Haier Biomedical
Intelligent Protection of Life Science

ULT Freezer Solutions

North America

UK

Europe

Middle East

Russia

China

Africa

South East Asia

South America

Oceania

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 Adopts chromium plating, rust-proof

USB Interface

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

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
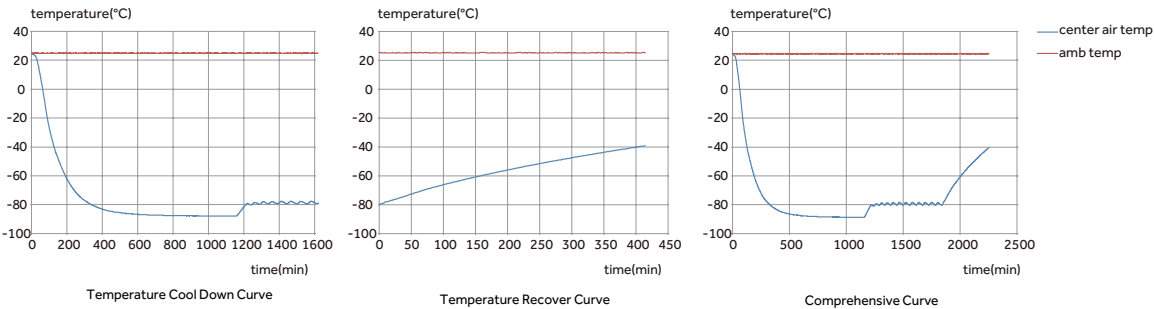
Multilevel Alarms

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

DW-86L829BP

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

temperature(°C)

Temperature Cool Down Curve

Temperature Recover Curve

—— center air temp
—— amb temp

Comprehensive Curve

Specifications

	Model		DW-86L959BP
Technical Data	Cabinet Type		Upright
	Climate Class		N
	Cooling Type		Direct Cooling
	Defrost Mode		Manual
	Refrigerant		HC
	Sound Level (dB(A))		47
Performance	Cooling Performance (°C)		-86
	Temp Range (°C)		-40～-86
Control	Controller		Microprocessor
	Display		LED
Electrical Data	Power Supply (V/Hz)		208～230/50/60
	Power (W)		1300
	Electrical Current (A)		7
Dimensions	Capacity (L/Cu.Ft)		959/33.9
	Net/Gross Weight (approx)	kg	450/485
		lbs	992.1/1069.2
	Interior Dimensions (W*D*H)	mm	1016*716*1310
		in	40.0*28.2*51.6
	Exterior Dimensions (W*D*H)	mm	1296*998*1980
		in	51.0*39.3*78.0
	Packing Dimension (W*D*H)	mm	1365*1105*2150
		in	53.7*43.5*84.6
	Container Load (20'/40'/40'H)		8/16/16
Alarms	Remote Alarm (Dry contacts)		Y
	High/Low Temp		Y
	Hot Condenser		Y
	Power Failure		Y
	Sensor Error		Y
	Low Battery		Y
	High Ambient Temp		Y
	Door Ajar		Y
Accessories	Caster		Y
	Foot		Y
	Porthole		Y/2
	Shelves/ Inner Doors		3/4
	USB Interface		Y
	5V Power Supply Port		Y
	Temp Recorder		Optional
	RS485 Port		Y
	CO$_2$ Backup System		Optional
	LN$_2$ Backup System		Optional
Other	Certification		CE,UL,ENERGY STAR

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

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.

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
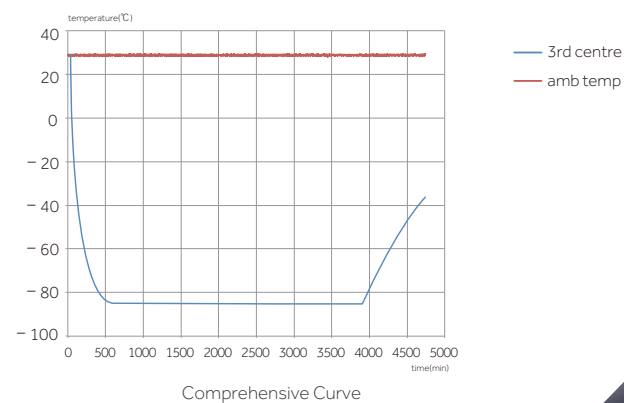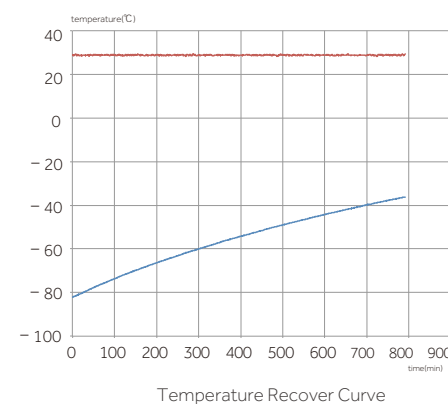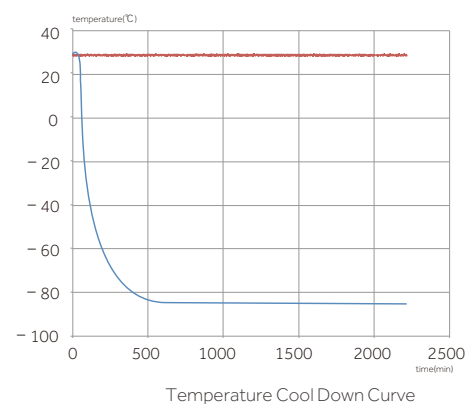- Dependable fans, compressors and other system related components

