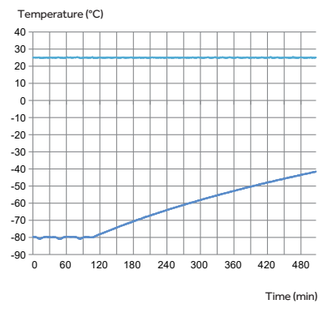
3rd centre
amb temp

Stability Curve



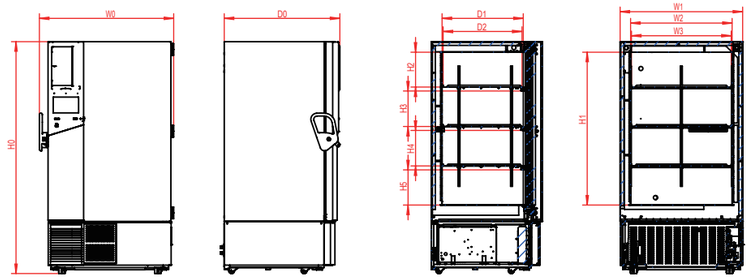
ave temp
1st center temp
2nd left outer temp
2nd right inner temp
3rd center temp
1st left inner temp
1st right outer temp
2nd center temp
3rd left inner temp
3rd right outer temp

Temperature Recovery Curve



3rd centra
amb temp

Product Dimensions



W0	W1	W2	W3	H0	H1	H2	H3	H4	H5	D0	D1	D2
1145mm	1050mm	870mm	854mm	1980mm	1310mm	298mm	303mm	303mm	301mm	998mm	695mm	676mm

Specifications

	Model		DW-86L578BPST	DW-86L728BPST	DW-86L828BPST
Technical Data	Cabinet Type		Upright	Upright	Upright
	Climate Class		N	N	N
	Cooling Type		Direct cooling	Direct cooling	Direct cooling
	Defrost Mode		Manual	Manual	Manual
	Refrigerant		HC	HC	HC
	Sound Level (dB(A))		42	42	42
Performance	Cooling Performance (°C)		-86	-86	-86
	Temperature Range (°C)		-40~-86	-40~-86	-40~-86
Control	Controller		Microprocessor	Microprocessor	Microprocessor
	Display		LCD	LCD	LCD
Electrical Data	Power Supply (V/Hz)		100~230/50/60Hz	100~230/50/60Hz	100~230/50/60Hz
	Power (W)		710	710	720
	Max Power Draw (W)		1100	1100	1400
	Electrical Current (A)		10.4	10.4	13
Dimensions	Capacity (L/Cu.Ft)		578/20.4	728/25.7	828/29.2
	Net/Gross Weight (approx)	kg	325/355	350/385	380/410
		lbs	716.5/782.6	771.6/848.8	837.7/914.9
	Interior Dimension (W*D*H)	mm	620*716*1310	766*716*1310	870*716*1310
		in	24.4*28.2*51.6	30.2*28.2*51.6	34.3*28.2*51.6
	Exterior Dimension (W*D*H)	mm	895*998*1980	1046*998*1980	1145*998*1980
		in	35.2*39.3*78.0	41.2*39.3*78.0	45.1*39.3*78.0
	Packing Dimension (W*D*H)	mm	950*1055*2150	1100*1105*2150	1190*1045*2150
		in	37.4*41.5*84.6	43.3*43.5*84.6	46.9*41.1*84.6
	Cabinet Width (without handle and hinge)	mm	800	946	1050
	Container Load (20'/40'/40'H)		12/24/24	10/20/20	8/20/20
Functions	High/Low Temperature		Y	Y	Y
	Hot Condenser		Y	Y	Y
	Power Failure		Y	Y	Y
	High/Low Voltage		Y	Y	Y
	Sensor Error		Y	Y	Y
	Low Battery		Y	Y	Y
	High Ambient Temperature		Y	Y	Y
	Door Ajar		Y	Y	Y
	Start-up Delay		Y	Y	Y
Accessories	Caster		Y	Y	Y
	Foot		Y	Y	Y
	Porthole		Y/2	Y/2	Y/2
	Shelves/ Inner Doors		3/4	3/4	3/4
	USB Interface		Y	Y	Y
	Remote Alarm		Y	Y	Y
	5V Power Supply Port		Y	Y	Y
	Temperature Chart Recorder		Optional	Optional	Optional
	RS232/485 Port		NA/Standard	NA/Standard	NA/Standard
	CO_2 Backup System		Optional	Optional	Optional
	LN_2 Backup System		Optional	Optional	Optional
Certifications	CE		Y	Y	Y
	UL		Y	Y	Y

Haier Biomedical

Intelligent Protection of Life Science

TwinCool ULT Freezer

TwinCool ULT Freezer

Scope of Application

The TwinCool ULT freezer can be used for the storage and protection of valuable samples which require strict and continuous storage conditions, designed to operate even in the event of a compressor failure. Suitable for viruses, pathogens, blood cells and other biological sample cold storage applications found within hospitals, disease control, research institutions and biomedical engineering. Also used to store special materials and other products within electronics and chemicals industries.

Advanced Hardware System

Smart Full-size Touch Screen

10-inch touch screen with state-of-art user interface design, coupled with sample management system provides optimal user experience.

A Dual independent refrigeration systems for maximum sample safety

The dual refrigeration systems run independently and alternately, both reaching -80°C, such that if one system fails the other will maintain temperature to ensure sample storage safety.

B High speed refrigeration system for faster pull down and temperature recovery after door opening

Utilizing auto-cascade hydrocarbon (HC) refrigeration technology to deliver fast temperature pull down. From an ambient of 25°C it takes just 180 minutes to reach -80°C. It provides a quick temperature recovery after door opening, with the internal temperatures returning to -75°C within 1 minute, guaranteeing safety of samples.

C World-leading energy saving refrigeration technology

The HC refrigeration technology coupled with superinsulation, which increases the insulation efficiency by 30%, and a cabinet designed to reduce heat loss ensures an energy efficient freezer. The 578L model has a power consumption of 11 kWh/day and is certified by The National Quality Certification Center for Energy Saving and Environmental Protection.

Optional IOT & Sample Management System (Professional Edition)

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

Friendly Design

Safe and secure

Equipped with key lock, padlock and optional electromagnetic lock, with optional fingerprint lock, providing multiple safeguards for sample safety

Cloud data storage available

Store hundreds of millions of scientific research and sample information in the cloud server

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

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 30%

Specifications

	Model		DW-86L578ST		DW-86L578SAT	DW-86L728ST		DW-86L728SAT
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))		53	52	53	50	53	53
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
	Display		LCD Touchscreen		LCD Touchscreen	LCD Touchscreen		LCD Touchscreen
Electrical Data	Power Supply (V/Hz)		220~240/50	120/60	208~230/60	208~230/50	120/60	208~230/60
	Electrical Current (A)		10	18	10	10	18	10
	Power Consumption (kWh/24h)		12	10	10	12	11	12
Construction	Capacity (L/Cu.Ft)		578/20.4		578/20.4	728/25.7		728/25.7
	Net/Gross Weight (approx)	kg	325/355		325/355	350/385		350/385
		lbs	716.5/782.6		716.5/782.6	771.6/848.8		771.6/848.8
	Interior Dimension (W*D*H)	mm	620*716*1310		620*716*1310	766*716*1310		766*716*1310
		in	24.4*28.2*51.6		24.4*28.2*51.6	30.2*28.2*51.6		30.2*28.2*51.6
	Exterior Dimension (W*D*H)	mm	895*998*1980		895*998*1980	1046*998*1980		1046*998*1980
		in	35.4*39.3*78.0		35.4*39.3*78.0	41.2*39.3*78.0		41.2*39.3*78.0
	Packing Dimension (W*D*H)	mm	950*1055*2150		950*1055*2150	1100*1105*2150		1100*1105*2150
		in	37.4*41.5*84.6		37.4*41.5*84.6	43.3*43.5*84.6		43.3*43.5*84.6
Loading Quantities	Container Load (20'/40'/40'H)		12/24/24		12/24/24	10/20/20		10/20/20
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 (Dry contacts)		Y		Y	Y		Y
	5V Power Supply Port		Y		Y	Y		Y
	Temperature Recorder		Optional		Optional	Optional		Optional
	RS485 Port		Y		Y	Y		Y
	CO_2 Backup System		Optional		Optional	Optional		Optional
	LN_2 Backup System		Optional		Optional	Optional		Optional
Certifications	CE		Y	/	/	Y	/	/
	UL		/	Y	Y	/	Y	Y
	ENERGY STAR		Y	Y	Y	Y	Y	Y

Product appearance and specifications are subject to change without notice

TwinCool ULT Freezer

The TwinCool ultra-low temperature freezer of Haier Biomedical provides the highest level of protection for your valuable samples.

