

Vacuum Chamber

We need a vacuum chamber with dimension 0.5m x 0.5m x 0.3m. The pressure (range: 1bar – 10^{-6} mbar) inside the chamber should be read using a gauge fitted onto the chamber. In addition, a control panel should provide an automatic cut-off mechanism (for a set pressure) based on feedback from a pressure sensor. The chamber should have a door for entry of personnel and also a window to view. In addition, there should be provision for taking cables (signal/electrical).

1. Provision for including pressure/vacuum gauge tapping (as well as vacuum gauge).

1	Shape and Dimension of working space inside the chamber (vacuum)	Square section: (350 mm x 350 mm) x height: 250 mm
2	Chamber material	Suitable grade of stainless steel
3	Type of pumps	Rotary: of suitable capacity Turbo-molecular pump (of suitable capacity).
4	Required Vacuum level	10^{-6} mbar or less
5	Temperature control	Optional
6	Features on four vertical walls, floor face and roof face of the chamber	<p>Side Wall 1. attachment of turbo-molecular pump</p> <p>Side Wall 2. attachment of quartz window (wide enough for clear visualization)</p> <p>Side Wall 3. door to open the chamber, door size should be as large as possible</p> <p>Side Wall 4: second quartz window</p> <p>Top roof: port for coupling laser unit and 2 small ports to bleed working gas (Ex: Ar, N₂)</p> <p>Base/floor: provision of suitable ports to integrate X-Y and rotary stages inside and to allow two thermocouples (flexible, wire type) to go in.</p> <p>Note: all arrangements can be made as per design requirement of the</p>

		manufacturer.
7	Sensors and controls	<p>1. Provision to control of pressure by position regulation of baffle valve. Acceptable level of fluctuation: 2% under no load condition.</p> <p>2. Presence of normal roughing and backing valve</p> <p>3. Suitable good quality gauges for high and low vacuum and digital display units</p> <p>4. Temperature monitoring unit with digital display</p> <p>5. Precise regulation of gas pressure inside the chamber when gas purging is necessary. Precision level to be mentioned:</p> <p>6. Gas flow controller : precision level need to be mentioned</p> <p>7. Acceptable level of pressure fluctuation (when gas purging is done): 5% of the set value</p>
8	Expected Delivery	3 month from place of orders
9	Optional (quote separately)	XY Stages and rotary stages with controls for positioning workpiece

Other Requirements

1. Quotations with the complete solution for the above requirement will only be accepted.
2. I.I.T. Madras has the right to accept the whole or any part of the tender or portion of the quantity offered or reject it in full without assigning any reason (Quote items separately)
3. A list of customers in India and abroad with details must accompany the quotations.
4. Quotations for a prototype machine will not be accepted.
5. Suppliers to provide training for operation and maintenance at IIT Madras at free of cost.
6. The system must be equipped with all the necessary safety interlocks. Provisions for safety wear are essential.
7. The complete system and its associated hardware/should have a standard warranty of 3 years from the date of installation, commissioning and acceptance of the system at IIT madras.

8. All technical literature/catalogues and drawings of various systems should accompany the quotation. All the documents should be in English.
9. Installation and commissioning should be provided by the supplier or its Indian agent. The Indian agent should have well proven service capability on similar systems with factory trained service engineers available in India. Details of their engineers expertise should be enclosed along with the offer and will be a key factor in the decision making.
10. The system should have compatibility with Indian environment conditions (for better power/energy stability)

11. The last date for receipt of the quotation is as per tender terms & conditions