

Technical specification for proposed

Two twoport adjoined glove box - 1 Nos.

1. Glove Box – Technical Specifications

- Automatic antechamber control
- Mini antechamber
- Vacuum pump
- Oxygen Analyzer/ Moisture Analyzer
- Solvent absorber
- Auto purge function
- PLC controlled with color touch panel
- EnergySave mode, Automatically reducing power consumption by up to 90% during idle periods.
- Automatic regenerable H₂O/ O₂ purifier
- Attainable purity O₂ < 1 ppm, H₂O < 1 ppm
- Industry leading low leak rate of < 0.05% Vol/ h
- Circulation capacity more than 84 m³/ h (50 cfm) at $\Delta P = 60$ mbar (60 Hz)
- Integrated high vacuum feedthroughs

2. Glove Chamber

- Power Supply: 100 - 120 V or 200 - 240 V AC/ 50 - 60 Hz, 20 A
- Material: Stainless Steel Type 304, 3.0 mm in thickness
- Internal Dimensions: 2000 mm (L) x 750 mm (W) x 900 mm (H) or more
- Front Window Material: Lexan (polycarbonate) & 10 mm in thickness upon request.
- Number of Glove Ports & Size: Two 220 mm in diameter, O-ring sealed.
- Glove Material: Hard aluminum alloy or polyaldehyde
- Gloves Material & Thickness: Butyl rubber and 0.4 mm thickness (two sets)
- HEPA Filters: Inlet and outlet filters eliminate particles with the size > 0.3 μm
- Lighting: Fluorescent lamp, front mounted

3. Enclosures for glove ports – 2

4. Gas Purification System

- Automated removal of H₂O and O₂
- Automatic Pressure Control: $\pm 12 \sim \pm 15$ mbar

- Single column, automated column regeneration
- Purity Level: O₂ < 1 ppm; H₂O < 1 ppm
- O₂ Capacity – 43 L per Purifier Column
- H₂O Capacity – 1800 g per Purifier Column
- Enclosed stainless steel loop for gas recirculation and purification
- Operating Gas – Working gas: Nitrogen, Argon, or Helium (purity > 99.999%); Column regeneration gas: Mixture of H₂ (5-10%) and working gas
- Vacuum Pump – Rotary vane pump, installed with oil mist filter, oil circulator, and automatic gas ballast control; dual-stage; Pumping rate: 10 CFM (17 m³/h); Ultimate vacuum: -3 mbar.
- Circulation Unit – Material: Integrated blower, oil-free, highly efficient; Flow Rate: 50 CFM (84 m³/h)
- Leakage Rate: Leak rate -5 mbar l/s
- Valves: Electro-pneumatic DN 40

5. Control System

- Full automatic PLC control system
- Language: English
- 6" Touch Screen Display
- LCD or LED Display: LCD, Pressure, O₂ and H₂O value is logged for 24 hours

6. Antechamber

- Main Antechamber – Material: Stainless Steel Type 304; 3.0 mm in thickness; Internal Dimensions: 360 mm (Φ) x 600 mm (L); Vacuum: 1 x 10⁻² mbar or better
- Mini Antechamber – Material: Stainless Steel Type 304; 3.0 mm in thickness; Inside Dimensions: 150 mm (Φ) x 400 mm (L); Vacuum: 1 x 10⁻² mbar or better

7. Purging System

- Function: By setting up the purging time and pressure, the system automatically purges the chamber
- O₂ level, timer or manually controlled.

8. Analyzer

- O₂-Analyzer – Measurement Range: 0 to 1000 ppm
- H₂O-Analyzer – Measurement Range: 0 to 1000 ppm

9. Solvent Purification System

- Column Material: Stainless Steel Type 304; 3.0 mm in thickness
- Inside Dimension: 220 mm (Φ) x 450 mm (H)
- Packing Material: High-quality activated carbon

10. Terms and conditions:

- Previous installations: Vendor should have minimum 5 or more installations in India. List of such 5 latest users and copy of their installation report should be enclosed.
- A detailed compliance certificate against each specification needs to be provided by the vendor along with the technical brochure
- Warranty: Minimum 2 years and 1 year non-comprehensive free service, Company must take responsibility to replace the consumables if needed during the two years of warranty Period.
- Service facility and down-time call attendance:

Supplier should clearly mention about their service set up in India (preferably in South part of India) for prompt service support along with contact details of service engineers specially trained on the offered system. Service should be provided within 24 h from the report of technical problem so that machine down time is minimized.

In case the Equipment / System remains non-operational for more than 5 days then warranty period will be extended for the equivalent period for which Equipment / System remained non-operational. Warranty extension in such case shall be done without prejudice to any other Term & condition of the contract.

- Spares: Supplier should confirm the availability of spares for next 10 years from the date of installation. All essential spares for day-to-day operation needs should be provided as standard supply.
- Installation and training at customer site is required.

- **Pre-Installation Requirement:** Necessary pre-installation advice should be sent immediately after the placement of the order.
- **Delivery Condition:** The instrument should be delivered within 14-16 weeks.