



## INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH PUNE

CLARIFICATION ON TENDER NUMBER - IISER-PUR-0325-20/0471-20/0851-20

ITEM DESCRIPTION- PROCUREMENT OF MULTIMODE PLATE READER.

Refer IISER Pune open tender number IISER-PUR-0325-20/0471-20/0851-20 for procurement of Multimode plate reader.

Pre-Bid meeting was held on May 5<sup>th</sup>, 2021 at 2.00 PM via video conferencing and minutes of meeting is as under.

At the outset, the Chairman welcomed all the Members and the representative of the Prospective Bidders and briefed in general the scope of the Project and thereafter requested Assistant Registrar (S&P) to brief the vendors on the salient features of the commercial terms and the indenting Officer to read out the clarification sought by the Prospective Bidders and replied thereto as detailed in Annexure -II

The representatives present were satisfied with the replies given and it was informed that the corrections / additions / clarifications given, as discussed during the Pre-Bid Conference would be hosted on the website of IISER Pune and all the Prospective Bidders are required to take cognizance of the proceedings of the Pre-Bid Conference before submitting their bids as stipulated in the Bidding Documents.

The other terms & conditions of the notice issued on our IISER website [www.iiserpune.ac .in](http://www.iiserpune.ac.in) will remain unchanged. No more correspondence in this regard will be entertained

The meeting ended with vote of thanks to the Chair

5.5.2021

Sd/-  
Assistant Registrar (S&P)



**IISER PUNE  
PRE-BID CONFERENCE FOR PROCUREMENT OF MULTIMODE PLATE READER**

**TECHNICAL & COMMERCIAL QUERIES AND CLARIFICATION**

| S.No | Query/Clarification Sought   | Clarification / Amendment  |
|------|--|--|
|      | <b>Multimode Plate Reader</b>  |  |
| 1    | <p><b>Page 23, point number 1:</b><br/>The indent lists the following Read Chemistries, " Absorbance, Fluorescence Intensity (top/bottom), Luminescence, Filtered Luminescence, Fluorescence Polarization, Time Resolved Fluorescence"<br/>- No details of FP chemistry have been mentioned in the specifications.</p> | <p><b>Amendment: Page 23 for Ref. No- 0325/20 only:</b><br/><br/>'fluorescence polarization and time resolved fluorescence' should be deleted. Details about filters are included separately.<br/><br/>The user should be able to switch and use all these technologies set in the multimode reader easily. Include all of the following technology modules together in the system without replacing one for the other: Absorbance, Fluorescence Intensity (top/bottom), Luminescence, Filters and Monochromators in one system.<br/><br/>Monochromator optical module should be equipped with a light source Xenon flash lamp, a Photodiode detector for Absorbance &amp; a PMT detector for top and bottom fluorescence intensity &amp; high performance luminescence detection.</p> |