DW-86L578S

Safer by Design

Haier Biomedical's ultra low temperature freezers with intelligent TwinCool technology are designed to provide optimal cabinet reliability, longevity, efficiency and sample protection. This super efficient technology also improves the energy efficiency of our third generation ULT freezers and leads the way in terms of product innovation.

Intelligent TwinCool Refrigeration System

Two independent refrigeration systems are designed to ensure optimal reliability, longevity and efficiency. Depending on the load demands and ambient conditions, one or both refrigeration systems will operate on demand, ensuring the samples are fully protected under the worst possible condition.

Maximum Sample Security

TwinCool system means extra insurance for temperature. Each independent refrigeration system can maintain -80°C separately.

Fast Cabinet Pull Down

Fast and efficient cabinet pulldown, it usually takes an average of three hours to reach -80°C at 25°C ambient. This means the temperature recovery after door opening is excellent ensuring the stored samples are not exposed to undesirable temperatures.

Maximum Energy Efficiency

The TwinCool ultra-low temperature system operates with 12 kWh/day.

World-leading Energy Saving Refrigeration Technology

The Haier hydrocarbon refrigeration technology uses less than 50% energy compared to traditional CFC refrigerants to reduce the operating cost. The refrigerants do not contain fluorine or chlorine giving it a GWP value of just three, which is better for the environment.

Reduced Running Costs

VIP thermal insulation system is designed to significantly reduce heat gain and operating cost.

TwinCool ULT Freezer

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

Multilayered Sealing Structure
Multilayered gaskets decrease heat loss and guarantee excellent warm up times in the event of a power failure

Pressure Equalisation Port
Heated Pressure Equalization Port allows users to re-open the main door quickly when entering
Adopts chromium plating, rust-proof

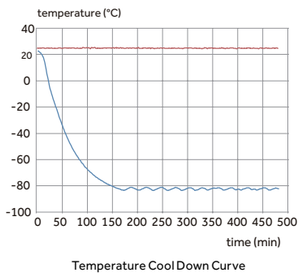
DW-86L578S

Improved Handle Design
Lockable handle safeguards your precious samples. A padlock can also be added for extra sample safety

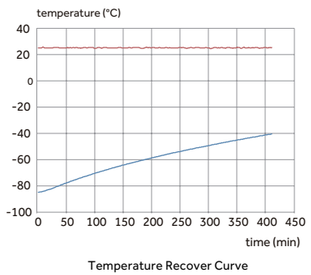
USB Interface
Enables users to download historical temperature data for compliance/auditing purposes

Multi-level Alarms
Alarm functions include high, low temperature, sensor error, power failure, high ambient, clean filter and door ajar

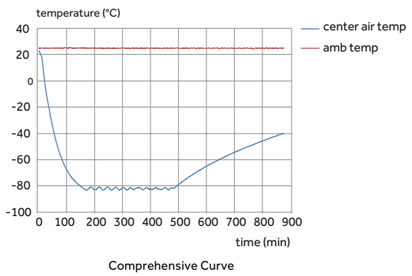
DW-86L578S | TYPICAL PERFORMANCE CHARACTERISTICS AT 25°C AMBIENT



Temperature Cool Down Curve



Temperature Recover Curve



Comprehensive Curve

Specifications

Model			DW-86L578S	DW-86L728S
Technical Data	Cabinet Type		Upright	Upright
	Climate Class		N	N
	Cooling Type		Direct Cooling	Direct Cooling
	Defrost Mode		Manual	Manual
	Refrigerant		HC	HC
	Sound Level (dB(A))		53	50
Performance	Cooling Performance (°C)		-86	-86
	Temperature Range (°C)		-40~-86	-40~-86
Control	Controller		Microprocessor	Microprocessor
	Display		LED	LED
Electrical Data	Power Supply (V/Hz)		220~240/50	220~240/50
	Electrical Current (A)		10	10
	Power Consumption (kWh/24h)		12	12
Construction	Capacity (L/Cu.Ft)		578/20.4	728/25.7
	Net/Gross Weight (approx)	kg	325/355	350/385
		lbs	716.5/782.6	771.6/848.8
	Interior Dimension (W*D*H)	mm	620*716*1310	766*716*1310
		in	24.4*28.2*51.6	30.2*28.2*51.6
	Exterior Dimension (W*D*H)	mm	895*998*1980	1046*998*1980
		in	35.4*39.3*78.0	41.2*39.3*78.0
	Packing Dimension (W*D*H)	mm	950*1055*2150	1100*1105*2150
		in	37.4*41.5*84.6	43.3*43.5*84.6
Loading Quantities	Container load (20'/40'/40'H)		12/24/24	10/20/20
Alarms	High/Low Temperature		Y	Y
	Hot Condenser		Y	Y
	Power Failure		Y	Y
	Sensor Error		Y	Y
	Low Battery		Y	Y
	High Ambient Temperature		Y	Y
	Door Ajar		Y	Y
Accessories	Caster		Y	Y
	Foot		Y	Y
	Porthole		Y/2	Y/2
	Shelves/Inner doors		3/4	3/4
	USB Interface		Y	Y
	Remote Alarm (Dry contacts)		Y	Y
	5V Power Supply Port		Y	Y
	Temperature Recorder		Optional	Optional
	RS485		Y	Y
	CO_2 Backup System		Optional	Optional
	LN_2 Backup System		Optional	Optional
Certifications	CE		Y	Y
	ENERGY STAR		Y	Y

S suffix - Dual independent refrigeration systems
Product appearance and specifications are subject to change without notice

Haier Biomedical

Intelligent Protection of Life Science

Frequency Conversion ULT Freezer

Scope of Application

Applicable for products and samples which require strict storage conditions such as viruses, pathogens, red blood cells, white blood cells, skin, bones, bacteria, semen, biological products, electronics and special materials. Suitable for long term storage applications and compliant with typical storage requirements found in hospitals, disease control and prevention centers, 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 to provide the optimal user experience.

HC & Variable Frequency Drive Refrigeration System for Additional Energy Saving

Advanced innovative design delivers excellent energy savings. The energy consumption is down to a single digit.

Optional IoT Software System

Simplified Sample Management Experience

Optional 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 Cloud data storage available

Store hundreds of millions of scientific research and sample information in the cloud server

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 43.5dB

Special noise-reduction design plus super silent compressor technology and energy-saving fan, considerably lowers noise level

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

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 (℃)		-86	-86	-86		-86	
	Temperature Range (℃)		-40~-86	-40~-86	-40~-86		-40~-86	
Control	Controller		Microprocessor	Microprocessor	Microprocessor		Microprocessor	
	Display		Touch Screen LCD	Touch Screen LCD	Touch Screen LCD		Touch Screen LCD	
Electrical Data	Power Supply (V/Hz)		100~230/50/60	100~230/50/60	110-120/60	208-230/50/60	110-120/60	208-230/50/60
	Electrical Current (A)		14	14	15	6	20	9
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	1193*1048*2127		1358*1098*2127	
		in	37.4*41.5*84.6	43.3*43.5*84.6	47.0*41.3*83.7		53.5*43.2*83.7	
	Container load (20'/40'/40'H)		12/24/24	10/20/20	8/20/20		8/16/16	
Functions	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	
	Start-up Delay		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 Chart Recorder		Optional	Optional	Optional		Optional	
	RS485 Port		Y	Y	Y		Y	
	CO_2 Backup System		Optional	Optional	Optional		Optional	
	LN_2 Backup System		Optional	Optional	Optional		Optional	
Certifications	CE		Y	Y	/	Y	/	Y
	UL		Y	Y	/	Y	/	Y
	ENERGY STAR		Y	Y	Y	Y	Y	Y

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

Salvum Ultimate Frequency 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°C.

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).

