



ULTRA LOW TEMPERATURE DEEP FREEZER



Quality, Management, Environment, Health & Safety Standards



CDSCO Certified



USFDA Listed



European CE



ISO 13485:
NABCB/IAF



ISO 9001: IAF



7 Electric Safety
Certifications

INTRODUCTION

MarkEn -86°C ultra-low temperature (ULT) freezers, powered by KryoXcel™ Technology, delivers precision cooling and unmatched stability for ultra-low temperature storage. Engineered for labs, hospitals, and pharmaceuticals, it ensures consistent temperatures from -40°C to -86°C , rapid recovery, and superior energy efficiency. With multi-layered safety features and certifications from USFDA, CE, ISO, and WHO-GMP, MarkEn sets the benchmark for advanced, reliable preservation of sensitive biological materials.



ULTIMATE PROTECTION, UNMATCHED RELIABILITY



Ultra-Low Cooling Excellence – Maintains -40°C to -86°C , even in extreme tropical conditions (up to $+43^{\circ}\text{C}$, 5-95% humidity).



Rapid Temperature Recovery – Heavy-duty hinges & triple-point silicone gasket ensure an airtight seal, restoring -86°C in just 6 minutes after a brief door opening.



Smart & Secure Access – RFID & password-protected control with PID/PLC system and an eye-level membrane keypad for enhanced security.



Reliable Cooling System – Three 10" axial fans optimize compressor efficiency, preventing overheating and ensuring consistent performance.



Uninterrupted Sample Safety – Supports LN2/CO2 backup to maintain ultra-low temperatures during power failures.



Precision Temperature Control – Electronic RTD probe guarantees high accuracy & stability, protecting your valuable samples. Experience secure, hassle-free storage with cutting-edge temperature control for ultimate sample protection.

BUILT-IN SAFETY. UNBREAKABLE PERFORMANCE

The MarkEn -86°C ULT Deep Freezer is built with advanced safety mechanisms to prevent overheating and ensure reliable, long-term operation :



LP & HP Pressure Switches
Automatically cut off power to prevent compressor damage from pressure fluctuations.



Overload & Overcurrent Protection
Instantly disconnects power if the compressor is overloaded or drawing excess current.



Fan Failure Protection Shuts down the compressor to prevent overheating in case of fan malfunction. These intelligent auto-shutdown systems safeguard against fire risks, ensuring continuous ultralow cooling and operator safety.

ECO-CONSCIOUS & SUSTAINABLE DESIGN

The MarkEn -86°C ULT Deep Freezer is engineered for energy-efficient, highperformance cooling with advanced technology:



Eco-Friendly Refrigeration – CFC-free system complies with EU F-Gas regulations for sustainable cooling.



Pure Copper Tubing (99.97%) – Optimized suction, freezer, and condenser tubing for superior heat transfer and reliability.



Condensation Prevention – Hotline technology keeps the interior dry, preventing moisture buildup



Smart Inverter Compressors – Variable speed control adjusts power based on heat load, reducing energy use & noise.



Energy Conservation – Auto shut-off when the door opens, cutting power consumption and minimizing environmental impact.



Built for Longevity – Designed for a minimum 10-year lifespan with assured spare parts availability.

Experience next-gen cooling with unmatched efficiency, durability, and eco-conscious design

USER-FRIENDLY AND QUIET



Heavy-Duty Storage – Even weight distribution across trays ensures secure, stable storage without risk of collapse.



Anti-Icing & Easy Maintenance – Heated air vent prevents condensation, while a washable front panel air filter allows for quick cleaning.



Effortless Door Access – Vacuum relief port equalizes pressure for smooth, hassle-free door openings.



Smart Filter Alerts – Blocked filter indicator warns users of airflow issues, and removable, washable filters ensure uninterrupted performance.



Whisper-Quiet Operation – Ultra-low noise (52 dBA) makes it ideal for direct use in labs. Experience seamless storage, effortless maintenance, and noise-free operation with the MarkEn -86°C ULT Deep Freezer.

SMART MONITORING. TOTAL CONTROL.



Interactive Touch Panel – 7" or 10" KryoXcel LED/LCD display, glove-friendly, with full control over temperature and alarms.



Real-Time Data Logging – Built-in memory stores temperature & alarm records, with seamless USB/Ethernet/RS485 connectivity for data transfer.



Centralized Management – Integrated data tracking software for monitoring critical storage conditions.

