



BLOOD BANK REFRIGERATOR



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 Blood Bank Refrigerators deliver unmatched performance, precise temperature control, and exceptional reliability for preserving critical blood components. Engineered with advanced microprocessor technology and a high-efficiency compressor, they ensure rapid cooling, quiet operation, and industry-leading uniformity – making them the ideal choice for blood banks, hospitals, and research facilities



KEY FEATURES

PRECISION COOLING & TEMPERATURE CONTROL



Operates seamlessly in ambient temperatures from -10°C to +45°C, with 15–95% relative humidity tolerance.



Maintains an internal temperature range of +2°C to +6°C for optimal blood storage.

ADVANCED REFRIGERATION & ENERGY EFFICIENCY



Eco-friendly CFC-free R290/R134a refrigerant and sustainable insulation.



Automatic shut-off minimizes power use during door openings.



Efficient 27% compressor runtime at 25°C ambient temperature reduces costs.

SUPERIOR BUILD & DURABILITY



99.97% pure copper tubing ensures long-lasting performance and efficient thermal conductivity.



Engineered for a 10-year operational life with guaranteed spare parts availability.

ENHANCED STORAGE & SPACE OPTIMIZATION



Compact design ideal for labs, clinics, and limited spaces.



Sturdy storage trays prevent collapse, even when fully loaded.

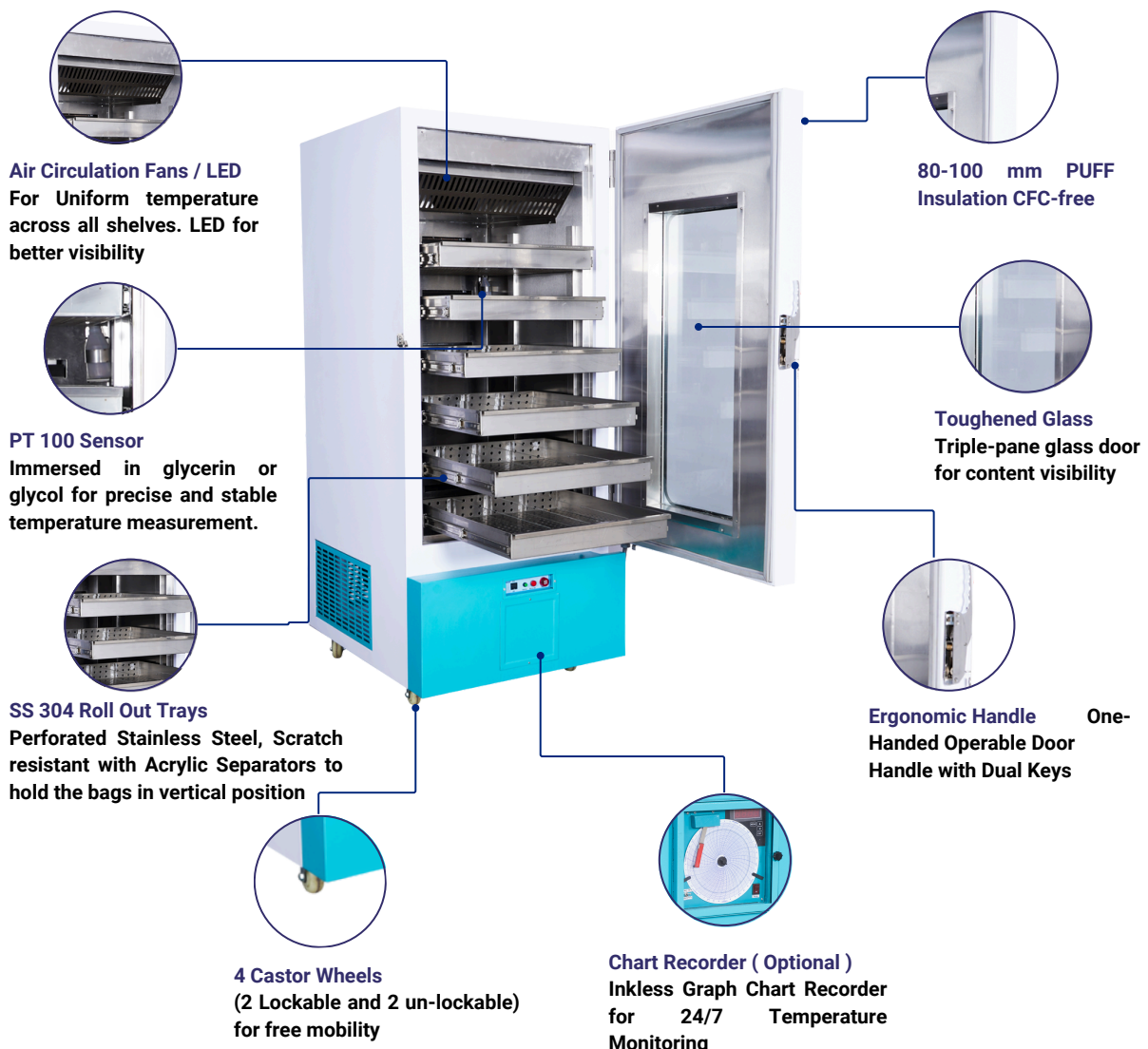
ADVANCED DOOR MECHANISM & SEALING



Durable Closure: Heavy-duty hinges with a spring-loaded automatic closing system (secure below 90°, max opening of 110°).



