

उपकरण का नाम / Name of Equipment : Floor Model Ultra Centrifuge

S.N.	Specifications	Qty.
	System should be floor model with in-built wheel in base for easy transport and system should have	01
1.	Maximum Speed; 100,000 rpm or more	
2.	Maximum RCF; 800,000 x g or more	
3.	Drive Type; Drive type: Imbalance tolerant direct drive, eye balance to within 5 mm	
4.	Drive Cooling: Air cooled	
5.	Refrigeration System; Thermo electric temperature Control system and No coolant	
6.	Vacuum system: Moisture purging / Moisture removal system	
7.	Should be able to handle volume starting from small such as 2ml to large volume upto 1500 ml	
8.	The Ultracentrifuge should have the temperature set range from 0°C to 40°C with 1 °C increments and temperature Accuracy of $\pm 0.5^\circ\text{C}$	
9.	Should be able to employ gravity max technology for Fixed Angle & Swinging Bucket Rotor to carry out analysis in different volumes without compromising force and RPM	
10.	Should be able to meet biosafety compliance and users comply with 21CFR Part 11	
11.	The system should come with color large LCD touch screen (fixed or movable) operation for RPM / RCF / Temp. / Time (Run / Hold) / Vacuum display with error alarms	
12.	System should accept with Fixed Angle/Vertical Tube/Near Vertical & Swinging Bucket Rotors	
13.	Rotor catalogue and Rotor tracking by serial number at fingertip should be present	
14.	Wider power fluctuation range 180- 264 VAC	
15.	The system should have Quiet drive technology, which operates at less than 51dB (A) or less for low noise	
16.	The centrifuge must be supplied with software CD or factory installed Simulation software feature which can provide Sedimentation Coefficient & Protocol Optimization before the experiment run	
17.	The centrifuge must have optical disc and rotor inertia technologies for rotor sensing to calculate rotor inertia energy and stops the system to prevent rotor failures if rotor run above its energy for Safety Feature	
18.	A solid-state thermopile shall monitor the chamber temperature	
19.	User defined programmer up to 1000 with 30 steps each or better	
20.	Safety Requirements:	

	<ul style="list-style-type: none"> I. The door shall be of high-strength structural steel chamber with a solenoid interlock to prevent operator contact with a spinning rotor II. An imbalance detector shall monitor the rotor during the run, causing automatic shutdown if rotor loads are severely out of balance III. Shall have over speed system to ensure that the rotor does not exceed its maximum allowable speed IV. Shall have an inbuilt mechanism to calculate rotor inertial energy and stops the system to prevent rotor failures 	
21.	<p><u>System should be able to perform application:</u></p> <p>Rapid differential sedimentation (pelleting) of small particles such as subcellular organelles and viruses, Rapid contamination-free isopycnic isolation of plasmid DNA, RNA pelleting in 2-3 hours; subcellular fractionation in sucrose gradients, protein separations in sucrose gradients, Pelleting of subcellular fractions in 5-30 minutes; plasmid DNA separation in 3 hours</p>	
22.	<p>The system should come with the following Rotors.</p> <ul style="list-style-type: none"> a) 8 x 13.5-15 ml, fixed angle Titanium rotor having RPM: 90,000, Max. G-force: 694,000. Tube/kit/adaptor to be provided along with tubes to run volumes such as <ul style="list-style-type: none"> - 2ml (117000 g force or more)- non reusable tubes (Ultraclear)-Quantity - 200 no. - 6ml (600000 g force)- quick seal (Polyallomar tubes)- Quantity - 200 no. - 10ml (362 000 g force)- reusable (Poly carbonate-)- Quantity - 200 no. - 13ml (600000 g force)- quick seal (Polyallomar tubes)- Quantity - 200 no. b) 8 x 36-40 ml, fixed angle Titanium rotor having RPM: 70,000, Max. G-force: 500,000. required Tube/kit/adaptor or tool kit to be provided along with Sealable <ul style="list-style-type: none"> i. Polyallomers tube of 35-40 mL capacity should be able to run at 500,000 x g or more (200 Nos tubes) ii. Reusable polycarbonate bottles of 26-30 mL capacity or more should be able to run at 250,000 x g or more (30 no's tubes) iii. Reusable polycarbonate tubes of 4 mL capacity should be able to run at 100,000 x g or more (200 no's tubes) c) 6 x 35-40 ml, Swing out Titanium rotor having RPM: 32,000, Max. G-force: 175,000 or better. <ul style="list-style-type: none"> - 35-40 mL capacity- non reusable (Ultraclear tubes- 175,000 g force) - Quantity - 200 no. d) 6 x 230-250 ml, fixed angle Aluminum rotor having RPM: 19,000, Max. G-force: 53,900. Along with 230-250 ml or better tube/bottle reusable (53,900 g force)- Quantity - 30 no e) 6 x 13-15 ml, Swing out Titanium rotor having RPM: 40,000, Max. G-force: 285,000. The system should be able to run 4-5ml, 10ml and 13-15 ml volume. <ul style="list-style-type: none"> - 3 mL capacity- reusable (quick seal Polyallomer tubes- 150,000g force or better) - Quantity - 200 no. - 4-5 mL capacity- reusable (quick seal Polyallomer tubes- 160,000 g or better force)-Quantity - 200 no. - 10 mL capacity- non reusable (Polyallomer tubes- at least 284,000 g force) - Quantity - 200 no. -13-14 mL capacity- non reusable (Ultraclear tubes- at least 284,000 g force) - 	