Salvum Ultimate Frequency Conversion ULT Freezer

Energy Saving Refrigeration

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

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

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 Adopts chromium plating, rust-proof

DW-86L829BP

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

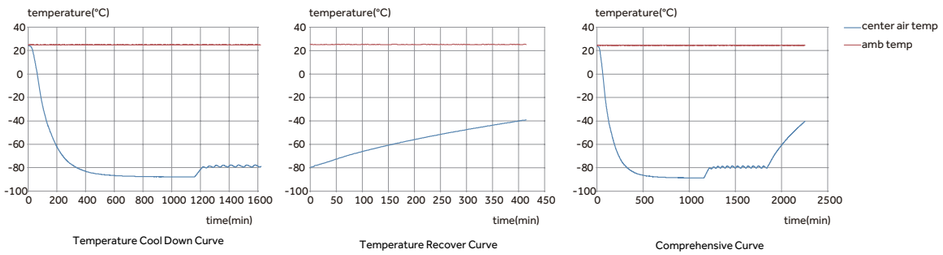
USB Interface

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

Multilevel Alarms

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

DW-86L829BP | TYPICAL PERFORMANCE CHARACTERISTICS AT 25°C AMBIENT



Salvum Ultimate Frequency Conversion ULT Freezer

Specifications

	Model		DW-86L579BP	DW-86L729BP	DW-86L829BP	DW-86L959BP
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
	Temp Range (°C)		-40~-86	-40~-86	-40~-86	-40~-86
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
	Electrical Current (A)		14	14	6	7
	Power Consumption (kWh/24h)		7.5	8	8.2	9.8
Construction	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 Dimensions (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 Dimensions (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	1193*1048*2127	1365*1105*2150
		in	37.4*41.5*84.6	43.3*43.5*84.6	47.0*41.3*83.7	53.7*43.5*84.6
Loading Quantities	Container Load (20'/40'/40'H)		12/24/24	10/20/20	9/20/20	8/16/16
Alarms	Remote Alarm (Dry contacts)		Y	Y	Y	Y
	High/Low Temp		Y	Y	Y	Y
	Hot Condenser		Y	Y	Y	Y
	Power Failure		Y	Y	Y	Y
	Sensor Error		Y	Y	Y	Y
	Low Battery		Y	Y	Y	Y
	High Ambient Temp		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
	5V Power Supply Port		Y	Y	Y	Y
	Temp Recorder		Optional	Optional	Optional	Optional
	RS485 Port		Y	Y	Y	Y
	CO_2 Backup System		Optional	Optional	Optional	Optional
	LN_2 Backup System		Optional	Optional	Optional	Optional
Certifications	CE		Y	Y	Y	Y
	UL		Y	Y	Y	Y
	ENERGY STAR		Y	Y	Y	Y

BP suffix - Variable frequency invertor compressor
Product appearance and specifications are subject to change without notice

Salvum Ultimate Water-Cooled ULT Freezer

Haier water-cooled ULT freezers are designed to meet strict requirements for storage of plasma, biological materials, vaccines, reagents, specimens, and other valuable samples. They are ideal for installations in hospitals, clinics, blood banks and medical research facilities where freezer heat must be removed by cooling water.

Advantages

- Intelligent frequency conversion technology
- Advanced control Touchscreen
- Higher efficiency to yield more energy savings of up to 20%
- Approximately 90% of the compressor heat generated during operation is removed by the cooling water, thus posting little impact to a laboratory's ambient
- Use less air-conditioning power for a comfortable laboratory condition
- Advanced control
- Low sound level
- Smart coolant control
- High quality industry grade hermetically sealed compressors
- Pressure protection system due to lack of water flow

Specifications

	Model		DW-86L828W	DW-86L959W
Technical Data	Cabinet Type		Upright	Upright
	Climate Class		N	N
	Cooling Type		Direct cooling	Direct cooling
	Defrost Mode		Manual	Manual
	Refrigerant		HC	HC
	Sound Level (dB(A))		43.5	47
Performance	Cooling Performance (℃)		-86	-86
	Temperature Range (℃)		-40~-86	-40~-86
Control	Controller		Microprocessor	Microprocessor
	Display		LCD Touch Screen	LCD Touch Screen
Electrical Data	Power Supply (V/Hz)		208-230/50/60	208-230/50/60
	Electrical Current (A)		6	7
Dimensions	Capacity (L/Cu.Ft)		828/29.2	959/33.9
	Net/Gross Weight (approx)	kg	380/415	450/485
		lbs	837.7/914.9	992.1/1069.2
	Interior Dimension (W*D*H)	mm	870*716*1310	1016*716*1310
		in	34.3*28.2*51.6	40.0*28.2*51.6
	Exterior Dimension(W*D*H)	mm	1145*998*1980	1296*998*1980
		in	45.1*39.3*78.0	51.0*39.3*78.0
	Packing Dimension (W*D*H)	mm	1190*1045*2150	1358*1098*2127
		in	46.9*41.1*84.6	53.5*43.2*83.7
	Container Load (20'/40'/40'H)		8/20/20	8/16/16
Alarms	High/Low Temperature		Y	Y
	Hot Condenser		Y	Y
	Power Failure		Y	Y
	High/Low Voltage		Y	Y
	Sensor Error		Y	Y
	Low Battery		Y	Y
	High Ambient Temperature		Y	Y
	Door Ajar		Y	Y
Accessories	Caster		Y	Y
	Foot		Y	Y
	Porthole		Y/2	Y/2
	Shelves/Inner doors		3/4	3/4
	USB Interface		Y	Y
	Remote Alarm (Dry contacts)		Y	Y
	5V Power Supply Port		Y	Y
	Temperature Recorder		Optional	Optional
	Rs485 Port		Y	Y
	CO_2 Backup System		Optional	Optional
	LN_2 Backup System		Optional	Optional
Others	Certification		CE	CE

Product appearance and specifications are subject to change without notice

Haier Biomedical Salvum brand of ULT freezers has been designed to deliver energy savings and reduced carbon footprint. This range uses environmentally safe hydrocarbon refrigerants and high efficiency fan motors to maximize the cooling ability of the system and reduce energy consumption. While providing sample safety, the freezer design makes energy savings possible for laboratories.

DW-86L829

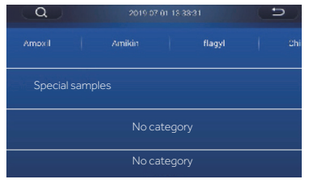
DW-86L579

Large Intelligent LCD Screen Visual Management

10-inch high-performance LCD capacitive screen, sensitive touch operation; intuitive display of inside temperature, ambient temperature, input voltage and other data and temperature curves.

Inventory Management System

The single version of the inventory management allows users who do not have a racking system within the freezer to easily record item locations, entry and exit records.



Single version (standard)

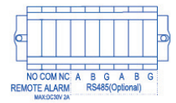
Professional version(optional)

In instances where customers use racking systems, the optional professional version of the inventory management is available. Freezer racks, boxes, and vials can easily record item locations and entry and exit records, facilitate item inventory and statistics, realize multi-screen interaction and reduce errors through secondary verification.

The freezer comes with the single version as standard.

Equipped with Multiple Interfaces

·Standard USB interface, capable of storing data for 10 years
·Standard remote alarm terminal RS485 port



Multiple Options for Safe Management and Control Systems

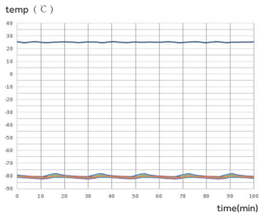
Standard password lock, optional fingerprint module, punch card module, face recognition, realizing safe and secure multi-user management.

Optional IoT System Realizes Real-time Monitoring

The IoT APP can monitor the operating status of the equipment anytime and anywhere. Equipped with multiple alarm functions and able to self-diagnose system faults to ensure sample safety. (Contact your local area representative to check local availability.)

Safe and Secure with Multiple Alarms

Multiple alarm functions include high temperature alarm, low temperature alarm, sensor failure alarm, power failure alarm, low battery alarm, door ajar alarm and high ambient temperature alarm.



Precise Temperature Control Ensures Safe Storage

Adjustable temperature set-point between -40°C ~ -86°C and the ability to monitor temperature curves in real time, equipped with sophisticated temperature safety alarm system to ensure product safety.

