



**INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
Powai, Mumbai - 400076**

Technical Specifications for Analytical Ultra Centrifuge

RFx No. 6100000714 (Reference No. 1000016596)

Sl. No.	Full description with complete specifications	Qty.
1	<p>Analytical Ultra Centrifuge AUC compatible with Absorbance/Interference (A/I) mode detection.</p> <ul style="list-style-type: none"> • To perform Sedimentation Velocity & Equilibrium studies • To measure a change in molecular weight or conformation based on its response to centrifugal force • To detect, measure, record and analyze the movement of molecules in solution under influence of centrifugal field • For in-solution characterization of proteins, oligomers, aggregates, particles, colloids & nano-structures 	1
2	<p>It should have following specifications:</p> <p>Speed</p> <ul style="list-style-type: none"> • Set speed - 1,000 — 60,000 RPM or similar with 100 RPM increments • It should display Speed <ul style="list-style-type: none"> — Actual measured rotor speed in 10-rpm increments below 1,000 RPM and 100 RPM increments \geq 1,000 RPM. • Speed control: <ul style="list-style-type: none"> — Actual measured rotor speed, \pm 2 RPM at steady state (1,000 RPM to rated speed) • It should have option for Braking speed <p>Time</p> <p>Set time:</p> <ul style="list-style-type: none"> — Up to 1000 hrs (approx.), including Hold runs — Up to 3.94780×10^{14} or similar radians squared per second in ω^2t mode <ul style="list-style-type: none"> • Time display: <ul style="list-style-type: none"> — Indicates time remaining and time elapsed in method scan. • Time accuracy: <ul style="list-style-type: none"> — \pm 50 ppm (5 seconds/day) or similar 	

Temperature

Set temperature:

- 4 to 40°C in 1°C increments at <25°C ambient temperature • Temperature display:
- Actual rotor temperature in 0.1°C increments
- Ambient temperature range:
 - 10 to 30°C
- Humidity restrictions:
 - <80% at <30°C (non-condensing)
- It must include Condensation removal:

Scanning UV/VIS Absorbance Optical System

It should have 10 μJM Xenon Flash Absorbance optics or equivalent

- Wavelength range – 180 to 800 nm
- Wavelength precision - ± 0.5 nm
- Photometric display range – 0 to 3 absorption Units
- Usable concentration range – 0 .005 - ~50 mg/mL
- Wavelength scan mode
 - wavelength increment step size 1.0 nm, from 190 nm to 800 nm

Interference Optical System

Rayleigh interference detection

Usable concentration range 0.01 to 20mg/mL

- Wavelength – 660 nm
- Laser - Red laser 120 mW Diode
- Scan Rate - approximately every 5 seconds

Interferometer precision - approximately ± 0.008 fringe

Analytical Rotors

Upto 8 samples per run; max speed 60K RPM

Analytical cell, torque stand, counterbalance kit, accessory kit, and cell housing kit

1. maximum speed of 60,000 RPM and up to eight cells and a counterbalance can be run at one time.
2. maximum speed of 50,000 RPM and up to seven cells and a counterbalance can be run at one time.

Essential components

1. Plug Gasket, Red Polyethylene (Pkg/100)
2. Washer, Screw Ring (Pkg of 6)
3. Plug, Housing (Pkg of 6)
4. Window Gasket, White Vinylite (Pkg/100)
5. Liner, Window (Pkg of 6)
6. Rotor Cleaning Kit

3
10
10
6
6
1
24

7. Cell Housing and Window Assembly Kit, for double sector cells, 12mm; plane quartz windows	24
8. Window Holder, Upper, for Plane Window	24
9. Screw Ring, Cell Housing	1
10. Centerpiece, Double Sector, Charcoal-Filled Epon, 12mm	2
11. An-60Ti, Titanium Analytical Rotor	1
12. Kit, XL-A Photometric Chk Solution	24
13. Ultracentrifuge OQ	6
14. Window, Plane Quartz Replacement	24
15. Centerpiece, double sector, aluminam, 12mm	1
16. Sapphire Window Replacement	
17. Cabinet, 18 drawer	
18. Torque stand assy for XL-A Cells	2
Sample cells	
Double sector cells should withstand 60K RPM; also, required cells for equilibrium/kinetic studies; Quartz and Sapphire windows.	
Display system	
Speed, time, method setup and temperature indicators.	
Data storage and transfer	
1TB with fast data transfer connectors like HDMI; safe networking adaptors;	
Data processing	
<ul style="list-style-type: none"> Automated and manual; remote connection capabilities Including comprehensive data analysis package with scripts. Additional licence for data analysis software 	
PC monitor: High resolution with capability for extension	
Training:	
<ol style="list-style-type: none"> One users should be trained properly and extensively at the company site. Must include an intense training by a company expert for all mode of data recording and analysis after installation Periodic training by local engineers for usage of the instrument 	
UPS: 10 KVA or appropriate for the instrument	
5 Years of Comprehensive warranty should be included.	
DetailedAccessories:	
1) Screwdriver, Cell Plug	1
2) An-50 Ti Overspeed Disk	1
3) Overspeed Disc, An-60 Ti Rotor	1
4) Filter Kit, HEPA	1
5) Cell Alignment Removal Tool	2
6) Spinkote Lubricant, 2 oz tube	1
7) Hsg Kit, 12 mm, 6-Channel	6
8) Centerpiece, Equilibrium	1
9) Allegra 64R centrifuge	1
10) C0650 Fixed Angle Rotor Assembly	1
11) Adapter, Conical 15mL, C0650 Rotor	6
12) F0630 Fixed Angle Rotor Assembly	1
13) Torque stand	2
14) Extra Xenon Flash lamp	1