

COMPLIANCE MATRIX

Sl. No.	Specification	Vendor's response (Parameter value/Noted/Complied)
1.0	Scope of supply	
	1.1 Closed cycle two-stage, G-M refrigerator cryopump	
	1.2 Suitable air or water cooled helium gas compressor	
	1.3 15ft length flexible helium gas supply and return lines with self-sealing couplings on both ends.	
	1.4 15ft length cold head power cable	
	1.5 30ft length sensor cable for temperature display	
	1.6 Installation tool kit	
	1.7 Maintenance Manifold	
	1.8 Regeneration system	
	1.9 Essential spares and accessories	
2.0	Technical Specifications	
	2.1 Cryopump	
	2.1.1 Nitrogen Pumping Speed (liters/sec) : ≥ 1500	
	2.1.2 Hydrogen Pumping Speed (liters/sec) : ≥ 2500	
	2.1.3 Water Vapour Pumping Speed (liters/sec) : ≥ 4000	
	2.1.4 Argon/Nitrogen Capacity (bar-liters): ≥ 600	

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	2.1.5 Cool down Time to reach 20K (minutes): ≤ 120	
	2.1.6 Crossover for Air/N ₂ (mbar-liters): ≥ 150	
	2.1.7 Ultimate Vacuum in blank-off condition(mbar): $\leq 1 \times 10^{-6}$ mbar	
	2.1.8 High Vacuum Flange: DN 200 ISO-K	
	2.1.9 Fore Vacuum Flange: DN 25/ 40 ISO-KF	
	2.1.10 Orientation: Suitable for mounting in either Horizontal or Vertical position.	
	2.1.11 Cryopump pressure relief valve: Suitable relief valve to be provided.	
	2.1.12 Cryosensor: Provided with Silicon Diode or any cryogenic based temperature sensors located on the Cold tips or Cryo panels.	
	2.1.13 Suitable temperature readout of digital display for cryosensor shall be provided with relay for automatic control/alarm.	
	2.2 Regeneration System	
	2.2.1 Heaters mounted on the 1 st stage and 2 nd stage of cryopump or externally mounted purge gas type regeneration shall be provided.	
	2.2.2 All the elements required for integration and operation of the regeneration system shall be provided.	
	2.2.3 All the components of regeneration facility shall be suitable for electrical supply rating of 415±10%VAC, 3Ø, 50±3% Hz or 230±10%VAC, 1Ø, 50±3% Hz.	
	2.3 Helium Compressor	
	2.3.1 Compatible air/water cooled Helium gas compressor.	
	2.3.2 Electrical supply rating 415±10%VAC, 3Ø, 50±3% Hz or 230±10%VAC, 1Ø, 50±3%.	

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3.0	Essential Spares and Accessories Requirements	
	3.1 Accessories	
	3.1.1 DN200 ISO-K centering ring with O-ring: 2 Nos.	
	3.1.2 Single claw clamps for DN200 ISO-K flange: 16 Nos.	
	3.2 Essential Spares	
	3.2.1 Compressor Adsorber: 2 Nos.	
	3.2.2 Charcoal Array Panel: 1 No.	
	3.2.3 Indium gasket kit: 5 Nos.	
	3.2.4 Cryosensor: Silicon diode or any cryogenic based temperature sensor: 3 Nos.	
	3.2.5 Digital display for cryosensor: 2 Nos. <i>It shall be noted that the offered digital display shall be provided with relay for automatic control/alarm.</i>	
4.0	General Requirements	
	4.1 The offered product shall be a catalogued one and technical catalogue/ drawings/ data sheets in support of the offered specifications shall be provided along with the quote.	
	4.2 It is a full supply package. Hence, Part supply will not be considered and accepted. The Lowest offer [L-1] shall be decided based on the aggregate value of all items put together.	
	4.3 Hard copy of Operation and Maintenance manuals should be provided in English Language.	
	4.4 Acceptance criteria: Item will be accepted at URSC after verification of ultimate vacuum of the cryopump in blank-off condition as per spec Sl. No. 2.1.7.	