



Notice Inviting e-Tender

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Procurement of Medical Equipment for the Blood Centres at Hospitals and Medical Colleges of Govt. of West Bengal
(Submission of Bid through *online*)

Bid Reference No.: WBMSCL/NIT-345/2023

Dated-05.07.2023

Amendment-I

TECHNICAL SPECIFICATION

Item-II

BLOOD BANK REFRIGERATOR

1. **Purpose of Equipment:** A refrigerator for storing whole blood or red cell packs in a blood bank.
2. **Type of Equipment:** Compression type refrigerator that uses CFC-free refrigerant gas/ green gas.
3. **Capacity:** At least 600 Ltrs /350 bags (volume-450 ml/bag) or more.
4. **Type:** Vertical
5. **Construction:**
 - Internal: Stainless steel (min. 22g).
 - External: Corrosion Resistant (CR at least 1mm thickness).
 - External Paint: Heat resistant, minimum 7 tanks process (Duly certified by the manufacturer).
 - CFC - free insulation.
 - Drawers: Roll out type, Stainless steel scratch resistant material, perforated on the bottom for perfect and homogeneous distribution of cold air. The separators,

if provided in the drawers, should be such that blood bags are held in a vertical position with the label side visible. There should not be any obstruction while rolling out the drawers for loading or unloading purpose.

➤ **Door:**

- Glass door, opening angle should be minimum 90° or more.
- Insulation and gasket should be silicone/rubber.
- Good quality Polyurethane Insulation should be minimum 50 mm.
- Door opening audio and visual display alarm.

6. Temperature range:

- 2°C to 6°C adjustable / factory set temperature with setting accuracy of $\pm 0.5^{\circ}\text{C}$ (or better).
- User Parameter settings: set point, high alarm point, low alarm point, buzzer off time, C/F Temperature choice.

7. Electrical Characteristics: Input voltage: 220/240V 50Hz.

- A line voltage corrector of appropriate rating will form part of standard configuration.
The servo voltage corrector should be capable to correct input voltage range from 160 – 280 V AC to 220/240 VAC , 50Hz.

8. Minimum Compressor Starting Voltage: 22% below nominal voltage.

9. Internal Temperature Control:

- Electronic temperature control, range +2 °C to +6 °C with setting accuracy of $\pm 1^{\circ}\text{C}$ whatever the load.
- Fan air cooling.

10. External Ambient Temperature: Performs in an ambient temperature of +10 to +33°C

11. Hold-Over Time: A full load of blood packs at +4 °C ($\pm 1^{\circ}\text{C}$) takes at least 30 minutes to rise to above +6 °C

12. Internal temperature hold over time in case of power failure should be at least 1.5 hours, if door not opened.

13. Cooling Down Time: A full load of blood packs at +25 °C takes a maximum of 1 to 3 hrs for all the packs to reach below +6 °C.

14. Temperature Monitoring:

- Digital temperature (LED) display with 0.5°C or lower gradation.
- Microprocessor based temperature controller with integrated audio visual temperature and power alarm function with digital monitoring

display.

- Independent safety thermostat to avoid negative temperatures.
- At least 2 Temperature Sensors: Sensor for temperature monitoring shown on front display, Sensor for managing use of compressor.

15. Temperature recording device

- Visual and audible alarm system indicating unsafe temperatures.
- Battery backup for alarm and temperature recording device.
- Facility for remote alarm.
- Seven days circular chart recorder.
- Seven days graphic temperature recorder with range of -5°C to +20°C (at least) with data logger & program reader, with supply of free circular charts for a period of warranty.
- Ideal compressor running time of 27% at room temperature.
- Door locks should be available.
- Audio and visual alarm for variation in temperature.
- Interior lighting.
- External ambient temperature +10°C to +40°C.
- Auto defrosting.
- Cooling time – Maximum 1 to 3 hours for all the packs to reach below +6°C.

16. Certifications:

- **Product certification:** CE/ US FDA / BIS
- **Quality Certification:** ISO certified.