

ITEM NO-4

Technical Specifications

Multimode Microplate Reader

- Instrument should be capable to read Fluorescence, Time-Resolved Fluorescence, Luminescence and UV-Visible Absorbance.
- Same instrument should be upgradeable at site to include TR-FRET, Fluorescence Polarization detection mode.
- Same instrument should be upgradeable at site to include Dual reagent dispenser which should be compatible to dispense in all 6, 12, 24, 48, 96 and 384 well plates. Should also support dispensing in all detection modes.
- It should have Quadruple Monochromators. It should have Two excitation Monochromator and Two Emission Monochromator for wavelength selection
- End Point, Kinetic, Spectral scanning and Well area scanning Read methods for Absorbance and Fluorescence mode should be available
- It should be compatible with 6, 12, 24, 48, 96 and 384 well microplates.
- Must be able to control temperature from ambient + 4 °C to 45 °C through natural convection, It should have excellent uniformity across the microplate. Not have more than ± 0.2 °C variation across the plate at 37 °C.
- Must have temperature gradient setting to minimize condensation on plate lids during incubated processes.
- It should have both Linear, Orbital and double Orbital shaking modes with programmable speed and duration.
- **Absorbance**
 - Light Source: Xenon Flash Lamp with life of least 1 billion flashes
 - Wavelength selection through tuneable grating monochromator
 - Wavelength range should be from 230 – 995 nm with minimum 1 nm increment
 - OD measurement range should be from 0.0 to 4.0 OD
 - OD measurement resolution should be 0.0001 OD
 - Pathlength correction feature should be available as a standard feature
 - Stray light should be 0.04% at 230 nm or better
 - Reading speed for 96 well plate should be not more than 15 seconds and 384 well plate should be not more than 30 seconds.

- **Fluorescence Intensity**

- Light Source: Xenon Flash Lamp with life of least 1 billion flashes
- Must have both Top and Bottom Fluorescence detection
- Wavelength selection should be through double grating monochromator for both Top and Bottom reading.
- Sensitivity for Top reading: Fluorescein 3.0 pM (0.3 fmol/well 384-well plate) or better
- Sensitivity for Bottom reading: Fluorescein 5 pM (0.5 fmol/well 384-well plate) or better
- Wavelength range should be from 250 to 650 nm or better
- Dynamic range should be greater than 6 decades
- Detection system: PMT (Photomultiplier tube)
- Reading speed for 96 well plate should be not more than 15 sec and 384 well plate should be not more than 35 sec.

- **Time Resolved Fluorescence**

- Light Source: Xenon Flash Lamp with life of least 1 billion flashes
- Wavelength range should be from 250 to 650 nm or better
- Sensitivity should be Europium 1250 fM (125 amol/well in 384-well plate) or better

- **Luminescence**

- Wavelength range: 320 to 680nm
- Dynamic range should be greater than 6 decades
- Detection system: PMT (Photomultiplier tube)
- Sensitivity should be at least 25 amol ATP or better

- Software: Single integrated windows based software for Reader control and data analysis with at least 4 user license should be supplied with the instrument. The software should be able to analyze the data and perform the calculations.

Software must have Quick Read function to enable read the plate without lengthy protocol definition.

- It should have USB and RS232 port to connect it to external computer
- Suitable compatible computer for instrument control and data analysis should be supplied with the instrument.
- Instrument should be CE and TUV marked. RoHS Compliant.
- Power supply: 240 Volts AC, 50-60 Hz
- Warranty: 3 years