

## **Technical Specifications for Fluorescence Microscope**

Fluorescence Microscope should be of modular design with infinity optics and possibility to upgrade to various applications later. The microscope should have the following technical features

- Microscope stand: Rugged and sturdy stand with modular design for future up gradation to various techniques.
- Built-in electronic power supply unit for mains connection: 100-240V, 50-60Hz and with 12V/60 watt power output.
- Co-axial coarse and fine focus knobs ergonomically positioned either side of the microscope stand for convenient operation with adjustable focus stop.
- Power ON/OFF switch and illumination regulation control knobs to be located close to the focus knobs for ease of operation.
- Microscope should have powerful transmitted light illumination with 12V/37watt halogen and should have a provision to switch over to a long life LED illumination (interchangeable option).
- Microscope should have a Quintuple (5x) precision revolving nose piece with provision for DIC sliders.
- Binocular tube with 45 deg inclination with Sidentop swivelling eyepiece tubes and with inter pupillary distance adjustment range 55-75mm.
- The microscope stand should have provision to attach a camera without replacement of the Binocular tube.
- Microscope should have a hard coat anodized specimen stage with 230x230mm size to accommodate various specimen holders. It should have a provision to attach an object guide with long coaxial X-Y drive knobs and holders for various specimen containers like petridishes, slide, The Coarse focus - 4 mm per rotation, Fine focus - 0.4 mm per rotation and the total focusing range should be 13 mm
- Long working distance condenser with 0.40NA, working distance of 50mm and with slider for Bright field, Phase. It should have a provision to upgrade to PlasDIC, Varel contrast and Hoffman modulation contrast.
- Infinity corrected high contrast Plan Achromatic objective with magnification 5x/0.12, 10x/0.25 Ph & Long working distance phase contrast objectives 20x/0.35 and 40x /0.55.
- Pair of wide field 10x eyepieces with FOV of 22mm or more with focusable front lens and with rubber eyecups suitable for spectacle wearers and should have a provision to insert measuring graticules.
- Fluorescence light attachment with powerful HBO 50W illumination should be quoted. It should have 4x filter turret with FITC & Cy3 filter sets. The filter sets should be easily insertable and removable by Push & Click method.
- Camera: Camera : High Resolution CCD color camera Resolution: 1936 (H) x 1460 (V) ; 2.50 megapixels or more ; Pixel Size 4.54  $\mu\text{m}$  x 4.54  $\mu\text{m}$  ; Exposure time : 1ms to 60s, Frame rate: 38fps @ full resolution, Interface : USB 3.0 Optical interface : C-Mount
- Software: Camera should be comes with software should have shading correction, features to reduce dark current, flat field correction. Measurement Tool should facilitate calibration of any camera to the microscope with display of calibrated bar & measurements in the live image. Must store measurements along with the captured images. Programmable resolution selected from wide variety of different camera resolutions for both live and captured images. Should adjust red, blue & green colour values already in the live image.