

Open tender notification for the procurement of “Bio-Safe Ultra Centrifuge and Floor Model High-Speed Centrifuge” at the Indian Institute of Science, Bangalore

**(Last date of submission of tenders: 10th-October-2021)
(TENDER FROM DOMESTIC VENDORS)**

Date: 27.09.2021

To whom it may concern

This is a Request For Quote (RFQ) from domestic (India-based) manufacturers for the supply of “**Bio-Safe Ultra Centrifuge and Floor Model High-Speed Centrifuge**”, as a part of a tender for the Department of Microbiology and Cell Biology at the Indian Institute of Science.

1. Please send your quotation valid for 90 days for the supply of equipment described below.
2. Your quotation should clearly indicate the terms and conditions of the quotations, delivery, delivery schedule, entry tax, payment terms, warranty coverage, etc.
3. The tender should be submitted in two separate sealed envelopes – one containing the “Technical Bid” and the other containing the “Commercial bid”, both of which should be duly signed and must reach the undersigned on or before 17:00 hours 10th-October-2021
4. The compliance table should include all the items and in the same order. The first column should describe your compliance in a “Yes” or “No” response. If “No” the second column should state the extent of the deviation. The “third” column should state the reasons for the deviation if any. The fourth column can be used to compare your solution with that of your competitors or provide details as requested in the technical requirements table below.

TECHNICAL SPECIFICATIONS

FLOOR MODEL BIOSAFE ULTRA CENTRIFUGE – 01 UNIT

Objective: Vendor should provide floor model Biosafe Ultra Centrifuge with dual HEPA filter of 0.2micron capacity

Operational Control Requirements:

Centrifuge should have the following control specifications

- Maximum Speed: 100,000 rpm and above
- Maximum RCF (x g): 800,000 and above
- Set Speed Control Accuracy: ± 2 rpm of set speed (above 1,000 rpm) or better
- Set Temperature: 0 to 40°C in 1°C increments
- Temperature Control: $\pm 0.5^\circ\text{C}$ of set temperature
- Temperature display: Actual rotor temperature in 0.1°C increments
- Ambient Operating Range: 10 to 35°C
- Acceleration Profiles: 10
- Deceleration Profiles: 11
- Set Speed: 1,000 to 100,000 rpm in 100 rpm increments

- Set Time: Up to 999 hours 59 minutes
- User- Defined Programs: 1,000 with up to 30 steps each
- User Profiles: 50 unique users and passwords
- Large touchscreen displays.
- Preferably the adapters/kits to adapt small samples in larger rotors without sacrificing the maximum force of the rotor, to shorten separation time up to 50 percent.
- Ideally, the system manufacturer should have certified free & sterile ultracentrifuge tubes with no detectable DNA, RNA, or any endotoxin which prevents sample degradation for Genomics, Exosomes & Proteomics workflow.

Networking

- Remote monitoring of centrifugation status through a networked computer or mobile app will be a preferred feature.

Fixed Angle Rotor: 8 x 36- 40.0mL (Quantity – 01 Number)

- Rotor Maximum Capacity: 285-320mL
- Rotor Maximum Speed: 65,000 RPM or more
- Rotor Maximum Force: 425,000 g or more
- Rotor k-factor: 52 or less
- 50 number of 36 – 40.0ml Polyallomer tubes to be provided along with the rotor along with proper spacers. Ideally, these tubes should be able to run at the same gForce of the rotor of up to 500,000 x g.
- 24 number of 26.0-30.0 ml Polycarbonate bottle assembly to be provided along with the rotor.
- 50 numbers of 11-16ml Polyallomer tubes to be provided along with the rotor with proper adapters. Ideally, these tubes should be able to run at the same gForce of the rotor of 500,000 x g.
- 50 numbers of 26-30ml Polyallomer/Polycarbonate tubes to be provided along with the rotor with proper adapters. Ideally, these tubes should be able to run at the same gForce of the rotor of up to 500,000 x g.
- Rotor Material: Titanium
- O-Rings, Overspeed disc, Tool Kit, Tube removal Kit for the rotor to be quoted.
- Cordless tube sealer to be included along with other required accessories.

Swinging Bucket Rotor: 6 x 13-14mL (Quantity – 01 Number)

- Rotor Maximum Capacity: 78-84mL
- Rotor Maximum Speed: 41,000 RPM or more
- Rotor Maximum Force: 286,000 x g or more
- Rotor k-factor: 124 or less
- 100 numbers of 13.0-14.0mL thin-walled polyallomer and 100 numbers of 13.0-14.0mL Clear tubes to be included along with the rotor along with other accessories. Ideally, these tubes should run at the same g-Force of the rotor of 286,000 x g.
- Bucket holder rack, Lubricant, and grease, Overspeed disc, 24 numbers of gaskets for the bucket to be quoted.

- Material: Swinging-Bucket Rotor, Titanium Head, and Buckets (black buckets)

Specific System Requirements:

- Braking: Regenerative with power reclamation
- Drive: Frequency-controlled, brushless direct-drive induction motor
- Drive Cooling: Air-cooled
- Maximum Heat Dissipation: 3400 BTU/hour (1.0kW)
- Noise Level 1 meter in front of Centrifuge: <51 dBA
- Power tolerance range: 190 to 250 VAC or better
- Moisture purging and diffusion pump vacuum system
- A solid-state thermopile shall monitor the chamber temperature
- Humidity restrictions: <80% at non-condensing temperature
- Shall give audible sounds for Boot up, Start of Run, End of Run, Diagnostics/Alert, vacuum low enough to open door
- The system manual should be provided in printed version only.
- Advanced Software features:
 - On-board software with inbuilt calculations, simulations, and references
 - Real-time run graphing
 - Powerful onboard simulation and calculation tools
 - Speed/temperature vs. time plot
 - Step-by-step zonal/CF operation screens
 - On-screen help
 - Online rotor calculator intelligent software to calculate, configure and convert RCF, RPM without manual intervention.

