

Technical Specifications for Multimode Plate Reader

1. The instrument should be a spectral scanning multimode microplate reader capable of doing photometry, Fluorometric Intensity (top), Luminescence and TRF (Time-resolved fluorescence).
2. Auto Gain facility should be available, not the default settings in software. Instrument should automatically calibrate results with different gain settings to obtain single consistent measurement range.
3. Self-diagnostic option and auto-calibration during the starting of the instrument as well as during longer kinetic assays.
4. Instrument has automatic dynamic range selection to adjust the photomultiplier tube sensitivity based on the signal strength of the sample well. Adjustment is done individually for every well and every measurement. This ensures measurement of both low and high signals within the same assay without problems with signal saturation or loss of the sensitivity.
5. The quoted instrument should have option of dispensers for flash luminescence assays like Ca²⁺ flux , ATP assays etc.
6. Onboard Incubator and shaker should be available. Orbital Shaking with adjustable timing, speed and diameter. Automatic safety control based on the shaking speed and plate format to avoid spilling of the liquid from wells.
7. The instrument controls shaking speed and diameter combinations to help prevent accidental spilling of the liquid out from the wells.
8. No loss of already measured data even in case of power failure.
9. Should be compatible for low volume sample analysis using accessory plate, volumes down to 2 μ L.
10. Automatic Smart Safety Checks like Plate check, Prime check, Position sensors, Shaker check and dispensing volume check. Instrument has automatic plate check mode and priming vessel check mode to prevent accidental dispensing of reagent inside the instrument.
11. System should be compatible with different microplate types: 6, 12, 24, 48, 96 and 384-well plates, PCR plates, Quartz Cuvette
12. System has temperature control with temp gradient to prevent condensation on lid while running kinetics with closed lid
13. Data Analysis Software:
 - Database based software to run backups of all data, restore back up data (in case of hardware failure of original computer).
 - Software should have option for area selection. i. e different protocols at different area of the same plate.
 - Spectral scanning of all 96 samples or 384 samples should be able to view in single graph plot.
 - Single software program should allow any number of measurement steps / different detection method within the same program.
 - System should be supplied with Analysis software with unlimited user license for multiple users for flexibility.

- The system should be supplied with a Suitable branded desktop/ laptop with and color Laser printer
14. Optical System:
- Instrument should have Quadruple Monochromator based, double excitation and double emission monochromators for fluorescence applications.
 - Instrument should have double monochromators for photometric (UV and Vis) measurement.
 - The instrument should have a single lamp source and separate detectors for Photometry, Fluorometry and optional module for Time resolved fluorescence and Luminescence.
15. Absorbance/Photometry
- System should have measurement range of 200-1000nm, xenon flash lamp with double photodiode detector and bandwidth of 5nm.
 - Measurement time should be 10-1000 ms with measurement speed of 10 s (± 5 s) for 96 well plate and 30 s (± 15 s) for 384 well plate.
16. Fluorescence/Fluorometry
- System should have excitation range of 200-1000nm (± 20) and emission range of 250-840nm (± 20).
 - Wavelength selection of double excitation and double emission monochromators.
 - Measurement time should be 10-1000 ms with measurement speed of 10 s (± 5 s) for 96 well plate and 30 s (± 15 s) for 384 well plate.
 - System has excitation bandwidth of 5 nm and 12 nm with both top and bottom fluorescence
17. Luminometry
- Luminometry should have three measurements mode – Normal, Filter and Monochromator mode with excellent sensitivity.
 - Flexibility to add filters anytime in machine for higher sensitivity (hybrid system)
 - Measurement time should be 10-1000 ms with measurement speed of 10 s (± 5 s) for 96 well plate and 30 s (± 15 s) for 384 well plate.
18. Quoted model should be CE certified & manufacturer should be ISO 9001-2000 company.
19. The instrument should be provided with 3 years warranty.
- 20. The specifications should be authenticated by brochures and company website/catalog. Technical catalogue or brochure of the model must be provided. Instant preparation of the same based on the specifications provided and its onward submission will disqualify the bidder without any further communication.**
- 21. If the need be, the qualifying bidders may be required to place the demo model of the quoted equipment in the Department for testing the efficiency of the equipment. Based on the efficiency and the results obtained the technical committee may further disqualify the vendors and shortlist the vendors whose financial bid will then be opened.**