Ergonomic Design

Narrow Door Design

The freezer can pass through an 750mm wide door when the door is open

New Handle Design

Adopting exclusive slide design, easy to open and close the door

Pressure Equalization Port

Equipped with pressure equalization port, realize easy opening
Adopts chromium plating, rust-proof

Porthole

Two portholes as standard, allows for independent testing of cabinet temperature

Filter Design

Tool-free removable filter design, easy and quick to clean the filter

Detachable Inner Door Design

Tool-free detachable inner door, realizing easy and quick defrost

Specifications

	Model		DW-86L419	DW-86L579	DW-86L729	DW-86L829
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))		47	47	52	52
Performance	Cooling Performance (°C)		-86	-86	-86	-86
	Temp Range (°C)		-40~-86	-40~-86	-40~-86	-40~-86
Control	Controller		Microprocessor	Microprocessor	Microprocessor	Microprocessor
	Display		LCD Touchscreen	LCD Touchscreen	LCD Touchscreen	LCD Touchscreen
Electrical Data	Power Supply (V/Hz)		220~240/50	220~240/50	220~240/50	220~240/50
	Electrical Current (A)		5	5.5	9	10
	Power Consumption (kWh/24h)		8	9	10	11
Construction	Capacity (L/Cu.Ft)		419/14.8	579/20.45	729/25.75	829/29..3
	Net/Gross Weight (approx)	kg	255/286	300/330	350/385	380/410
		lbs	562.2/630.5	661.4/727.5	771.6/848.8	837.7/903.9
	Interior Dimensions (W*D*H)	mm	465*716*1310	620*716*1310	766*716*1310	870*716*1310
		in	18.3*28.2*51.6	24.4*28.2*51.6	30.2*28.2*51.6	34.3*28.2*51.6
	Exterior Dimensions (W*D*H)	mm	830*980*1980	903*980*1960	1049*980*1980	1153*980*1980
		in	32.7*38.6*78.0	35.6*38.6*77.2	41.3*38.6*78.0	45.4*38.6*78.0
	Packing Dimension (W*D*H)	mm	874*1073*2127	948*1078*2127	1100*1105*2150	1190*1045*2150
		in	34.4*42.2*83.7	37.3*42.4*83.7	43.3*43.5*84.6	46.9*41.1*84.6
Loading Quantities	Container Load (20'/40'/40'H)		12/26/26	12/24/24	10/20/20	10/20/20
Alarms	High/Low Temp		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 Temp		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		3/2	3/4	3/4	3/4
	USB Interface		Y	Y	Y	Y
	Remote Alarm (Dry contacts)		Y	Y	Y	Y
	5V Power Supply Port		Y	Y	Y	Y
	Temp Recorder		Optional	Optional	Optional	Optional
	RS485 Port		Y	Y	Y	Y
	CO_2 Backup System		Optional	Optional	Optional	Optional
	LN_2 Backup System		Optional	Optional	Optional	Optional
Certification	CE		Y	Y	Y	Y
	Energy star		/	Y	Y	Y

Product appearance and specifications are subject to change without notice

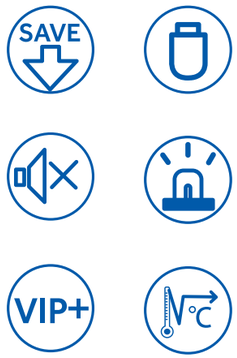
Salvum Ultimate Standard Low Energy ULT Freezer with LED Display

This product line is designed and manufactured for long term storage of various biological products, including viruses, germs, erythrocytes and leucocytes. Applications can be found in blood banks, hospitals, epidemic prevention services, research institutes, biological engineering institutes, laboratories in electronic and chemical plants.

ENERGY STAR

Advantages

- World leading energy-efficient
- Hydrocarbon refrigeration system
- Slim cabinet design
- Reliable sample protection
- Malfunction alarms
- Excellent insulation performance



Insulation and System Design

- Special V-I-P (Vacuum Insulation Panel) insulation system reduces the heat gain by 25%
- High efficiency HC refrigeration system improves the overall efficiency by 45%
- Four individual insulated inner doors reduce the cold air loss to the minimum
- Heated Pressure Equalization Port makes re-accessing the unit fast
- About 50 dba sound level

Safe and Reliable Storage

- Superior temperature uniformity
- Dependable fans, compressors and other system related components

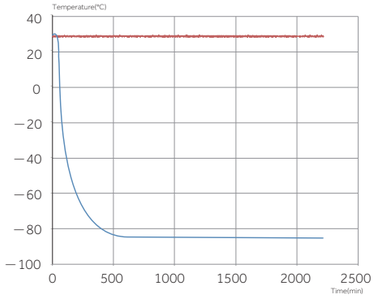
Alarms (Visual and Audible)

- Adjustable High/Low temperature alarm
- Sensor error
- Low battery
- Door ajar
- Power failure
- Hot condenser
- High ambient
- Remote alarm contact

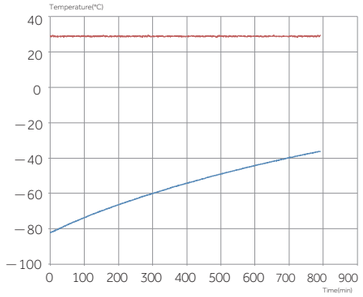
Extended Warm up Time During Power Failure

- Warm up time measures the time taken for temperature to rise up (from -80°C to -50°C) at 25°C ambient when the power is interrupted.
- Haier has the longest warm up time when compared with other major brands in the market.

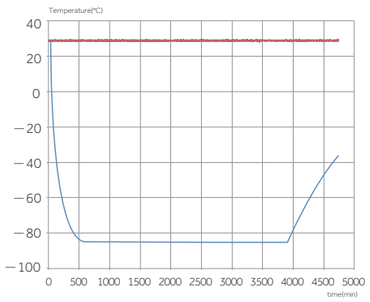
TYPICAL PERFORMANCE CHARACTERISTICS AT 25 °C AMBIENT



Temperature Cool Down Curve



Temperature Recover Curve



Comprehensive Curve

4 Individual Removable Foam Inner Doors

- 4 individual inner doors can be opened independently to minimize frost buildup inside the chamber.
- Unique door seal design for the minimum loss of cold temperature during a door opening.
- Compatibility with existing racking system from competitors.
- Stainless steel handle to ensure proper strength for door latching.
- Some interior door handles have been upgraded to stainless steel for more comfortable door opening experience

Excellent Doors Seals

- Total of five gaskets to safeguard the freezer temperature, including four seals for the exterior door, one for each inner door

- Optimized slideway design, easier to open and close the door

Pressure Equalization Port

- Heated port with spring-assisted mechanism to prevent icing on the vent.
- Allows re-accessing the freezer after initial door opening.
- Adopts chromium plating, rust-proof

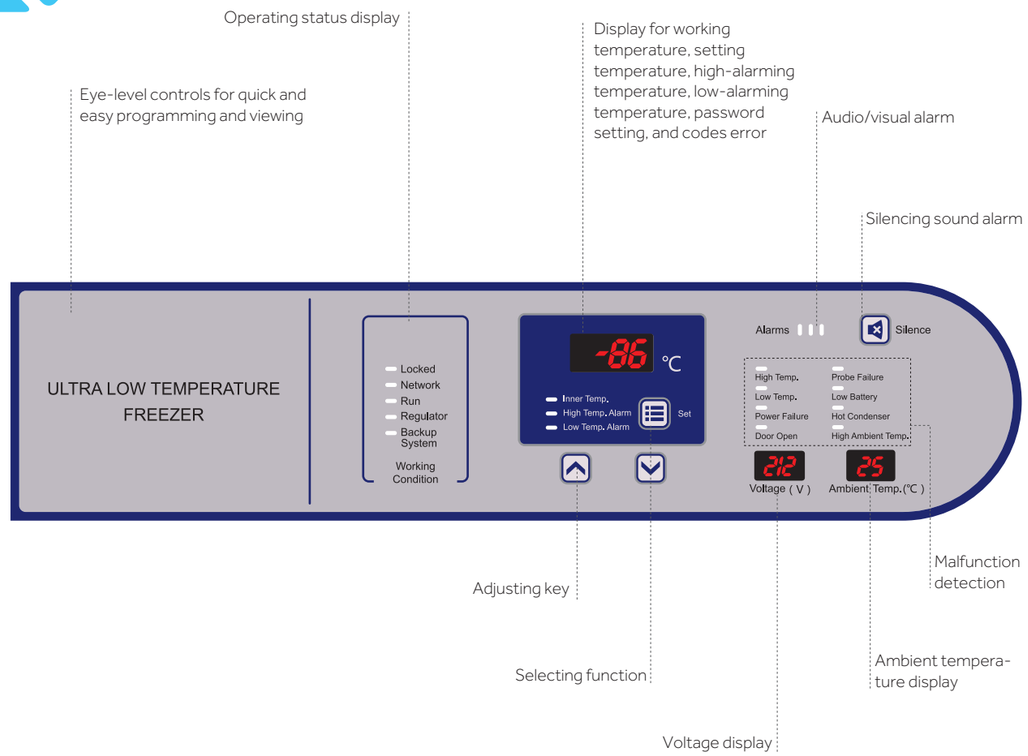
Circular- chart Recorder (Optional)

- Front-mounted.
- For independent temperature monitoring.

