

SmartFrequency Conversion



DW-86L829BP



Intelligent Frequency Conversion Technology

Two frequency conversion compressors, designed with adaptive control, follow user patterns and adjust the refrigeration system, substantially reducing energy without compromising performance.



Maximum Energy Efficiency

Due to our SmartFrequency refrigeration technology, innovative cabinet design and the use of hydrocarbon refrigerants, this range of freezers have the lowest energy consumption figures to date at just 8.2kWh/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 $\pm 3^{\circ}\text{C}$.

Haier Biomedical's ultra low temperature freezers with SmartFrequency conversion technology that provides users with a world-leading energy efficient freezer.

Smarter by Design

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



Frequency Conversion Adaptive Technology

Unlike standard, single speed compressors that cycle on and off, our frequency conversion compressor runs at variable speeds to adjust cooling performance to the conditions inside and outside of the freezer. It allows the freezer to adjust to factors such as start-up and door openings when a higher compressor speed is needed. When conditions are normal or stable, the drive runs at a lower speed while still protecting the samples.



World-leading Energy Saving Refrigeration Technology

The hydrocarbon refrigeration technology saves energy by 50%, significantly reducing the running costs of the freezer. Hydrocarbon refrigerant contains no fluorine or chlorine and has a global warming potential (GWP) value of just 3, meaning this refrigerant is a more environmentally friendly option compared to HFC refrigerants.



Minimal Noise Output

Adaptive control technology controls fans and compressors to reduce noise levels to an exceptional 43.5dB.

PRODUCT ADVANTAGES



Energy Saving Refrigeration

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



Pressure Equalisation Port

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



USB Interface

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



DW-86L829BP



Multilayered Sealing Structure

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



Improved Handle Design

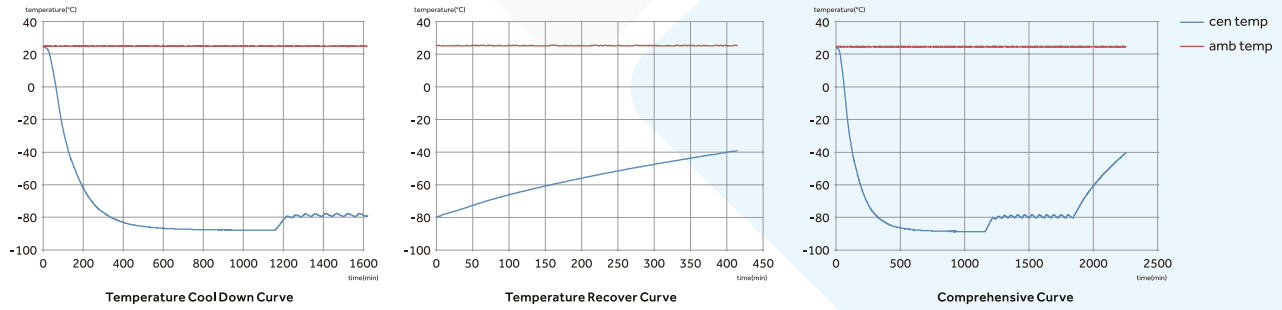
Lockable handle with unique key prevents other Haier freezer owners access to your precious samples, also comes with space for a padlock for that extra security



