

Technical Specifications of Multimode Microplate Reader

1.0 Bidder Eligibility Criteria-I

Si. No	Bidder Eligibility Criteria-I	Complied / Not Complied	Reference Page No.	Remarks, If any
1	The bidder/OEM should have supplied at least 3 similar items to IITs, NITs, IISERs, CSIR Labs or other Govt. R&D organizations in the last 5 years, PO copies or installation certificates along with contact details of end user need to be submitted as the proof of supply. IIT Madras reserves its right to verify the claims submitted by the bidder and the feedback from the previous customers will be part of technical evaluation.			
2	The service center should be within Chennai, Tamilnadu. Proof of facility registration, location & contact details to be provided along with technical bid.			
3	The Item should be installed in IITM and training & demonstration of the equipment to be provided.			

2.0 Technical Specifications II

Si. No	Specification	Complied / Not Complied	Reference, Page. No.
General			
1.	Wavelength Selection	Should have Quadruple Monochromators. Should have Two excitation Monochromator and Two Emission Monochromator for wavelength selection.	
2.	Detection method	Should be capable to read Fluorescence, Time-Resolved Fluorescence, Luminescence and UV-Visible Absorbance.	
3.	Read method	Should be able to perform End-point, kinetic, spectral scanning, well-area scanning assays.	
4.	Microplate types	Should read 6, 12, 24, 48, 96 and 384-well plates without need for any adapters.	
5.	Maximum Plate Height	Absorbance: 0.8" (20.3 mm)	
6.	Fluorescence & Luminescence: 0.89" (22.6 mm)		
7.	Temperature control	Ambient +4°C to 45°C \pm 0.2°C at 37°C. It should also have Condensation control system to minimize condensation on plate lids during incubated process. The incubation should be through natural heat convection to prevent edge effects in incubated assays.	

8.	Shaking	It should have linear, orbital, double orbital plate shaking modes. Also the speed and duration should be programmable.		
9.	Software	Single integrated windows based software for Reader control and data analysis should be supplied with the instrument. The software should be able to analyze the data and perform the calculations.		
10.	Software must have Quick Read function to enable read the plate without lengthy protocol definition.			
11.	Absorbance			
	a) Light source	Xenon Flash Lamp. Lamp Life should be at least 1 billion flashes		
	b) Wavelength selection	Monochromator		
	c) Wavelength range	230 - 999 nm, 1 nm increment		
	d) Bandpass	4 nm (230-285 m), 8 nm (>285 m)		
	e) Dynamic range	0 - 4.0 OD		
12.	Resolution			
		0.0001 OD		
	a) Pathlength correction	Pathlength Correction facility should be available as a standard feature.		
	b) Monochromator wavelength accuracy	+/- 2 nm		
	c) Monochromator wavelength repeatability	+/- 0.2 nm		
	d) OD accuracy	< 1% at 2.0 OD typical		
	e)	< 3% at 3.0 OD typical		
	f) OD linearity	< 1% from 0 to 3.0 OD typical		
	g) OD repeatability	< 0.5% at 2.0 OD typical		
	h) Stray light	0.03% at 230 nm typical		
	i) Reading speed	96: 11 seconds		
	j)	384: 22 seconds		
13.	Fluorescence Intensity			
	a) Sensitivity	Top: Fluorescein 2.5 pM (0.25 fmol/well 384-well plate)		
	b)	Bottom: Fluorescein 4 pM (0.4 fmol/well 384-well plate)		
	c) Light source	Xenon Flash Lamp		
	d) Wavelength selection	Double grating monochromators (Top and Bottom)		
	e) Wavelength range	250 – 900 nm		

14.	Dynamic range	7 decades (0 – 9,999,999 RFU)		
	a) Detection system	PMT		
	b) Gain Settings	Should be able to program Auto or Manual gain settings for PMT		
	c) Reading speed	96: 11 seconds; 384: 22 seconds		
15.	Time Resolved Fluorescence			
	a) Light Source	Xenon flash lamp		
	b) Wavelength range	250 – 900 nm		
	c) Sensitivity	Europium 1200 fM (120 amol/well in 384-well plate)		
16.	Luminescence			
	a) Sensitivity	20 amol ATP (flash)		
	b)	100 amol ATP (glow)		
	c) Wavelength range	300 - 700 nm		
	d) Dynamic range	> 6 decades (0 – 5,800,000 RLU)		
17.	Power Requirements			
	a) Power	100-240 V _{AC} 50/60 Hz . 130 Watts max		
18.	Regulatory			
	a) Regulatory	Instrument should be CE and NRTL Safety Agency marked.		
19.	It should be upgradeable on site to include Anisotropy integrated in the same unit for future needs. Also should be able to add CO ₂ /O ₂ control for Cell based assay and dual reagent dispenser for fast kinetics and flash fluorescence / Luminescence assays.			
Other terms and conditions				
20.	Warranty	3 years warranty must be provided		

(Note: It is mandatory for the bidders to provide the compliance statement in tabular column format along with catalogue page number (comply/not comply) for the Above points with document proof as required. Failing which bidders will be technically disqualified)