High Efficiency Refrigeration Components

Two port holes for ease of temperature monitoring

Salvum Ultimate Standard Low Energy ULT Freezer with LED Display



Specifications

Alarm	Alarm Triggering Condition
High Temperature	Temperature reaches the warm alarm limit
Low Temperature	Temperature reaches the low alarm limit
Power Failure	Equipment loses power
Door Ajar	Door opening time secedes set time, settable between 0 and 20 minutes
Sensor Error	E0.Ambient sensor fails E1.Condenser sensor fails E2.Main cabinet temperature control sensor fails E3.Heat exchanger sensor fails E4.Heat exchanger temperature fails
Low Battery	Battery capacity runs low or battery switch is not turned on
Hot Condenser	1. Condensers filter element is clogged 2. Ambient temperature is too high
High Ambient Temperature	Ambient temperature exceeds 32°C

Salvum Ultimate Standard Low Energy ULT Freezer with LED Display

Field proven reliablity

- Unique insulated inner door design for four separate storage compartments to minimize frost buildup inside the chamber
- Specialized control system design for a well-balanced operation of cascade refrigeration system
- Positive field proven reliability record

Safety

- Malfunction alarms including high and low temperature, power failure, sensor error, clean -filter, and extremely high ambient
- Capable of producing two types of alarm outputs: audible buzzer and visible flashing light
- Multiple built-in system protection features including user-settable protection code for controls, user settable delay to start, voltage compensation system, and protection against extreme high voltages
- Door open feature standard and USB port for temperature data downloading standard on upright models
- Remote alarm contacts

Installation & Application

- Wide range operating voltage system from 185V to 260 V designed to allow units installed in areas with poor voltage condition
- Suitable for 10°C to 32°C ambient temperature
- Input voltage and ambient temperature shown simultaneously for ease of monitoring environmental conditions
- Robust door latch designed for secure door closing
- Compact casters for ease of maneuvering

Low sound level

- Specialized refrigeration system design using whisper quiet fan and compressors
- Freezer chassis designed to absorb vibration and sound

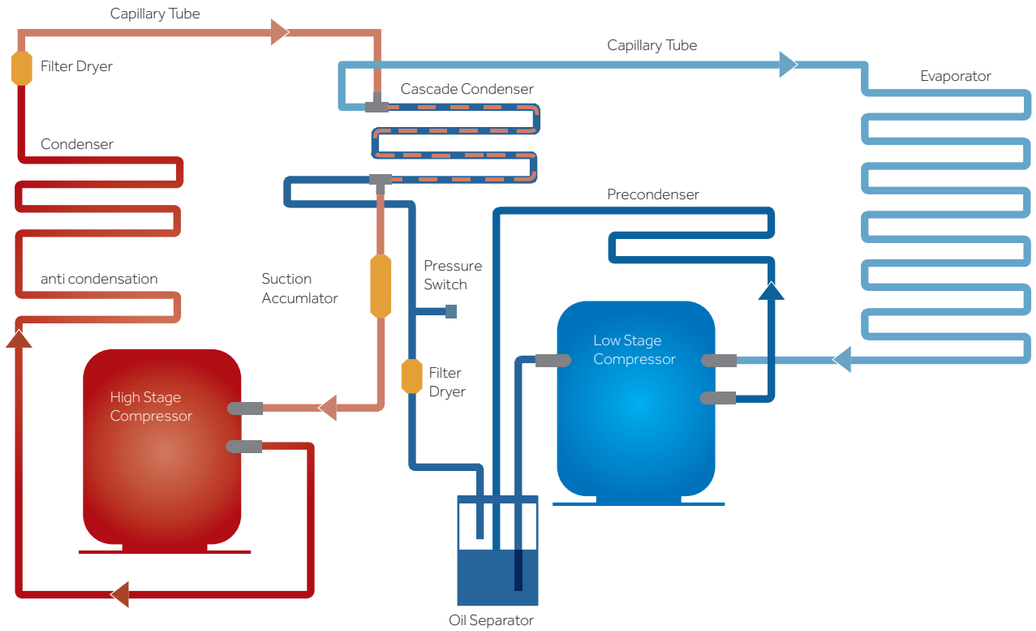
Energy saving

- Unique door seal design for the minimum loss of cold temperature during a door opening
- High performance VIP insulation panels to minimize cabinet heat gain and to improve temperature stability
- Patented cabinet insulation system designed for optimal performance of cold storage temperature and minimal frost buildup
- Unique design of independent insulated inner door systems for independent access of storage space to provide the maximum protection of stored samples

Key design features

- Microprocessor-controlled system designed for controllable range of -40°C to -86°C for cabinet space with 1°C increment
- Large LED display for cabinet temperature, set temperature, ambient temperature, and input voltage
- Settable high temperature and low temperature alarms
- Automatic clean-filter alarm and sensor error alert
- Adjustable storage shelf height
- Optional temperature recorder, storage racks and storage boxes

Heat Exchange Circulation System



	Filter dryer • Filtration and drying device for water and debris
	Capillary tube for high stage • Expansion device for high stage liquid refrigerant
	Capillary tube for low stage • Expansion device for low stage refrigerant
	High stage condenser • Extra-large air cooled condenser dissipates product heat content efficiently.
	Low stage evaporator • Heat exchanger for expanded low stage refrigerant
	Ultra low noise compressor • Compressor provides reliable performance with ultra low noise • Specially designed low stage evaporator yields excellent temperature uniformity and recovery after loading and door opening. • Both high and low stage compressors are industrial grade hermetically sealed compressor designed for low temperature application. Sound level is extremely low.
	Cascade condenser • Heat exchanger between the high and low temperature stage in the system
	Temprite oil separator • Temprite oil separator can effectively separate oil and water to improve the refrigeration performance

Salvum Ultimate Under Counter ULT freezer

Suitable for clinical, medical, scientific research, quarantine and other departments to store items under low temperature conditions. Applicable for universities, hospitals, disease prevention and control centers, blood stations, scientific research institutes, electronics and chemical enterprise laboratories and biomedical engineering research institutes. For storage of biological products and biological samples such as red and white blood cells, viruses, bone and bacteria. Also used for electronic devices and other materials used for cryogenic tests.

DW-86L100J

Energy Efficient, Safe and Reliable
High efficiency HC refrigeration system, optimised for energy efficiency delivering a power consumption figure of just 5.5kW/24hrs.

Personal ULT Storage
810mm cabinet height makes it easy to place on or under counter, saving storage space. Stackable design.

Ergonomic design
Ergonomic handle design ensures easy one-hand door opening.

Low noise
Optimized noise reduction cabinet and system design, emits sound level of only 46.8dB.

Under Counter ULT freezer

VIP insulation and multilayered sealing design

70mm insulating layer with 25mm VIP and 4 layers of gasket improves energy efficiency and reduces heat loss to deliver excellent warm up times in event of power failure.

Optional IoT Module

Real time monitoring of cabinet temperature, temperature setting, high and low temperature alarm value, temperature curve, alarm log and event log.

- User-settable parameters such as set point and alarms.
- Real-time cabinet temperature display, alarm information, power supply and compressor start/stop state.
- Standard USB port capable of storing
  >15 years of operating data for compliance.

Filter is easy to remove and clean without the need for tools.

Ergonomic design for easy door opening and closing. Lockable and equipped with 4 keys as standard with the ability to add a padlock for extra security when required.

4 casters + 2-foot locks, easy to move, lock and level.

Double stainless-steel inner doors to prevent cooling loss when opening the outer door, easy to clean.

Under Counter ULT freezer

Microprocessor control system

· Microcomputer electronic thermostat, LED temperature display, display precision 1°C, adjustable cabinet temperature set point -40°C~-86°C.
· Cabinet temperature/voltage/ambient temperature checking are available.
· Multiple alarm functions: high temperature alarm, low temperature alarm, sensor fault alarm, power failure alarm, low battery power alarm, open door alarm and high ambient temperature alert.
· Sound and light alarm mode, attachable to remote alarm interface.
· Battery backup alarm function operates continuously for >24hrs in the event of a power outage.
· Standard configuration: RS485 port and USB interface.
· Standard 5V power supply available for test equipment.
· Optional IoT module.

Superior thermal insulation performance

70mm super thick insulation layer design, aviation vacuum insulation material VIP, thickness of 25 mm or more, 4 layers of silicone seal, superior thermal insulation and energy saving effect.

Porthole

Portholes as standard, allows for independent testing of cabinet temperature.

Security lock

Standard door lock and padlock to ensure sample security and prevent unauthorised access.

USB data storage

Capable of storing more than 15 years of data.