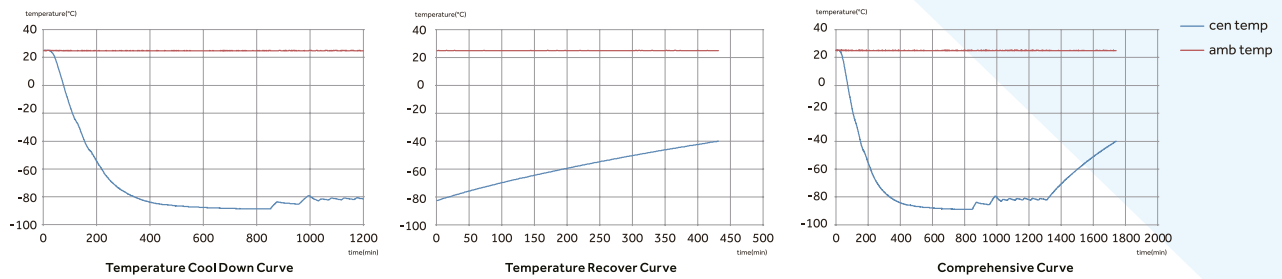
Multilevel Alarms

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

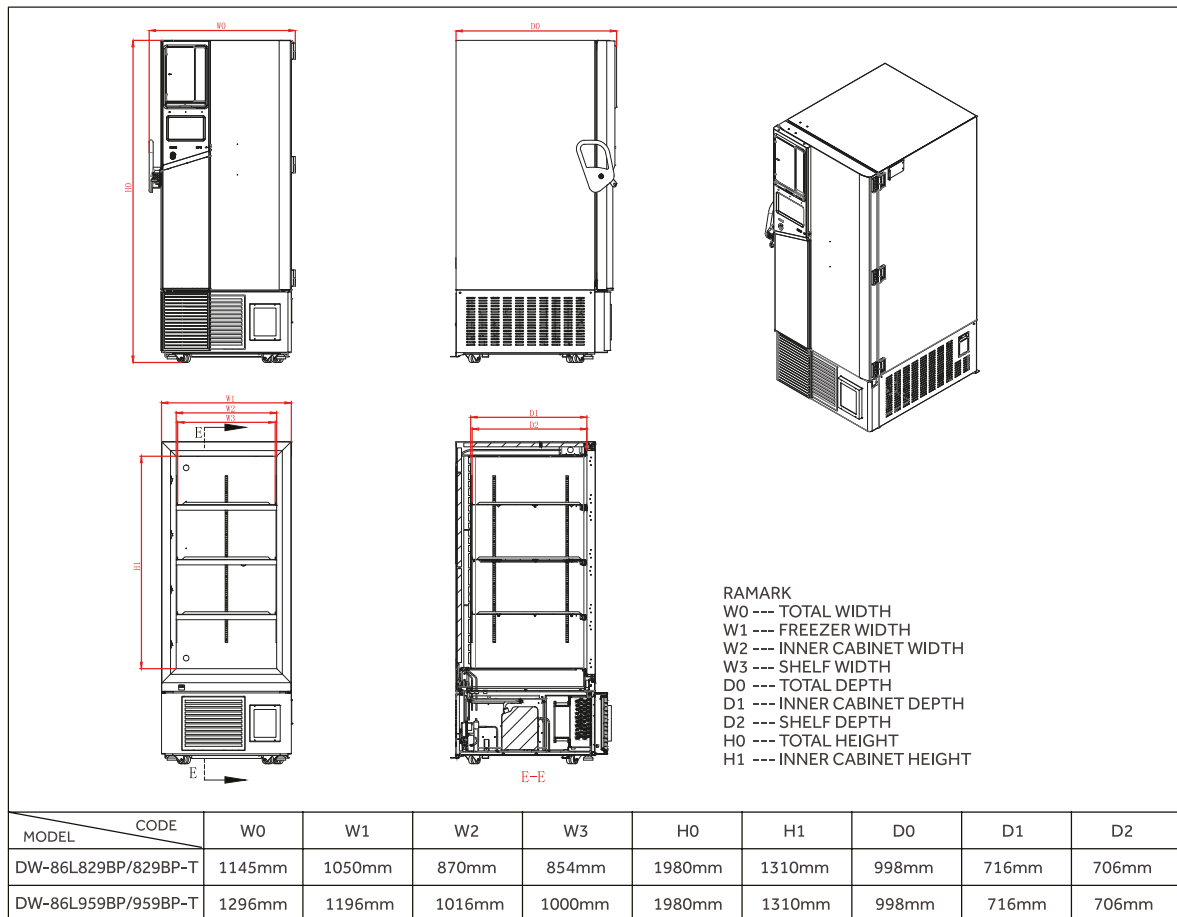
DW-86L829BP/829BP-T | TYPICAL PERFORMANCE CHARACTERISTICS IN 25°C AMBIENT



DW-86L959BP/959BP-T | TYPICAL PERFORMANCE CHARACTERISTICS IN 25°C AMBIENT



PRODUCT DIMENSION DRAWING



Model	Voltage (V/Hz)	Rated Power (W)	Inner Cabinet Temperature(°C)	External Dimension (W * D * H mm)	Internal Dimension (W * D * H mm)	Effective Volume (L)	Net Weight / Gross Weight (Kg)	Shelf
DW-86L829BP/829BP-T	208 ~ 230/50/60	1100	-86	1145*998*1980	870*716*1310	829	380/415	3
DW-86L959BP/959BP-T	208 ~ 230/50/60	1300	-86	1296*998*1980	1016*716*1310	959	450/485	3