|   |  |   |
|---|--|---|
| 2 | <p><b>Are agencies allowed to quote for only one or two systems or are required to quote for all three systems to qualify in the bid?</b></p>  | <p>The vendor is allowed to quote for any/or all of the indents based on the specifications asked and each indent will be awarded based on separate L1.</p>   |
| 3 | <p>Filter based system does not mean that your application is compromised as long as we can supply the required filters that you need. Please find a document discussing all the filters that we provide as part of the <b>extended filter set</b>. "Hidex Sense Optical System"</p>   | <p><b>Clarification: No change in specification.</b></p> <p>The specifications of all the three systems should be capable of generating a fluorescence spectrum, with 1 nm increments of wavelengths.</p>   |
| 4 | <p><b>Pg #23, S. No. 1</b> - "The monochromator optics should work at 200 - 999 nm" - While the range specified in this point is from 200-999 nm, elsewhere in point # 5a it has been listed as 200-1000 nm.</p>   | <p><b>Amendment:</b><br/> <b>Changed to 230 - 999 nm in point 5a for all the three technical specifications (Ref. nos. 0325, 0471 and 0851)</b></p>   |
| 5 | <p><b>Pg #23, S. No. 1</b> - "The filter module should be completely independent add-on that includes its own light source Xenon Flash Lamp, a PMT detector and a high performance dichroic based wavelength selection system"</p> <p>- We provide a system where separate filter assemblies are provided, which have a distinct light path from the monochromator assemblies but share the same illumination source as a Xenon Flash Lamp as well as the same detector. The only thing that changes is the wavelength selection system. These filter-based capabilities can be utilized and switched independently of the monochromator assembly.</p> | <p><b>Clarification/Amendment:</b></p> <p>Hence, the specification is amended as in all the three technical specifications (point no. 1 for Ref. nos. 0325, 0471 and 0851):</p> <p>“ The filter module should function independently of the monochromator assembly with a light source Xenon flash lamp, a PMT detector and a high performance dichroic-based wavelength selection system.”</p> |
| 6 | <p><b>Pg #24, S. No. 5a</b> - The Absorbance Monochromator based wavelength range asks for 200-1000 nm - We can provide 230-1000nm range for Absorbance using a Monochromator. Is that acceptable?</p>   | <p><b>Clarification/Amendment:</b></p> <p>This is acceptable. We have amended the specifications for point 5 in <b>all the three technical specifications (point no. 5a, Ref. nos. 0325, 0471, 0851)</b> accordingly.</p>   |
| 7 | <p><b>Pg #24, S. No. 5b</b> - The Excitation and Emission Wavelength Ranges mentioned are 200-1000nm &amp; 270-840nm respectively. We are able to provide Ex - 250-830nm, Em - 270-850nm in our platform. Would this be</p>  | <p><b>Clarification/Amendment:</b></p> <p>This is acceptable, if the requested filter sets are provided. We have amended the specifications for</p>   |

|     |   |  |
|-----|---|--|
|     | acceptable?   | point 5 in all the three technical specifications (Ref. no. 0325, 0471, 0851) accordingly.   |
| 8   | At multiple places in the specifications, the wavelength range expected for Filter assemblies has been asked for but no details have been provided with respect to how many filters or of what bandwidth those filters need to be for those wavelength ranges.                | <p><b>Clarification:</b></p> <p><b>Minimum of 4 filter sets for wavelength selection should be included In the bid for FI, FP and 1 for TRF (compatible with Europium and Terbium). Please provide the details of choice of wavelengths and bandwidths available, compatible with the quoted model.</b></p> <p><b>UV polarization filters should be quoted for the fluorescence polarization in UV range for ref nos: 0471 and 0851.</b></p> <p><b>The specifications for 0325, 0471 and 0851 have been amended accordingly to include the filter specifications in point 5.</b></p> |
| 9   | Pg #24, S. No. 5c - While the Lum Flash assay performance specification is asked for, injectors do not have to be quoted (the system should only be future upgradable with dual injectors).   | The sensitivity specifications should be provided according to the FLASH capability though the injectors are not provided.   |
| 10. | Pg #27 (& Pg #30) S. No 7 - A "UV Fluorescence Polarization Filter set (Ex 284/10 & Em 340/30)" is asked for Tryptophan assays - We are able to provide a Ex 300 nm using the monochromator mode and have a Em 360/35 filter for Tryptophan assays. Would this be acceptable? | <p>The requirement is for filters for fluorescence polarization applications in the UV range.</p> <p>This is not for fluorescence intensity measurements. For FI applications, excitation wavelengths lower than 300 nm (ideally from 250 nm) is essential as given in the specifications.</p> <p>The requirements for filters have been specified in point no 5 accordingly.</p>  |
| 11. | Is TRF in the secondary mode acceptable?  | Primary or secondary modes are acceptable, provided the required specifications for sensitivity match.   |

|     |   |   |
|-----|---|---|
|     |   | TRF requirement has been removed from Ref. no. 0325 and hence need not be provided as a secondary mode. |
| 12. | If the multimode plate reader comes with a computer of some specification, should one more system provided with the requested specifications? | A computer with the requested specifications should be provided for technical qualification of the bid. |