-86°C ULT Freezer

Specifications






	Model		DW-86L338J	DW-86L338JA		DW-86L388J	DW-86L486E	DW-86L490J	DW-86L490JA	DW-86L578J	DW-86L578JA		DW-86L628E
Technical Data	Cabinet Type		Upright			Upright	Upright	Upright		Upright			Upright
	Climate Class		N			N	N	N		N			N
	Cooling Type		Direct cooling			Direct cooling	Direct cooling	Direct cooling		Direct cooling			Direct cooling
	Defrost Mode		Manual			Manual	Manual	Manual		Manual			Manual
	Refrigerant		HC			HC	HC	HC		HC			HC
	Sound level (dB(A))		50			50	49	50		50			49
Performance	Cooling Performance (°C)		-86			-86	-86	-86		-86			-86
	Temperature Range (°C)		-40~-86			-40~-86	-40~-86	-40~-86		-40~-86			-40~-86
Control	Controller		Microprocessor			Microprocessor	Microprocessor	Microprocessor		Microprocessor			Microprocessor
	Display		LED			LED	LED	LED		LED			LED
Electrical Data	Power Supply (V/Hz)		220~240/50	115/60	208~230/60	220~240/50	220~240/50	220~240/50	208~230/60	220~240/50	120/60	208~230/60	220~240/50
	Electrical Current (A)		7.5	12	7.5	7.5	10	8	8	7.5	12	9	11
	Power Consumption(kWh/24h) (set -80°C at 25°C ambient)		10	7.5	8.2	11	13	11.5	11.5	12	8.5	8.5	14
Construction	Capacity (L/Cu.Ft)		338/11.9			388/13.7	486/17.1	490/17.3		578/20.4			626/22.1
	Net/Gross Weight (approx)	kg	238/278			255/286	290/310	295/335		300/330			301/323
		lbs	524.7/612.9			562.2/630.5	639.3/683.4	650.4/738.5		661.4/727.5			664.0/712.0
	Interior Dimension (W*D*H)	mm	465*630*1165			465*716*1310	590*630*1310	590*630*1310		620*716*1310			760*630*1310
		in	18.3*24.8*45.9			18.3*28.2*51.6	23.3*24.8*51.6	23.2*24.8*51.6		24.4*28.2*51.6			29.9*24.8*51.6
	Exterior Dimension (W*D*H)	mm	823*900*1871			830*980*1980	953*900*1980	873*900*1980		903*980*1960			1035*900*1980
		in	32.4*35.4*73.6			32.7*38.6*78.0	37.5*35.4*78.0	34.4*35.4*78.0		35.6*38.6*77.2			40.7*35.4*78.0
	Packing Dimension (W*D*H)	mm	878*973*2027			893*1078*2135	998*998*2127	928*988*2127		990*1110*2070			1080*965*2150
		in	34.6*38.3*79.8			35.2*42.4*84.1	39.3*39.3*83.7	36.5*38.9*83.7		39.0*43.7*81.5			42.5*38.0*84.6
Loading Quantities	Container load (20'/40'/40'H)		12/24/24			12/24/24	12/24/24	12/24/24		12/24/24			12/24/24
Alarms	High/Low Temperature		Y			Y	Y	Y		Y			Y
	Hot Condenser		Y			Y	Y	Y		Y			Y
	Power Failure		Y			Y	Y	Y		Y			Y
	Sensor Error		Y			Y	Y	Y		Y			Y
	Low Battery		Y			Y	Y	Y		Y			Y
	High Ambient Temperature		Y			Y	Y	Y		Y			Y
	Door Ajar		Y			Y	Y	Y		Y			Y
Accessories	Caster		Y			Y	Y	Y		Y			Y
	Foot		Y			Y	Y	Y		Y			Y
	Porthole		Y/2			Y/2	Y/2	Y/2		Y/2			Y/2
	Shelves/Inner doors		3/2			3/2	3/4	3/4		3/4			3/4
	USB Interface		Y			Y	Y	Y		Y			Y
	Remote Alarm (Dry contacts)		Y			Y	Y	Y		Y			Y
	5V Power Supply Port		Y			Y	Y	Y		Y			Y
	Temperature Recorder		Optional			Optional	Optional	Optional		Optional			Optional
	RS232/485 Port		Optional			Optional	Optional	Optional		Optional			Optional
	CO_2 Backup System		Optional			Optional	Optional	Optional		Optional			Optional
	LN2 Backup System		Optional			Optional	Optional	Optional		Optional			Optional
Certifications	CE		Y	/		Y	Y	Y	/	Y	/	/	Y
	UL		/	Y		/	/	/	Y	/	Y	Y	/
	ENERGY STAR		/	/		/	/	/	/	Y	Y	/	/

· Product appearance and specifications are subject to change without notice
· DW-86L338J/490J/578/628/959 stainless steel interior optional

-86°C ULT Freezer

Specifications

	Model		DW-86L728J	DW-86L728JA		DW-86L828J	DW-86L828JA		DW-86L100J		DW-86W100J	DW-86W420J	DW-86W420JA
Technical Data	Cabinet Type		Upright			Upright			Upright		Chest	Chest	
	Climate Class		N			N			N		N	N	
	Cooling Type		Direct cooling			Direct cooling			Direct cooling		Direct cooling	Direct cooling	
	Defrost Mode		Manual			Manual			Manual		Manual	Manual	
	Refrigerant		HC			HC			HC		HC	HC	
	Sound level (dB(A))		50			50	51.5		46.8		49	50	
Performance	Cooling Performance (°C)		-86			-86			-86		-86	-86	
	Temperature Range (°C)		-40~-86			-40~-86			-40~-86		-40~-86	-40~-86	
Control	Controller		Microprocessor			Microprocessor			Microprocessor		Microprocessor	Microprocessor	
	Display		LED			LED			LED		LED	LED	
Electrical Data	Power Supply (V/Hz)		220~240/50	120/60	208~230/60	220~240/50	208~230/60		220~240/50	120/60	220~240/50	220~240/50	208~230/60
	Electrical Current (A)		10	18	10	10	10		3	6.5	4	7.5	
	Power Consumption (kWh/24h)		10.5	10.5	10.5	12	12		5.5	5.5	5	12.5	
Construction	Capacity (L/Cu.Ft)		728/25.7			828/29.2			100/3.5		100/3.5	420/14.8	
	Net/Gross Weight (approx)	kg	345/385			380/410			108/132		138/160	310/357	
		lbs	760.6/848.8			837.7/903.9			238/291		304.2/352.7	683.4/787.0	
	Interior Dimension (W*D*H)	mm	766*716*1310			870*716*1310			330*481*630		470*450*480	1367*462*652	
		in	30.2*28.2*51.6			34.3*28.2*51.6			13*19*25		18.5*17.7*18.9	53.8*18.2*25.7	
	Exterior Dimension (W*D*H)	mm	1049*980*1980			1145*980*1980			770*660*810		769*825*1120	2130*870*1020	
		in	41.3*38.6*78.0			45.1*38.6*78.0			30*26*32		30.3*32.5*44.1	83.9*34.3*40.2	
	Packing Dimension (W*D*H)	mm	1093*1048*2127			1240*1117*2110			844*724*860		845*855*1250	2200*890*1160	
		in	43*41.3*83.7			48.8*44.0*83.1			33.2*28.5*33.9		33.3*33.7*49.2	86.6*35.0*45.7	
Loading Quantities	Container load (20'/40'/40'H)		12/20/20			8/20/20			44/88/88		12/24/48	6/12/24	
Alarms	High/Low Temperature		Y			Y			Y		Y	Y	
	Hot Condenser		Y			Y			Y		Y	Y	
	Power Failure		Y			Y			Y		Y	Y	
	High/Low Voltage		/			/			Y		/	/	
	Sensor Error		Y			Y			Y		Y	Y	
	Low Battery		Y			Y			Y		Y	Y	
	High Ambient Temperature		Y			Y			Y		Y	Y	
	Door Ajar		Y			Y			Y		Y	Y	
Accessories	Caster		Y			Y			Y		Y	Y	
	Foot		Y			Y			Y		Y	Y	
	Porthole		Y/2			Y/2			Y/1		Y/1	Y/1	
	Shelves/Inner doors		3/4			3/4			1/2		-/1	-/3	
	USB Interface		Y			Y			Y		Y	Y	
	Remote Alarm		Y			Y			Y		Y	Y	
	5V Power Supply Port		Y			Y			Y		N/A	N/A	
	Temperature Recorder		Optional			Optional			/		Optional	Optional	
	Rs232/485 Interface		Optional			Optional			-/Y		Optional	Optional	
	CO_2 Backup System		Optional			Optional			Optional		Optional	Optional	
	LN_2 Backup System		Optional			Optional			Optional		Optional	Optional	
Certifications	CE		Y	/	/	Y	/		Y	/	Y	Y	/
	UL		/	Y	Y	/	Y		/	Y	/	/	Y
	ENERGY STAR		/	Y	/	/	Y		/	/	/	/	/

Product appearance and specifications are subject to change without notice

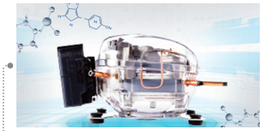
-86°C ULT Freezer

Suitable for pharmaceutical, clinical and medical research use, for the long-term storage of samples and products under ultra-low temperature conditions.

