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

Purchase Requisition No. 1000014927 (SRM/RFX No. 6100000385)

Technical specifications for Upright Reflected Light Optical Microscope

A complete upright reflected light microscope with a columnar design (head attached to a column allowing adjustable vertical positioning) with camera and software.

Mandatory requirements:
All items and specifications mentioned below are essential for the complete microscopy solution (for materials science research). The quoted system must fulfill ALL specifications. The quoted systems partially fulfilling specifications will not be accepted. All electrical appliances to be used in India (220 V, 50 Hz).
Warranty: For at least one year from the date of delivery
Installation: On-site without additional costs

An upright reflected light optical microscope (visible-near infra-red range) for materials science research with accessories: 1 nos

Detailed specifications

Microscope	Description
Type:	Upright type with infinity corrected optical system
Stand :	Microscope stand designed for reflected-light and fluorescence applications, with extended specimen space that accommodates large objects up to 380 mm. The microscope should have a columnar configuration with the microscope head attached at the top of the column with a crank arrangement allowing continuous and manual vertical positioning of the microscope head without any additional accessory. The assembly should be mounted on a mechanically stable base plate necessary for high-resolution microscopy requiring reduced vibrations.
	Lower part of the stand with a column 560mm column with crank for vertical adjustment with a maximum sample height of 380mm.
	15mm focus lift and above
	ECO mode and light management control button
	Snap button for image acquisition
	Motion button on left side of the microscope for motorized stage movement
	built in illumination adapter, achromatic
	built in luminous-field diaphragm slider
	built in aperture stop slider
	Microscope should be usable for Circular DIC, Dark field and Fluorescence in future
Optics	Infinity Colour Corrected system Optics

Reflector Turret	**Coded Reflector Turret 6x** for the different contrasting techniques viz., bright field, dark field , Circular-DIC and blank spaces for future upgradation
Revolving centerable nosepiece	**Coded Nospiece 6x** with bright field, dark field and DIC
Illumination:	Incident & transmitted LED illumination.
Magnification:	50X uo to 1000X
Objectives	M27 large diameter, objectives which can be used for Bright field and Dark field studies. Plan Objecitves of 5x/0.13, 10x/0.25, 20x/0.4 and 100x/0.85
Circular DIC	Upgradable for Circular-DIC at later stages
Eyepiece	Wide field eyepiece 10X with a field of view of 23 and above with cross wire in one eyepiece and Dioptirc adjustment of +/-5
Observation Tube	Siedentopf designed Trinocular tube with 20˚ with beam splitting ratio of 100:0/0:100 for observation and camera interpupillary distance adjustment from 55 to 75 mm
Mechanical Stage	Mechanical stage 75x50 R for reflected light with hard-coat anodized surface with stage plate of 290 x 165mm stage plate. Suitable for the mounting of objects with a diameter of up to 4", Including 2 stage clamps for the attachment of flat objects
C-Mount	0.5x
Camera Attachment	CMOS Camera color with driver software 64bit, USB 3.0 PCIe x1 interface,
	USB 3.0 connection cable 3.0 m,
	SATA power cable and Molex power cable
	Sensor: Aptina CMOS color sensor
	Basic resolution: 2560 (H) x 1920 (V) = 5.0 Megapixel
	Pixel size: 2.2 µm x 2.2 µm
	Chip size: 5.70 mm x 4.28 mm, equivalent to 1/2.5" (diagonal 7.1 mm)
Software	To capture, store and analyze the images and Interactive measurement for:
	Measuring length, area, perimeter, grey values, etc.
	Manually placing the micron bar and modifying the range of bar.
	Text annotation.
	Generating histograms, line plots and other statistical data.
Computer	Branded i5 processor,
	16 GB RAM, 1 TB HDD,
	21” monitor,
	related OS