



MD-86L358



## Reliable Sample Storage

High temperature uniformity;  
Imported world-famous components.

## Double Door Design

Two independent inner door design reduce heat loss.

## Multi-level Alarms

High,low temperature,sensor error,power failure,  
high ambient alarm,door open alarm.

## Fast Cooling

High efficiency cooling fans and compressors.

## ■ Structure Features

### 1 Multi-layer Sealing Structure

Multi-layers gaskets provide a tight seal between the inner doors and outer door, reducing heat exchange and retaining the inner temperature better when there is power failure.

### 2 VIP PLUS Design

Provides up to 30% more storage capacity than a conventionally insulated freezer, without increasing the footprint. A glass fibre core provides advanced thermal properties.

### 3 USB Port

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

### 4 LED Display/LCD Display

Alarm functions include high, low temperature, sensor error, power failure, high ambient alarm, door open alarm etc.



### 5 Lever Handle Design

Ingenious handle design helps you to open and close door easier. Lockable handle safeguards your precious samples. Padlock can also be added for extra sample safety.

### 6 Relief Ports

It allows users to re-open the main door quickly when entering ,rust-proof, freeze-free.

### 7 Narrow Door Design

The freezer can pass through an 750mm wide door when the door is open.

### Application, Rating, & Electrical Data

Application	ULT freezer
Storage Volume (L/Cu.Ft)	358/12.64
Temperature Range	-40°C to -86°C
Default Set Point	-81°C
Power	115-V/60Hz   220-240~V/50Hz   220-240~V/60Hz
Current	8.5A   5.3A   5.3A
Power Cord Length	1.7m
Certification	CE/UL
Door type	Solid door
Application Environment	Non-corrosive, non-flammable, non-explosive
Ambient Operating Temperature	10°C~32°C

### Refrigeration

Refrigeration System	Self-cascade
Compressor	Hermetic
Condenser Type	Air cooling
Expansion Device	Capillary tube
Evaporator Type	Built-in
Defrost Method	Manual defrosting
Refrigerant	Mix refrigerant

### Controller / Configuration Settings

Display screen	LED
Controller Type	Microprocessor
Security	Lockable door, password protected settings
Control Sensor	PT1000/NTC, stainless steel
Communication Ports	USB, Remote alarm contacts
Power Failure Alarm	Yes
High/Low Alarms	Yes, fully adjustable
Door Ajar Alarm	Yes
Download	Yes, via USB, PDF
Temperature Log	Yes, download via USB
Battery Back-up	Yes, 16 hr display and alarm back-up   Rechargeable 12V, lead acid

### Performance Characteristics (normal operating conditions)

Uniformity   (°C)	±5.0
Recovery to -75°C after 1 min door opening   (min)	27.5
Temperature fluctuation   (°C)	≤5.7
Energy consumption   (kWh/day)	11.04   9.7   9.6
Noise emission   (dB)	50
Heat rejection   (BTU/hr)	3521
Pull-down time to -81°C   (min)	174.6   216   216

### Typical Temperature Map

	test 1	test 2	test 3	test 4	test 5	test 6	test 7	test 8	test 9
Avg	-82.77	-83.30	-83.12	-83.08	-83.35	-83.15	-79.13	-80.01	-80.04
Max	-79.30	-79.90	-79.90	-80.70	-80.80	-80.60	-77.50	-78.10	-78.40
Min	-85.30	-85.90	-85.60	-85.30	-85.60	-85.60	-80.90	-82.00	-81.80

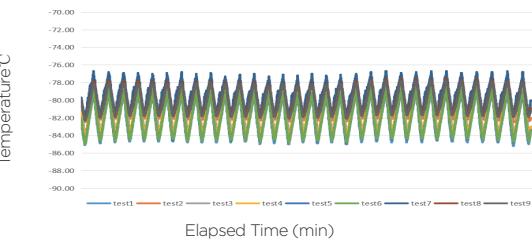
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### Dimensions and Construction

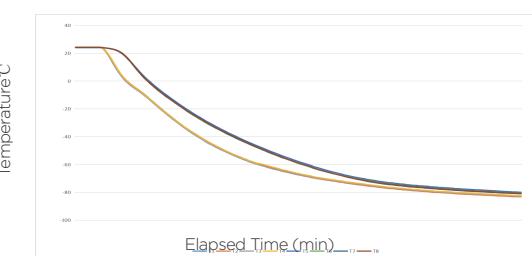
Interior (w*d*h)	450*583*1326 mm
Exterior (w*d*h)	795*885*1855 mm
Access Port	2 Access Port- for external monitoring probe(s) (25 mm diameter)
shelf	3   49 kg max capacity
Wheels	4/Omni-directional 2/leveling feet
Net Weight	160 kg
Gross Weight	206 kg

All performance data from 358L ULT freezer, 25 ambient, -81°C

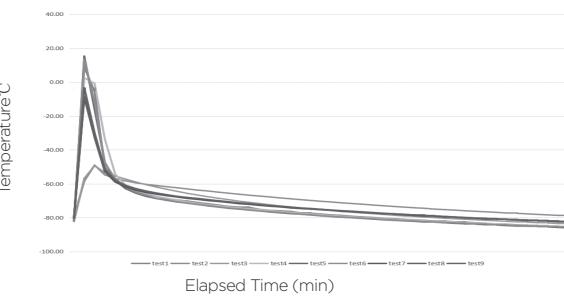
### Uniformity



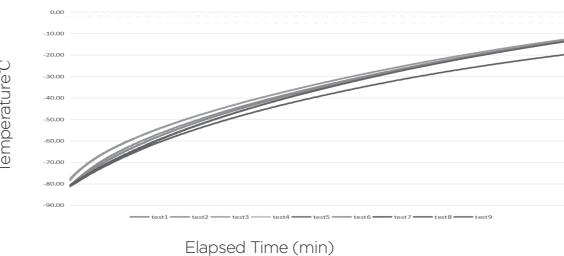
### Cooling Speed



### DOR 1 minute



### Temperature recover curve



Elapsed Time (min)

Elapsed Time (min)