

**Technical Specification for Deep Freezer (- 80° C)**

- 1) **Capacity:** 400-500 Liter
- 2) **Temp Range:** -40°C to -80°C
- 3) **Construction:** Double wall, outer with M.S 18 swg & Inner with S.S 304.
- 4) **Control:** Micro process-based Controller & along with Mini micro-based control in-built to maintain cascade temperature and safe guard low stage compressor
- 5) **Refrigeration:** Specially designed Cascade system with Hermetically sealed Dual compressors System
- 6) **Refrigerant:** CFC Free
- 7) **Insulation:** PUF to minimize temperature loss with 10kg/m<sup>3</sup> density
- 8) **Main Door:** 1 Main Door with durable Double magnetic rubber gasket and sealed with PPCP material
- 9) **Sub Door:** 2Nos of independent compartments doors made of anticorrosive material to minimize temperature loss while door opening
- 10) **Fuse:** Equipped with slow blow fuse for compressor protection
- 11) **Caster:** Smooth moving ball bearing type Castor wheels for moving entire equipment (Johnson make)
- 12) **Door Latch:** Provided with latch and Safety lock to prevent unauthorized access.
- 13) **Door Handle:** Full length door handle provided for easy opening and elegant look
- 14) Cooling coils all around the inner chamber, cooling starts from top of the chamber for natural convection top to bottom
- 15) Must be supplied with 4 shelves
- 16) **Alarm:** Audio-visual alarm for high/low temperature/sensor failure/Door Ajar/Power Failure
- 17) Power consumption not more than 810 W
- 18) **Power:** Works on 230 V AC single Phase 50Hz.
- 19) Warranty- 03 Years on equipment, 05 Years on compressor

**Technical Specification for CO<sub>2</sub> Incubator for animal cell culture**

- 1) Microprocessor or Touch Screen controlled with data acquisition 180 Ltr direct heat CO<sub>2</sub> Incubator temperature control from 5° C above ambient to 50°C, with control accuracy ±0.5°C. with high Temp. Decontamination at 140°C.
- 2) It must have fan less design to avoid contamination.
- 3) It should have six-sided direct heating to provide stable temperature control, excellent uniformity, and rapid recovery with no over shoot.
- 4) It should have CO<sub>2</sub> control range from 0.1 to 20% with control accuracy and uniformity of ±0.1% and should have rapid recovery of at least 7 minutes.
- 5) It should have Infra-red (IR) CO<sub>2</sub> sensor It should come with minimum 3 adjustable height shelves & humidity reservoir (removable) to achieve at least 80±% RH.
- 6) It should have independent door heater eliminate condensation on inner door surface.
- 7) It should have HEPA filter on CO<sub>2</sub> inlet, it should have 25mm access port. –
- 8) It should be ISO & CE Certification.
- 9) Warranty 03 years
- 10) Two CO<sub>2</sub> Cylinder, regulator with compatible tubes & Stabilizer/or power backup system must be quoted separately with system.
- 11) Minimum Three years of warranty must be quoted with the system.

### **Technical Specification for Vertical Laminar Flow Cabinet**

- 1) The inner dimension of the chamber: 914 X 609 X 650 mm (3x2x2 Feet); and outer dimension: 1020 X 905 X 1900 mm.
- 2) Should have microprocessor controlled electronic controller
- 3) Should have LCD display to show measured parameters like password protection Air velocity, total using time, UV/FL lamp on/off etc.
- 4) Laminar Should be provided with Air Velocity sensor.
- 5) The air purification should be done through class 100 HEPA filter, with 99.97%, 0.3 um particle removal
- 6) Should have a pre-filter of 3-30 um particle removal, and it should be recyclable.
- 7) The cabinet should give class 100 purity
- 8) Should have wind velocity of 0.35-0.60 m/sec
- 9) Should have UV lamp 40 w x 2 EA, FL lamp 40 w x 2 EA
- 10) Material of construction: Inner - Stainless steel 304/316; Outer - Powder coated GI steel
- 11) Door should be made of tempered safety glass sliding door or glass wind screen
- 12) Utility device - air cock, gas cock, electrical socket
- 13) Electricity Supply - 220 V, 50/60 Hz
- 14) Ensure noiseless operation and anti-vibration construction provides efficient working environment.
- 15) Filter replacement warning signal.
- 16) Should be ISO or CE or ICMED approved product.
- 17) Laminar Should be provided with wheel with lock and Instrument leveller
- 18) 3 Years of warranty.