



ULTRA LOW TEMPERATURE DEEP FREEZER



Quality, Management, Environment, Health & Safety Standards



CDSKO MD 5 License



USFDA Listed



European CE



ISO 9001:2015
IAF



ISO 13485:2016
NABCB/IAF



ISO 45001 : 2018
IAF



7 Electric Safety Certifications
IEC 60335-1 and IEC 60335-2-24, IEC 61010-1,
IEC 61010-2-020 and 61010-2-101, IEC 61326-1,
IEC 61326-2-6.

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!



Shelf Design & Safety – Enhanced shelf design for efficient and consistent air circulation in the chamber and rounded metal rims of shelfedges for enhanced safety of users fingers.



Automated Vent Port



Heavy-Duty Door Hinges



Secure Internal Door Locking



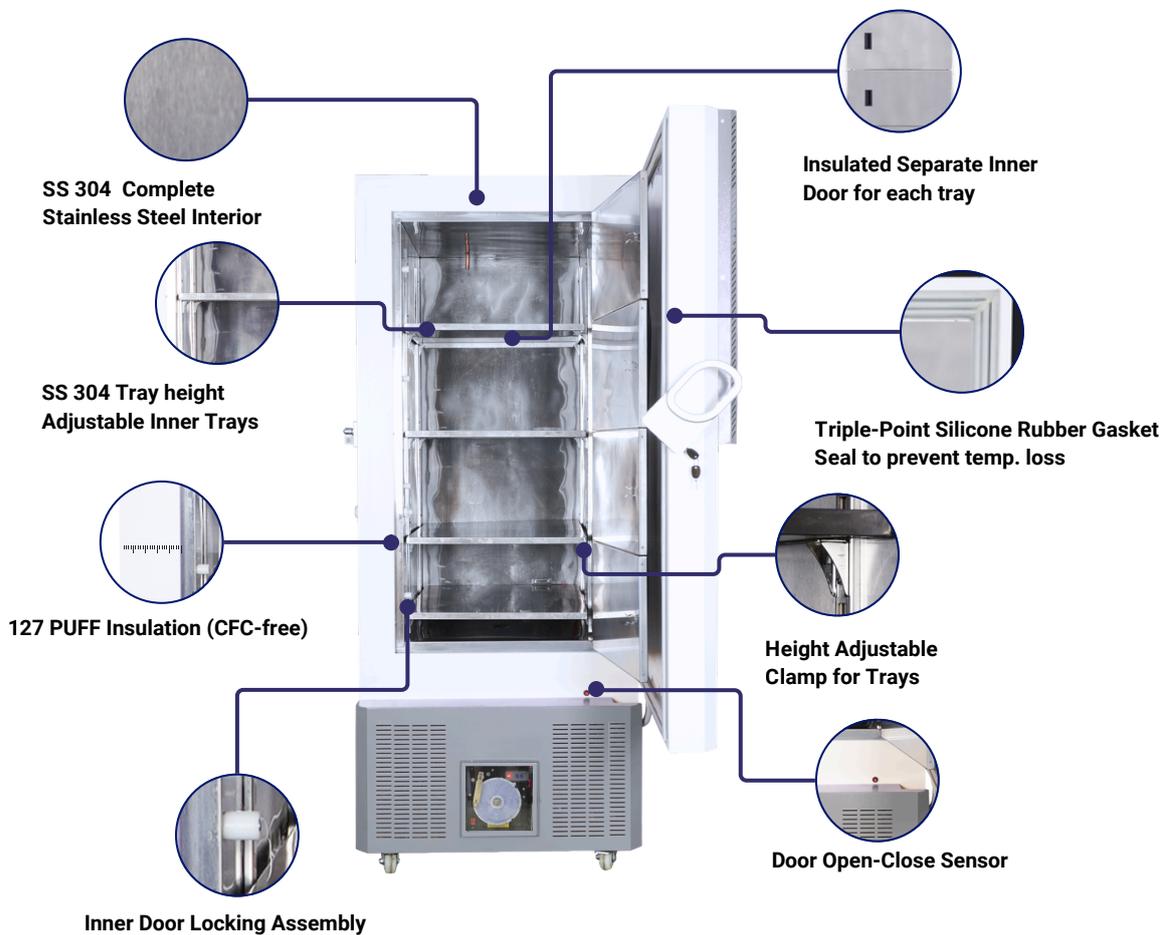
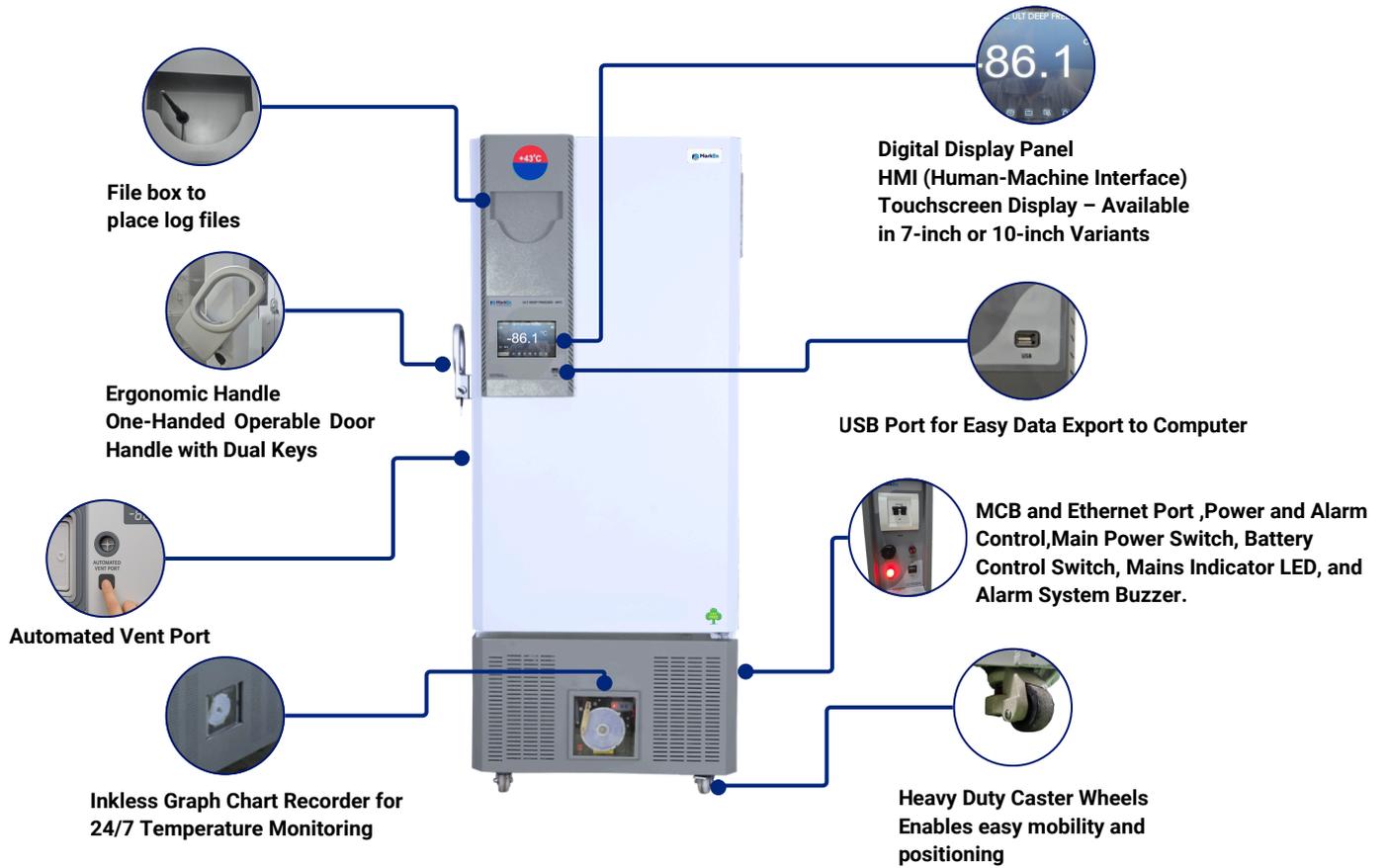
Inner Door with Thermal Protection



Optimized Storage Racking



Sensor Port For Centralised Monitoring



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	<50 dBA	
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	

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



400+

Product Range



500+

Service center



1000+

Committed Engineers



1,00,000+

Satisfied Users

CERTIFICATION



10 products tested by a WHO-PQS accredited laboratory



ISO 14001: IAF



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...

OUR ESTEEMED CUSTOMERS



& MANY MORE...



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