UPLC with PDA detector

TECHNICAL SPECIFICATION

Binary High Pressure Liquid Chromatography with PDA detector and **compatible** and **upgradable** to **Tripple Quadrupole** MS detector system.

• The system sensitivity should meet Indian- MRPLs for contaminants in food matrix. (Proof document/ application note to be enclosed along with technical tender document)	
Computer and Operating System	• Suitable branded Personnel Computer, i7or advanced processor with 12 GB DDR 3 Memory, Up to 1 TB SATA hard drive (7200RPM) or better for software requirements of PDA or better or equivalent latest one. Compatible for operation of LCMSMS instrument. (Compatible) • DVD-RW 24" LED Monitor with suitable authorized operating system, 4 USB port or higher configuration. Original licensed software CD of Operating system and MS office (MS-WORD, MS-EXCEL, MS- POWERPOINT) • Requested branded heavy duty Laser jet printer has to be provided • Should be complete with all necessary accessories with comprehensive. • Warranty of minimum 5 years of all the electronic components as well as wear and tear consumables (PC, Hard Drive, Printer etc.)
Further upgradation Computer platform Software and operating system requirement	• Software must be Multitasking type. It must acquire and process the data simultaneously • 21 CFR & food safety compliance (part 11 may be quoted optional) • Must be capable of performing the following functions and should be upgradable: o Workstation must be able to control the MS, acquire, store, process and reproduce the data by the same computer o Workstation must be able to control LC, Detector and auto sampler. o It must be able to regulate the gas pressure and flow during the data acquisition and append to the relevant data file. o Software must have automated calibration and Quantitative optimization. o Automated MS to MS/MS switching during a single run with user selectable criteria o Perform alternating positive/ negative scans in one run o Automated Quantification and reporting of acquired samples. o Data may be processed as it is being acquired o Method development features in software will be desirable.
HIGH PERFORMANCE LIQUID CHROMATOGRAPHY SYSTEM	
• Binary solvent system with degasser, Auto sampler, Column oven. • The complete system and the detector should be controlled by the single software • The system should have the capability to operate the column range from sub 2µm particle size • Total system (including pump and auto sampler) should be capable of operation at 15000psi at upto 1ml/Min	
Pump	• Binary solvent manager pumps, capable of switching between four solvents capable of operation 15000psi or better • Vacuum Degassing Capability 4 channel capability • Operating flow range:0.010-2.0ml/min with 0.01ml increments • Effective system dead volume<420µl, independent of system back

	pressure • Plunger seal wash Integral, active, programmable • Gradient profiles Eleven (11) gradient curves (including linear, step (2), concave (4) and convex (4) • Composition accuracy:±0.5% absolute (full scale) • Composition precision: 0.15%RSD or better or +/- 0.04 min SD, whichever is greater, based on retention time • Flow Accuracy:±1.0% (05- 2.0ml/min) • Flow precision:± 0.075% RSD (0.5000-2ml/min)
Auto Sampler	• No. of sample plates two, vial plate 1.5 to 2ml vials • Number of sample injection:1-99 or better • Number of sample injector -1-99 injections sample • Injection volume range:0.1-1000 µl in 0.1µL increments with partial or full loop mode • 50µL Loop one with the system and one spare shall be provided with other necessary accessories required for injection and sample temperature range 4-40°C instead of 4-400°C • Sample delivery precision:<0.3% RSD or better • Injector linearity :r2>0.999 or better • Sample temperature:4-40°C • Sample carry over <0.002% or better Caffeine
Column Oven	• Column oven to accommodate at least two column or better 15 com length. It should have leak sensor and high temperature cut off facility. • Column temperature control 5°C above ambient to 60°C • Column Tracking & Storage Device should be provided.
UPS and others	• A branded UPS System with SMF Batteries, of appropriate capacity (minimum 15 KVA) and input/output phases as per requirement of the UPLC System, capable of providing a backup time of minimum 2 hours, with comprehensive warranty of minimum 5 years inclusive of SMF or latest. • All the items should be covered under Two Years comprehensive warranty with at least on Preventive maintenance along with PM kit each year and five years CMC after the warranty period including all spares, accessories and consumables, at least on Preventive maintenance along with PM kit each year and unlimited breakdown visits. Three phase to single phase connectivity and SNMP/WEB interface UPS SNMP Card and Wake-on-Lan (WOL) feature.
Installation and Demonstration	• IQ/OQ/PQ to be performed as per OEM protocol, should be done free of cost with necessary traceable standards along with necessary performance kit standard solutions. • Documents, Kits,& standards etc as required being supply along with the instrument. • Demonstration and Training on system to our Lab personal at site to be incorporated, responsibility of the supplier from training of the lab personnel at supplier site/ installation site • The instrument supplier has to demonstrate on site validation as per the laboratory/ regulatory requirements/ protocols at least for four parameters, as selected/ preferred by the lab. • Basic training for a period of not less than two weeks after installation & Commissioning of the equipment to technical personnel at one technical personnel training at Factory site of the

