



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
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PR No. 1000041853 Rfx No. 6100001840:

Detailed Technical Specifications of Multimode Microplate Reader (Qty: 1 Nos):

Sr. No.	Description	Compliance (Yes/No)	Additional Information if any
1	Specifications for Multimode plate reader		
1.1	It should support Fluorescence, UV-visible absorption and Luminescence detection		
1.2	It should read 6, 12, 24, 48, 96 and 384 well plate		
1.3	The read methods should be endpoint, kinetic, spectral scanning		
1.4	Should be able to measure standard size cuvettes in all detection modes		
1.5	Condensation and Temperature control should be possible - ambient +4 to 45 degree C with ability to set temperature gradient		
1.6	Microplates need to be shakable linearly and orbitally		
1.7	It should have micro-volume plate to measure at least 2 uL microspots		
2	For absorption:		
2.1	Light source should be Xenon flash lamp		
2.2	Detector: Photodiode		
2.3	Wavelength range: 230-999 nm		
2.4	Dynamic range: 0 to 4 OD		
2.5	Resolution: 0.001 OD or better		
2.6	Monochromator wavelength accuracy: ± 2 nm		
2.7	It should be able to correct the pathlength automatically		
2.8	It should include automatic height adjustment to use for various microplates and fluid levels		
2.9	There should be an option to upgrade for gas control for CO ₂ /O ₂ and dual reagent injector		

3	For fluorescence intensity:		
3.1	Light source should be Xenon flash lamp		
3.2	should have 2 excitation and 2 emission monochromators		
3.3	Both top and bottom readings should be possible		
3.4	Wavelength range: at least 250-700 nm, Filters 200-700 nm		
3.5	Sensitivity of monochromator for top: at least 2.5 pM, for bottom: at least 4 pM		
3.6	Dynamic range: 7 decades		
3.7	There should be provision of Time resolved Fluorescence for monochromator and filters		
3.8	Should have Fluorescence polarization upto 700 nm with necessary UV filters for Tryptophan		
3.9	A filter module should be completely independent including its own light source- Xenon flash lamp, a PMT detector and a high performance dichroic based wavelength selection system. The optics for monochromator and filters should not be shared.		
3.10	It should have total 2 PMT detectors- one for monochromator and other for filter		
4	For Luminescence:		
4.1	Wavelength range: 300-700 nm		
4.2	Sensitivity at least 20 amol ATP (flash) and 10 amol ATP (glow)		
4.3	Dynamic range: greater than 6 decades		
4.4	Software: a single software to control the instrument and perform data analysis with multiple licenses		
5	Accessories:		
5.1	Stand alone computer with i5 or higher processor, 8 GB or higher RAM, 512 GB or higher SSD, Win 11 Pro or higher OS		
5.2	Suitable UPS		
5.3	3 ml and 1 ml quartz cuvette should be given alongwith its stopper		
	Warranty:		
6	3 years warranty		