

**New Generation**

# **-86°C Ultra-low Freezers**







*More efficient, more economical*



MDF-86V408E      MDF-86V728E      MDF-86V838E      MDF-86V588E      MDF-86V340E

The new generation Ultra-low freezers are devices intended for the storage of blood components and blood plasma, human cells, tissues, live virus vaccines, and other laboratory samples at ultra-low temperatures down to -86°C. Superior performance and cost-effective are its Impressive features.



-  **Super Cooling Performance**  
3 hours down to -80°C \*
-  **Advanced Insulation Tech**  
VIP + PURF & better sealing
-  **Intelligent Controller**  
Touch screen with graphs
-  **High Quality Materials**  
Sturdy & anti-corrosion

**The reliable partner in your laboratory**



# GET STARTED WITH NEW GENERATION ULT FREEZERS

## EFFICIENT COOLING SYSTEM

- Faster pull down & door recovery time
- 2 Compressor with mixed gas, if one is breakdown, the other one could keep the temperture at -70°C stably.
- Excellent performance even in extreme ambient conditions
- Low noise operation at 50d
- Unique CFC-free mixed refrigerant



## ADVANCED INSULATION

- Internal V.I.P panels reduce cold loss
- CFC-free high-density PU foam
- Better warm up time keeps the samples cold as long as possible once power failure

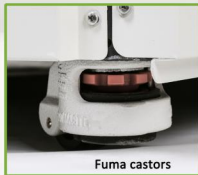
## INTELLIGENT CONTROLLER

- Eye-level 7" color touch screen for simple and intuitive operation
- Integrated temperature display, graphs, Freezer status, and events monitoring
- Complete alarm system escorts your valuable bio-samples



## EXCELLENT EXTENSIBILITY

- Internal USB data logger
- Equiped with romote alarm interface and RS485/232 contact
- Optional water cooling system
- Optional temperature chart recorder



## USER-FRIENDLY DESIGN

- Automatic vacumm release port allows users to open&close the door frequently
- Ergonomic one-handed operation handle
- File box design for keeping daily files

## OPTIMIZED CONSTRUCTION

- Quick-release condenser cover
- Sturdy shell & chamber for longer service life
- Heavy duty fuma universal castors

## Guide to Models

**MDF - 86 V 588 E**

Model	Code	Temp. Range	Type	Capacity	Series
Ultra-low temperature Freezer	Medical Deep Freezer	-40°C ~ -86°C	Vertical	340 liters 408 liters 588 liters 728 liters 838 liters	Ecnomic



## Humanized Designs



Quick release filter



One-hand operation handle



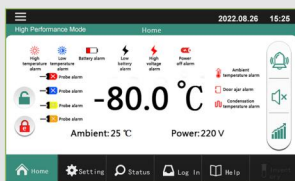
File-box for keeping daily files



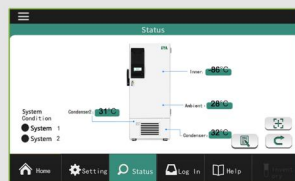
Easy access USB interface



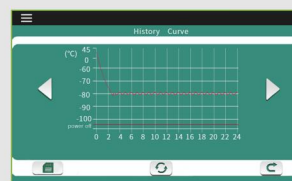
## Intelligent Controller



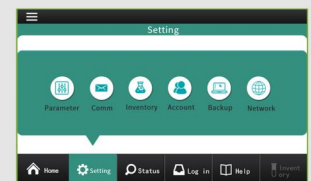
Complete alarm function



Monitoring of status



Temp. graphs & downloading

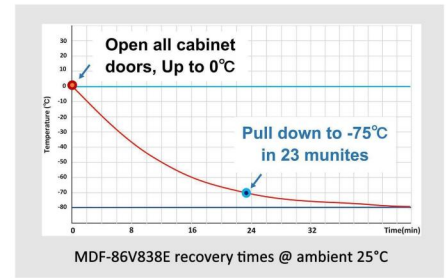
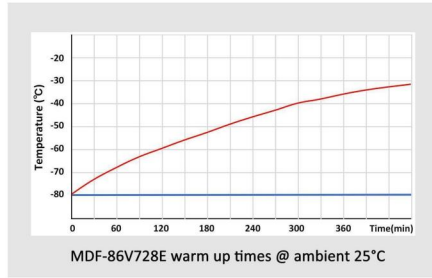
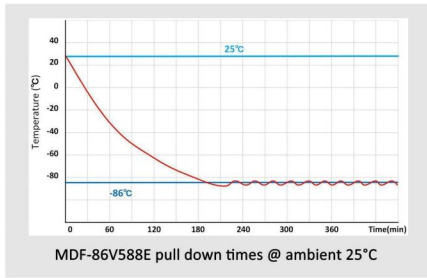


