

Request for Proposal (RFP) for Turbo Pumping Station with accessories

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S.No	Name of the component	No.of Units required
1	Turbo Pumping Station with Accessories	1

Technical specifications of the component

1. Pumping Station

Turbo Pump (Qty :1)	
Type	Turbo Pumping Station
Cooling Method	Air
Flange IN	DN 63 ISO-K
Flange OUT	Silencer, G 1/8"
Pumping Speed for N ₂	65-100 l/s
Ultimate Pressure	$<1 \cdot 10^{-7}$ mbar
Pump-down time for vacuum chamber size 100 l	≤ 5572 s
Pump-down time for vacuum chamber size 10 l	≤ 557 s
Pump-down time for vacuum chamber size 1 l	≤ 56 s
Mains requirement: voltage	100 - 240 V
Weight	<13 kg
Backing Pump	
Cooling Method	Air
Flange IN	G 1/8" elbow union + enclosed hose DN 6 x 1000 mm with a straight union in G 1/4" at the end
Flange OUT	G 1/8" + silencer
Emission sound pressure level without gas ballast or purge	≤ 52 dB(A)
Exhaust pressure, max	1000 mbar
Intake pressure max.	1100 mbar
Leak rate	$\leq 5 \cdot 10^{-4}$ Pa m ³ /s
Pumping speed at 50 Hz	0.5 m ³ /h
Rotation speed at 50 Hz	1,500 rpm
Rated current absorption	1.1A
Mains requirement: voltage 50 Hz	100 – 115/208 – 236 V

Protection category	IP20
Weight	< 7 Kg
Mounting Material (Qty :1)	
Mounting Material	DN 63 ISO-K inclusive centering ring coated with splinter shield, bracket screw
Vacuum Gauge (Qty :1)	
Type	High Current Pirani/Cold Cathode
Nominal diameter	DN 40 CF-F
Flange, Material	Stainless Steel 1.4435
Filament	Tungsten
Measurement range C 1	$\cdot 10^{-8} - 10^3$ mbar
Output signal: Measurement range	2 – 8.6 V
Output signal: Minimum load	10 k Ω
Pressure max.	10,000 mbar
Repeatability: $1 \cdot 10^{-8} - 100$ hPa	± 5 %
Supply: Power consumption max.	2 W
Supply: Voltage V DC	14.5 – 30 V DC
Temperature: Operating	5-55 °C
Controller for guage (Qty :1)	
Display rate Error signal: Interfaces USB, RS-485, Ethernet	≥ 10 Hz
Working contact, potential-free	1 Pcs.
Filter time constant	0.75/0.15/0.02 s
Interfaces	USB, RS-485, Ethernet
Mains requirement: frequency (range)	50/60 Hz
Mains requirement: power consumption	45 VA
Mains requirement: voltage (range)	100-240 V
Measurement range	$5 \cdot 10^{-11} - 5.5 \cdot 10^4$ mbar
Measurement rate.	≥ 100 Hz
Measuring channel	1 Pcs
Sensor Cable (Qty :1)	
Length	3m
Additional Vacuum Components (Qty: 1 each)	
Reducer	Straight, ISO NW 100K ISO NW 100/63 ISO-K, stainless steel, length 50 mm
Corrugated Hose	DN 63 ISO-K Stainless steel, flexible, length 1500 mm
Centering Ring with Outer Ring	ISO NW 100K Aluminum/O-Ring FKM
Centering Ring with Outer Ring,	DN 63 ISO-K Aluminum/O-Ring FKM

Scope of the item:

The component mentioned in this RFP will be used for generating and monitoring high vacuum in spectrophotometer kept in MGKML.

Additional Requirements:

- The vacuum seal or o-rings should be UHV grade and compatible with ISO - 3/4 class (as per ISO 14644-1).
- Outer finish/ coatings on all auxiliary hardware should be compatible with ISO - 3/4 class (as per ISO 14644-1).

Eligibility criteria of vendor:

The vendor must have knowledge, experience and infrastructure for the design and fabrication of vacuum pumping stations.

Expected deliverables:

As mentioned in "**Table of Contents**" along with conformance certificates for specifications mentioned in "**Technical specifications of the components**"

Expected Time Schedule

4 - 5 months

For any information/clarifications contact the following

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