



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

MATERIALS MANAGEMENT DIVISION

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Technical Specifications

UV-VIS- NIR with Diffuse Spectrometer

Parameters	Specifications
1. Wavelength Range	185nm–3300nm
2. Spectral Bandwidth	UV-Vis 0.5 nm or better
	NIR 0.2 nm or better
3. Resolution	UV-Vis 0.1 nm or better
	NIR 0.2 nm or better
4. Wavelength accuracy	UV-Vis +/- 0.2 nm
	NIR: +/- 0.8 nm
5. Wavelength repeatability	UV-Vis +/- 0.08 nm
	NIR: +/- 0.32 nm
6. Wavelength scanning speed	UV-Vis: 1800 nm/min
	NIR: 5000 nm/min
7. Detector Requirement	UV-Vis Appropriate PMT
	NIR: PbS
	Automatic light source and detector switching synchronized with wavelength
8. Monochromator	Double beam double monochromator Photometric system
	Double monochromator with diffraction grating with 1000 lines/mm in UV-Vis or better and 250 lines/mm or better in NIR
9. Ambient Humidity	35-80% (no condensation, less than 70% at temp. above 30° C 70% at temp. above 30°C
10. Sample Holder for all types	UV 10 mm, 5 mm, 2 mm, 1mm Cell Quartz Kit with appropriate spacers- At least 4 pieces each

of samples and Cuvettes for liquid samples	Super Micro Black Cell (50-400 uL)
	Powdered Sample Holder for Integrating Sphere
	Solid Film Holder
11. Peltier Accessory	Peltier temperature-controlled sample holder unit (synchronized sample +reference heating/cooling) ~ 0 degree C to ~ +100 degree C or better, with variable stirring speed and appropriate stir bars, water circulator and software driver)
12. Diffusive reflectance accessory	110 nm integrating sphere capable of measurements on powdered, film or gel samples in the wavelength range of 220-2500 nm or better
13. Computer	Minimum of i5, 8G RAM, 1TB Hard drive, and 22-inch monitor and appropriate software for running the instrument
14. UPS	Suitable for 1 hour power backup.
15. Warranty	Minimum 3 years comprehensive warranty over the entire system (for third party items as well) including consumables like 2 pair of lamps to cover the entire wavelength.
16. Training and visits	Elaborate Training program and regular visits (atleast 2 visits/year) by the service engineer for the regular maintenance.
17. Wavelength calibration	An inbuilt appropriate wavelength calibration source
18. Stray light (%T)	<0.00007%
19. Photometric accuracy (Abs)	<0.006 Abs or better
20. Photometric range (Abs)	6 Abs or more for both UV-Vis and NIR Range
21. Photometric noise Abs/RMS)	<0.00009 or better
22. Photometric Stability	<0.0002 Abs/h (2 h warm up, 500 nm, 1 S averaging, 2 nm SBW)