



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

MATERIALS MANAGEMENT DIVISION

PR No. 1000043233

RFx No. 6100001934

Technical Specifications for High-Performance Liquid Chromatography (HPLC) (Qty: 1 No.)

Sr. No.	Tender Specifications	Compliance (Y/N)	Additional Information
1	Solvent Delivery System for Analytical flow rates with Degasser		
	<p>1.1 Parallel type double plunger with automatic pulsation correction for pulse-free solvent delivery.</p> <p>1.2 Plunger capacity of 10 μl or better, increment of 0.0001 ml.</p> <p>1.3 Flow rate settable between 0.0001 to 10.0000 ml/min without hardware changes.</p> <p>1.4 Flow rate accuracy of \pm 1% or \pm 2 μl/min of set value whichever is larger</p> <p>1.5 Flow rate precision of \pm 0.06 %RSD or better.</p> <p>1.6 Pressure setting range of 40 MPa or better.</p> <p>1.7 Gradient formation through quaternary low-pressure gradient mixing.</p> <p>1.8 Composition precision must be less than 0.1% RSD.</p> <p>1.9 Stable delivery of non-polar organic solvents via employing active check valves.</p> <p>1.10 Automatic plunger rinsing</p> <p>1.11 Capable of standalone operation.</p> <p>1.12 Should incorporate membrane-type degassing unit upto 5 flow lines.</p> <p>1.13 Internal capacity of degasser should be 400 μl or better per flow line.</p> <p>1.14 Must have leak sensor as safety feature.</p>		

		<p>1.15 It should be supplied with Reservoir tray with 4 solvent bottles complete with fittings</p> <p>1.16 There should be provision of addition of fraction collector in existing module.</p>		
2	Autosampler with Sample Cooler	<p>2.1 Sample injection volume variable between 0.1 μl to 100 μl with zero sample loss during injection</p> <p>2.2 Number of samples to be processed automatically, random access up to 175 positions for 1 ml vial, 192 for 2x96 wells microtitre plates, 768 for 2x384 microtitre plates, 192 for 2x96 wells deep-well plates</p> <p>2.3 Flow line rinse capability both before and after sampling should be possible</p> <p>2.4 Variable needle aspiration speed from 0.1 to 15 μl/sec</p> <p>2.5 Carry-over no more than 0.0025%</p> <p>2.6 Injection volume accuracy within 1%</p> <p>2.7 Injection precision within 0.3% of RSD</p> <p>2.8 Should include leak sensor, automatic rack, and vial recognition as safety feature</p> <p>2.9 Supply of at least 100 sample vials of 1.5 ml capacity, complete with caps and septa should be included</p> <p>2.10 Autosampler with inbuilt cooler with 4°C to</p>		

		40°C operating temperature range		
3	Column Oven	<p>3.1 Block heating type with electronic heating and cooling for uniform temperature distribution</p> <p>3.2 Temperature range setting from 4°C to 80°C</p> <p>3.3 Temperature control precision of $\pm 0.1^\circ\text{C}$</p> <p>3.4 Accommodates up to two columns of 25 cm length</p> <p>3.5 Should include leak sensor</p>		
4	UV Detector	<p>4.1 Light source: Deuterium (D2) lamp</p> <p>4.2 Spectrum bandwidth of 8 nm</p> <p>4.3 Wavelength range: 190 to 700 nm</p> <p>4.4 Wavelength reproducibility should be $< \pm 0.1$ nm</p> <p>4.5 Simultaneous dual wavelength monitoring</p> <p>4.6 Sampling rate of 100 Hz</p> <p>4.7 Wavelength accuracy of ± 1 nm maximum</p> <p>4.8 Drift: $< 100 \times 10^{-6}$ AU/h</p> <p>4.9 Noise level: $< \pm 2.5 \times 10^{-6}$ AU to 3.0×10^{-6} AU</p> <p>4.10 Linearity ≥ 2.5 AU (5%)</p> <p>4.11 Flow cell volume and path length: 10 μl and 10 mm</p>		
5	Chromatography Software	<p>5.1 Genuine, compliant chromatography software should be supplied with HPLC System</p> <p>5.2 Should cover full one-point digital instrument control, qualitative and quantitative processing, report creation and self-diagnosis</p> <p>5.3 Standard sample schedule wizard function with on-line help function</p> <p>5.4 The reporting format should be flexible and easy to use in any desired format</p>		

		<p>5.5 Data should be convertible to other formats</p> <p>5.6 System should allow automatic execution of system checks, auto-purge, and baseline checks</p> <p>5.7 It should have all compliance required for data integrity</p> <p>5.8 Software should have all compliances as per standard norms and requirement.</p>		
6	Service, Warranty, and Training	<p>6.1 Tendered price should include delivery, installation, commissioning and training (at least 4 users) at supplier's location</p> <p>6.2 Warranty for complete equipment for 36 months from date of supply (includes travel, labor expenses of Custom Engineer, and service parts used for repairs)</p> <p>6.3 Vendor to provide a copy of site-preparation checklist</p> <p>6.4 Vendor must demonstrate that it has a proven appropriate set-up and and capability to provide after-sales service efficiently and effectively. The supplier should have in his facility a similar system to that proposed in this tender for training purpose.</p> <p>6.5 One Analytical C-18 Column (5um, 4.6 x 250mm) should be supplied along with this HPLC system</p> <p>6.6 Vendor experience of 10+ years with at least 3 installations of HPLC, UHPLC & Preparative LC systems in India</p> <p>6.7 Vendor experience of at least 3 installations of LCMS & LCSMS systems in India. They should have</p>		

		<p>their own facility within Mumbai for demo / training purpose having similar instrument which has been quoted here.</p> <p>6.8 Vendor must have service as well as application engineers based within Mumbai region.</p> <p>6.9 On-site demo and training with similar equipment available</p> <p>6.10 One size exclusion chromatography column in the range of 5 kDa-300 kDa</p> <p>6.11 All required kits, tubings, joints, tool kit etc. essential for running & maintenance of the system shall be supplied along with the system</p> <p>6.12 IQ, OQ and PQ should be done and certificates should be provided.</p>		
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