PRODUCT SPECIFICATIONS

Product	DW-86L829BP	DW-86L829BP-T	DW-86L959BP	DW-86L959BP-T
Cabinet Type	Upright	Upright	Upright	Upright
Climate Class	N	N	N	N
Storage Capacity(L/Cu.Ft)	829/29.2	829/29.2	959/33.9	959/33.9
Temperature Range(°C)	-40~-86	-40~-86	-40~-86	-40~-86
Noise Level (dB(A))	43.5	43.5	47	47
Net/Gross Weight(kg/lbs)	380/410	380/410	450/485	450/485
Exterior Dimensions(W*D*H)	1145*998*1980(mm) 45.1*39.3*78.0(in)	1145*998*1980(mm) 45.1*39.3*78.0(in)	1296*998*1980(mm) 51.0*39.3*78.0(in)	1296*998*1980(mm) 51.0*39.3*78.0(in)
Interior Dimensions(W*D*H)	870*716*1310(mm) 34.3*28.2*51.6(in)	870*716*1310(mm) 34.3*28.2*51.6(in)	1016*716*1310(mm) 40.0*28.2*51.6(in)	1016*716*1310(mm) 40.0*28.2*51.6(in)
Refrigerant	HC	HC	HC	HC
Cooling Performance(°C)	-86	-86	-86	-86
Display	LED	LCD	LED	LCD
Power Supply(V/Hz)	208-230/50/60	208-230/50/60	208-230/50/60	208-230/50/60
Power(W)	1100	1100	1300	1300
Power Consumption(kWh/day)	8.2	8.2	12	12
Electrical Current(A)	6	6	6	6
Building Supply Rating (A)	16	16	16	16
Power Lead Length(m)	2.5	2.5	2.5	2.5
Heat Rejection (BTU/day)	27980	27980	40947	40947
Ambient Temperature(°C)	10-32	10-32	10-32	10-32
Cooling Type	Direct cooling	Direct cooling	Direct cooling	Direct cooling
Compressor Type/Brand/Number	Hermetic Reciprocating Type / Nidec/ 2	Hermetic Reciprocating Type / Nidec/ 2	Hermetic Reciprocating Type / embraco / 2	Hermetic Reciprocating Type / embraco / 2
Compressor Capacity(W)	950+950	950+950	950+950	950+950
Evaporator Type	Copper Tube Evaporator	Copper Tube Evaporator	Copper Tube Evaporator	Copper Tube Evaporator
Defrost Mode	Manual	Manual	Manual	Manual
Controller Level	Top	Top	Top	Top
Power Switch	16A	16A	16A	16A
Controller	Microprocessor	Microprocessor	Microprocessor	Microprocessor
Setpoint Security	Yes	Yes	Yes	Yes
Controller Sensor	PT100	PT100	PT100	PT100
Remote Alarm Terminals	Remote Alarm Port, RS485	Remote Alarm Port, RS485	Remote Alarm Port, RS485	Remote Alarm Port, RS485
Adjustable High/Low Temp Alarms	Y	Y	Y	Y
Insulation	VIP+CFC Free Foaming Agent	VIP+CFC Free Foaming Agent	VIP+CFC Free Foaming Agent	VIP+CFC Free Foaming Agent
Exterior Door Seal	Four Seal on the Outside Door Seal Strip	Four Seal on the Outside Door Seal Strip	Four Seal on the Outside Door Seal Strip	Four Seal on the Outside Door Seal Strip
Interior Door Seal	One Seal on the Interior Door Seal Strip	One Seal on the Interior Door Seal Strip	One Seal on the Interior Door Seal Strip	One Seal on the Interior Door Seal Strip
Shelves/Capacity/Dims/Material	3 stainless steel adjustable shelves with dimension 854*706 mm(W*D), max capacity per shelf:60kg/132.4lbs	3 stainless steel adjustable shelves with dimension 854*706 mm(W*D), max capacity per shelf:60kg/132.4 lbs	3 stainless steel adjustable shelves with dimension 1000*706 mm(W*D), max capacity per shelf:70kg/154.5 lbs	3 stainless steel adjustable shelves with dimension 1000*706 mm(W*D), max capacity per shelf:70kg/154.5 lbs
Caster	Y/4	Y/4	Y/4	Y/4
Exterior Material	Colour Coating Steel Plate	Colour Coating Steel Plate	Colour Coating Steel Plate	Colour Coating Steel Plate
Interior Material	Colour Coating Steel Plate	Colour Coating Steel Plate	Colour Coating Steel Plate	Colour Coating Steel Plate
Door Thickness (mm)	90	90	90	90
Cabinet Thickness(mm)	90	90	90	90
Inner Door	Four Solid Door	Four Solid Door	Four Solid Door	Four Solid Door
Condenser Type	Fin Condenser	Fin Condenser	Fin Condenser	Fin Condenser
Fan Brand	EBM	EBM	EBM	EBM
Back Up Battery for Alarm Functions	Support high/low temperature, power failure, door open, sensor failure, high ambient temperature, hot condenser and low battery alarms	Support high/low temperature, power failure, door open, sensor failure, high ambient temperature, hot condenser, low battery alarms, login alarm, backup system alarm	Support high/low temperature, power failure, door open, sensor failure, high ambient temperature, hot condenser and low battery alarms	Support high/low temperature, power failure, door open, sensor failure, high ambient temperature, hot condenser, low battery alarms, login alarm, backup system alarm
Temperature Uniformity(°C)	±3	±3	±3	±3
Temperature Accuracy(°C)	1	0.1	1	0.1
Cool Down Time (25°C ambient to -80°C) mins	350	350	340	340
Warm Up Time (25°C ambient -80°C to -50°C) mins	290	290	290	290
Recovery Time with all inner and outer door open for 1 min(ambient 25°C running temp -80°C) mins	40	40	45	45
Certificate	CE	CE	CE	CE

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