13. Amended specifications with the modified marking scheme are given.

#### CHAPTER 4- SCHEDULE OF REQUIREMENTS, SPECIFICATIONS & ALLIED TECHNICAL DETAILS

Ref. No- 0325/20 Technical specification of Multimode Plate Reader

| Technical evaluation criteria with marks |  |       |
|--|--|-------|
| S. No.                                   | Technical requirement  | Marks |
| 1  | <p><b>Multimode microplate reader</b> should be a high-performance system with dual optical modules, a quadruple grating monochromator optical module &amp; a filter-based optical module.<br/> <b>The system should be capable for advanced detection modes such as UV-Vis Absorbance, Fluorescence intensity, and Luminescence.</b><br/> The user should be able to switch and use all these technologies set in the multimode reader easily. Include all of the following technology modules together in the system without replacing one for the other: Absorbance, Fluorescence Intensity (top/bottom), Luminescence; Filters and Monochromators in one system.<br/> Monochromator optical module should be equipped with a light source Xenon flash lamp, a Photodiode detector for Absorbance &amp; a PMT detector for top and bottom fluorescence intensity &amp; high performance luminescence detection.<br/> The monochromator optics should work at 230 - 999 nm wavelength range with 1 nm increments.<br/> The filter module should function independently of the monochromator assembly with a light source Xenon flash lamp, a PMT detector and a high performance dichroic-based wavelength selection system.</p> | 20    |
| 2  | <p>a) The system should have the capacity to read different <b>plate formats</b> from 6- to 384-well plates.</p> <p>b) Automated z-focusing capability for adjusting the reading height for low volumes and different</p>  | 10    |

|    |  |    |
|----|--|----|
|    | plate types should be available.   |    |
| 3  | <p><b>System temperature control</b></p> <p>a) from ambient +4 °C to 50 °C. The temperature must be uniform across the plate.<br/> b) Acceptable limit: not more than <math>\pm 0.2</math> °C variation across the plate at 37 °C, applicable to any plate used.<br/> c) Must have temperature gradient settings to minimize condensation on plate lids during the incubation processes.</p>   | 10 |
| 4  | System should be capable of <b>plate shaking in linear, orbital and double-orbital modes</b> . Shaking should be software supported along with provision to set duration, speed and amplitude.   | 5  |
| 5. | <p><b>Instrument sensitivity</b> in various detection modes should be as follows:</p> <p><b><u>a) Absorbance:</u></b><br/> Monochromator optical module:<br/> Wavelength range: 230 - 999 nm at 1 nm increments<br/> Dynamic range: 0 - 4.0 OD<br/> OD accuracy: &lt;1 % at 2.0 OD, &lt;3% at 3.0 OD<br/> Monochromator bandwidth: at least 4 nm (230-285 nm), 8 nm (&gt;285 nm)<br/> Monochromator wavelength accuracy: <math>\pm 2</math> nm<br/> OD linearity: &lt;1% from 0 to 3.0 OD<br/> OD repeatability: &lt;0.5% at 2.0 OD</p> <p><b><u>b) Fluorescence Intensity:</u></b><br/> Monochromator optical module:<br/> Excitation wavelength range: 320 - 700 nm at 1 nm increments<br/> Emission wavelength range: 270 - 840 nm<br/> Sensitivity:<br/> Top reading: &lt; 0.25 fmol Fluorescein/well (384 well plate, black)<br/> Bottom reading: &lt; 0.4 fmol fluorescein/well (384 well plate, clear bottom, black)<br/> Dynamic range:<br/> Top reading: &gt; 6 decades<br/> Bottom reading: &gt; 6 decades<br/> Filter optical Module:<br/> Top: &lt; 0.025 fmol Fluorescein/well (384 well plate, black)</p> <p><b><u>c) Luminescence:</u></b><br/> Monochromator system: &lt; 20 amol ATP (flash)<br/> Filter system: &lt; 20 amol ATP (flash)<br/> Wavelength range: 300 - 700 nm</p> | 30 |

