

# Dual X Series ULT Freezer



MD-86L720BS



## Dual Cooling&Dual Guard

Two independent systems ensure uninterrupted operation, even if one fails; Dual systems reduce individual load, extending overall lifespan



## Super & Even Cooling

180Mins Rapid Cooling (25°C→-81°C)&±3 Uniformity.



## FLEX-VOLT®(100-240~V)

Stable operation at 100-240~V, 50/60Hz.



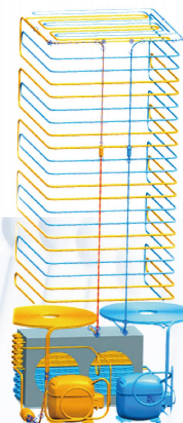
## Energy-Saving & Low Noise

6.5KW/24h Power Consumption & 46dB Low Noise.

### Voltage Flex Tech



### Dual Cooling Technology



### 10.1 inch LCD Touch Display



304 SS VS PCM



220V 10A Plug  
10A VS 15A



Ingenious Handle  
Design



Li-ion VS Lead-Acid  
Maintenance-free



5-Layer Silicone Seal



Anti-Condensation  
80% humidity

### Application, Rating, & Electrical Data

|                               |   |
|-------------------------------|---|
| Application                   | ULT freezer                                 |
| Storage Volume (L/cuft)       | 720/25.43                                   |
| Temperature Range             | -40°C to -86°C                              |
| Default Set Point             | -81°C                                       |
| Power                         | 100V-240-V /50Hz/60Hz                       |
| Current                       | 14A (at 100V) ,6.5A(at 240V)                |
| Power Cord Length             | 1.7m  |
| Certification                 | CE  |
| Door type                     | Solid door                                  |
| Application Environment       | Non-corrosive, non-flammable, non-explosive |
| Ambient Operating Temperature | 10°C-32°C                                   |

### Refrigeration

|                      |                          |
|----------------------|--------------------------|
| Refrigeration System | Dual Inverter cooling    |
| Compressor           | Hermetic, variable speed |
| Condenser Type       | Air cooling              |
| Expansion Device     | Capillary tube           |
| Evaporator Type      | Built-in                 |
| Defrost Method       | Manual defrosting        |
| Refrigerant          | Mix refrigerant          |

### Controller / Configuration Settings

|                     |   |
|---------------------|---|
| Display screen      | 10.1"LCD Touch screen   |
| Controller Type     | Microprocessor  |
| Security            | Lockable door, password protected settings                              |
| Control Sensor      | PT1000, 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, 17 hr display and alarm back-up   Rechargeable 12V, li-ion battery |

### Performance Characteristics (normal operating conditions)

|  |   |
|--|---|
| Uniformity   (°C)                                  | ±3  |
| Recovery to -75°C after 1 min door opening   (min) | 20  |
| Temperature fluctuation   (°C)                     | ≤3  |
| Energy consumption   (kWh/day)                     | 6.5   |
| Noise emission   (dB)                              | 46  |
| Heat rejection   (BTU/hr)                          | 1638  |
| Pull-down time to -81°C   (min)                    | 180   |
| Backup Time(h)                                     | 17  |
| Optional Accessories                               | Cryo Rack,Cryo Box,Cryovial,Chart Recorder, Cold Chain Monitor,LN2 Backup,CO2 Backup ,Printer |

### Typical Temperature Map

|     | test 1 | test 2 | test 3 | test 4 | test 5 | test 6 | test 7 | test 8 | test 9 |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Avg | -81.50 | -81.60 | -82.76 | -82.28 | -82.77 | -82.42 | -81.39 | -81.98 | -82.24 |
| Max | -80.10 | -80.40 | -80.80 | -80.00 | -80.60 | -80.30 | -80.00 | -80.80 | -81.00 |
| Min | -82.40 | -83.40 | -84.60 | -84.20 | -84.50 | -84.20 | -82.80 | -83.20 | -83.50 |

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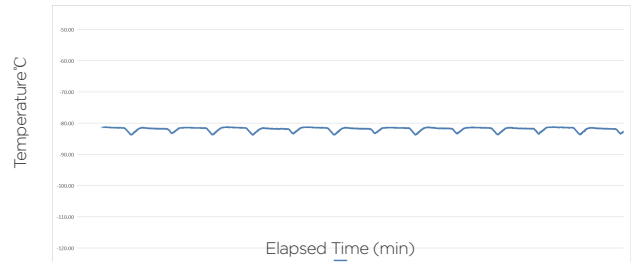


### Dimensions and Construction

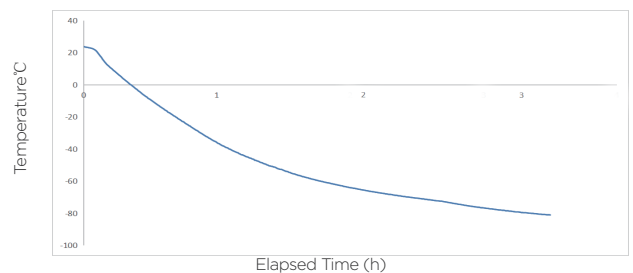
|                  |  |
|------------------|--|
| Interior (w*d*h) | 740*720*1310 mm  |
| Exterior (w*d*h) | 1030*995*1980 mm   |
| Access Port      | 2 Access Port- for external monitoring probe(s) (25 mm diameter) |
| shelf            | 3   87 kg max capacity   |
| Wheels           | 4 Swivel Casters + 2 Leveling Feet                               |
| Net Weight       | 320 kg   |
| Gross Weight     | 370 kg   |

All performance data from 720L ULT freezer, 25 ambient, -81°C

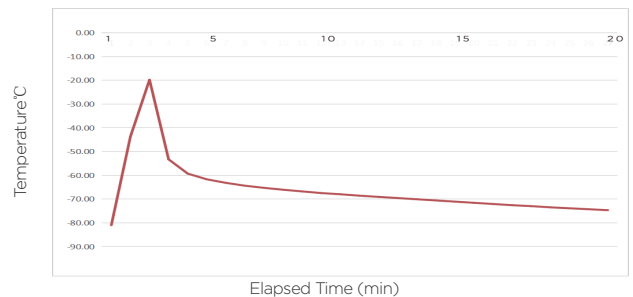
#### Uniformity



#### Cooling Speed



#### DOR 1 minute



#### Temperature Rise Profile

