



Multiple alarms



Hydrocarbon refrigerant  
and foam material LBA



High performance in  
temperature uniformity



Intelligent frequency  
conversion technology

# TwinCool Frequency Conversion ULT

The Twincool Frequency conversion range of freezers utilize two key innovations to delivery outstanding sample security and energy efficiency – dual cooling and adaptive refrigeration technologies.



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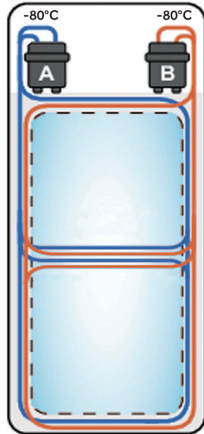


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## Product Advantages



### Dual refrigeration system, double safety and optimal reliability

Double independent hydrocarbon refrigeration system design, each system can maintain  $-80^{\circ}\text{C}$  ensuring the safety of stored samples



### Environmental Protection

Environmentally friendly hydrocarbon refrigerant and foam material LBA



### 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 warns users to ensure sample safety



### 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



### Faster Re-Entry

The optimized pressure relief port makes re-entry possible within just 60 seconds

## Ergonomic Design



### 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. Users can check the real-time operating status via IoT



### Low Noise Design

Optimised systems and noise-reducing cabinet design lower noise out to 53dB for a quieter working experience

**Product Parts**



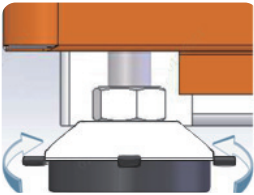
**Ergonomic design**

Document holder for easy storage of documents



**High quality door opening experience**

The ergonomic chamfer design of the handle ensures smooth operation and maximum durability



**Adjustable feet**

For easy positioning and levelling



**Magnetic filter screen**

Filter screen is easy to clean



**Microcomputer control**

Microcontroller with 10.1 inch LCD touch screen displays temperature and other important data. Temperature display precision is 0.1°C

**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



**Multiple safety lock**

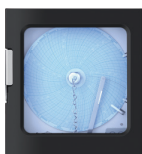
Standard mechanical lock, optional electromagnetic lock  
Optional fingerprint lock and NFC for optimal security and access



**Networking function**

Equipped with RS485 interface to connect multiple freezers

**Product Accessories (Optional)**



**Temperature Recorder (Optional)**

- Front-mounted.
- For independent temperature monitoring.

**CO<sub>2</sub> 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<sub>2</sub> injection pipe is designed in combination of filter, to prevent the blockage of CO<sub>2</sub> back-up system

**Safety**

- Liquid CO<sub>2</sub> test button to ensure the backup system is working
- Low CO<sub>2</sub> alarm system alerts the user when liquid CO<sub>2</sub> bottle is low in liquid level
- Ultra-low sound level compressors

**Reliability**

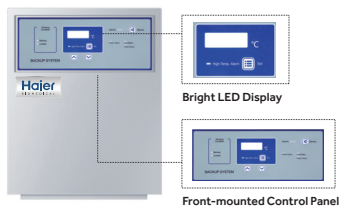
- Stainless steel covering, more elegant
- Stainless steel input pipe design, allows for flexibility and ease of cylinder positioning
- Durable battery lasts up to 48 hours





**LN<sub>2</sub> Backup System**

**Features**

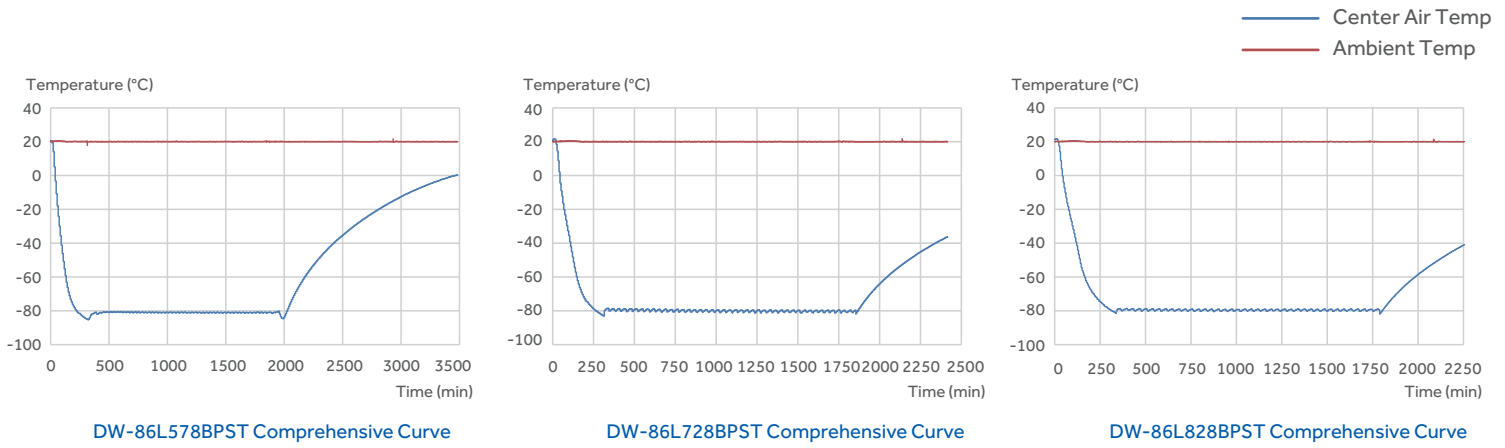
- Interlocked design to turn off the LN<sub>2</sub> injection when the door is opened
- Protection circuit to prevent over-charging battery
- Light weight and portable design, suitable for installation on top of a freezer
- Alarm functions to include low battery and sensor error