|   |  |    |
|---|--|----|
|   | <p>Dynamic range: &gt; 6 decades</p> <p><b>e) Filter requirements:</b></p> <p>Four pairs of excitation and emission filters, preferably EX 280, 360, 480 and 550 nm with appropriate band-widths for Fluorescence intensity should be included in the bid. A list of filters along with specifications of excitation and emission to choose from as accessories should be provided.</p>  |    |
| 6 | <p>System should be in future upgradable to connect a dual reagent injection system to automate inject/read assays such as ion channels assays, ATPase or flash luminescence assays.</p>   | 5  |
| 7 | <p><b>Computer:</b></p> <p>Computer and monitor equipped with necessary software for operation, data collection and analysis, viewing and data transfer (USB, hard disk drives and ethernet ports) and printer (laser printer with scanner) should be provided.</p> <p>A suitable computer should be supplied along with instrument of following minimum specifications: Intel Core i3 or higher processor with 16 GB RAM, 256GB SSD, 1 TB HDD, USB ports, Colour monitor, keyboard, mouse with Windows 10, professional editions, 64-bit software O.S. &amp; MS office 2010 or higher.</p> <p><b>Software:</b></p> <p>Instrument should come with licensed software for reader control, advanced data analysis and flexible Excel export in one software package.</p> <p>It should be easy to export and use data in other formats.</p> <p>Future software updates necessary for operation and analysis, compatible to the model provided, should be available free of cost and periodically updated.</p> <p>Analysis software: should provide copies of offline analysis software and should not require a separate software supporting license.</p> | 10 |
| 8 | <p><b>Service and Maintenance:</b></p> <p>(a) Trained technicians should install the instrument and ensure that it is operating correctly and within specifications. User training at site should also be provided.</p> <p>(b) There should be at least one service engineer and one application scientist based in India trained on the same quoted instrument.</p> <p>(c) They should provide user manual, warranty for <b><u>minimum of three years</u></b>, and also long term regular service of the instrument. There should be periodic visits (at least one per year) from both service engineer and application scientist for periodic training of new users and software/application updates, in addition to visits due to break down or specific requests.</p>  | 10 |

|              |   |            |
|--------------|---|------------|
|              | (d) User training at site should be provided by the application scientist, including instructions for maintenance and optimal usage.<br>(e) Price should include installation, operating instructions and training at site. |            |
| <b>Total</b> |   | <b>100</b> |

| Sr. No. | Other information    |  |
|---------|----------------------|--|
| 1       | Eligibility criteria | <ul style="list-style-type: none"> <li>- Bidder should have a minimum 5 installations for above listed items in any government Institutes.</li> <li>- A user's list should be provided highlighting instalment of similar equipment in other research institutes in India in the recent past. A good record in supply and service to other research institutes will be considered as a positive point for a particular company.</li> </ul> |

**Minimum marks for qualification: 95**



Ref. No- 0471/20 Technical specification of Multimode Plate Reader

| Technical evaluation criteria with marks |   |       |
|--|---|-------|
| S. No.                                   | Technical requirement   | Marks |
| 1  | <p><b>Multimode microplate reader</b> should be a high-performance system with dual optical modules, a quadruple grating monochromator optical module &amp; a filter-based optical module.</p> <p><b>The system should be capable for advanced detection modes such as UV-Vis Absorbance, Fluorescence intensity, Luminescence, Fluorescence Polarization &amp; Time-Resolved Fluorescence.</b></p> <p>The user should be able to switch and use all these technologies set in the multimode reader easily. Include all of the following technology modules together in the system without replacing one for the other: Absorbance, Fluorescence Intensity (top/bottom), Luminescence, Fluorescence Polarization, Time-Resolved Fluorescence; Filters and Monochromators in one system.</p> <p>Monochromator optical module should be equipped with a light source Xenon flash lamp, a Photodiode detector for Absorbance &amp; a PMT detector for top and bottom fluorescence intensity, high performance luminescence detection &amp; Time-Resolved Fluorescence.</p> <p>The monochromator optics should work at 230 - 999 nm wavelength range with 1 nm increments.</p> <p>The filter module should function independently of the monochromator assembly with a light source Xenon flash lamp, a PMT detector and a high performance dichroic-based wavelength selection system.</p> | 20    |
| 2  | <p>a) The system should have the capacity to read different <b>plate formats</b> from 6- to 384-well plates.</p> <p>b) Automated z-focusing capability for adjusting the reading height for low volumes and different plate types should be available.</p>  | 10    |
| 3  | <p><b>System temperature control</b></p> <p>a) from ambient +4 °C to 50 °C. The temperature must be uniform across the plate.</p> <p>b) Acceptable limit: not more than ±0.2 °C variation across the plate at 37 °C, applicable to any plate used.</p> <p>c) Must have temperature gradient settings to minimize condensation on plate lids during the incubation processes.</p>  | 10    |
| 4  | System should be capable of <b>plate shaking in linear, orbital and double-orbital modes</b> . Shaking should be software supported along with provision to set duration, speed and amplitude.  | 5     |
| 5.                                       | <p><b>Instrument sensitivity</b> in various detection modes should be as follows:</p> <p><b>a) Absorbance:</b><br/>Monochromator optical module:<br/>Wavelength range: 230 - 999 nm at 1 nm increments</p>  | 25    |

