



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

PR No. : 1000047986

RFX No. : 6100002249

Technical Specifications Multimode Microplate Reader and Fluorimeter (Qty : 01)

Sr. No	Item Description	Detailed Technical Specification	Technical Compliance (Yes / No)	Additional Information (if any)
1	Mode of scanning	The instrument should be a spectral scanning multimode microplate reader capable of performing photometry, Fluorometric Intensity, Luminescence, and upgradable to hTRF (TR-FRET), AlphaScreen and AlphaLISA applications.		
2	Tested and guaranteed specifications	All specifications of the system should be tested and guaranteed. The specification should not be typical or relative values.		
3	Autogain	Auto Gain facility should be available, not the default settings in software. Instrument should automatically calibrate the results with different gain settings to obtain single consistent measurement range.		
4	Self Diagnostic	Instrument should have Self diagnostic option and auto-calibration at the start as well as during longer kinetic assays.		
5	PMT sensitivity	Instrument should have 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 sensitivity.		
6	Range of fluorescence and luminescence	The dynamic range for fluorescence and luminescence should be mentioned and approximately it should be more than 6 to 7 decades.		
7	Upgradability	The quoted instrument should have Absorbance, Fluorescence Intensity, Luminescence detection modes. It should be field upgradable to add up to 2 on-board dispensers for flash luminescence assays like Ca ²⁺ flux, ATP assays etc.		
8	Inbuilt Incubator and shaker	On-board Incubator and shaker should be available. The incubation temperature should be up to 45°C and Orbital shaker with adjustable speed and diameter.		
9	Analysis software	The system should be supplied with Analysis software with unlimited user license (RUO).		
10	Analysis software	Single software program should allow any number of measurement steps (different detection modes) within the program.		
11	Adjustable orbital shaking	Instrument should have Orbital Shaking with adjustable timing, speed, and diameter. Automatic safety control based on the shaking speed and plate format to prevent spilling of the liquid from wells.		
12	Data backup	There should be no loss of already measured data even in case of power failure.		

13	Compatible for low volume sample	Should be compatible for low volume sample analysis using accessory plate, volumes down to 2-4 μ L.		
14	Automated safety checks	It should have Automatic Smart Safety Checks like Plate check, Prime check, Position sensors, Shaker check and dispensing volume check mode to prevent accidental dispensing of reagent inside the instrument.		
15	Data retrieval	It should have ability to include multiple plates inside a measurement session and combine data from all plates to the same data set.		
16	System hardware upgradability	System should have upgradation option of up to 2 on-board dispensers, dispensing volume should be 2 μ L to 5000 μ L with 1 μ L increments.		
17	double excitation and double emission monochromators for fluorescence applications.	Instrument should have Quadruple Monochromator based, double excitation and double emission monochromators for fluorescence applications.		
18	UV and Vis photometer	The instrument should have double monochromators for photometric (UV and Vis) measurement.		
19	Single lamp source with separate detectors for different modes	The quoted instrument should have a single lamp source and separate highly sensitive detectors for Photometry, Fluorometry and Luminescence.		
20	Top and bottom reading mode	Quoted instrument should come with Top and bottom read optical design for measurement of solution and cell-based assays, fluorescence assays or biochemical Assay.		
21	Spectral scanning	Spectrum scans over the entire wavelength range for Absorbance, Fluorescence and Luminescence.		

22	Suitable for in-solution and cell based assays	Well scanning (for reading solution and cell-based assays for High sensitivity for Absorbance, Fluorescence and Luminescence).		
23	Kinetic measurement	Kinetic measurements for Time-based assays and Endpoint measurements.		
24	Double scanning	Dual scans over the entire range (for determining the optimal Excitation & emission wavelengths for a particular Fluorophore).		
25	Photometry measurement range	Measurement range in Photometry: 200-1000nm		
26	Automated Pathlength correction	Instrument should have on-board pathlength correction for direct quantification. E.g. Nucleic acids and proteins.		
27	Plate type compatibility	Plate type: 6 well to 384 well format, also compatible with low volume (2µl to 10µl) analysis plate for DNA/RNA estimation		
28	Wave length range for fluorimetry	Fluorometry wavelength selection: Excitation range: 200–822nm, Emission: 270-840nm.		
29	Fluorescence sensitivity	Fluorescence intensity sensitivity of 0.4 fmol fluorescein per well with 384 well black plates.		
30	Plate type compatibility	Plate Type: 6 well to 1536 well format		
31	System upgradability to luminescence	Luminometric upgradation should be done at field / at Lab.		
32	Luminometric sensitivity	Luminometric sensitivity of <7 amol ATP/well with 384 well white plate using flash ATP reaction. Should have spectral scanning options		
33	Measurements mode in Luminometry	Luminometry should have three measurements mode – Normal, Filter and Monochromator mode with excellent sensitivity.		
34	Restoration of back-up data	Database based software to run backups of all data, restore back up		

		data (in case of hardware failure of original computer.		
35	Area selection	Software should have option for area selection. i. e different protocols at different area of the same plate.		
36	Graph plotting	Spectral scanning of all 96 samples or 384 samples should be able to view in single graph plot.		
37	Different detection in same method	Single software program should allow any number of measurement steps / different detection method within the same program.		
38	Warranty of the system	1 year		