## -86°C Ultra Low Temperature Freezer

AUTO-CASCADE system ULT series

Auto-Cascade System -86ºC ULT freezer is specially designed for long term storage of a wide range of biological materials, including viruses, bacteria, red and white blood cells, and skin samples. Ideal for use in blood banks, hospitals, research institutes, clinical laboratories, electronic and chemical industry labs and biotechnology and bioengineering facilities




MDF-86V188E

## Product Featurers

**Large LED Display**
Comprehensive control panel

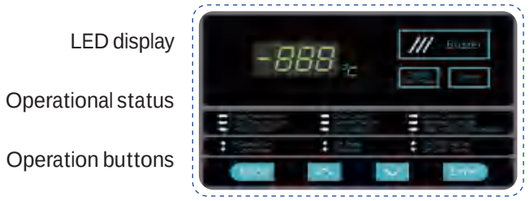
**10 types of Alarms**
Audible and visual alarms

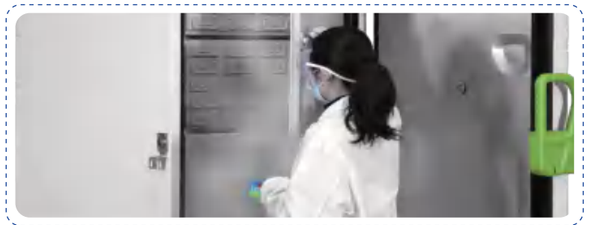
**Multi-layered Sealing Design**
Better sealing and better insulation

**International Certifications**
ISO9001, ISO13485 & CE certified

**Eco-friendly**
CFC-free refrigerant & insulation

**Energy Saving**
High-efficiency cooling system



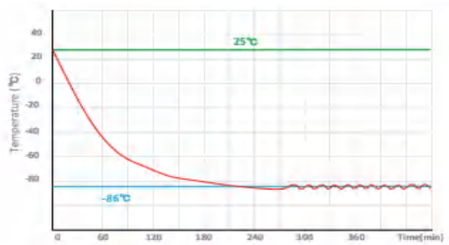





## Casaade System

### Advanced Thermal Insulation

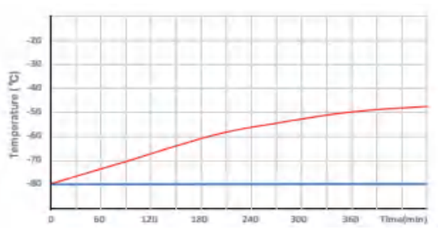
Advanced insulation materials and a multi-chamber design enhance cooling efficiency and reduce thermal loss, resulting in improved insulation performance and greater energy savings




Pull down test at ambient temp. 25°C

### Super-stable Cooling System

The auto-cascade cooling system features a high-performance compressor that drives a proprietary mixed refrigerant blend, enabling rapid cabinet cooldown. The system offers a simplified structure, energy-efficient operation, and easy maintenance




Pull up test at ambient temp. 25°C

## Internal Structure



Adjustable shelves



PTC sensor



Pressure-regulated inner door handle






Multi-layered silicone sealing gaskets
Low temperature resistance



Stainless steel inner door filled with PURF
Easily-detachable design

## -86°C Ultra Low Temperature Freezer

### External Structure

ULT freezers are manufactured using cold-rolled steel and coated with anti-corrosion powder. Varying configurations and ergonomic designs offer great opreating convenience