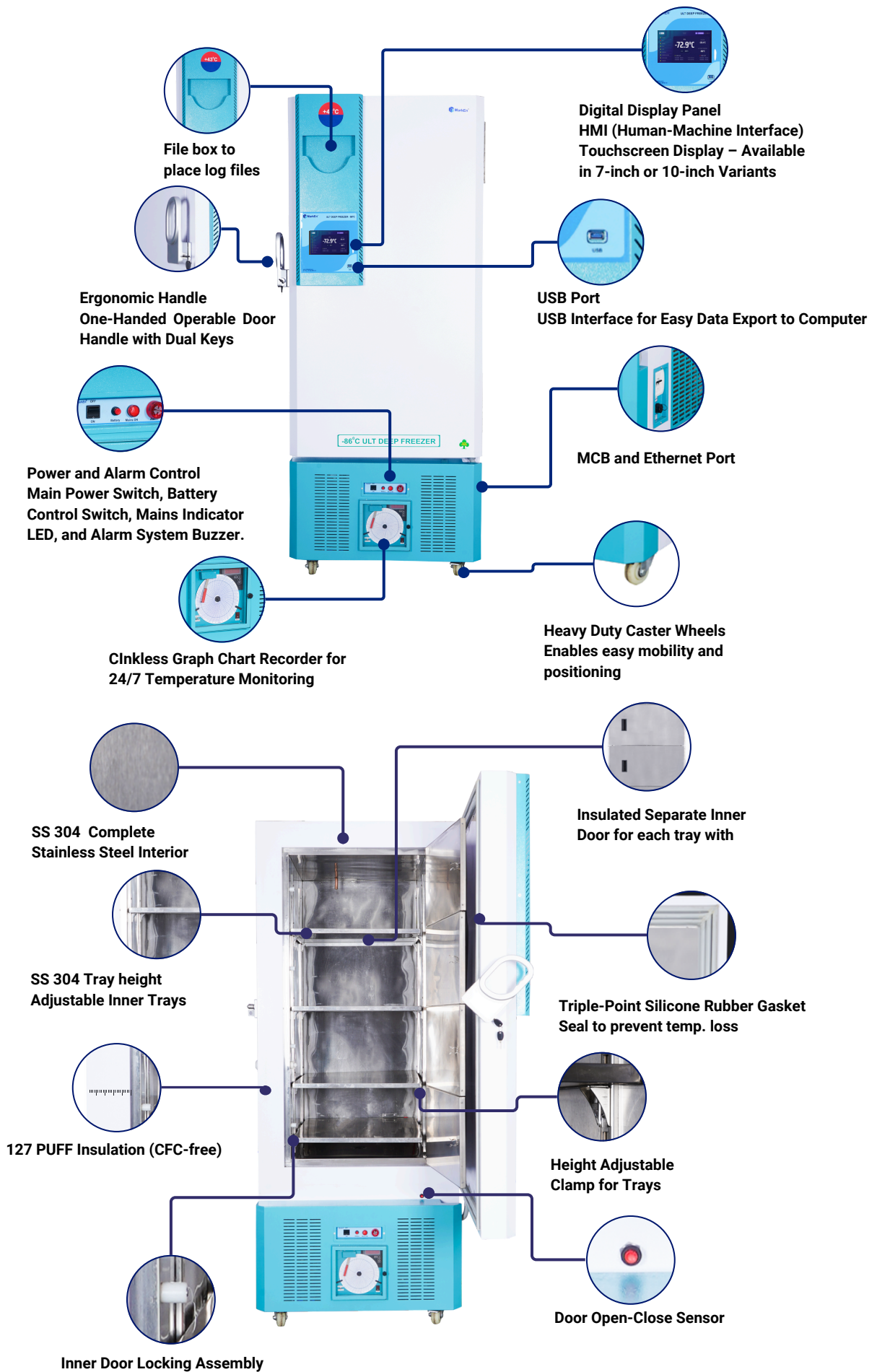


Simultaneous Display – Set & actual temperature conditions shown in realtime for precise monitoring.



Remote Monitoring & Alerts – Digital recorder, SMS alerts, and remote access ensure continuous oversight. Stay in complete control with advanced monitoring and seamless data management!





ULTRA LOW TEMPERATURE DEEP FREEZER VERTICAL MODELS

| Volume | 125 liters | 200 liters | 300 liters | 370 liters |
|--------------------------------|------------------|------------------|------------------|-------------------|
| Exterior Dimensions (WxDxH) mm | 658 x 687 x 1540 | 707 x 860 x 1539 | 708 x 886 x 1864 | 708 x 1026 x 1864 |
| Interior Dimensions (WxDxH) mm | 400 x 400 x 760 | 450 x 530 x 760 | 450 x 600 x 1060 | 450 x 740 x 1060 |
| Inner Tray | 3 | 3 | 4 | 4 |
| Insulated inner Door | 3 | 3 | 4 | 4 |
| Power Consumption | 0.6 kW-hr/day | 0.7 kW-hr/day. | 0.8 kW-hr/day | 0.8 kW-hr/day |
| Net weight | 90 Kg | 110 Kg | 115 Kg | 125 Kg |

