

### Specifications for FPLC system with accessories

- The system must be an inert biocompatible automated purification system capable of performing all the chromatography techniques: Size exclusion, Affinity, Ion exchange, Hydrophobic interaction, and Reverse phase
- Flow rate range of the system should range between 0.001 to 25 ml/min with accuracy of  $\pm 1.2\%$ , and system should be capable of going to a flow of 50 ml/min as packing flow rate for the system with pressure rating of 20 MPa without adding any additional modules on to the system.
- Pump Type must be : Piston pump, metering type
- The system must have IP21 protection code
- Pump head piston of the system should be made up of hydrophobic material for lifelong performance and inertness with the common chromatographic buffers.
- The system should come along with a 2 mm flow cell and illuminated cell volume of 2  $\mu\text{L}$  with an option of : Optical path length 5 mm and illuminated cell volume 6 of  $\mu\text{L}$
- System Viscosity range must range between 0.35 to 10 cP (5 cP above 12.5 mL/min)
- Rotary type valve must be part of the system and must have options of using upto 12 valves
- Mixing principle of mixer should be a chamber with a magnetic stirrer
- System must be capable of accurate, automatic gradient formation from 0 to 100% gradient over the entire flow range of 1 to 25 ml/min.
- The UV-monitor should be capable of detecting a wavelength of 280 nm using LED technology
- System UV detector should have an absorbance range of -6 to 6AU with a resolution of 0.001 m Au crucial for sharp peaks and for samples in the negative spectra of the absorbance
- System should be supplied with a conductive monitor for conductivity measurement between 0.01ms/cm up to 999.9 ms/cm, with automated temperature compensation and flow restrictor.
- System should have built temperature sensor to correct variation due to temperature
- The system should have capability to be integrated using I/O box with third party Detectors and Autosamplers simultaneously for increased application flexibility at the time of purchase or post purchase.
- The system should be fully modular system that can be further expanded to increase system capability and productivity
- System should be supplied with an Outlet valve with at least 3 ports - to connect to waste, fraction collector and one outlet position for main system
- System must include 7x1 ml prepacked columns containing a different Sepharose ion exchange resin (medium) for screening of the optimal ion exchange resins for specific application and development work .
- The system should be supplied with a drop Sync fraction collector. Minimize spillage using sensor and allows the use of 3-, 8-, 15- and 50-ml tubes. Fraction collector can be used in time, volume or peak recognition mode.
- The system must come with a accessories/ assortment box including - Screw lids and cap membranes, Tubing cutter ,Syringe, 10ml – 1 ,Column clamp for 10-21 mm o.d. columns ,Multi-purpose holder , Purge kit – 1 ,Tubing connector 1/16” – 5 ,Union luer F - 1/16" ,Fingertight connector 1/16” , Fingertight connector 1/16” red (for connection of columns) , Ferrule for inlet tubing , Stop plug, 1/16" , Inlet filter holder kit , Inlet filter set – 1 ,Wrench 1/4" (6,3 mm) , Union, 1/16”F - 1/16”F , Online filter kit -1 and 500ul sample loop

- Installation and training: Vendor must take care of on-site installation, demonstration, and training by a well-trained engineer. Required training for smooth operation of the instrument should be provided free of charge during and after installation
- A list of users of the quoted equipment within the country should be enclosed
- Original catalogue from the manufacturer with technical specifications and relevant application notes must be enclosed.
- The vendor must provide a certificate saying that prompt after-sales service such as regular maintenance, troubleshooting and fixing will be carried out by company-trained engineers
- System must be quoted along with a compatible 2KvA UPS for system backup
- The automated purification system must carry a warranty of minimum of 1 year
- **The system must be supplied with a software of following capabilities -**
  1. License base software with 21 CFR Complied Confidential - Company Proprietary
  2. Intuitive user interface with an interactive process picture and simplified evaluation modules
  3. Built in templates for all the existing columns with option to develop method for third party
  4. Sharing of methods and results along with remote access capabilities to systems to save valuable time and resources
  5. Scouting of up to 99 runs with individual parameters in single method
  6. Method Queues for combining of different purification techniques
  7. Software should perform real time control, data evaluation, watch commands, Scouting parameters, method queue, method wizard for easy programming, column library, with report generation option
  8. Automatic data recovery after run is over should be possible
  9. The system should be capable of being installed with Design of Experiment (DOE) software integrated with the system control software as a tool for experimental design for generating precise data in fewer experiments for time and cost-efficient method development