

## DEEP FREEZER

**MarkEn** Deep Freezers are widely used for storage of various Biological samples that requires Temperature between  $-15^{\circ}\text{C}$  to  $-40^{\circ}\text{C}$ . Sensitive Stem Cells, Plasma, Semen, Virus, Bone Graft and other Biological samples are stored in MarkEn Deep Freezers. These freezers are used in life science research institutes, hospitals, Blood Banks and pharmaceutical and biotech companies and some industrial applications also.

### FEATURES:

Temperatures Range of  $-15^{\circ}\text{C}$  to  $-40^{\circ}\text{C}$  at Environmental Temperature up to  $+55^{\circ}\text{C}$ .

Designed for tropical climates.

Weight carrying capacity Uniformly distributed to each tray.

The Hot Line at the mouth of the cabinet for Anti Condensation.

Compression Cycled type. With rapid freezing free

Refrigeration and insulation are CFC free.

All system tubing – Suction- Freezer – Condensing Tubing of minimum 99.97% of pure Copper.

Internal memory for storing temperature & Alarm data records which can displayed and transferred to PC.

Provision of Defrosting.

Auto Door closure.

Designed for minimum 10 years life with assurance of spare parts availability.

CE (European notified body 4 digit No.1282).

Electrical Safety Standards IEC 61010, IEC 60335-1 and IEC 60335-2-24.

### ACCESSORIES :

Stem Alcohol Thermometer.

Servo Controlled Voltage Stabilizer with Automatic High-Low Voltage cut-off and Time Delay Restart

**Make: MarkEn**  
**Model: MDFU-13**



 **U.S. FOOD & DRUG ADMINISTRATION**



### Quality Assurance:

USFDA, IEC 60529-2004, ISO:45001:2018, ISO 14001:2015, ISO 9001:2015, ISO 13849-1:2015, ISO 13485:2016, BIFMA INTERNATIONAL, WHO-PQS, WHO-GMP, CE (European notified body 4 digit).

Technical Specifications of Deep Freezer	
▪ Make	MarkEn
▪ Model	MDFU-13
▪ Capacity in Liter	280
▪ Type of Cabinet	Vertical/Upright
▪ Color	White
▪ Outer Material of Cabinet	Corrosion resistance CRCA/GI powder coated steel (18swg)
▪ Inner Material of Cabinet	Stainless Steel 304
▪ PUFF Insulation- CFC free	Cabinet: 127 mm
	Door : 115 mm
▪ Ground Clearance	100 mm with 4 castor wheels (2 Lockable and 2 un-lockable)
▪ Door	Solid door with Lock-Key and handle and 04 Nos Inner Door.
▪ Inner Shelves	04 Nos.
▪ Compressor	Hermetically sealed compressor
▪ Refrigerants	CFC-HCFC-Free non flammable refrigerants. R 404
▪ Condensing	Skin condensing Inner and air cooled grooved aluminum fins OR forced air circulation to maintain.
▪ Dimensions (WxDxH) in mm	Outer: 612x 650 x1908
	Inner : 452x490x1308
▪ Pull down time	04 Hours
▪ Operating Temperature Range	-15°C to -40°C adjustable with setting accuracy $\pm 0.1^{\circ}\text{C}$
▪ Temperature uniformity	$\pm 3^{\circ}\text{C}$ or Less
▪ Environmental Condition	Maximum +45°C with Humidity 5% to 95% RH
▪ Control System	Fully programmable microprocessor controlled with membrane keypad and Password Protected eye level control panel
▪ Temperature Monitoring System	With IOT (Cloud Manage) supported (Optional) and 7 days inkless Chart Recorder (Optional).
▪ Display	Digital Temperature Display 7" Touch Screen.
▪ Alarms	Audible and visual alarm system for over and under temperature, sudden power failure, system failure, Door open and battery low.
▪ Battery Backup	12 Hrs Battery Backup for Digital Display, Total Alarm system, Temp. recording system with auto recharging facility.
▪ Access port	Provision of connecting LN2/CO2 Backup system for maintaining the set temperature during power failure.
▪ Noise level	<55 db
▪ Power Consumption rate-	Stable Running: 2.040 kWh/24Hrs Cool Down Test:2.30kWh/24Hrs.
▪ Net weight	150 kg
▪ Power supply	Suitable for Input Voltage Range 100 to 290 VAC, 50 Hz $\pm 10\%$