

Department of Textile Technology

IIT Delhi

Technical Specifications of UV VIS Spectrophotometer

- Wavelength Range: 190-1100 nm
- Monochromator: Blazed Holographic Grating in Czerny Turner Mounting with minimum 1800 lines/mm.
- Spectral Bandwidth: 1 nm or better
- Photometric System: True Double Beam Optics
- Detector: Dual Silicon Photodiode
- System should comply to resolution test of 0.02% v/v Toluene in Hexane.
- Stray light specification of 0.02%T at 220 nm by NaI.
- The spectrum and peak detection results obtained for NIST SRM 2034 Holmium Oxide Solution which is used as a wavelength standard
- System should comply to wavelength accuracy test of 15% w/v Holmium Perchlorate solution in 10% Perchloric acid.
- Compliance to second order derivative test with 0.02% v/v solution of Toluene in Methanol.
- Light Source: 20 W Halogen and Deuterium Lamp, Built in light source auto position Adjustment
- Wavelength Setting: 0.1 nm
- Wavelength Slew Rate: about 6,000 nm/min
- Wavelength Accuracy: ± 0.1 nm at D2 peak 656.1 nm and ± 0.3 nm for entire range
- Wavelength Repeatability: ± 0.1 nm Less than ± 0.001 Abs at 0.5 Abs; Less than ± 0.001 Abs at 1 Abs; Less than ± 0.003 Abs at 2 Abs
- Wavelength Scanning Speed: 3,000 to 2 nm/min
- Stray Light: <0.02 %
- Photometric Range: Absorbance is -4 to 4 Abs and Transmittance is 0 % to 400 %
- Photometric Accuracy: ± 0.002 Abs at 0.5 Abs, ± 0.004 Abs at 1.0 Abs and ± 0.006 Abs at 2.0 Abs
- Photometric Repeatability: Less than ± 0.001 Abs at 0.5 Abs; Less than ± 0.001 Abs at 1 Abs; Less than ± 0.003 Abs at 2 Abs
- Lamp Interchange wavelength: Automatic interchange linked to wavelength. The interchange wavelength can be set freely in the range of 295 to 364 nm (0.1 nm increments).
- Baseline Stability: less than 0.0003 Abs/Hr (700 nm one hour after light source Turned ON)
- Baseline Flatness: Less than ± 0.0006 Abs (1100 to 190 nm, one hour after light source Turned ON)
- Noise Level: Less than 0.00005 Abs (700 nm)

Software Specifications:

- Operation through PC or as Standalone
- Built-in validation, maintenance and security functions.
- Can Work in Photometric; Spectrum; Quantitation; Kinetics, Time Scan, DNA and Protein Quantitation with additional Multi-Component measurement available in stand-alone mode.
- 4 or more USB ports for high speed PC and printer connectivity, data storage and transfers. through USB pen drive. Built in validation program, diagnostic and security function

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