Enhanced Sealing: Triple-pane glass and high-grade magnetic silicone gasket minimize temperature fluctuations and boost energy efficiency.



CONTROL SYSTEM

Intelligent Temperature Management & Defrosting



- **Consistent Cooling:** 90° angled internal fan ensures uniform temperature across compartments.



- **Moisture Control:** Strategically placed hotline prevents condensation, maintaining a dry storage environment.



- **Flexible Defrosting:** Offers both automatic and manual defrost modes based on storage needs.

Advanced Control & User Interface



- **Programmable Controller:** User-friendly microprocessor/PLC with a membrane keypad for easy configuration and monitoring.



- **Digital Display:** 4" HMI LED display with 0.5°C precision for clear, accurate readings.



- **Temperature Unit Flexibility:** Selectable °C or °F display options for user preference.

Illumination & Monitoring



- **Optimal Lighting:** Flicker-free CFL illumination ensures clear visibility without eye strain.



- **Advanced Monitoring:** Microprocessor controller with digital display for real-time temperature tracking and an independent safety thermostat to prevent temperature deviations.

Security & Data Management



- **Enhanced Security:** User login, RFID/password protection, and protocol tracking for secure access.



- **Real-Time Data Logging:** RS485/USB connectivity for seamless data transfer and management.



- **Data Storage:** Stores temperature and alarm data for over 4 months with PC transfer capability.

Precision & Temperature Control



- **Accurate Measurement:** Factory-calibrated RTD sensors for precise temperature monitoring.



- **Uniform Distribution:** Forced air circulation ensures consistent temperature across shelves.

Monitoring & Alerts



- **Simultaneous Monitoring:** Displays both set and actual conditions for real-time performance tracking.



- **Alarm Systems:** Visual and audible alarms for immediate deviation or system issue alerts.



- **Remote Monitoring:** SMS alerts and remote access for enhanced control and oversight.

BLOOD BANK REFRIGERATOR

Type		Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	As per customer requirement
Blood Bag Storage Capacity	450 ml	64 Bags	132 Bags	180 Bags	240 Bags	300 Bags	360 Bags	
	350 ml	80 Bags	160 Bags	230 Bags	300 Bags	375 Bags	510 Bags	
Liters		178.62 L	284.04 L	381.06 L	467.77 L	554.48 L	641.20 L	
No. of Tray		2	4	3	4	5	6	
External Dimensions (WxDxH) mm		644x816 x1220	644x816x1580	784x978x1404	784x978 x1584	784 x978x1764	784 x978x 1944	
Internal Dimensions (WxDxH) mm		484x605x610	484x605x970	620x777x791	620x777x971	620 x777 x1151	620 x 777x 1331	

TECHNICAL SPECIFICATION

Make	MarkEn
Outer Cabinet	CRCA/GI powder coated steel (Corrosion resistance)
Inner Cabinet	Stainless Steel 304 (22G) sheet
Insulation	CFC-free PUFF Insulation
Insulation Thickness	Cabinet: 80-100 mm
Ground Clearance	4 castor wheels (2 Lockable and 2 un-lockable) for free mobility.
Door	Triple-pane, automatic-closing glass door with a handle and latch assembly for easy operation, featuring a standard key lock and a provision for a padlock.
Inner Acrylic Door (Optional)	Ultimate Insulation option with acrylic inner doors which effectively locks in the temperature inside, minimizing cold air loss.
Tray Type	Convenient, fully extendable Roll-out, adjustable perforated trays made of SS 304, featuring scratch-resistant surfaces and acrylic separators to securely hold bags in a vertical position with sufficient airspace to reduce the "sardine effect."
Compressor	Hermetically sealed, industrial-grade, highly efficient, air-cooled compressor for optimal performance and reliability.
Refrigerant	R290/R 134a, CFC Free-HCFC Free non flammable environmentally friendly green refrigerants.
Air Circulation	Automatically operated, forced uniform air circulation using an evaporator fan for consistent cooling distribution.
Pull down time	04 Hours
Temperature Controller	Fully programmable, microprocessor-controlled system with a membrane keypad and an eye-level control panel for intuitive operation and precise control
Display with Resolution	LCD/LED with 0.1°C resolution.
Temperature Range	+2°C to +6°C with a setting accuracy of $\pm 0.1^\circ\text{C}$ for precise temperature control.
Temperature uniformity	$\pm 1^\circ\text{C}$ or Less
Environmental Condition	10°C to +45°C with Humidity 5% to 95% RH
Temperature Hold Over	2 Hours
Cool-down Time	4 to 5 Hours for all the packs to reach below +6°C
Audio Alarms with Visual Indication on Digital Display	Temperature High, Temperature Low, Door Ajar, Power Failure, Sensor Failure
HMI Visual Indications Parameters	Heater ON, Door Open, Battery Low, Compressor On, Mains LED, System OK, Chart change , Power On
Sensor	Dual Temperature Sensors: One for front display, 2nd for temperature recording device (Chart Recorder) —ensuring precise monitoring.
Battery Backup	12-Hour Battery Backup: Supports digital display, alarm system, and temperature recording (TRCU) with auto-recharging for uninterrupted temperature tracking.
Noise level	<55 db
Power Protection	MCB fitted in input Power Line
Power supply	220 -240 VAC, 50 Hz +22% below Nominal Voltage.

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



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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



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Authorized Distributor Details