SECTION - C

TECHNICAL SPECIFICATIONS OF STORES AND DRAWINGS.

Technical Specifications for Supply, Installation and Final Acceptance Tests at IPR for Cryopumping System

INSTITUTE FOR PLASMA RESEARCH

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Technical Specifications for Supply, Installation and Final Acceptance Test at IPR of Cryopumping System

Sr. No.	Description	Value
1	**Pumping Speed:**	
	Water	≥ 9000 l/s
	Hydrogen	≥ 5000 l/s
2	**Capacity**	
	Hydrogen	> 20 Standard liters
	Argon	~ 2000 standard liters
3	Minimum Temperature achieved on 2nd Stage	< 14 K
4	Ultimate vacuum at pump's mouth	< 5.0×10^{-9} Torr
5	Inlet Flange	300 CF (14" CF) Refer Dimension as OD: 355.6 mm (14") , Bolt Circle: 325.4 mm, Bolt Hole Size: ~ 10.3 mm, No. of Holes: 30 Nos.
6	Cross over	≥ 250 Torr-liters
7	Cool down Time from Room temp to 20 K	~ 120 minutes
8	Roughing side port	25 KF or any standard
9	Helium Compressor	Water cooled
10	Orientation	Any
11	Input Power	Single phase 50 Hz, AC 230 V (±10%). or Three Phase 50 Hz, AC 380-420 V
12	Minimum 3-meter long metallic flexible hoses for Helium with self-sealing coupling.	
13	Minimum 3 meter long cryo pump power cable.	
14	Temperature sensor on 2nd stage with minimum 6 meter long cable up to display unit.	
15	Temperature Display: Digital with Relay Control along with RS-232 communication.	
16	Vendor should submit the standard company catalog /technical data sheet of the quoted product along with the quote.	
17	Vendor should submit the Detail Operation manuals along with the system	
18	**Vendor should quote for complete cryogenic system inclusive of all the mandatory items which are required to work/run the system independently i.e., Cryopump, Compressor, Temperature Monitor, Temperature Sensor, Interconnecting hose, Pressure Relief Valve, Cables, Installation Tool Kit etc.**	
19	**Optional Items: Vendor may quote optional accessories separately.**	
20	**Vendor should do the installation and testing of the system at IPR site. Rate of the same may quote separately (if required).**	
	Acceptance test at IPR:	
21	Testing of the cryo pump system will have to be carried out by the vendor at IPR site. Like Prepare Test setup, Installation pump, flanges, gauges etc., Operation, Testing **Acceptance Criteria:** Ultimate vacuum: ~ 5 x 10^{-9} Torr at Pump Inlet Flange (No load situation) ; Cryo 2nd Stage Temperature: < 14 K, Cool down Time from Room temperature to 20 K : ~ 120 minutes **Note:** IPR will provide all other required components and necessary support during acceptance	

	testing.
22	**Warranty:** System should be covered under warranty for a period of 1 year from the date of acceptance.
23	The vendor should ensure to provide after sales service and necessary spare parts whenever required at least for 5 years.

Compliance Statement

Compliance Statement for Supply, Installation and Final Acceptance Test at IPR of Cryopumping System

Bidder must submit compliance statement dully filled with exact technical values of each specifications (Not with OK, CONFIRM, COMPLY, ACCEPTABLE) alongwith official seal and signature with their offer.

Sr. No.	Particulars	IPR Requirement	Vendor's Specification
1	**Pumping Speed:**		
	Water	≥ 9000 l/s	
	Hydrogen	≥ 5000 l/s	
2	**Capacity**		
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	Argon	~ 2000 standard liters	
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22	**Warranty:** System should be covered under warranty for a period of 1 year from the date of acceptance.	
23	The vendor should ensure to provide after sales service and necessary spare parts whenever required at least for 5 years.	

Note: Vendors are requested to provide technical data/ remarks on all above mentioned specifications and requirements.

Authorised Signatory

Official Seal

Date :-