NCBS Specifications for Multimode Microplate Reader

1. The instrument should be a spectral scanning multimode microplate reader capable of doing photometry Absorbance, Fluorometric Intensity, Luminescence, Time resolved Fluorescence and FRET.
2. System should protocol of End point, Kinetic, spectral scanning and well area scanning read methods.
3. System should have Quadruple Monochromator based, double excitation and double emission monochromators with wavelength range of 200-1000nm in step of 1nm for fluorescence applications.
4. System should have double monochromators for photometric absorbance (UV-Visible) measurement.
5. System should have xenon Flash lamp as a light source.
6. System should support 6 to 384 well microplate for all type of measurements.
7. System should have ability to include multiple plates inside a measurement session, and combine data from all plates to the same data set.
8. System should be able to read different type of 96/384 well plates covered with lid.
9. System should have Photometry measurement range from 200-1000nm.
10. System should have wavelength bandwidth ≤10nm for florescence and absorbance.
11. System should have fluorescence detection limit of less than 1fmole/well in top read and less than 5fmole/well for bottom read for 96/384 well plates.
12. System should have luminescence detection limit less than 10amol/well for glow luminescence and 15amol/well for flash luminescence.
13. System should have should have on-board path length correction for direct quantification.
14. System should have plate read time of ≤15 seconds for 96 well plates and ≤50s seconds for 384 well plates.
15. System should have automatically calibrate results with different gain settings to obtain single consistent measurement range.
16. System should have Self diagnostic option and auto-calibration during the starting of the instrument as well as during longer kinetic assays.
17. System should have automatic dynamic range selection to adjust the photomultiplier tube sensitivity based on the signal strength of the sample well.
18. System should have Onboard Incubator and shaker. Incubation temperature should be up to 45^{0}C and Orbital/Linear shaker.
19. System should have temperature safety control feature for protection against over temperature.
20. System should have Orbital Shaking with adjustable timing, speed and diameter.
21. System should have Dual Reagent Dispenser /Injector for Luminescence application.
22. The dual injector should have dispensing volume range 5-1000µL.
23. System should have Dispense volume accuracy of ±2µL.
24. The dispenser should be compatible for 50ml,15ml Falcon tubes, 3ml/1.5ml Eppendorf tubes for reagents.
25. System should have automatic plate check mode and priming vessel check mode to prevent accidental dispensing of reagent inside the instrument.
26. System should have safety control on the shaking speed and plate format to avoid spilling of the liquid from wells.
27. System should be supplied with Analysis software with unlimited user license.
28. System should support Single software program should allow any number of measurement steps, different detection modes within the program.
29. System should have different file formats during data export which includes .xlsx, .pdf, xml, and .txt
30. System should have memory back up for measured data in case of power failure.
31. System should be supplied all the accessories which includes fluorescence filters as a part of main offer
32. All specifications of the system should be tested and guaranteed. The specification should not be typical or relative values.
33. The system should be supplied with necessary accessories required for calibration.
34. The system should have automatic restart function in case of powers failure.
35. The product should be as per CE/IEC guideline and certificate from authorized body should be submitted.
36. The system should operate at 230 volt, 50Hz.
37. The system should be supplied with the latest configuration Desktop which supports the functionality of instrument.