	supplier. • Trouble shooting training along with Application support for developing validating and at least one polar parameter or selected by the lab.
Spares and accessories	• All required standards for calibration and tuning, HPLC calibration should be provided • Columns-C 18-100 x 2.1mm, 3 sub microne- 5 nos. • Columns-C 18-100 x 2.1mm, 2 sub microne- 5 nos • Vial with cap (1.5 ml)- 5000nos. • Auto samples syringe- 2 complete wiring from battery to UPS and UPS to instrument. • Any other material required to made the instrument functional should be provided • Standard Tool kit should be provided for Instrument maintenance • Reputed highly branded solvent filtration unit with pump and required accessories- 02 nos. • Reputed highly branded solvent filtration unit with pump and required accessories- 02nos.
After sales service	• Should have a good after sales service/ technical support capable of reaching at short notice the places where UPLC is proposed to be installed, Visits and unlimited breakdown calls by service/ application support, engineers should attend immediately without fail. • Troubleshooting training (Instrumentation/ Application) as and when required free of cost • The vendor should also assure supply of spares, accessories, consumables and service for at least 10 years.
Warranty	• The warranty period should be 3 Years. All breakdown of the instrument should be addressed within 24 hours by an onsite visit. • All parts of the instrument, accessories and supporting instruments should be covered under the warranty. If any accessory/ spare part/ consumable is not covered under the comprehensive warranty, then the itemized list of such items, including their prices during the period 2014-15 and average lifetime of the items should be provided. • The equipment should be installed at the proposed site, demonstrate the required objective of the test with the claimed limit of detection/quantification with the sample provided. • Training should be given to the staff at the site, for the operation of the instrument on demand • Any accessory system(s) other than those mentioned in the technical specifications, that are required for satisfactory installation of the system should be quoted and supplied with the instrument. • Agency commission: Agency commission if any will be paid to the Indian agent in rupees on receipt of the equipment and after satisfactory installation. • Agency commission will not be paid in foreign currency under any circumstances. The details should be explicitly shown in

	tender even in case of Nil commission. The tender should indicate the percentage of Agency commission to be paid to the Indian agent.
Comprehensive AMC	• Five years CAMC after the warranty period including all spares, accessories and consumables, at least on Preventive maintenance along with PM kit & OQ/ PQ each year and unlimited breakdown visits. • It should cover hardware, software as well as wear and tear consumables (except column and sample preparation), prompt service (within 24 hours on-call), training and application support during the period.
General condition of supply	• The instrument and all its sub units should operate on 240 volts 50 Hz power supply. • All the operation and maintenance manuals, circuits diagrams, application notes and application software's to be supplied should be in English language. • In case of breakdown of the system, the servicing to be done immediately by the supplier during the warranty period and Maximum down time period is 24 hrs, if its not attended the warranty will extends accordingly
Delivery	• The instrument supplied to the site of address provided. If any permit such as road permit/ way bill, customs/ excise duty, octroi etc. if any all should be borne by the supplier. If any documents required for the above purpose the office may consider to provide on request prior intimation.
Experience	• The supplier should have experience of at least 05 installation or more and 03 installations from food testing lab in India preferably operating UPLC in India.
Degasser	• Online membrane type degasser • Number of degassed solvents-5 • Minimum 4 lines-4 mobile phases, inbuilt facility for auto sampler rinsing • Degassed flow line capacity 380µl • Column Oven • Temperature control from 4- 85 deg C • Temperature control precision 0.1C max • Controllable through software • Storage capacity- minimum 3 columns • Safety functions like leak sensor, high temperature cut-off
PDA Detector Dedicated for UPLC/ UHPLC applications	• Light source- D2 and/ or W lamps • Number of Diode elements- minimum 1024 • Wavelength range 190nm- 800nm • Bandwidth 1.2nm • Slit width 8nm • 1 precision: 1nm • 1 accuracy : 0.1nm • Should support Contour plot, Peak Purity, Spectrum Library features • Data acquisition- 80 Hz • Flow cell- UHPLC

Accessories	• All required standards of calibration standards for the HPLC detectors, and any other material required to make the instrument functional should be provided • One each of spare W and D2 lamps should be provided • Spare Solvent filters (0.25micron), 10nos, and spare auto sampler syringe, 1no, of the same type supplied with the System
Additional Terms and Conditions	• A complete compliance statement (this sheet filled in), stating the status of compliance with each point in the technical specification, should necessarily accompany the quotation. • A minimum of 15 users of the quoted model in India should be available. The list of these users, with full details of contact persons, addresses, telephone, mobile and email should be provided in the table form.