	Quantity - 200 no. All rotors and reusable tubes to be covered under 5 years warranty	
23.	A Tube sealer complete set must be provided- Qty-01	
24.	The Ultracentrifuge must be provided with HEPA Filter to maintain the aseptic condition with 21CFR regulations	
25.	Must having USB port for output of GMP/GLP/NABL compatible run data. Dual Display of RUN and SET PARAMETERS, Data Entry through touch Pad, RPM/RCF mode User interface offering a controlled access feature restricting access to authorized users with an ID/Password code. During installation, IQ/ OQ/ PQ is required for further documentation. IQ/ OQ/ PQ is required during installation. Yearly calibration for the parameters temperature and speed covering the entire range is to be done from NABL accredited laboratory as per standard ISO IEC 17025:2017 by the vendor during warranty period and report must be given.	
26.	After 6 months of installation, yearly validation and calibration of instrument is to be done by company personnel till the warranty period.	
27.	Should having a user interface which can offer at least 50 unique user profiles 500 programs in memory with minimum 20 steps each, speed and g-force operation, actual run timer, Real Time Clock function, step mode operation, pulse mode operation, case operating history and rotor catalogue.	
28.	All the required accessories like Spacers, Tube slicer to slice the tubes for gradient experiment, Tube Rack, Tube holders for weighing Spacer Removal Tool, Spinkote Lubricant, Vacuum Grease, tube removal tools, tube sealers must be included.	
29.	Vacuum Grease must be included till warranty period or as and when required.	
30.	O Ring Removal Tools or any other tools may require must be included	
31.	Regulatory Standards: CE, IEC, EN and other international standards (as applicable)	
32.	Latest Branded Frost Free Double Door Refrigerator (Qty 01, 500-550 Ltrs)- It should be with Inverter Compressor and 3 star or better provided	
33.	Confirmation for AMC & CMC services for next FIVE years after expiry of warranty period of 05 years at rates not more than @3% & 5% respectively of contract value (exclusive of GST) to be provided along with technical bid.	
34.	L1 will be selected based on the cost of the system with all accessories with 5 years of comprehensive warranty with PM Kit including all the spares and software updates and a written undertaking on stamp paper of availability of spare parts for 10 years . No charges of spare parts will be paid during the warranty period.	
35.	Manufacturer should mention the year of introducing the particular model in the market and make appropriate commitments in writing from OEM/Principals that the instrument model being proposed is current and is not likely to be obsolete within the next couple of years, and that spare rotors and accessories will be available for it at least 10 years after its installation.	
36.	Vendor must submit the OEM for the instruments and the accessories and Manufacturer's Authorization Certification along with the quotation.	
37.	The Ultracentrifuge MUST be included with 10 KVA Sinewave Servo controlled Voltage stabilizer and an UPS of 10KVA capacity to ensure uninterrupted power supply in case of sudden power failure to be provided with 5 years warranty including	

	batteries	
38.	Physical presence of service engineer with thorough knowledge and having experience of attending the instrument for last 5 years during the installation and breakdown within 72 hrs of breakdown (as and when required). No virtual assistance will be entertained.	
39.	Yearly 3-5 on-site trainings during the warranty period upto the satisfaction of the end user must be provided by the company to lab personnel/ end users to operate the instrument.	
40.	Vendor should allow 3 installations in addition to the initial installation in case of relocation within the same premises or nearby buildings. IQ/ OQ/ PQ is required during every new installation.	
41.	The bidder/OEM should have mandatorily successfully executed one contract for supply of similar category equipment during the last 3 financial years (i.e. 2022-23, 2023-24 & 2024-25) before the bid opening date to any Central/ State Govt. Organization /PSU. Purchase order with contract value & invoice copies of relevant contracts (proving supply of required quantity any one financial year) and performance certificate from concerned user to be submitted along with bid in support of quantity supplied in the relevant financial year along with the technical bid.	
42.	Comprehensive Warranty should be authorized from the OEM/Principals	05