Advantage

Microprocessor Control System

Microprocessor control, with temperature display precision at 0.1°C. Internal temperature is adjustable from of -40°C ~ -86°C

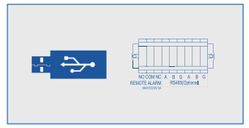


Auto-cascade Hydrocarbon (HC) Refrigeration Technology

Utilizing auto-cascade hydrocarbon compressor, with superior refrigeration and energy saving effect

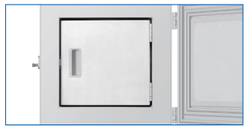
Excellent Doors Seals

Total six gaskets to safeguard the freezer temperature, including a 70mm insulation layer, a 25mm vacuum VIP and 4 layers of silicone seal



Multiple Ports

Enables users to download historical temperature data (up to 15 years) Equipped with remote alarm function and RS485 port



Stainless Steel Inner Door

Prevents loss of internal air to keep samples safe

Quick Access Filter Design

Tool-free removable filter design, easy and quick to clean the filter

Internal Lock

Standard internal lock with 4 keys for multiple users

Ergonomic Design

Unique hook slide handle design, allows users to open and close the door with one hand

Porthole

One porthole as standard, allows for independent testing of cabinet temperature

DW86L51J

Advantage

DW-80WZ15

HC Energy Saving

High quality HC high-efficiency compressor with optimized refrigeration system, which can save 50% on power consumption.

One Unit for Multiple Applications

*Vehicle-mounted transportation with 24V(DC) power supply
*Long-term storage with 110V power supply.

Superior Uniformity

Built-in evaporator, fast cool down refrigeration, the temperature is safe, secure and reliable with the uniformity of ±3°C at key characteristic points.

Flexible, Portable Mini-ULT Freezer

Ergonomic Design

Light Weight

The whole unit weighs 27kg, easy to carry.

Superior Insulation Performance

25mm VIP + 70mm thick LBA foam insulation layer design, dual seal strips for better insulation.

Safety Lock Catch

Simple adjustable mechanical lock with lock catch, and it can be equipped with an external lock to guarantee the safety of sample transportation and storage.

Metal Handle

Hidden metal handle, stylish and comfortable, safe and durable, easy to carry.

Specifications

Model			DW-80WZ15			DW-86L51J	
Technical Data	Cabinet Type		Chest			Upright	
	Climate Class		N			N	
	Cooling Type		Direct Cooling			Direct Cooling	
	Defrost Mode		Manual			Manual	
	Refrigerant		HC			HC	
	Sound Level (dB(A))		60			46.8	
Performance	Cooling Performance (°C)		-80			-86	
	Temperature Range (°C)		-60~-80			-40~-86	
Control	Controller		Temperature Controller			Microprocessor	
	Display		LED			LED	
Electrical Data	Power Supply (V/Hz)		220/50	110/60	DC 24	120/60	220~240/50
	Max Power (W)		320	320	320	420	320
	Electrical Current (A)		2.5	4.5	12	7.5	3
Dimensions	Capacity (L/Cu.Ft)		15/0.53			51/1.8	
	Net/Gross Weight (approx)	(kg)	27/33			77/90	73/86
		(lbs)	59.52			160.9/189.6	
	Exterior Dimension (W*D*H)	(mm)	690*320*500			532*640*806	
		(in)	27.2*12.6*19.7			20.9*25.2*31.7	
	Interior Dimension (W*D*H)	(mm)	260*180*330			330*481*316	
		(in)	10.2*7.1*13.0			13*16.5*12.4	
	Packing Dimension (W*D*H)	(mm)	805*430*725			550*703*847	
		(in)	31.7*17.0*28.5			28.3*21.9*38.3	
	Cabinet Width (Without Handle and Hinge)		/			470	
	Container Load (20'/40'/40'H)		105/210/210			64/120/120	
Functions	High/Low Temperature		Y			Y	
	Hot Condenser		N			Y	
	Power Failure		Y			Y	
	High/Low Voltage		N			Y	
	Sensor Error		Y			Y	
	Low Battery		N			Y	
	High Ambient Temperature		N			Y	
	Door Ajar		N			Y	
	Start-up Delay		/			Y	
Accessories	Caster		N			Y	
	Foot		Y			Y	
	Porthole		N			Y/1	
	Shelves/Basket		N/N			1/1	
	USB Interface		N			Y	
	Remote Alarm		N			Y	
	RS232/485 Port		N			NA/Standard	
Other	Certification		/			CE	

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

CO_2 Backup System

Advantage

- Small footprint, light and easy for installation
- User adjustable temperature setting
- Simple to program and operate
- Flexible – Can be installed on any ULT freezer, which has a port hole
- The CO_2 injection pipe is designed in combination of filter, to prevent the blockage of CO_2 back-up system

Safety

- Liquid CO_2 test button to ensure the backup system is working
- Low CO_2 alarm system alerts the user when liquid CO_2 bottle is low in liquid level
- Ultra-low sound level compressors

Reliability

- Stainless steel covering, more elegant
- Stainless steel input pipe design, allows for flexibility and ease of cylinder positioning
- Durable battery lasts up to 48 hours

Specifications

Model		HBX-IC
Technical Data	Climate Class	N
	Cooling Type	Direct cooling
	Refrigerant	CO_2
Performance	Cooling Performance (°C)	-70
	Temperature Range (°C)	-40~-70
Control	Controller	Thermostat
	Display	LED
Electrical Data	Power Supply (V/Hz)	220-240/50 208-230/60 115/60
	Power (W)	20
	Electrical Current (A)	0.25
Dimensions	Net/Gross Weight (approx)	11.2/14 24.7/30.86
	Exterior Dimensions (W*D*H)	200*400*160 7.8*15.7*6.3
	Packing Dimensions (W*D*H)	370*530*330 14.6*20.9*13
Alarms	CO_2 Margin Insufficient Alarm	Y
	Low Battery Alarm	Y
	Sensor Error Alarm	Y
	Main Power Off Alarm	Y
	Charge Indicator	Y
	CO_2 Injection Test Button	Y
Accessories	Foot	4
Others	Certification	CE/UL

Product appearance and specifications are subject to change without notice

LN_2 Backup System

LN_2 backup cooling system is an independent refrigeration system generally used for a -150°C mechanical cryo freezer. When there is a loss of power or the temperature of the freezer rises to the high alarm set point, the LN_2 backup system can be automatically activated to inject LN_2 into the chamber to maintain the freezer temperature. The backup system operates on a rechargeable battery when there is a loss of mains power.

Features

- Interlocked design to turn off the LN_2 injection when the door is opened
- Protection circuit to prevent over-charging battery
- Light weight and portable design, suitable for installation on top of a freezer
- Alarm functions to include low battery and sensor error

Specifications

Model		HBX-IIA
Technical Data	Cabinet Type	Horizontal
	Cooling Type	Direct cooling
	Refrigerant	LN_2
Performance	Cooling performance (°C)	-135
	Temperature Range (°C)	-90~-135
Control	Controller	Thermostat
	Display	LED
Electrical Data	Power Supply (V/Hz)	220-240/50 208-230/60 115/60
	Power (W)	20
	Electrical Current (A)	0.05
Dimensions	Net/Gross Weight (approx)	15/17 33.1/37.5
	Exterior Dimensions (W*D*H)	360*305*445 14.2*12.0*17.5
	Packing Dimensions (W*D*H)	417*357*698 16.4*14.1*27.5
Alarms	Low Battery Alarm	Y
	Sensor Error Alarm	Y
	Main Power Off Alarm	Y
	Charge Indicator	Y
Others	Certification	CE/UL

Product appearance and specifications are subject to change without notice

Haier Biomedical
Intelligent Protection of Life Science

-86°C Personal ULT Freezer

DW-86L51J

Scope of Application :

Suitable for pharmaceutical, clinical and medical research use, for the long-term storage of samples and products under ultra-low temperature conditions.

