

Guru Nanak Dev University, Amritsar

Online specifications for tender published in Time of India and Indian Express dated November 3, 2011

Tenders are invited for the purchase of **Ultra Performance Liquid Chromatography (UPLC)** in the Department of Botanical & Environmental Science. Latest by 26/12/2011

Terms & Conditions

- 1) Tender must be accompanied by earnest money @ **2%** of the quoted amount in the shape of demand draft in favour of “Registrar, Guru Nanak Dev University, Amritsar” and payable at Amritsar.
- 2) **Technical Bid & Financial Bids** should be quoted separately.
- 3) Tender should be submitted by post and describe on the envelop “Tender for the supply of <Equipment Name> and send to the concerned department.
- 4) You can submit more than one quotation separately for different models and makes.
- 5) University does not bind itself to accept the lowest tender and reserves the right to accept the whole or part of the tender on quality basis.
- 6) The rates should be FOR GNDU, Amritsar with insurance cover.
- 7) The taxes / custom duty if any should be quoted specifically.
- 8) One service manual and one operation manual.
- 9) Warranty: System must be quoted along with minimum three years comprehensive warranty
- 10) Original manufacturer should guarantee supply of original spares for adequate servicing of the instrument and provide support for upgradation of the instrument whenever asked for.
- 11) Imparting operational training by the service engineer at the time of installation, calibration, standardization. Three officials should be trained for complete working and maintenance
- 12) Spare of the instrument must be available for at least ten years
- 13) Detailed information about site preparation, if any, must be supplied three months before delivery of equipment
- 14) User list must be enclosed
- 15) Payment against delivery and installation
- 16) The system should be compable will third party accessories and should be upgradable.
- 17) Operation manual and circuit diagram should be provided alongwith the equipment.

- 18) The tenderer must provide a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature with clear reference of page number, paragraph or lines. This statement must be signed, with the company seal, by the Tenderer for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification of the Tender.

Ultra Performance Liquid Chromatography (UPLC)

Ultra High Pressure Liquid Chromatography System

Solvent Delivery System

1. No. of Solvents : Up to four solvents
2. Flow rate range : 0.2 ml to 5 ml or better
3. Flow Accuracy : $\pm 1.0\%$ or better
4. Flow Precision : 0.08% RSD or better
5. Maximum Operating Pressure : 9000 or 15000 psi or more
6. Composition Accuracy : $\pm 0.5\%$ or better
7. Composition Precision : $\leq 0.20\%$ RSD or better
8. It must have a leak sensor as a safety feature.

Auto Sampler

1. Injection Type : Flow through needle design with variable injection volume
2. Injection volume range : 0.1 to 50 μl or 100 μl
3. Sample delivery precision : $< 1.0\%$ RSD
4. Sample carryover : $< 0.005\%$ or better
5. Temperature setting range : 5°C to 40°C or better
6. No. of Samples to be processed : 90 vials or more of 2 ml or 150 vials or more of 1 ml
7. Injection time : 10-15 sec/sample
8. It should have safety feature like leak sensor and automatic rack and vial recognition

Auto fraction collector

Column Oven

1. Column Temp setting range : 5°C to 80°C in 0.1°C increments or better
2. Temp control precision : $\pm 0.1^{\circ}\text{C}$
3. Preheater for mobile phase should be available as standard.
4. The column must have a solvent and gas leak sensor as safety.
5. It should accommodate two or more columns.

Photo Diode Array (PDA) Detector

1. Wavelength Range : 190-800 nm

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|---|--------------------------------|
| 2. No. of diode elements | : 512 |
| 3. Light source
tungsten lamp | : Deuterium lamp and |
| 4. Wavelength Accuracy | : ± 1 nm |
| 5. Optical resolution | : 1.2 nm or better |
| 6. Drift | : $< 0.5 \times 10^{-3}$ AU/Hr |
| 7. Noise level | : $< 0.6 \times 10^{-5}$ AU |
| 8. Linearity
method) | : ≥ 2.0 AU (ASTM |
| 9. Should have automatic wavelength accuracy check and wavelength correction. | |
| 10. It must have leak sensor as a safety measure. | |

Online Vacuum Degassing Unit

1. Membrane degassing unit should have four flow lines.
2. Maximum operating flow rate should be upto 10 ml/min per flow line.
3. It must have a leak sensor as a safety feature.

System Controller

1. It should function as a communication bus module with data buffering capability.
2. It should acquire upto 24h for one analysis, at 500 ms sampling rate.
3. It should store upto 20 analysis files with a total upto 400 steps of time programs.

Chromatography Manager Software

1. Single Software for Control of complete LC system with detectors, acquire and processing of data, Full 32 bit architecture.
2. Pre-made templates, customizable data reports, online help and answer wizard embedded oracle data base, report publisher, versatility for multitasking without multiple software package.
3. Software should be G-LP, G-MP and 21 CFR.

Columns (1 each)

1. C-18, 4.6x150 mm, 5 μ .
2. C-8 LC column, 50x2.1 mm, 2.6 μ m.
3. C-18 LC column, 50x2.1 mm, 2.6 μ m.
4. Phenyl LC column, 50x2.1 mm, 2.6 μ m.
5. Amino acid, carbohydrates, polyphenols, glucosinolates, organic acids and pesticides.
6. 300 A° C18 Column 2.1x100 mm, (sub 2 micron).
7. 130 A° C18 Column 2.1x100mm (sub 2 micron).
8. 130 A° C8 Column 2.1x100mm (sub 2 micron).

Computer:

Pentium core™ i5 2300 processor (2.8 GHz), 4 GB ram, 320 GB hard disk or higher, DVD-RW drive, 18.5" LCD colour monitor or above, 101 keys keyboard and mouse, Pre-installed windows XP/windows 7, HP laser-jet printer

Online UPS:

Online UPS 3KVA or above with atleast 30 minutes backup

Optional

Fluorescence Detector

1. Wavelength Range : 200 – 650 nm or better
2. Light Source : Xenon Lamp
3. Bandwidth : 15/20 nm or better
4. Wavelength Accuracy : ± 3 nm or better
5. Wavelength Repeatability : ± 0.25 nm or better
6. Sensitivity : S/N > 800 (Raman spectrum of water) or better
7. Measurement Range : 0.001 to 10000 EU
8. Data Acquisition Rate : Upto 80 Hz or better
9. Function dual wavelength detection, wavelength scanning.
10. Detector with leakage sensor as safety feature

Evaporative Light Scattering Detector (ELSD)

1. Light Source : 670 nm Laser Diode, <5 mW.
2. Detector : Hermetically sealed photo diode.
3. Nebulization chamber temp range : 10°C to 70°C.
4. Evaporative zone temp range : Amb. to 120°C.
5. Gas requirement : 50 psi Nitrogen or other inert gas along with Nitrogen gas generator.
6. Gas consumption : ~1 SLPM.
7. Liquid flow rate : 0.2 ml/min. to 5 ml/min.
8. Pending Thermo Split Technology.

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