Large LED display
With alarm indicators and operational statuses

Service port



Remote interface
RS232/485

USB interface
Power on/off Switch



Quick-release filter
Easy open & Quick clean





Proven hinges



Ergonomic handle
Easy open
Padlock latch



Heavy duty castors
Universal wheels

### Accessories



$LN_2/CO_2$ backup system



Data logger



Chart recorder



Racks & Boxes



Gloves

### Product Parameters

| Model | | MDF-86V188E | MDF-86V58 | MDF-86V58U |
|---|---|---|---|---|
| Specifications | Shelf or Drawer/ Quantity | Stainless steel shelf/2 | Stainless steel shelf/1 | Stainless steel shelf/1 |
| | Cooling Type | Direct cooling | Direct cooling | Direct cooling |
| | Defrost Mode | Manual | Manual | Manual |
| | Refrigerant Type | R4001 | R4001 | R4001 |
| | Power Consumption (kWh/24h) | 11.17 | 6.09 | 6.09 |
| | Noise (dBA) | 52 | 50 | 50 |
| | Ambient Temperature (°C) | 10~32 | 10~32 | 10~32 |
| | Temperature Range (°C) | -40~-86 | -40~-86 | -40~-86 |
| Cooling System | Compressor Brand/Quantity | CUBIGEL/1 | SECOP/1 | SECOP/1 |
| | Sensor | PTC | PTC | PTC |
| | Controller | Microprocessor | Microprocessor | Microprocessor |
| | Display | Digital | Digital | Digital |
| Electrical Data | Voltage/Frequency (V/Hz) | 220/50Hz | 220/50Hz | 220/50Hz |
| | Power (W) | 660 | 442 | 363 |
| | Current (A) | 3.14 | 3.18 | 3 |
| Material & Build | Internal Material | Stainless steel | Stainless steel | Stainless steel |
| | External Material | Powder coated steel | Powder coated steel | Powder coated steel |
| | Insulation | PUF | PUF | PUF |
| Size | Capacity (L/Cu. ft) | 188/6.63 | 58L/2 | 60L/2 |
| | NT./GT. (kg) | 194.5/220 | 112/146 | 94/128 |
| | Exterior Size (W×D×H)(mm) | 830×810×1607.5 | 635×757×1212 | 904×798×748 |
| | Interior Size (W×D×H)(mm) | 465×465×830 | 330×453×410 | 330×453×410 |
| | Package Size (W×D×H)(mm) | 920×890×1820 | 735×850×1410 | 966×818×932 |
| | Volume ($m^3$) | 1.49 | 0.88 | 0.73 |
| | 20GP/40GP/40HQ | 12/26/26 | 21/42/42 | / |
| Frozen Racks | Loading Quantity (Racks) | 12 (4×3) | 2 (6×2) | 2 (6×2) |
| | Loading Quantity (2-Inch Boxes) | 108 | 24 | 24 |
| | Loading Quantity (2ml Tubes) | 10800 | 2400 | 2400 |
| Alarm | High/Low Temperature | Y | Y | Y |
| | Power Failure | Y | Y | Y |
| | Abnormal Voltage | Y | Y | Y |
| | Sensor Error | Y | Y | Y |
| | Filter Dirty | Y | Y | Y |
| | Thermostat Failure | Y | Y | Y |
| | Low Battery | Y | Y | Y |
| | Clean Condenser Reminder | Y | Y | Y |
| | High Ambient Temperature | Y | Y | Y |
| | Door Ajar | Y | Y | Y |
| | Controller Power Failure Alarm | 72h | 72h | 72h |
| Accessories | Castor Wheels | Y | Y | Y |
| | Interior Door/Quantity | 3 | 1 | 1 |
| | Service Port Quantity/Diameter | 1/25mm | 1/25mm | 1/25mm |
| | USB Port | Y | Y | Y |
| | RS485 Port | Optional (Free) | Optional (Free) | Optional (Free) |
| | Graph Recorder | N | N | N |
| | Data Logger | Optional | Optional | Optional |
| | Remote Alarm port | Y | Y | Y |
| Optional | $CO_2$ Back Up System | Optional | Optional | Optional |
| | $LN_2$ Back Up System | Optional | Optional | Optional |
| Other | Certification | ISO 9001/13485/14001/45001, CE | ISO 9001/13485/14001/45001, CE, UL | ISO 9001/13485/14001/45001, CE |