**Detailed Specifications – Multiple Mode Plate Reader**

Multimode Microplate Reader with high performance optics consisting of Quadruple Grating Monochromator

Monochromator should support top and bottom fluorescence intensity, Time resolved Fluorescence, UV-visible absorbance and luminescence detection.  
  
Modular design and can be upgraded to Hybrid optics by adding Filter module. End-point, kinetic, spectral scanning and well-area scanning

Reads 6 to 384 well plates. Also, can read Take3Mplate for small volume (2 ml) measurements.

Able to measure standard cuvettes in all detection modes within the temperature- controlled reading environment.  
  
Temperature Control: Ambient temperature +5 °C up to 42 °C  
Microplate Shaking: Linear, Orbital

Plate format: 6- to 384-well plates, cuvettes, Take3Mplate

**Absorbance**  
Light Source: UV Xenon flashlamp

Wavelength Selection: Monochromator system

Wavelength range: 230-1000 nm in 1 rim increment through tunable grating Monochromator.

Bandpass : 4 nm (230-285 m), 8 nm (>285 m)

Measurement range: 0 to 4.0 OD

Resolution: 0.0001 OD

Detection System: UV silicon photodiode

Monochromator

Wavelength accuracy: +2nm Monochromator wavelength

Repeatability: +0.2nm

OD accuracy: <1% at 3.0 OD

Stray light: 0.03% at 230nm typical   
Includes pathlength correction feature and automatic z-height adjustment.  
Instrument is upgradeable for gas control option for CO2/ 02 or CO2 only environmental control. Range: 0- 20% (CO2);1- 19% (02)- Dispense volume range is S - 1000ul  
  
**Fluorescence Intensity:**

Light source: UV Xenon flashlamp

Wavelength selection: Monochromator for both Top and Bottom Reading.

Wavelength range: Excitation: 230 – 900 nm, Emission: 280 – 900 nm

Sensitivity: Top - Fluorescein 2.5 pM typical (0.25 fmol/well 384- well plate)

Bottom -Fluorescein 4 pM typical (0.4 fmol/well 384-well plate)

Detection System: PMT, UV and red-sensitive

Dynamic Range: 7 decades  
  
**Time resolved Fluorescence (TRF):**

Wavelength range: Monochromators: 250-700 nm (Optional: 250-900nm with Red Extended PMT) Sensitivity: Europium 1200 fM with monos (~120 amol/well in 384-well plate)

**Luminescence:**

Wavelength range: 300-700 nm (Optional: 300-900nm with Red Extended PMT)

Detection System: photon counting system with low dark current PMT

Sensitivity: ~20 amol ATP (flash); & ~100 amol ATP (glow)

**Injectors**

Injectors Pump speed : 100 – 300 μl/s

Injection volume : selectable in 1 μl increments

Dead volume : 100 μl including pump back

**Read times**

~20 seconds for 96 well and ~30 seconds for 384 well plates

Computer with I3 processor or higher, 4 GB RAM or higher, 500 GD HDD or higher, USB Ports, Colour Monitor, Keyboard, Mouse, Windows 10 Pro (64-bit) operating system, MS Excel 2016 or later (64-bit).