Parameter settings

# INSIDE IS MORE IMPORTANT THAN OUTSIDE



## RELIABLE PERFORMANCE



### FAST PULL DOWN TIME

- 3 hours down to -80°C \*
- 2 compressors cooperate intelligently to improve the cooling performance by 50%
- Superior microcomputer control for longer service life of the freezer

### LEADING WARM UP TIME

- Slower warm-up during an extended power failure buys the user time for carrying out a back-up plan
- Advanced insulation tech maximum the locking of cold air
- Hold over to -50°C in 300 minutes\*

### PERFECT RECOVERY TIME

- Protect your temperature sensitive biological samples
- No afraid of frequent door opening and closing
- Recovery to -75°C in 23 minutes \*\*\*



## DELICATE INTERIOR

**Stepped door frame design**  
Reduce cold air leakage and ice buildup

**Keep the cold inside**  
Advanced internal VIP panels flexible and efficient silicone sealings firmly lock the cold air inside.

**Access port**  
For extra monitoring device

**Enhanced shelf design**  
SS shelf supports 40kg

**Lock the cold air**  
Inner door closing pressure can be adjusted by the handle

**Heavy duty hinges**  
Garantee 10 years of door body without deformation

**Door frame heating**  
Effectively prevents ice buildup

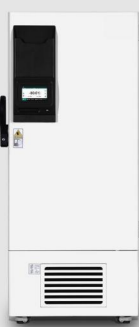
**Compartment doors**  
Stainless steel and 27mm thick PU foam-filled inner doors for better insulation

**Complete SS chamber**  
Robust stainless steel body for high sample safety and easy cleaning

**Vacuum release port**  
For quick re-access to samples

**Inner door gaskets**  
Low temp. resistance flexible silicone sealings recude cold leakage

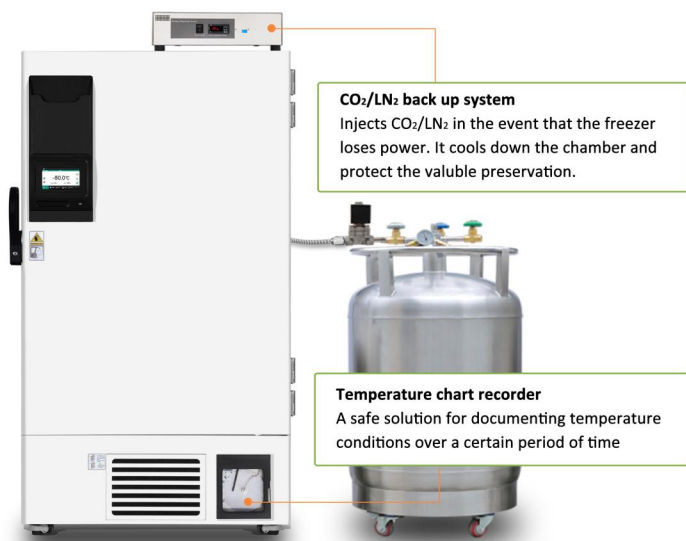
**Detachable design**  
Inner doors can be easy removal and cleaning



# MORE THAN A ULT FREEZER



## SUPER EXTENSIBILITY



**CO<sub>2</sub>/LN<sub>2</sub> back up system**  
 Injects CO<sub>2</sub>/LN<sub>2</sub> in the event that the freezer loses power. It cools down the chamber and protect the valuable preservation.

**Temperature chart recorder**  
 A safe solution for documenting temperature conditions over a certain period of time



**4G/Wifi Data logger**  
 An external monitoring device to record internal temperature and upload data to internet management platform



**Remote interface**  
 Equiped with a standard remote alarm port and RS485 dry contact for connection to BMS system



**Water cooling system**  
 A special device that cools the refrigeration system and allows the freezer to work more efficient or under extreme conditions



## ACCESSORIES



**Data Logger (DLW-100EC)**  
 DLW-360 is a monitoring device independent of the freezer, it can record the realtime temperature in the chamber and provide the necessary alerts to protect your irreplaceable samples



**4G/Wifi Data Logger (DLW-360P)**  
 DLW-360P is a networked device that can upload real-time temperature data to the cloud. Users can monitor and manage the data through the mobile app or cloud platform.