| Volume | 425 liters | 590 liters | 690 liters | 760 liters |
|--------------------------------|-------------------|-------------------|-------------------|-------------------|
| Exterior Dimensions (WxDxH) mm | 798 x 1076 x 1861 | 888 x 1027 x 1990 | 993 x 1027 x 1990 | 993 x 1076 x 1990 |
| Interior Dimensions (WxDxH) mm | 540 x 740 x 1060 | 735 x 740 x 1060 | 735 x 740 x 1210 | 735 x 790 x 1210 |
| Inner Tray | 4 | 5 | 5 | 5 |
| Insulated inner Door | 4 | 4 | 4 | 5 |
| Power Consumption | 0.9 kW-hr/day | 1.3 kW-hr/day | 1.3 kW-hr/day | 1.5 kW-hr/day |
| Net weight | 130 Kg | 155 Kg | 165 Kg | 175 Kg |

| Volume | 810 liters | 1000 liters | 1300 liters | As per customer requirement |
|--------------------------------|-------------------|--------------------|--------------------|-----------------------------|
| Exterior Dimensions (WxDxH) mm | 993 x 1134 x 2100 | 1044 x 1084 x 2354 | 1154 x 1083 x 2554 | |
| Interior Dimensions (WxDxH) mm | 735 x 790 x 1310 | 790 x 790 x 1500 | 900 x 790 x 1700 | |
| Inner Tray | 5 to 6 | 5 to 7 | 6 to 8 | |
| Insulated inner Door | 5 | 6 | 6 | |
| Power Consumption | 1.7 kW-hr/day | 1.9 kW-hr/day | 2.4 kW-hr/day | |
| Net weight | 215 Kg | 240 Kg | 270 Kg | |

TECHNICAL SPECIFICATIONS

| | | |
|---|--|---------------------|
| Make | MarkEn | |
| Cabinet Type | Vertical / Upright | |
| Exterior Cabinet | Corrosion resistance CRCA/GI powder coated steel | |
| Inner Cabinet | High grade corrosion-resistant SS 304 (Stainless Steel) | |
| Insulation Material | CFC-free vacuum insulation panels for prevent temperature loss | |
| Insulation Thickness | Cabinet: 127 mm | Door: 115 mm |
| Castors Wheels | Four castor wheels (two lockable and two unlockable) for easy mobility. | |
| Ground Clearance | 100 mm | |
| Door | Single or double (optional) door with a handle and latch assembly for easy operation, featuring a standard key lock and a provision for a padlock | |
| Compressor | Two two-stage cascade hermetically sealed compressors | |
| Refrigerants | CFC Free-HCFC Free non-flammable green refrigerants. | |
| Condensing | Skin condensing with inner and air-cooled grooved aluminum fins. | |
| Temperature Range | -50°C to -86°C adjustable with accuracy of $\pm 0.1^{\circ}\text{C}$ | |
| Temperature Uniformity | $\pm 2^{\circ}\text{C}$ | |
| Pull-down Time | 5.5 hours | |
| Warm-up Time | -86°C to -40°C in 5 hours (when freezer is empty) | |
| Hold-over Time | 5 to 8 hours in case of power failure. | |
| Environmental Condition | Up to +45°C with Humidity 5% to 95% RH | |
| Temperature Monitoring System | IoT (Cloud Management) supported (optional) with a 7-day inkless chart recorder (optional). | |
| Audio & Visual Alarms System | Settable over and under-temperature alarms, sudden power failure, system failure, door open alert, low battery, overload, overheating, overcurrent, blocked filter, and filter cleaning fault notifications. | |
| Battery Backup | 24/48/72-hour backup for temperature display, security lock, alarm system, and temperature chart recorder to ensure continuous recording in case of power failure. | |
| Noise Level | <55dBA | |
| Power Protection | MCB provides an extra layer of protection against electrical overloads and short circuits to ensure safe and reliable operation. | |
| Power supply | 220-240V AC, 50 Hz Single Phase AC Power Supply | |

CERTIFICATIONS

Quality, Management, Environment, Health & Safety Standards



**50 Products
CDSCO Certified**



USFDA Listed



**8 products tested by a
WHO-accredited laboratory**



European CE



NABCB: ISO 13485



ISO 9001: IAF



ISO 14001: IAF



ISO 45001: IAF



**7 Electric Safety
Certifications**



WHO GMP



**BIFMA Certified,
BIFMA Level 3**



**ASTM- Corrosion
Free Products**



ISO 2409

**EN 13523-26,
ISO 13849-1,
IP 69, IP 65**

& many other...

ALL-IN-ONE SOLUTION FOR

Cold Chain Solution
Medical Equipment
Blood Bank Equipment

Hospital & Scientific Equipment
Hospital Furniture & Infrastructure
Commercial Refrigeration



25+

Years of Excellence



350+

Product Range



500+

Service center



1000+

Committed Engineers



1,00,000+

Satisfied Users

OUR ESTEEMED CUSTOMERS



& MANY MORE...



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Authorized Distributor Details