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

— 3rd centre
— amb temp

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
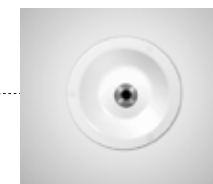
Excellent Doors Seals

- 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)

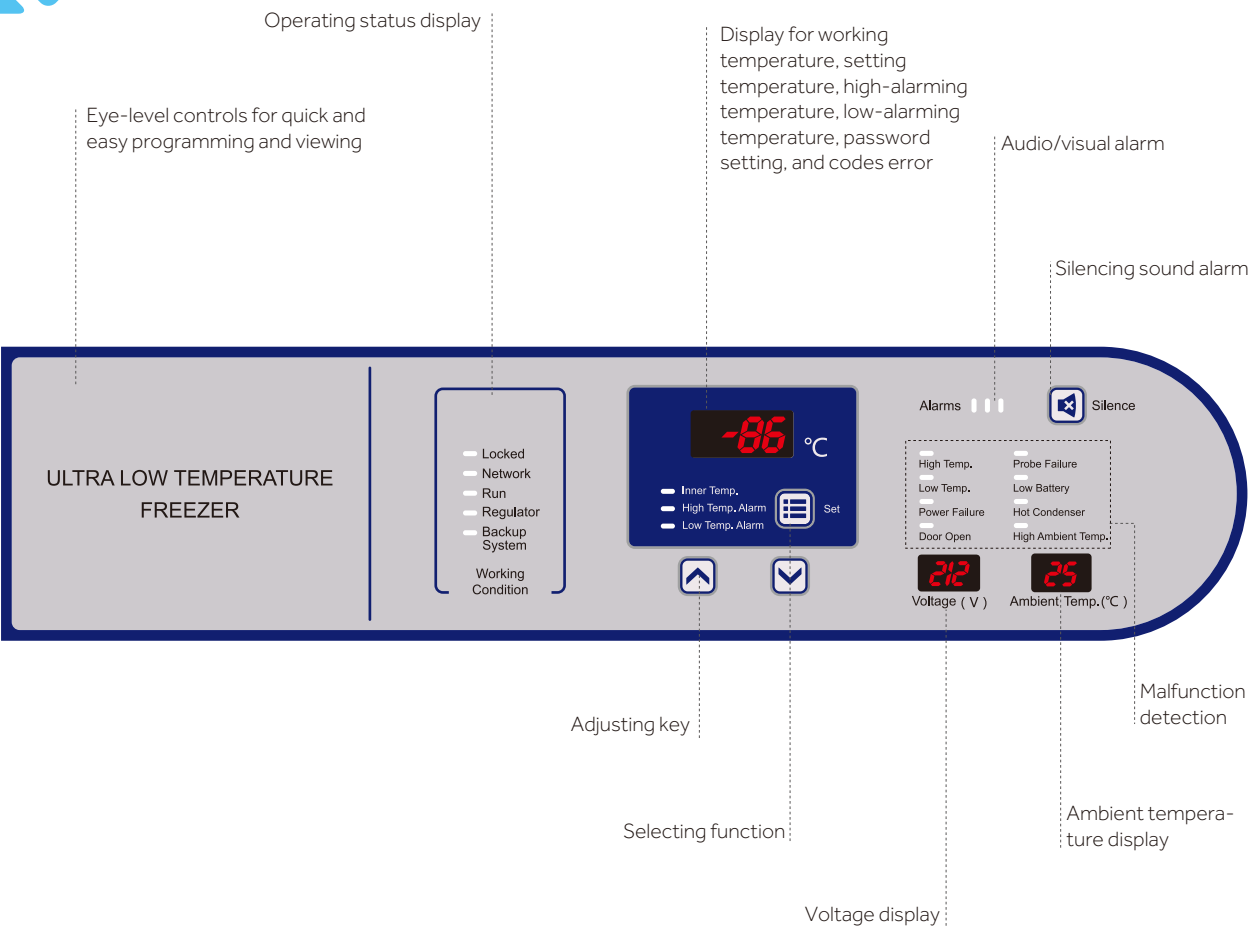- Front-mounted.
- For independent temperature monitoring.

