



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

Ref No. (PR No. 1000038654)

RFQ No : 6100001664

Technical Specifications for Nanobio Spectrophotometer

Sr. No	Technical Specifications	Qty	Compliance(Yes/No)
1	<p>A. Spectral scanning for Fluorescence and Luminescence should be possible.</p> <ul style="list-style-type: none">i. Compatibility Plate reading Type: spectral scanning from 6, 24, 48, 96, 384 well format.ii. Self-diagnostic option and auto-calibration during the starting of the instrument as well as during longer kinetic assays.iii. 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.iv. Dynamic range for the fluorescence and luminescence should be mentioned and approximately it should be more than 6 to 7 decades.v. Capable to upgrade 2 dispensers, dispensing volume should be 2μl to 5000 μl with 1 μl increments.vi. Onboard Incubator and shaker should be available. Incubation temperature should be up to 45°C and Orbital shaker with adjustable speed and diameter.vii. On-board incubator must function by preventing condensation on a microplate lid to enable reading through the lid even during long kinetic assays (at least 24 hours).viii. System should be supplied with Analysis software with unlimited user license.ix. Single software program should allow any number of measurement steps (different detection modes) within the program.x. 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.xi. No loss of already measured data even in case of power failure.xii. Should be compatible for low volume sample analysis using accessory plate, volumes down to 2 μL.xiii. Automatic Smart Safety Checks like Plate check, Prime check, Position sensors, Shaker check and dispensing volume check.xiv. Instrument has automatic plate check mode and priming vessel check mode to prevent accidental dispensing of reagent inside the instrument.xv. Ability to include multiple plates inside a measurement session, and combine data from all plates to the same data set	1	

	<p>System should be able to read different wavelength in one 96 well plate in one protocol</p> <p>B. Optical System:</p> <ul style="list-style-type: none"> i. Instrument should have Quadruple Monochromator based, double excitation and double emission monochromators for fluorescence applications. ii. Instrument should have double monochromators for photometric (UV and Vis) measurement. <p>C. Absorbance / Photometry</p> <ul style="list-style-type: none"> i. Plate types - 6- to 384-well plates ii. Wavelength selection - Double monochromators iii. Wavelength range - 200–1,000 nm iv. Light source - Xenon flash lamp v. Read-out range - 0–6 Abs vi. Linear measurement range -0–4 Abs (96-well plate) at 450 nm, ±2% 0–3 Abs (384-well plate) at 450 nm, ±2% vii. Accuracy- 0.003 Abs or ±2%, at 200–399 nm (0–2 Abs) 0.003 Abs or ±1%, at 400–1,000 nm (0–3 Abs) viii. Precision - Standard deviation (SD) <0.001 Abs or coefficient of variation (CV) <0.5%, at 450 nm (0–3 Abs) <p>D. Fluorescence/Fluorometry:</p> <ul style="list-style-type: none"> i. Plate types 6- to 1,536-well plates ii. Wavelength selection- Double excitation and emission monochromators iii. Excitation wavelength range -200–1,000 nm iv. Emission wavelength range - 270–840 nm v. Light source - Xenon flash lamp vi. Sensitivity -Top reading: <0.4 fmol fluorescein/well (black 384-well plate) vii. Dynamic range Top reading: >6 decades, Bottom reading: >5.5 decades <p>E. Luminescence</p> <ul style="list-style-type: none"> i. Plate types- 6–1536 well plates (spectral scanning 6-384 well plates) ii. Wavelength selection-Direct or filters (spectral scanning with double monochromators) iii. Wavelength range-360–670 nm iv. Sensitivity- <7 amol ATP/well (white 384-well plate) v. Dynamic range->7 decades <p>F. Data Analysis Software :</p> <ul style="list-style-type: none"> i. Database based software to run backups of all data, restore back up data (in case of hardware failure of original computer. ii. Cloud library connectivity to download routine used ready protocols for run. iii. Software should have option for area selection. i. e different protocols at different area of the same plate. iv. Spectral scanning of all 96 samples or 384 samples should be able to view in single graph plot. v. Single software program should allow any number of measurement steps / different detection method within the same program. 		
	<p>Warranty:</p>	<p>3 years</p>	