Innovative Design

- H806mm Fits on or Under Counter
- Ergonomic & User Friendly Design
- Microprocessor Control System
- Temperature uniformity ±3°C
- Hydrocarbon Energy Saving
- Safe, Secure and Reliable
- Multiple Data Ports

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Product Advantages

HC Energy Saving

High-efficiency, energy-saving hydrocarbon compressor technology. Power consumption as low as 4.5kWh/24h

Quiet

Optimized system and noise reduction design, noise output is 46.8dB (220V/50Hz test data)

Personal ULT Freezer

This compact freezer stores up to 3,000 samples in 2 freezer racks (30*2 inch boxes, 10*10 configuration), with a footprint of just 0.35m^2

Microprocessor Control System

Microprocessor control, with temperature display precision at 0.1°C. Internal temperature is adjustable from -40°C to -86°C

Ergonomic Design

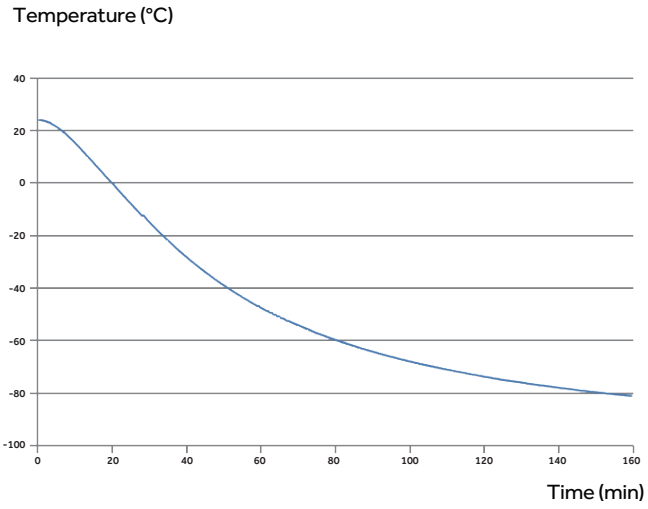
Ergonomic handle design, easy to open and close

Superior Performance

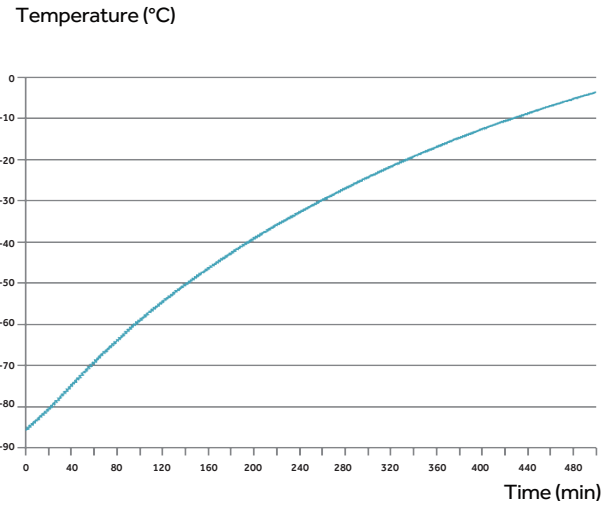
The temperature uniformity is ±3°C, safe and reliable

Temperature Curve

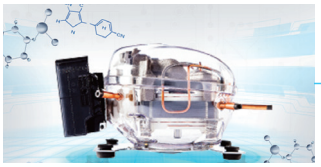
Temperature Cool Down Curve



Temperature Recovery Curve



Product Features

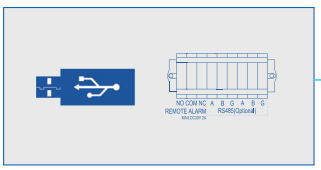


Auto-cascade Hydrocarbon (HC) Refrigeration Technology

Utilizing efficient, auto-cascade HC compressor technology to deliver superior refrigeration performance and low energy consumption

Microprocessor Control System

Microprocessor control, with temperature display precision at 0.1°C. Internal temperature is adjustable from -40°C ~ -86°C



Multiple Ports

USB interface enables users to download historical temperature data (up to 15 years)

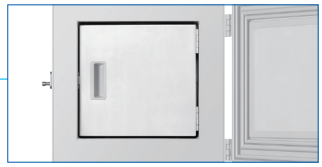
Equipped with remote alarm function and RS485 port

Quick Access Filter Design

Tool-free removable filter design, easy and quick to clean the filter

VIP Insulation and Multilayered Sealing Design

70mm insulation layer with 25mm VIP and 4 layers of gasket improves energy efficiency and reduces heat loss to ensure a slow warm up rate in the event of power failure.



Stainless Steel Inner Door

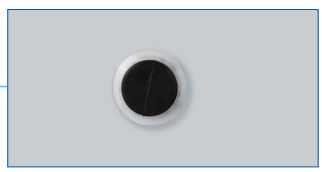
Prevents loss of internal air to keep samples safe

Ergonomic Design

Unique handle design, allows users to open and close the door with one hand

Internal Lock

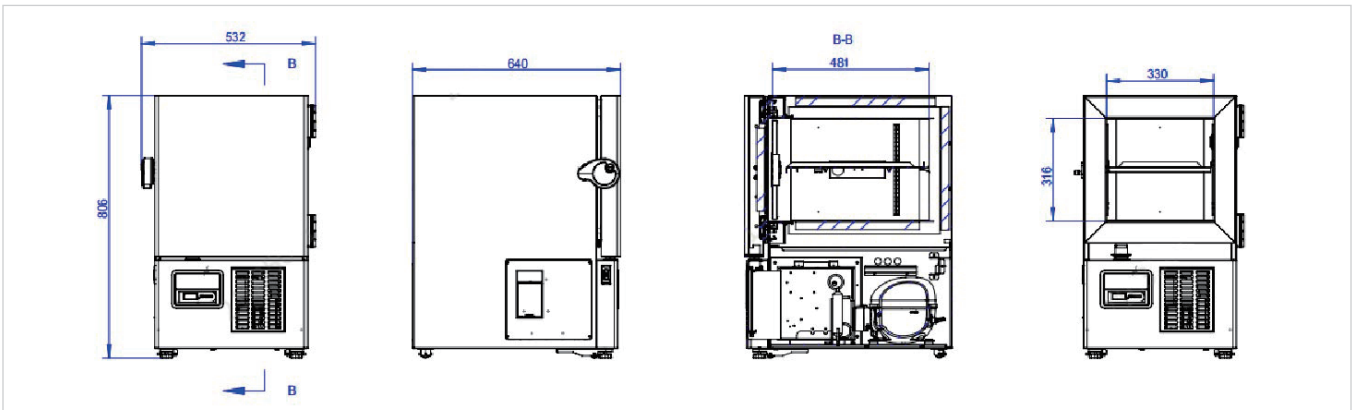
Standard internal lock with 4 keys for multiple users



Access Port

One access port as standard, allows for independent testing of cabinet temperature

Product Dimensions



Specifications

Model			DW-86L51J	
Technical Data	Cabinet Type		Upright	
	Climate Class		N	
	Cooling Type		Direct cooling	
	Defrost Mode		Manual	
	Refrigerant		HC	
	Sound Level (dB(A))		46.8	
Performance	Cooling Performance (°C)		-86	
	Temperature Range (°C)		-40~-86	
Control	Controller		Microprocessor	
	Display		LED	
Electrical Data	Power Supply (V/Hz)		120/60	220~240/50
	Electrical Current (A)		7.5	3
Dimensions	Capacity (L/Cu.Ft)		51/1.8	
	Net/Gross Weight	kg	77/90	73/86
		lbs	169.8/198.4	160.9/189.6
	Interior Dimension(W*D*H)	mm	330*481*316	
		in	13*16.5*12.4	
	Exterior Dimension(W*D*H)	mm	532*640*806	
		in	20.9*25.2*31.7	
	Packing Dimension(W*D*H)	mm	570*735*1100	
		in	22.4*28.9*43.3	
	Cabinet Width (without handle and hinge)	mm	470	
	Container Load(20'/40'/40'H)		60/126/126	
Functions	High/Low Temperature		Y	
	Hot Condenser		Y	
	Power Failure		Y	
	High/Low Voltage		Y	
	Sensor Error		Y	
	Low Battery		Y	
	High Ambient Temperature		Y	
	Door Ajar		Y	
	Start-up delay		Y	
Accessories	Caster		Y	
	Foot		Y	
	Porthole		Y/1	
	Shelves/Inner Doors		1/1	
	USB Interface		Y	
	Remote Alarm		Y	
	RS485 Port		NA / Standard	
Other	Certification		UL	CE

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