DW-86L728J

High Efficiency Refrigeration Components

- Hermetically sealed industrial grade compressors for ultra-low refrigeration application.
- Low sound level.
- High efficient oil separator.
- Unique hydrocarbon refrigeration system to provide maximum efficiency in extreme conditions.
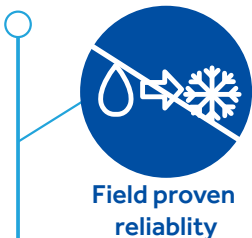
Two port holes for ease of temperature monitoring

Operating status display

Eye-level controls for quick and easy programming and viewing

Display for working temperature, setting temperature, high-alarming temperature, low-alarming temperature, password setting, and codes error

Audio/visual alarm

Silencing sound alarm

ULTRA LOW TEMPERATURE FREEZER

-86 °C

Locked
Network
Run
Regulator
Backup System
Working Condition

Inner Temp.
High Temp. Alarm
Low Temp. Alarm

Set

Alarms — Silence

High Temp. — Probe Failure
Low Temp. — Low Battery
Power Failure — Hot Condenser
Door Open — High Ambient Temp.

Voltage (V) — 212
Ambient Temp.(°C) — 25

Adjusting key

Selecting function

Voltage display

Malfunction detection

Ambient temperature display

Specifications

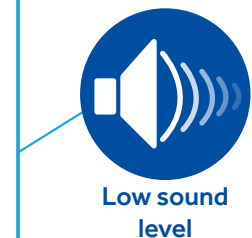| Alarm	Alarm Triggering Condition
High Temperature	Temperature reaches the warm alarm limit
Low Temperature	Temperature reaches the low alarm limit
Power Failure	Equipment loses power
Door Ajar	Door opening time secedes set time, settable between 0 and 20 minutes
Sensor Error	E0.Ambient sensor fails 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

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
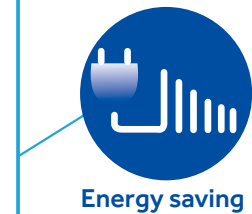- Positive field proven reliability record

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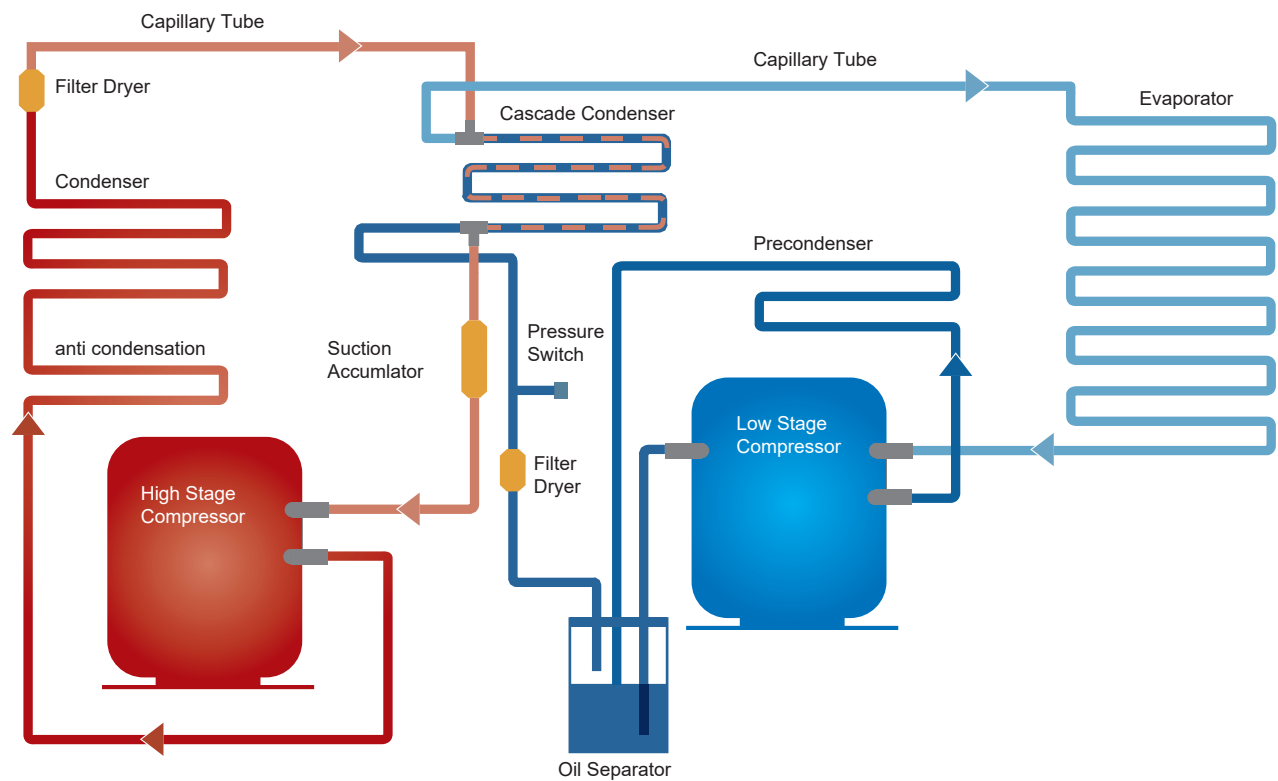
Low sound level
- Specialized refrigeration system design using whisper quiet fan and compressors
- Freezer chassis designed to absorb vibration and sound

