



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

Reference No. (PR No. 1000021168)

RFx No. 6100000888

TECHNICAL SPECIFICATIONS

Inverted Motorized Microscope

1 The microscope should be suitable for brightfield, DIC and fluorescence techniques with following details:

- 1.1 Microscope should have four positions. Eye piece 100%, left 100%, right 100% & eyepiece 20% left 80%. Motorized optical path switching. It should also have built in Bertrand lens.
- 1.2 The Stage should have X, Y travel with universal holder, and short handle.
- 1.3 Nose Piece should be Intelligent / coded sextuple DIC nose piece,
- 1.4 Focus drive should have coarse and fine motorized Z drive with minimum step size 20nm
- 1.5 The condenser should have seven positions with intelligent / coded facility.
- 1.6 Microscope should have intermediate magnification 1.5X
- 1.7 Binocular tube with 10X eye pieces
- 1.8 Illumination 12V / 100 W OR LED
- 1.9 The fluorescence attachment needs - sextuple motorized fluorescence turret & filter cubes with noise terminator mechanism, Heat absorbing filters, LED illumination, and Filter cubes for 385, 470, 525nm Excitation wavelengths. The shutter should have motorized operation.
- 1.10 The DIC contrast is needed for 60X & 100X objectives. Its accessories should be quoted.
- 1.11 Following Semi Apochromatic objectives suitable for brightfield and fluorescence should be offered:
 - 1.11.1 10x/0.30 WD 16mm,
 - 1.11.2 20x/0.50 WD 2.1mm,
 - 1.11.3 ELWD 40x/0.60 WD 3.6 – 2.8mm,
 - 1.11.4 60x (oil)/0.5 – 1.25 WD 0.20mm,
 - 1.11.5 100x (oil)/0.5 – 1.3 WD 0.15mm

2 One active anti-vibration table of 4 ft x 3 ft (L x D) size should be offered.



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3 Items/accessories to be included:

3.1 Camera

The microscopy-dedicated camera should have following facilities:

- 3.1.1 Color Digital Camera having CCD/ CMOS sensor,
- 3.1.2 More than 5-megapixel resolution with suitable C-mount attachment.
- 3.1.3 Camera speed at full resolution should be 15 fps, Max speed should be 30 fps or more
- 3.1.4 Exposure time 100 μ sec to 30 sec, Quantum efficiency should be 60% or more
- 3.1.5 ISO sensitivity - Standard: equivalent to ISO 50 (Selectable from ISO 50 to ISO 3200 equivalent) USB 3.0 Communication ROI Imaging and future provision for wide-field acquisition

3.2 Image Acquisition & Analysis Software

The image analysis software should have 6D experiment ability such as

- 3.2.1 Advance Research Imaging Software for acquisition and camera control through image acquisition and analysis (X, Y, Z, Time, Multi-Channel).
- 3.2.2 Time-lapse imaging,
- 3.2.3 Multi-Channel Fluorescence,
- 3.2.4 Annotation,
- 3.2.5 Z-stack imaging,
- 3.2.6 Time measurement and live image comparison,
- 3.2.7 Facility to plug in modules,
- 3.2.8 2D/3D view,
- 3.2.9 Filter,
- 3.2.10 Morphology,
- 3.2.11 Segmentation,
- 3.2.12 Auto-measurement
- 3.2.13 Report Generator Facility,
- 3.2.14 Data Base, Vector layer & multi-dimensional file format,
- 3.2.15 6D imaging plug-in (X, Y, Z, time, wavelength and multi-point),
- 3.2.16 Macro writing and reading facility.

4 Warranty: Standard warranty of at least 3 years should be included.