Dynamic range: 0 - 4.0 OD  
OD accuracy: <1 % at 2.0 OD, <3% at 3.0 OD  
Monochromator bandwidth: at least 4 nm (230-285 nm), 8 nm (>285 nm)  
Monochromator wavelength accuracy:  $\pm 2$  nm  
OD linearity: <1% from 0 to 3.0 OD  
OD repeatability: <0.5% at 2.0 OD

**b) Fluorescence Intensity:**

Monochromator optical module:  
Excitation wavelength range: 320 - 700 nm at 1 nm increments  
Emission wavelength range: 270 - 840 nm  
Sensitivity:  
Top reading: < 0.25 fmol Fluorescein/well (384 well plate, black)  
Bottom reading: < 0.4 fmol fluorescein/well (384 well plate, clear bottom, black)  
Dynamic range:  
Top reading: > 6 decades  
Bottom reading: > 6 decades  
Filter optical Module:  
Top: < 0.025 fmol Fluorescein/well (384 well plate, black)

**c) Luminescence:**

Monochromator system: < 20 amol ATP (flash)  
Filter system: < 20 amol ATP (flash)  
Wavelength range: 300 - 700 nm  
Dynamic range: > 6 decades

**d) Fluorescence Polarization:**

Filter system: 1.2 mP standard deviation at 1 nM fluorescein  
Wavelength selection mode: filters  
Wavelength range:  
Excitation range: 330 - 700 nm  
Emission range: 400 - 700 nm

**e) Time-Resolved Fluorescence:**

Monochromator system: Europium 1200 fM (120 amol/well in 384-well plate)  
Filter system: Europium 40 fM (4 amol/well in 384-well plate)  
Wavelength range:  
Monochromator: 250 - 800 nm

|   |  |    |
|---|--|----|
|   | <p>Filter: 200 - 700 nm</p> <p><b>f) Filter requirements:</b><br/> Four pairs of excitation and emission filters, preferably EX 280, 360, 480 and 550 nm for Fluorescence intensity and polarization, vertical and horizontal filter sets for fluorescence polarization and UV polarization filter set for EX 280/10 and EM 340/30 should be included in the bid. A list of filters along with specifications of excitation and emission to choose from as accessories should be provided. Filter set for TRF compatible with Europium measurements should be provided.</p>  |    |
| 6 | System should be in future upgradable to connect a dual reagent injection system to automate inject/read assays such as ion channels assays, ATPase or flash luminescence assays.  | 5  |
| 7 | <p><b>Computer:</b><br/> Computer and monitor equipped with necessary software for operation, data collection and analysis, viewing and data transfer (USB, hard disk drives and ethernet ports) and printer should be provided. The workstation computer supplied along with instrument should meet the following minimum specifications:<br/> Intel Core i7 or higher processor with 32 GB RAM with additional 2 or more free memory slots, 1 no. x 1 TB SSD for operating systems and 2 nos. x 4TB SATA HDD 1 TB SSD, additional 2 TB or more external HD, USB ports, optical CD/ DVD drive, Color monitor with a 23.8 " or higher LED display, resolution HD 1920 x 1080. Monitor must be same make as that of the workstation. Should contain expansion slots, workstation security software, high definition integrated audio with speakers, high quality keyboard and mouse with Windows 10, professional edition, 64-bit software O.S. &amp; MS office 2010 or higher and Ubuntu Linux 19.04 or higher (dual boot, so either OS can be used). Additional software for data analysis and creating high resolution figures - Graphpad Prism 9 perpetual license, Adobe Illustrator perpetual license - should be provided</p> <p><b>Software:</b><br/> Instrument should come with licensed software for reader control, advanced data analysis and flexible Excel export in one software package.<br/> It should be easy to export and use data in other formats.<br/> Future software updates necessary for operation and analysis, compatible to the model provided, should be available free of cost and periodically updated.<br/> Analysis software: should provide copies of offline analysis software and should not require a separate software supporting license.</p> | 15 |
| 8 | <p><b>Service and Maintenance:</b><br/> (a) Trained technicians should install the instrument and ensure that it is operating correctly and within specifications. User training at site should also be provided.<br/> (b) There should be at least one service engineer and one application scientist based in India trained on</p>   | 10 |