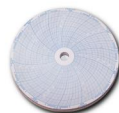
**CO<sub>2</sub>/LN<sub>2</sub> Back-up System**  
 The back-up system injects liquid CO<sub>2</sub>/LN<sub>2</sub> on demand when cabinet temperature warms to a pre-set level. Back-up system includes all hardware except the supply cylinder. In the event of a power failure, the system will operate on a charged battery.



**6" Temperature Chart Recorder**  
 The chart recorder provides an easy-to-read graph of data vs time. It is a reliable, accurate, and stable instrument, for on-the-spot written documentation of freezer chamber temperature.



**Additional Shelves**  
 Each ULT freezer comes standard with 3 shelves. Extra shelves are available and each shelf comes with 4 clips.



**6" Temperature Chart**  
 6" Temperature Chart, 7day, 54/pack



**Ice Scraper**  
 Ice scraper is available for cleaning ice built up on door gasket, PEP and other places in the freezer



**Cryo Safety Gloves**  
 Mid-arm style cryo safety gloves are available for use with ultra-cold surfaces. Cryo safety gloves protect hands and arm when inserting or removing inventory



**Stainless Steel Racks**  
 Store the 2" cyo-boxes within organized freezer racks. High quality stainless steel racks to optimize your freezer space and makes it easy to find the items you desire.








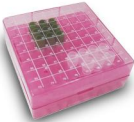

**Cryo-boxes & Cryo-tubes**  
 Fit into ULT freezers. The outer footprint dimensions (133mm) are compatible with common racks and the inner grid provides for a perfect fit to cryotubes.

# MANAGE YOUR BIO-SAMPLES PERFECTLY






## CRYO-RACKS & CRYO BOXES

Store your freezer storage boxes within organized freezer racks. Stainless steel racks are optional to optimize your freezer space and makes it easy to find the items you desire. We offer variety of racks for our freezers. These racks are made of high-quality stainless steel and help you organize the samples inside your freezer.

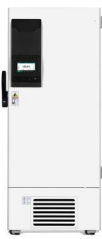
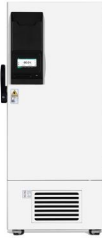



Optimize your limited freezer space				
<b>Model</b>	<b>N3J-244D</b>	<b>N3J-254D</b>	<b>N3J-255D</b>	<b>MN3J-264D</b>
<b>Material</b>	Stainless steel	Stainless steel	Stainless steel	Stainless steel
<b>Box type</b>	2 inch 9*9/10*10	2 inch 9*9/10*10	2 inch 9*9/10*10	2 inch 9*9/10*10
<b>Box layout(H*D)</b>	4 * 4	5 * 4	5 * 5	6 * 4
<b>Box Qty(pc)</b>	16	20	25	24
<b>Dimensions W*D*H(mm)</b>	140*559*236	140*559*291	140*686*291	140*559*350
<b>Net weight (kg)</b>	3.4	4.3	5.2	5.0

Organize your numerous bio-samples			
<b>Model</b>	<b>Cardboard box</b>	<b>PP box</b>	<b>PC box</b>
<b>Material</b>	Cardboard	Polypropylene	Polycarbonate
<b>Temp. range</b>	-196°C ~ 121°C		
<b>Grid</b>	9*9 wells for crew-cap vial 10*10 wells for internal-thread vial		
<b>Cryo-vial</b>	0.5/1.5/1.8/2.0ml		
<b>Dimensions W*D*H</b>	133*133*53mm		

## CRYO-RACKS LAYOUT

Fit into your daily lab work					
<b>Model</b>	<b>MDF-86V340E</b>	<b>MDF-86V408E</b>	<b>MDF-86V588E</b>	<b>MDF-86V728E</b>	<b>MDF-86V838E</b>
<b>Layout</b>	N3J-244D*12	N3J-254D*8 N3J-244D*8	N3J-255D*16	N3J-254D*18 N3J-264D*6	N3J-255D*24
<b>Boxes (2 Inches)</b>	192	288	400	504	600
<b>Cryo-vial(2ml)</b>	19,200	28,800	40,000	50,400	60,000