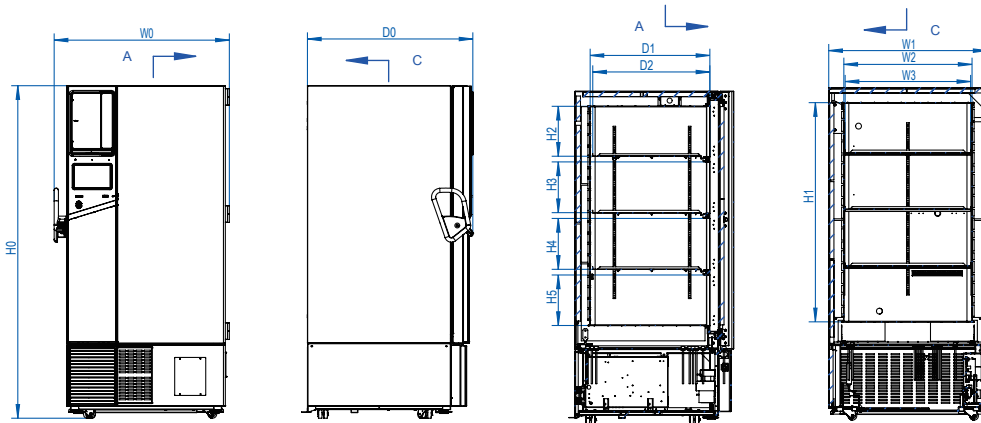
Rack Type	ULT Freezer	Freezer Rack						Freezer Rack Quantity	Box Capacity
		CAT.NO.	Model	Material	Layout (Rows*Columns)	Box Type	Dimensions (D*W*H)(mm)		
 <p>Sliding-drawer freezer rack</p>	DW-86L578BPST	433001	(EXP)	SUS201	5*5	2 inch	686*141*291	16	400
	DW-86L728BPST		DCJ-55-B (SUS201)					20	500
	DW-86L828BPST							24	600
	DW-86L578BPST	433002	(EXP)	SUS304	5*5	2 inch	686*141*291	16	400
	DW-86L728BPST		DCJ-55-B (SUS304)					20	500
	DW-86L828BPST							24	600

Rack Type	ULT Freezer	Freezer Rack						Freezer Rack Quantity	Box Capacity
		CAT.NO.	Model	Material	Layout (Rows*Columns)	Box Type	Dimensions (D*W*H)(mm)		
 <p>Side-access freezer rack</p>	DW-86L578BPST	4330012	(EXP)	SUS304	5*5	2 inch	686*141*291	16	400
	DW-86L728BPST		DCJ-55-A (SUS304)					20	500
	DW-86L828BPST							24	600

**Typical Performance Characteristics at 20°C Ambient**



**Product Size Drawing**



- Ramark
- W0=Total Width
  - W1=Freezer Width
  - W2=Inner Cabinet Width
  - W3=Inner Cabinet Shelf Width
  - H0=Total Height
  - H1=Inner Cabinet Height
  - H2=1<sup>st</sup> Floor Height
  - H3=2<sup>nd</sup> Floor Height
  - H4=3<sup>rd</sup> Floor Height
  - H5=4<sup>th</sup> Floor Height
  - D0=Total Depth
  - D1=Inner Cabinet Width
  - D2=Inner Cabinet Shelf Width

Parameter	W0	W1	W2	W3	H0	H1	H2	H3	H4	H5	D0	D1	D2
Model													
DW-86L578BPST	895mm	800mm	620mm	602mm	1980mm	1310mm	298mm	303mm	303mm	301mm	998mm	716mm	700mm
DW-86L728BPST	1046mm	946mm	766mm	750mm	1980mm	1310mm	298mm	303mm	303mm	301mm	998mm	716mm	700mm
DW-86L828BPST	1145mm	1050mm	870mm	854mm	1980mm	1310mm	298mm	303mm	303mm	301mm	998mm	716mm	700mm

**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 Touchscreen	LCD Touchscreen	LCD Touchscreen	
Electrical Data	Power Supply (V/Hz)	100-230/50/60	100-230/50/60	100-30/50/60	
	Max Power (W)	1100	1100	1400	
Dimensions	Capacity (L/Cu.Ft)	578/20.4	728/25.7	828/29.2	
	Net/Gross Weight	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	953*1071*2127	1105*1066*2117	1200*1080*2130
in		37.5*42.1*83.7	43.5*42*83.3	47.2*42.5*83.9	
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(4)	Y(4)	Y(4)	
	Leveling Feet	Y(2)	Y(2)	Y(2)	
	Porthole	2 rears, (25mm)diameter	2 rears, (25mm)diameter	2 rears, (25mm)diameter	
	Inner Doors	4	4	4	
	Shelves	3- stainless steel adjustable shelves	3- stainless steel adjustable shelves	3- stainless steel adjustable shelves	
	Shelf Dimensions (W*D) (mm)	606*650	752*650	856*650	
	Max. Load per Shelf (kg)	72	90	108	
	Freezer Racks Quantity (2" boxes)	16	20	24	
	Capacity (2" boxes)	400	500	600	
	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 <sub>2</sub> Backup System	Optional	Optional	Optional		
LN <sub>2</sub> Backup System	Optional	Optional	Optional		
Other	Certification	CE, UL, ENERGY STAR	CE, UL, ENERGY STAR	CE, UL, ENERGY STAR	

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