|              |   |     |
|--------------|---|-----|
|              | <p>the same quoted instrument.</p> <p>(c) They should provide user manual, warranty for <b>minimum of three years</b>, and also long term regular service of the instrument. There should be periodic visits (at least one per year) from both service engineer and application scientist for periodic training of new users and software/application updates, in addition to visits due to break down or specific requests.</p> <p>(d) User training at site should be provided by the application scientist, including instructions for maintenance and optimal usage.</p> <p>(e) Price should include installation, operating instructions and training at site.</p> |     |
| <b>Total</b> |   | 100 |

| Sr. No. | <b>Other information</b> |  |
|---------|--------------------------|--|
| 1       | Eligibility criteria     | <ul style="list-style-type: none"> <li>- Bidder should have a minimum 5 installations for above listed items in any government Institutes.</li> <li>- A user's list should be provided highlighting instalment of similar equipment in other research institutes in India in the recent past. A good record in supply and service to other research institutes will be considered as a positive point for a particular company.</li> </ul> |

**Minimum marks for qualification: 95**

**Ref. No-0851/20 Technical specification of Multimode Plate Reader**

| <b>Technical evaluation criteria with marks</b> |   |              |
|---|---|--------------|
| <b>S. No.</b>                                   | <b>Technical requirement</b>  | <b>Marks</b> |
| 1   | <p><b>Multimode microplate reader</b> should be a high-performance system with dual optical modules, a quadruple grating monochromator optical module &amp; a filter-based optical module.</p> <p><b>The system should be capable for advanced detection modes such as UV-Vis Absorbance, Fluorescence intensity, Luminescence, Fluorescence Polarization &amp; Time-Resolved Fluorescence.</b></p> <p>The user should be able to switch and use all these technologies set in the multimode reader easily. Include all of the following technology modules together in the system without replacing one for the other: Absorbance, Fluorescence Intensity (top/bottom), Luminescence, Fluorescence Polarization, Time-Resolved Fluorescence; Filters and Monochromators in one system.</p> <p>Monochromator optical module should be equipped with a light source Xenon flash lamp, a Photodiode detector for Absorbance &amp; a PMT detector for top and bottom fluorescence intensity, high performance luminescence detection &amp; Time-Resolved Fluorescence.</p> <p>The monochromator optics should work at 230 - 999 nm wavelength range with 1 nm increments.</p> <p>The filter module should function independently of the monochromator assembly with a light source Xenon flash lamp, a PMT detector and a high performance dichroic-based wavelength selection system.</p> | 20           |
| 2   | <p>a) The system should have the capacity to read different <b>plate formats</b> from 6- to 384-well plates.</p> <p>b) Automated z-focusing capability for adjusting the reading height for low volumes and different plate types should be available.</p>  | 10           |
| 3   | <p><b>System temperature control</b></p> <p>a) from ambient +4 °C to 50 °C. The temperature must be uniform across the plate.</p> <p>b) Acceptable limit: not more than ±0.2 °C variation across the plate at 37 °C, applicable to any plate used.</p> <p>c) Must have temperature gradient settings to minimize condensation on plate lids during the incubation processes.</p>  | 10           |
| 4   | System should be capable of <b>plate shaking in linear, orbital and double-orbital modes</b> . Shaking should be software supported along with provision to set duration, speed and amplitude.  | 5            |
| 5.  | <p><b>Instrument sensitivity</b> in various detection modes should be as follows:</p> <p><b>a) Absorbance:</b><br/>                     Monochromator optical module:<br/>                     Wavelength range: 230 - 999 nm at 1 nm increments<br/>                     Dynamic range: 0 - 4.0 OD</p>   | 30           |

OD accuracy: <1 % at 2.0 OD, <3% at 3.0 OD  
Monochromator bandwidth: at least 4 nm (230-285 nm), 8 nm (>285 nm)  
Monochromator wavelength accuracy:  $\pm 2$  nm  
OD linearity: <1% from 0 to 3.0 OD  
OD repeatability: <0.5% at 2.0 OD

