



**INDIAN INSTITUTE OF TECHNOLOGY BOMBAY**  
**MATERIALS MANAGEMENT DIVISION**  
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**Specifications for Spectrometer and Accessories**

**1) Spectrometer :**

- Focal length : minimum 300mm or more
- Cover wavelength range from 0-1500nm
- Aperture Ratio f/4.1 or better
- Triple grating turret to accommodate three gratings
- Required number of grating: one (1200 grooves/mm blazed between 300-350nm)
- Grating Size-68mm X 68mm
- Spectral Coverage Range with detector: 250-850nm or better
- Wavelength accuracy:  $\pm 0.20\text{nm}$
- Repeatability :  $\pm 0.075\text{nm}$
- Scan Speed : - 160nm/sec
- Step Size: 0.002nm or better
- Entrance Side: Computer controlled entrance with variable slit atleast from 0-7mm in 6 micron steps
- Provision to add second entrance and motorized swing away mirror
- Exit Side: Computer controlled exit with variable slit atleast from 0-7mm in 6 micron steps
- Provision to add second exit for CCD detector and motorized swing away mirror
- Capability to correct astigmatism and improve image quality
- Provisions for Nitrogen/inert gas purging for UV or IR applications
- Computer interface: High speed USB

**2) Detector with Software :**

- Suitable (compatible with proposed spectrometer given above)

- Photomultiplier Tube (PMT) with appropriate power supply provided to cover the emission range from 250-850nm.
- Provide the data acquisition system with at least one current input channel and one voltage input channel
- Maximum allowed dark current : 50nA
- Rise time: 2.3ns or better
- Transit Time: 23nsec or better
- Software: Necessary software provided for data acquisition, wide range of data treatment, storage option and to control the spectrometer and detectors completely and software work in windows based operating
- Warranty: At least one year from the date of installation