

## Detailed Technical Specifications

Sr. No.	Description		Qty.
01.	Main Circulation Pump for TMO test loop		02
	Type	Canned Motor Pump	
	Location	Indoor	
	Working Fluid	R-134a	
	Flow Rate	0 - 1 m <sup>3</sup> /hr. ( 0 - 0.3 kg/s)	
	Design Pressure	5 MPa (50 bar)	
	Design Temperature	150 °C	
	NPSH <sub>a</sub>	3 m	
	Suction & Discharge Port Diameters	~ DN 15 mm	
	Operating Temperature Range	10 - 100 °C	
	Differential Head	30 m	
	Motor Data		
	Motor Type:	VFD Controlled (Compatible with Pump Model)	
	Phase / Voltage / Frequency	3 Ph / 400V / 50 Hz	
	Orientation	Horizontal	
	Motor type/Connection	3 phase/DOL	
	Type of Starting	Direct Online	
	Permissible Phase Unbalance in Supply Voltage	< 5%	
	Enclosure and Degree of Protection	IP-65	
	Material of Construction		
	Casing, impeller, pump shaft, sleeves, motor body and all wetted parts	SS-316 L or higher grades	
02.	VFD Controller		02
03.	Counter flanges		For 02 Pumps
04.	Base plate		02 sets
05.	Design & manufacturing Standard		
Design and manufacturing in compliance with API-685 standard			
06.	Terms and conditions – documentation required		
i. Certificate of Origin		vii. Standard QA certificate should be provided & QCP Pump and motor data sheet	
ii. Material test certificate		viii. Instrumentation details	
iii. Hydrostatic performance test certificate		ix. Electrical test (type and routine procedure)	
iv. NPSH Test & Pump Performance test certificates		x. Dynamic balance test procedure and report	
v. Pump characteristic curves		xi. Hydraulic performance test 3.1B according to ISO 9906 class 2B	
vi. General arrangement drawings (GADs)			
07.	Inspection		Certificate of inspection & performance testing, noise level monitoring along-with inspection of QCP documents as per above quoted standards by third party, Pre-shipment inspection at vendor's premises.
08.	Spares		05 Years (included)