**b) Fluorescence Intensity:**

Monochromator optical module:  
Excitation wavelength range: 320 - 700 nm at 1 nm increments  
Emission wavelength range: 270 - 840 nm  
Sensitivity:  
Top reading: < 0.25 fmol Fluorescein/well (384 well plate, black)  
Bottom reading: < 0.4 fmol fluorescein/well (384 well plate, clear bottom, black)  
Dynamic range:  
Top reading: > 6 decades  
Bottom reading: > 6 decades  
Filter optical Module:  
Top: < 0.025 fmol Fluorescein/well (384 well plate, black)

**c) Luminescence:**

Monochromator system: < 20 amol ATP (flash)  
Filter system: < 20 amol ATP (flash)  
Wavelength range: 300 - 700 nm  
Dynamic range: > 6 decades

**d) Fluorescence Polarization:**

Filter system: 1.2 mP standard deviation at 1 nM fluorescein  
Wavelength selection mode: filters  
Wavelength range:  
Excitation range: 330 - 700 nm  
Emission range: 400 - 700 nm

**e) Time-Resolved Fluorescence:**

Monochromator system: Europium 1200 fM (120 amol/well in 384-well plate)  
Filter system: Europium 40 fM (4 amol/well in 384-well plate)  
Wavelength range:  
Monochromator: 250 - 800 nm  
Filter: 200 - 700 nm

|   |  |    |
|---|--|----|
|   | <p><b>f) Filter requirements:</b><br/> Four pairs of excitation and emission filters, preferably EX 280, 360, 480 and 550 nm for Fluorescence intensity and polarization, vertical and horizontal filter sets for fluorescence polarization and UV polarization filter set for EX 280/10 and EM 340/30 should be included in the bid. A list of filters along with specifications of excitation and emission to choose from as accessories should be provided.<br/> Filter set for TRF compatible with Europium measurements should be provided.</p>   |    |
| 6 | System should be in future upgradable to connect a dual reagent injection system to automate inject/read assays such as ion channels assays, ATPase or flash luminescence assays.  | 5  |
| 7 | <p><b>Computer:</b><br/> Computer and monitor equipped with necessary software for operation, data collection and analysis, viewing and data transfer (USB, hard disk drives and ethernet ports) and printer should be provided. A suitable computer should be supplied along with instrument of following minimum specifications: Intel Core i3 or higher processor with 16 GB RAM, 256GB SSD, 1 TB HDD, USB ports, Colour monitor, keyboard, mouse with Windows 10, professional editions, 64-bit software O.S. &amp; MS office 2010 or higher.</p> <p><b>Software:</b><br/> Instrument should come with licensed software for reader control, advanced data analysis and flexible Excel export in one software package.</p> <p>It should be easy to export and use data in other formats.<br/> Future software updates necessary for operation and analysis, compatible to the model provided, should be available free of cost and periodically updated.<br/> Analysis software: should provide copies of offline analysis software and should not require a separate software supporting license.</p> | 10 |
| 8 | <p><b>Service and Maintenance:</b><br/> (a) Trained technicians should install the instrument and ensure that it is operating correctly and within specifications. User training at site should also be provided.<br/> (b) There should be at least one service engineer and one application scientist based in India trained on the same quoted instrument.<br/> (c) They should provide user manual, warranty for <b>minimum of three years</b>, and also long term regular service of the instrument. There should be periodic visits (at least one per year) from both service engineer and application scientist for periodic training of new users and software/application</p>  | 10 |

|                |   |  |            |
|----------------|---|--|------------|
|                | updates, in addition to visits due to break down or specific requests.<br>(d) User training at site should be provided by the application scientist, including instructions for maintenance and optimal usage.<br>(e) Price should include installation, operating instructions and training at site. |  |            |
| <b>Total</b>   |   |  | <b>100</b> |
| <b>Sr. No.</b> | <b>Other information</b>  |  |            |
| 1              | Eligibility criteria  | <ul style="list-style-type: none"> <li>- Bidder should have a minimum 5 installations for above listed items in any government Institutes.</li> <li>- A user's list should be provided highlighting instalment of similar equipment in other research institutes in India in the recent past. A good record in supply and service to other research institutes will be considered as a positive point for a particular company.</li> </ul> |            |

**Minimum marks for qualification: 95**