Safety Requirements:

- The Ultra Centrifuge should be available with optional dual 0.2-micron HEPA filtration systems for a complete biosafety solution to the user working with infectious disease and virus purification when used within the BSL-III facility providing safety to the user, samples, and environment.
- The door shall be of high-strength structural steel chamber with a solenoid interlock to prevent operator contact with a spinning rotor
- Shall lock automatically when the door is closed, and a run begins
- An imbalance detector shall monitor the rotor during the run, causing automatic shutdown if rotor loads are severely out of balance
- Shall have over speed system to ensure that the rotor does not exceed its maximum allowable speed
- Preferably the system shall have an inbuilt mechanism to calculate rotor inertial energy and stops the system to prevent rotor failures.

FLOOR MODEL HIGH-SPEED CENTRIFUGE – 4 Liters Capacity

Objective: To provide tender specifications for a 4 Liters capacity Floor model High-Speed Centrifuge

Operational Control Requirements:

- The centrifuge should have the following control specifications
- Maximum Speed: 21,000 rpm and above
- Maximum RCF (x g): 53,000 and above
- Maximum Volume: 4 Liters
- Set Speed Control Accuracy: ± 50 rpm of set speed
- Set Temperature: -10 to 40°C in 1°C increments
- Temperature Control: $\pm 2^\circ\text{C}$ of set temperature after equilibration
- Ambient Operating Range: 15°C - 35°C
- Acceleration / Deceleration Profiles: 2/3
- Heat Output: <6900 BTU/hr (2.0 kW)
- Drive Type/Cooling: SR drive/Air-cooled
- Refrigeration: Non-CFC, non-ozone depleting refrigerant
- Sound Level: <64 dBa (3 ft from instrument at maximum speed)
- Material of rotor: Metallic only

Fixed Angle 8 x 50ml rotor:

- Rotor Maximum Capacity: 8 x 50mL
- Rotor Maximum Speed: 20,000 RPM or more
- Rotor Maximum Force: 47000 gForce or more
- Rotor k-factor: 770 or less
- Rotor Material: Aluminum/ Polycarbonate
- 50 numbers of 50ml Polycarbonate Bottles to be quoted.

Fixed Angle 6 x 250ml rotor:

- Rotor Maximum Capacity: 6 x 250mL
- Rotor Maximum Speed: 14,000 RPM or more
- Rotor Maximum Force: 30,000 gForce or more
- Rotor k-factor: 1764 or less
- Rotor Material: Aluminum/ Polycarbonate
- 12 numbers of 250ml Wide Mouth Polycarbonate Bottles with cap assembly to be quoted.

Specific System Requirements:

- Electronic Signature: Yes
- The system shall have an inbuilt mechanism to reach desired vacuum levels much faster
- An over-temperature system shall provide flexibility, sample protection, and safety for the user
- Refrigeration System: Refrigerant 404A (HVC)
- Humidity restrictions: <80% at (non-condensing)
- Shall give audible sounds for Boot up, Start of Run, End of Run, Diagnostics/Alert, vacuum low enough to open door

- Power Requirement: 200-240V, 30 A, 50/60 Hz

Safety Requirements:

- An electromechanical door lock system prevents operator contact with spinning rotors and prevents run initiation unless the door is closed and locked.
- An imbalance detector shall monitor the rotor during the run, causing automatic shutdown if rotor loads are severely out of balance
- Shall have an optional HEPA filter

Warranty:

- 03 years comprehensive warranty to be provided from the date of installation for both Floor model Biosafe Ultra Centrifuge and Floor model High-Speed Centrifuge system and it includes the necessary spares and service engineer visit.

Terms and conditions:

1. The quote should come only from the Indian Original Equipment Manufacturer (OEM) or their Indian authorized distributor.
2. The quotations should be on FOR-IISc Bangalore basis in INR only.
3. The quotations should be submitted in two bids system; i.e., Technical bid, and Commercial bid.
4. The technical bid must include all details of technical specifications of the instrument along with commercial terms and conditions masking only the price component. Bill of materials, brochures, technical datasheets, and any other document may be enclosed to help the evaluation of the technical bid. Please also include warranty terms and any other information on upgradation terms in the technical bid.
5. The commercial bid must include the price of the instrument in Indian currency indicating break up of Installation, commissioning, and training charges, including any incidental expenses if any.
6. The price of every line item in the commercial bid should be quoted along with the total quoted price for the instrument to be operational (fixed and ready to use) in our facility.
7. Both the Technical and Commercial bid should be put in separate sealed envelopes, and put together in another cover stating, “**Bio-Safe Ultra Centrifuge and Floor Model High-Speed Centrifuge**” and should reach us on or before 17:00 hours 10th-October-2021
8. The vendor should have a good track record of having previously supplied at least 5 Bio-Safe Ultra Centrifuge and Floor Model High-Speed Centrifuge machines in India in the last two years (please furnish details)

9. The vendor should have a team of dedicated engineers for application and service support based out of Bangalore
10. The lead time for the delivery of the equipment should not be more than three months from the date of receipt of the purchase order
11. The validity period of the quotation should be 90 days
12. If the goods are found to be defective, they have to be replaced or rectified at the cost of the supplier within 30 days from the date of receipt of written communication from us. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.
13. The purchaser reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time period to the award of construct without thereby incurring any liability of the affected bidder or bidders
14. Please submit the proposal to the following address: The Chair, Department of Microbiology and Cell Biology, Indian Institute of Science, C. V. Raman Avenue, Bangalore 560012.