

SPECIFICATIONS OF THE INSTRUMENTS TO BE PURCHASED FROM ICMR FUNDED PROJECT - (F.N.5/9/1425/2022-NUT) A DEPARTMENT OF BIOTECHNOLOGY.

Refrigerated high speed Bench top centrifuge with the following specifications :

1. Temperature range of -11°C- + 40°C.
2. Should come with short-spin key, fast pre-cooling and stand-by/ continuous cooling option.
3. With high centrifugation speed 30,000 x g (17,000rpm) or more, adjustable from 100rpm upwards.
4. Must have a standby cooling. And a programming function to shutoff/deactivate the compressor after inactivity in user defined period of 1/2/4/8 hrs. which will save energy and extend compressor life.
5. Timer for run can be set up to 99minutes/ continuous.
6. Must have “At set rpm” function which enables timer countdown to be started only when selected speed is achieved.
7. Digital display of time, speed and temperature. Programmable time and speed using Key pad.
8. Must be able to store atleast 50 routine procedures with minimum 5 programmable buttons for frequently used programs in the first level.
9. Able to switch display between rcf and rpm speed setting, Separate short spin key.
10. Acceleration time to max rpm ≤ 14 sec, braking time to max rpm ≤14 s.
11. Low noise levels less than 56db at max speed.
12. The centrifuge must be CE & IEC 1010-2-020 certified.
13. Stainless steel chamber, Brushless maintenance free drive, Automatic motorised locking when lid almost closed.
14. Versatility with 12 different rotors option: 10 fixed angle rotors and 2 swing out rotors.
15. Fixed angle rotor: - 30x1.5/2ml, high speed rotor 24x1.5/2ml with 30000xg, 48x1.5/2ml with 18000xg, 16x5.0ml with 21000xg, 6x15/50ml falcon with 7500xg, 18x1-2ml cryo tubes, 24 spin column tubes, 8x8- PCR strips.
16. Swing-bucket rotors for 24x1.5/2.0 ml tubes with 16,000xg and for 2 x DWP or MTP not higher than 29 mm with 2,200xg or more.
17. Following rotors and accessories should be supplied along with the centrifuge:
 - Fixed angle rotor for 30x1.5/2.0ml tubes with 14000 rpm & 21000xg
18. Rotors and lids should be made of good quality aluminium to ensure chemical resistance, Automatic imbalance, and rotor recognition.
19. Rotor must be autoclavable at 121°C for 20min to eliminate any contaminating material
20. Technical bid should contain at least 5 letters in official letterhead from Scientist or Faculty members from Government funded research Institute or Universities who are using the same model for at least two

years; stating the date of installation and that they are satisfied with the instrument and the service.

21. There must be at least 10 installations of the same item in Universities or Research Institutes in India. A user's list should be submitted along with the quotation.
22. It should come with 36 months comprehensive warranty.

TECHNICAL SPECIFICATION FOR AUTOMATED CELL COUNTER

1. System for automated cell counting and cell viability analysis without limitation of cell types.
2. System should come with the brightfield detection method.
3. System should be able to differentiate between live and dead cells in brightfield detection.
4. System should be able to count stable cell lines
5. Cell size detection range: Nominal detectable Range: 3-60 μm ; Optimal Range: 8-30 μm
6. Cell Circularity Range: 30-100%
7. Cell Viability Range: 0-100%
8. Light Source: LED
9. Image Resolution: not less than 5MP and should have 4X Zooming
10. Counting Volume: minimum 0.5 μl
11. Sample Volume: 10-15 μl
12. Counting Speed: < 10 Seconds for brightfield
13. Navigating Screen - Yes
14. User Defined protocol - Yes
15. Review of Saved Images - Yes
16. Cell counting range: 5×10^4 - 1×10^7 /ml
17. Compatible dyes: Trypan Blue, Erythrosin B
18. Adjustable parameters: Cell Size, Dilution factor, Live cell sensitivity, Noise reduction, Roundness.
19. Additional features: Cell size gating, Cluster map, Dilution calculator.
20. Data export: Cell count and viability data (CSV), Raw image (TIF), Analyzed image (annotated TIF), Full report (PDF), Count and viability data, Cell images, Protocol used, Analytical histograms, Cluster map.
21. System should come with 1 unit of compatible reusable slide with compatible adaptor and 10 units of compatible coverslips.
22. Cell Counting area /FOV (Field of View) $\geq 4.5 \text{ mm}^2$ (which is minimum 4.5 times larger than the counting Area of standard Hemocytometer)
23. System should come with 50 units of compatible disposable cell counting slides.
24. System should come with 2x1ml of Trypan blue stain (0.4%).
25. The vendor supplying the instrument should have own application support for efficient after sales service-support.

3. Multi channel Pipettes

Specifications & Description of

Multi Channel Pipettes

Sterile	No
Max Volume(μL)	300
Autoclavable	Yes
Min Volume (μL)	30

Warranty	3 year
Min Volume (mL)	0.03
Max Volume (mL)	0.3
Min Dispensing (mL)	0.03
Max Dispensing (mL)	0.3
Increments (µL)	0.2
Accuracy (%)	±0.80%
Precision (%)	±0.30%
Number Of Channels	8
Tip Ejector	Yes
Color Code	Orange
Control Button Color	Orange
Calibration	User