

Technical Specifications and Compliance Sheets

(A) Fluorescence Spectrophotometer

PC controlled Fluorescence Spectrophotometer (220 V) capable of measuring Fluorescence, Phosphorescence, Chemiluminescence and Bioluminescence with the following technical specifications should be quoted:

Sr. no.	Parameter	Description	Complies/not Complies
1.	Light Source	Software controlled Polarized light generated using an Ozone free Xenon Lamp	
2.	Measuring Wavelength	200 – 900 nm (Excitation and 200 – 900 nm (Emission) or better, Zero Order Settable.	
3.	Optical System	Monochromator with advanced grating	
4.	Sensitivity	S/N Ratio of 800:1 or better using Raman band of water	
5.	Spectral Bandpass	variable / adjustable	
6.	Resolution	± 2 nm (Minimum)	
7.	Wavelength accuracy	± 1.5 nm or better	
8.	Wavelength Scan Speed	0.01 – 24000 nm/min	
9.	Data Collection Rate	Atleast 80 data points/sec for fluorescence mode measurements	
10.	Filter System	Should comprise of software selectable emission filters	
11.	Detector	Photomultiplier Detector with support for the range 200 – 900 nm / High Performance PMT	
12.	Power Compliance	230 Volts, 50Hz	
13.	Software	Compatible with Windows Vista, Windows XP, Windows 7 etc. should have various data analysis facilities like arithmetic functions, smoothing, First to fourth order derivatives, area peak, normalization, merger difference interpolate and specific application programs should also be provided for determination of phosphorescence, simple quantitation and kinetic evaluations, GLP compliant.	
14.	Cell	One pair of standard 10 mm quartz cell with PTFE lid – 10X10 mm path length	
15.	Micro Cell	10 mm length quartz micro cells	
16.	Cell Holder	Peltier controlled One and Four 10 mm cuvette holding capacity & magnetically stirred cell holder	
17.	Peltier Capabilities	Supplied through instrument manufacturer only software controlled Temperature range 0 to 100° C (Min.) with temperature stability ± 0.5° C (Max.)	
18.	PC / Printer	Branded, to be supplied with the instrument with operating system on CD and Microsoft Office Pro as well as licensed latest NORTON antivirus programme.	
19.	UPS	An instrument compatible UPS to be provided with the system	
20.	Optional accessories	Any other accessory useful for handling different types of samples (such as Film/Powder and film, Kindly specify details and use)	

(B) Fourier Transform Spectrometer (FTIR)

PC controlled advanced FTIR system (220 V) with windows based operation/working software as well as handling both solid as well as liquid samples with minimum following specifications should be quoted

Sr. No.	Parameter	Description	Complies/not Complies
1.	Range	350-8000 cm^{-1}	
2.	Optics	Most efficient, rugged and latest	
3.	Signal to noise ratio	30,000-50,000:1	
4.	Stability	Should be immune to tilt, shear and vibrations	
5.	Spectral resolution	Min. 0.5 cm^{-1} in steps	
6.	Surfaces	Moisture resistant etc.	
7.	Source	High intensity, long life	
8.	Mirror speeds	Variable	
9.	Data sampling	Lasers	
10.	Software	Windows based with full instrument control, arithmetic calculations, dynamic spectral subtraction, peak detection, baseline correction, normalization, derivatives etc.	
11.	Data processing	Built-in advanced	
12.	Elimination of water/ CO_2 peaks	Automatic, built-in	
13.	Cells	Cell Holders both for solid/liquid samples complete with KBr Pellet maker and holder	
14.	PC connectivity	USB interfaced	
15.	PC	Latest Branded PC complete with licensed windows software, Norton antivirus system, laser printer, UPS etc.	
16.	UPS system	Capable of supporting complete functioning of the instrument with sufficient back-up time	
17.	Optional accessories	Any other accessory useful for handling different types of samples (Kindly specify details and use)	

(C) Fourier-Transform Near Infrared Spectrometer (FT-NIR)

PC controlled advanced FT-NIR system (220 V) with windows based operation/working software as well as handling both solid as well as liquid samples with minimum following specifications should be quoted.

Sr. No.	Parameter	Description	Complies/not Complies
1.	Spectral range	Transmission 14000-2200 cm^{-1} or better	
2.	Spectral resolution	1 cm^{-1} to 60 cm^{-1} or better	
3.	Wavelength precision	+/-0.03 cm^{-1}	
4.	Wavelength accuracy	+/-0.2 cm^{-1} or better	
5.	Signal to noise ratio	<15 μA RMS or better	
6.	Source	Tungsten or other suitable for above range (sr. no. 1)	
7.	Vibration	Vibration isolated mechanism	
8.	Detectors	To cover the range at Sr. no. 1 as well as sensitivity	
9.	Optical unit	Give specifications	
10.	Software	Original software Capable of operating in Windows XP or other versions Equipped with basic and	

		advanced data manipulations routines, Spectral calculator, Spectral comparison, Beer law etc.	
11.	PC etc	Branded PC to be supplied alongwith UPS, Laser printer, interface, licensed software including NORTON antivirus software etc.	
12.	UPS	Capable of running the equipment safely should be provided	
13.	Accessories	In addition to handling liquid samples, measurement of solids (integrating sphere) etc., disposable glass vials must be provided	

Terms and 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) Separate financial and technical bids, sealed in two separate envelopes and packed in one cover are required.
- 3) FOR Guru Nanak Dev University Amritsar.
- 4) The taxes / custom duty if any should be quoted specifically.
- 5) Consumables, accessories and spares worth for trouble free running of the instrument for atleast three years must be quoted. Original service manual as well as operation manuals must be provided.
- 6) Warranty: System must be quoted along with minimum three years comprehensive warranty.
- 7) 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.
- 8) Imparting operational training by the service engineer at the time of installation, calibration, standardization. Three officials should be trained for complete working and maintenance.
- 9) The seller must have installed a minimum of 5 such instruments in the reputed academic Institutes in India (Central / State Universities or Institutes) during the last 5 years. User list for this period must be enclosed.
- 10) System must be quoted with all the accessories to run the system.
- 11) Payment against delivery, installation and satisfactory working of the equipment.