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

Capillary Tube

Filter Dryer

Condenser

anti condensation

Suction Accumlator

Capillary Tube

Cascade Condenser

Pressure Switch

Filter Dryer

Precondenser

Evaporator

Low Stage Compressor

High Stage Compressor

Oil Separator

	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 so as 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 centres, 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.

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.

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

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.

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

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-86L388J	DW-86L490J		DW-86L578J		
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))	50			50	50		50		
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	LED			LED	LED		LED		
Electrical Data	Power Supply (V/Hz)	220～240/50	115/60		220～240/50	220～240/50		220～240/50	120/60	
	Power (W)	650	700		650	900		750	1000	
	Electrical Current (A)	7.5	12		5	8		7.5	12	
Dimensions	Capacity (L/Cu.Ft)	338/11.9			388/13.7	490/17.3		578/20.4		
	Net/Gross Weight (approx) — kg	238/278			255/286	295/335		300/330		
	Net/Gross Weight (approx) — lbs	524.7/612.9			562.2/630.5	650.4/738.5		661.4/727.5		
	Interior Dimension (W*D*H) — mm	465*630*1165			465*716*1310	590*630*1310		620*716*1310		
	Interior Dimension (W*D*H) — in	18.3*24.8*45.9			18.3*28.2*51.6	23.2*24.8*51.6		24.4*28.2*51.6		
	Exterior Dimension (W*D*H) — mm	830*893*1846			812*980*1980	860*900*1980		903*980*1960		
	Exterior Dimension (W*D*H) — in	32.7*35.2*72.7			31.2*38.6*78.0	33.9*35.4*78.0		35.6*38.6*77.2		
	Packing Dimension (W*D*H) — mm	875*970*2010			893*1078*2135	925*985*2150		950*1055*2125		
	Packing Dimension (W*D*H) — in	34.4*38.2*79.1			35.2*42.4*84.1	36.4*38.8*84.6		37.4*41.5*83.7		
	Container load (20'/40'/40'H)	12/24/24			12/24/24	12/24/24		12/24/24		
Alarms	High/Low Temperature	Y			Y	Y		Y		
	Hot Condenser	Y			Y	Y		Y		
	Power Failure	Y			Y	Y		Y		
	High/Low Voltage	N/A			N/A	N/A		N/A		
	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	3/2			3/2	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		
	RS232/485 Port	Optional			Optional	Optional		Optional		
	CO_2 Backup System	Optional			Optional	Optional		Optional		
	LN2 Backup System	Optional			Optional	Optional		Optional		
Others	Certification	CE	UL		CE	CE	UL	CE,ENERGY STAR	UL,ENERGY STAR	UL

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

Specifications

	Model	DW-86L728J	DW-86L828J	DW-86L100J	DW-86W100J	DW-86W420J
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	220～240/50	220～240/50 / 120/60	220～240/50	220～240/50
	Power (W)	1000 / 1000	1000	680 / 680	550	1000
	Electrical Current (A)	10 / 18	10	3 / 6.5	4	7.5
Dimensions	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
	Net/Gross Weight (approx) 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
	Interior Dimension (W*D*H) 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
	Exterior Dimension (W*D*H) 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	1090*1050*2150	1190*1045*2150	830*710*970	845*855*1250	2195*895*1130
	Packing Dimension (W*D*H) in	42.9*41.3*84.6	46.9*41.1*84.6	32*28*38.5	33.3*33.7*49.2	90.6*38.2*45.8
	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	N/A	N/A	Y	N/A	N/A
	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
Others	Certification	CE,ENERGY STAR / UL	CE,ENERGY STAR / UL	CE / UL	CE	CE / UL

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