Dated. 21-07-2015

Technical Specifications

Deep freezer (small)

1. Description of Function:

1.1 Deep freezers maintain temperatures (-) 25°C to (-) 15°C, to store vaccines and freeze ice packs .

1.2 Deep Freezers are required at district, regional and PHC levels, to store vaccine and prepare ice packs required for passive cooling in vaccines carriers and cold boxes.

2 Operational Requirements:

2.1 Designed for tropical climates.
2.2 Target holdover time should be not less than 2hrs and 30 minutes.
2.3 Hot and cold compressor starting at 172 volts (22% below rated voltage).
2.4 Manufacturing process of the product should not use or produce hazardous chemicals-gases.
2.5 Provision for drainage for the waste water.
2.6 Should have legs in the base with rotating screw type height adjustments to balance the weight on uneven floor.
2.7 The unit should have ground clearance minimum 100 mm.

3 Technical Specifications:

3.1 Gross Volume: 105 to 125 liters.
3.2 Construction:
Internal: Stainless 304 grade steel
3.3 External: Corrosion Resistance
3.4 Chest type with CFC – free insulation
3.5 Should have foam pad cover on top of the basket.
3.6 Solid door with lock and handle
3.7 Type: Compression Cycled, CFC-Free (both for refrigeration and insulation) All system tubing (suction tube, freezer tube and condensing tube) should be of minimum 99.97% of pure copper coil.
3.8 Temperature of compartment to be maintained between (-) 25deg C to (-) 15deg C continuous availability of energy at ambient temperature 5 to 45 deg. C .
3.9 Inlet of Capillary should be outside the PUF body.
3.10 ON/OFF Switch and power indicator should be available

3.11 A Micro-processor based control unit should be provided for setting of temperature and display following features:
3.11.1 3 digit digital display (to one decimal point) of cabinet temperature. The sensor should be placed 25 to 50 mm above base of chamber.
3.11.2 Power indicator
3.11.3 Audio (minimum 65 dBA) and visual alarm against the violation of set temperature range.
3.11.4 Min. & Max. cabinet temperature digital display of last 24 hrs. and breaches during last 24 hrs.
3.11.5 Temperature manual control with one decimal deg. scale.

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3.11.6 The unit should be sealed protected from dust, moisture or condensed water falling over it.

3.12 Accuracy for digital controller +- 0.5 degree centigrade.

4 System Configuration

4.1 Programmable Micro-processor control unit with child lock facility.

4.2 Should have provision to set minimum and maximum temperature at 0.1 degree Centigrade to programme the unit for continuous operation.

4.3 Should have provision for defrosting program.

5 Accessories, spares and warrantee:

5.1 The equipment should have minimum warrantee including comprehensive maintenance of sixty months after installation or sixty six months after the supply whichever is later.

5.2 Vaccine Storage Basket allowing free circulation of air, having the size to be able to accommodate 4 to 6 of them in the unit and suitable to match the net volume requirement. It should be minimum 5 wire basket.

5.3 Stem Alcohol thermometer (specifications and standard as per MOHFW approved **Annexure-1**) - one piece per unit range of -30 to +50 degree centigrade.

5.4 The supplier is required to maintain all the spare parts throughout the warrantee period and not less than ten years.

6 Environmental factors:

6.1 The unit shall be capable of being stored continuously in ambient temperature of 0 to 50deg C and relative humidity of 95%

6.2 The unit shall be capable of operating continuously in ambient temperature of 5 to 45 deg C and relative humidity of 90%

6.3 The plug should be flexible and unbreakable sealed rubber type.

7 Power Supply:

7.1 Power input to be 220-240VAC, 50Hz as appropriate fitted with Indian plug

7.2 Voltage stabilizer as per the MOHFW approved specifications and standard enclosed as **Annexure-2**

8 Standards and Safety

8.1 Product should be FDA or CE approved.

8.2 Should meet WHO/UNICEF Standard WHO/PQS/E03/FZ03.1.for Deep Freezers.

8.3 Test and inspection as per WHO procedure reference WHO/PQS/E03/FZ03-VP.1 Testing should be carried out from WHO certified lab/NABL/ILAC/STQC Labs.

8.4 Colour code : Blue

9 Documentation:

9.1 A paper copy of user/operator manuals to be supplied in English.

9.2 A paper copy of technical/wiring diagram/maintenance manuals to be supplied in English.

9.3 Certificate of inspection for technical compliance from an independent laboratory approved /recognized by WHO certified /National Accreditation Board for laboratories/ILAC/STQC Labs is essential. Certificate of testing should be currently valid till the supply and same must be verified by inspecting authority.

9.4 List of important spare parts and accessories with their part number and costing.

10 Packing of the equipment during shipment:

10.1 The supplier should provide strong and sufficient packing to ensure safe arrival of goods at the destination free from loss or damage.

10.2 A vertical arrow should be marked at the all sides of packages to ensure transportation of equipment in vertical position. TOP and BOTTOM should also be written.

10.3 To put label and signage's for HANDLE WITH CARE ON ALL SIDES OF THE CRATES as per packing & shipment norms.

11 Following messages should be written at the Top of the DEEP FREEZER

11.1.1 Place Freezer at least 10 cms away from the wall and 20 cms away from other equipment for free air circulation.

11.1.2 Use voltage stabilizer provided for theDEEP FREEZER

11.1.3 Safe temperature range (-)15 to (-)25°C

11.1.4 At CHC/PHC use deep freezer for freezing of ice packs only

11.1.5 Open the lid, only when needed

11.1.6 Store only Polio vaccines at Regional/District store.

11.1.7 Keep all vaccine in wire baskets provided.

11.1.8 Leave space between the vaccine boxes and ice packs for air circulation.

11.1.9 Place a thermometer at the place provided for.

11.1.10 Avoid removing thermometer from the unit while reading temperature.

11.1.11 Net vaccine storage capacity in Litres

11.1.12 Hold over time in hrs.

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