# PARAMETERS OF NEW GENERATION ULT FREEZERS

General Specifications						
New generation Ultra-low temperature Freezers						
Model		MDF-86V340E	MDF-86V408E	MDF-86V588E	MDF-86V728E	MDF-86V838E
Specifications	Shelf/drawer QTY	Stainless steel shelf/3	Stainless steel shelf/3	Stainless steel shelf/3	Stainless steel shelf/3	Stainless steel shelf/3
	Cooling	Direct cooling	Direct cooling	Direct cooling	Direct cooling	Direct cooling
	Defrost	Manual	Manual	Manual	Manual	Manual
	Refrigerant	R4001(mixed gas)	R4001(mixed gas)	R4001(mixed gas)	R4001(mixed gas)	R4001(mixed gas)
	Power Consumption(kWh/24h)	13.09	12.82	16.02	23.44	19.98
	Noise ( db)	52	50	53	50	55
	Ambient temperature ( °C )	10~32°C	10~32°C	10~32°C	10~32°C	10~32°C
Temperature range ( °C )	-40~-86°C	-40~-86°C	-40~-86°C	-40~-86°C	-40~-86°C	
Cooling system	Compressor brand/QTY	SECOP/1	SECOP/1	SECOP/2	SECOP/2	SECOP/2
	Sensor	PT 100	PT 100	PT 100	PT 100	PT 100
	Temperature controller	Microprocessor	Microprocessor	Microprocessor	Microprocessor	Microprocessor
	Display	7" LCD touch screen	7" LCD touch screen	7" LCD touch screen	7" LCD touch screen	7" LCD touch screen
	Pull down time*(min)	224	245	178	247	268
Power	Warm up time**(min)	205	234	273	292	304
	Voltage/frequency ( V/Hz)	220/50Hz	220/50Hz	220/50Hz	220/50Hz	220/50Hz
	Power ( W)	810W	890W	1500W	1400W	1700W
Material	Current ( A)	5.13A	5.34A	10.35A	10.37A	10.75A
	Inside material	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	Outside material	Color sprayed steel	Color sprayed steel	Color sprayed steel	Color sprayed steel	Color sprayed steel
Size	Insulation	VIP + PURF	VIP + PURF	VIP + PURF	VIP + PURF	VIP + PURF
	Capacity ( L/cu.ft)	340/12	408/14.40	588/20.76	728/25.7	838/29.59
	NT./GT. ( kg)	268/288	268/293	303/332	374/394	391/424
	Exterior size(W*D*H)(mm)	854*1006*1907	872*1028*1945.5	872*1192*1994.5	1229*1012*1994.5	1160*1172*1994.5
	Interior size(W*D*H)(mm)	488*607*1140	606*575*1180	606*738*1310	963*571*1350	894*718*1310
	Package size(W*D*H)(mm)	935*1070*2128	954*955*2094	970*1138*2185	1320*970*2185	1270*1100*2185
	Shipping CBM	2.13	1.92	2.42	2.79	3.05
Rack	20GP/40GP/40HQ	12/24/24	12/24/24	12/24/24	10/21/21	8/18/18
	Racks	N3J-244D*12	N3J-254D*8 N3J-244D*8	N3J-255D*16	N3J-254D*18 N3J-264D*6	N3J-255D*24
	Boxes (2 Inches)	192	288	400	504	600
Alarms	Samples(2ml)	19200	28800	40000	50400	60000
	High/low temperature	Y	Y	Y	Y	Y
	Power failure	Y	Y	Y	Y	Y
	Abnormal voltage	Y	Y	Y	Y	Y
	Sensor error	Y	Y	Y	Y	Y
	Filter screen check	Y	Y	Y	Y	Y
	Thermostat failure	Y	Y	Y	Y	Y
	Low battery	Y	Y	Y	Y	Y
	Condenser clean	Y	Y	Y	Y	Y
	High ambient temperature	Y	Y	Y	Y	Y
	Door ajar	Y	Y	Y	Y	Y
Power failure backup	72h	72h	72h	72h	72h	
Accessories	Castor	Y	Y	Y	Y	Y
	Compartment door	2	2	2	2	2
	Access port QTY/diameter	1/25MM	1/25MM	1/25MM	1/25MM	1/25MM
	USB port	Y	Y	Y	Y	Y
	Chart recorder	/	/	Optional	Optional	Optional
	Data logger	Optional	Optional	Optional	Optional	Optional
	Remote alarm port	Y	Y	Y	Y	Y

\* Pull down to -80°C @ ambient temperature 25°C (No load) \*\* Hold over to -40°C @ ambient temperature 25°C (No load) \*\*\* Recovery to -75°C @ ambient temperature 25°C (No load)