

**ANNEXURE – I**  
**TECHNICAL SPECIFICATION for MULTI BLOCK PCR WITH ACCESSORIES**

**Bidder Eligibility Criteria –I**

S.NO	SPECIFICATION	Complied/Not Complied	Ref. Page No.
1.	The bidder/OEM should have supplied at least 10 similar equipment to IITs, NITs, IISERs, CSIR Labs or other Govt. R&D organizations or any reputed organization abroad in the last 2 years, PO copies or installation certificates along with contact details of end user need to be submitted as proof of supply. IIT at its own discretion may seek opinion of the customer, based on which the vendor's offer may be accepted or rejected		
2.	The Bidder should provide service within 10 hours of lodging a complaint for the equipment and its accessories. Necessary complaint statement should be provided in this regard.		

**Technical Compliance –II**

S.NO	SPECIFICATION	Complied/Not Complied	Ref. Page No.
1.	Asymmetric independently controllable universal dual block with 64 and 32 wells		
2.	Block should accommodate PCR tube strips, 0.2ml & 0.5 mL PCR (flat or domed capped) tubes, Eppendorf divisible PCR plate		
3.	Should be capable of testing temperatures at Denaturation, Annealing & Extension steps		
4.	Should have 12°C gradient range		
5.	Gradient technology should ensure identical ramp rates in both gradient and normal operation		
6.	Gradient temperature ranges from 30 – 99°C		
7.	Preprogramed protocol templates for easy selection, like 2-step, 3-step PCR, Cycle sequencing, Long range PCR, low volume PCR, Nested cycles, Touchdown PCR, Gradient PCR, Reverse Transcription, etc.		
8.	Should have Time or Temperature increment with cycles in PCR program		
9.	Adjustable ramp rate is must to meet critical amplification conditions		
10.	Customized programming allows a maximum of 20 steps and 99 cycles		
11.	Heating and cooling of block must be through Peltier technology		

12.	Block temperature control range must be 4°C to 99°C		
13.	Fast, Standard and Safe temperature control modes are must		
14.	Lid Temperature range: 37 - 110 °C		
15.	Block Temperature Accuracy: $\pm 0.2^{\circ}\text{C}$		
16.	Block Homogeneity: $\leq \pm 0.3^{\circ}\text{C}$ (20°C to 72°C); $\leq \pm 0.4^{\circ}\text{C}$ (90°C)		
17.	Heating rate: 3 °C/s; Cooling rate: 2 °C/s		
18.	Lid descent and closing pressure must use Flex lid technology with Thermal sample Protection (TSP) to accommodate PCR tubes with flat or domed caps		
19.	Auto Restart facility with user defined time interval when power fails and resumes		
20.	Instrument status indicating the step, cycle and remaining runtime during the run		
21.	Block temperature control range must be 4°C to 99°C		
22.	Should have Two USB ports: for Protocol transfer, Self-test, USB, printer / mouse		
23.	Should have Logbook function for error messages and new calibration		
24.	System must be capable of connecting two additional PCR machines in future for ultimate throughput.		
25.	<b>Quantity: 1 no</b>		
	<b><u>Accessories:</u></b>		
	<b>Upright Freezer (Quantity: 5 nos)</b>		
1.	A vertical type deep freezer for storing DNA, RNA, Plasmid and Bacterial culture samples.		
2.	Capacity should be around 525-550 liters		
3.	Temp Range: Programmable temperature range from -50°C to -86°C in 1°C increments, should maintain this temperature even at ambient temperature up to 32°C		
4.	Should have 3 to 4 compartments with two adjustable height and should come with stainless steel shelves. Additional shelving must be available.		
5.	Must be an energy efficient freezer and should not consume more than 14 kWh/day at -80°C.		
6.	Optional Remote Control: Factory installed RS 485 port with optional Cryo command software monitors/ controls up to 30 freezers simultaneously.		
7.	5KVA stabilizer should be supplied along with Freezer		
8.	Suitable SS Racks for complete capacity should be supplied along with freezer.		
9.	Online monitoring device should be supplied along with freezer.		
10.	Quantity: 5no.		
	<b>Refrigerated multipurpose bench-top Centrifuge with 4 Liter capacity with touch-screen interface. ( Quantity – 2 nos )</b>		
1.	System should have a maximum Capacity of swing out rotor of 4 x		

	1000 mL, 4 x 5 MTP and fixed angle 6 x 250 mL bottle		
2.	System should have Universal adapter to support tubes/plates/bottle formats without needing to change the adapters. To bring more comfort and convenience for a faster workflow and adds a cost saving, lab space saving by not having too many individual adapters for each format.		
3.	System must have digital lab support with remote monitoring solution		
4.	Rotor must be made of aluminium and fully autoclavable		
5.	System should have the facility to support documentation of all the parameter settings, run records, event logs and rotor logs		
6.	System should have the option to export all run records, event logs via USB port		
7.	High capacity swing out rotor of 4 x 1000 mL with Universal bucket to fit tubes / Plates using universal adapter with maximum of 4,500 rpm and 4,347 x g (Tubes: 68 x 5/15 mL, 36 x 50 mL, and 4 x MTP / DWP should be supplied along with Centrifuge		
8.	Quantity: 2no.		
	<b>Refrigerated Micro Centrifuge ( Quantity – 2 nos. )</b>		
1.	System should have a Maximum Speed of 15,060 rpm/21,300 x g with a brushless motor and user defined RPM or RCF setting		
2.	Fixed angle rotor for 24 x 1.5 /2.0 mL tubes with aerosol tight lid with maximum of 15,060 rpm and 21,300 x g; Rotor and rotor lid must be made of aluminium; Rotor with Aerosol-tight lid and supporting quick locking		
3.	Suitable 0.5ml & 0.2ml adapters for 24 position each should be supplied along with instruments		
4.	Quantity: 2no.		
	<b>Other Conditions:</b>		
1.	Standard Warranty of one year to be provided		
2.	Additional warranty should be quoted for 5 years as a optional item. Additional warranty will not be considered for price evaluation.		

(Note: It is mandatory for the bidders to provide the compliance statement in tabular column format along with catalogue page number (comply/not comply) for the Above points with document proof as required. Failing which bidders will be technically disqualified)