


**Technical Evaluation of: Tender NO. NC-001215-PH1608-18-19**  
**for TURBO MOLECULAR PUMPING STATION**

<b>TURBO MOLECULAR PUMPING SYSTEM</b>	1
Spec	<b>Pfeiffer Vacuum</b>
<p><b>Specification of Turbo Molecular Pump:</b>  Turbo molecular Pump with Controller:  Inlet flange: DN 63 CF-F  Inlet pumping speed of Nitrogen: <math>\geq 67</math> ls-1  Compression ratio of Nitrogen: <math>&gt; 1 \times 10^{11}</math>  Gas throughput at full rotation speed of Nitrogen <math>&gt; 1</math> mbar l/s  Backing pressure: <math>&gt; 20</math> mbar  Cooling of turbo pump: Air cooling  Start time to reach normal rotation speed: <math>&lt; 120</math> s  Ultimate vacuum: <math>&lt; 5 \times 10^{-10}</math> mbar  Normal rotation speed: 90,000 rpm or higher.  Rotation Speed of TMP variable by Controller: - 20 – 100%  Protection: - Against water spillage i.e. IP 54  Bearing Mechanism:  Dry permanent magnetic bearing at high vacuum side;  Oil lubricated ceramic bearing at other side.</p> <p>Turbo controller: Suitable controller to power the turbo pump  Safety features: Stop rotation when the turbo is over heated  Power: single phase AC 220 V 50 Hz  Control unit should display:  Rotation speed,  Current drawn by the pump,  Temperature of Motor, Bearing, Electronics, Rotor and Bottom part of Turbo Pump etc.  Necessary accessories:- Mesh, Venting valve, Air Cooling Kit</p>	Complied
<p><b>Specifications for Backing Rotary vane Pump: - Magnetic Coupling</b>  Peak pumping speed: <math>2.5 \text{ m}^3\text{h}^{-1}</math>  Ultimate vacuum: <math>&lt; 0.005</math> mbar  Sound noise level: <math>&lt; 55</math> db  Coupling:- Magnetic ( No use of Radial Shaft Seal)  Leak Rate: <math>\leq 1 \times 10^{-4}</math> mbar l/s  Oil Mist filter  Power: single phase AC 220 V 50 Hz</p>	Complied
<p><b>Vacuum Gauges:</b>  Pirani &amp; Cold cathode Gauge  Vacuum connector: DN 40 CF-F  Pressure range: - 1000 mbar to <math>5 \times 10^{-9}</math> mbar  Accuracy: 30% (<math>10^{-8}</math> mbar to 100 mbar)  Corrosive resistant  Pressure maximum:- 10 bar  Bake out temperature:- <math>150</math> °C  Operating temperature: <math>5</math>°C to <math>50</math> °C  Gauge controller: Single gauge controller has provision to</p>	Complied

<p>connect above gauge head  Power: single phase AC 220 V 50 Hz  Filter time constant 0.75/0.15/0.02 s  Set Point:- 2 Pieces  Interface:-USB</p>	
<p>Local service and support: Service and support should be provided by local engineers placed in India, for complete repair of Turbo Pump ( Rotor and Stator replacement of Turbo Pump at NISER Bhubaneswar, Bearing Replacement of Turbo Pump at NISER Bhubaneswar), Rotary Vane Pump and Gauge.</p> <p>Vendor should submit brochure of all the equipment.  Compliance certificates of all the equipments supported by the brochures should be submitted.</p> <p>1 Year Standard free onsite OEM warranty</p>	<p>Complied</p>

Pfeiffer Vacuum complies with all the technical specs for the above mentioned item. Therefore, they technically qualify for the financial bid opening.



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