



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
Powai, Mumbai 400076

PR No. 1000019163 (Rfx No. 6100000860)

Detailed Technical Specifications for Spectrometer and Deep cooled CCD

Specifications for spectrometer:

1. Aperture: F/3.6 or better for higher throughput
2. Focal length: 190 or higher Number of input: One entrance slit
3. Number of output: One exit CCD port
4. Focus: Option for automatic focusing (software controlled) must be present
5. Astigmatism-corrected optical design: Torroid optics enable multi-track fiber detection and excellent sample image relay from a microscope at the grating '0' order.
6. Gratings: Interchangeable dual on-axis RFID-tagged turret for easy swapping preferred
Communication/Interface: USB 2.0
7. Wavelength accuracy canter: 0.15 nm or better Wavelength repeatability: 80 pm or better
Grating size: 50 x 50 mm or bigger
8. Gratings:

1200 lines/mm Grating blazed at 300nm suitable for Raman (Resolution 0.27nm)

600 lines/mm Grating Blazed at 500nm suitable for PL (Resolution 0.59nm)

Specification for Deep cooled CCD:

1. Active pixels: 1024 x 255 Type: Open Electrode CCD Pixel size (W x H): 26 x 26 μm
2. Image area: 26.6 x 6.6 mm with 100% fill factor Register well depth (typical) 1,000,000 e-
3. Peak Q.E: > 55%
4. Cooling: -80 C (With Air) or better Deepest cooling with TE upto - 100 C Read noise As low as:
4e-
5. Read out rates: 33kHz, 50kHz and 100kHz Dark current: 0.0004 e-/pixel/sec or better Linearity:
Better than 99 %
6. Digitization: 16 bit
7. Interface: USB 2.0
8. Vertical clock speed: 8, 16, 32, 64 μs (software selectable) CCD mounting flange for
spectrometer must be included
Should Include Latest data acquisition and control software (64 bit & 32 bit
Windows OS compatible)

Fixed Fiber adapter:

2 meter fiber 200 micron core

Warranty: 1 year from date of installation.