

Specifications for Upright Fluorescence Microscope with Image Analysis Software and Digital Camera

1. **Optical System:** Infinity corrected optical system
2. **Upgradability:** The quoted system should be onsite upgradable to full like **motorized 6 positions** or higher fluorescence filter turret, Motorized condenser, Motorised 6-7 positions or higher DIC nosepiece etc.
3. **Focus:** Coaxial coarse & fine focusing with at least 25 mm stage stroke with coarse adjustment limit stopper. Fine focusing knob with minimum adjustment gradations of 1 μm or better. Torque adjustment for coarse adjustment knobs.
4. **Illuminator:** The microscope should have an ergonomic stand with high intensity – at least 12-14 Watt LED transmitted illumination system with a life of at least 40,000 hours or more. The intensity should be equivalent or better than a 100 watt Halogen bulb.
5. **Observation Tube:** Wide field Trinocular Tube having at least 22 mm field of view with three way lights path distribution (0:100, 100:0, 20:80/50:50) for simultaneous viewing & Imaging of Specimens through the Eyepiece & Camera.
6. **Eyepieces:** Should be of at least 10X magnification, with diopter adjustment facility with FN 22 or higher.
7. **Nose piece:** Sextuple (6-positions) revolving nosepiece with a slot for analyzer or DIC slider.
8. **Objectives:** The following objectives should be quoted:-
 - Plan Achromat 4X, N.A. 0.1 or higher, W.D. 18 mm or better.
 - Semi Apochromat Fluorescence 10X Phase, N.A. 0.30 or higher, W.D. 10 mm or better.
 - Semi Apochromat Fluorescence 20X Phase, N.A. 0.50 or higher, W.D. 2.1 mm or better.
 - Plan Apochromat 40X (spring-loaded), N.A. 0.95 or higher, W.D. 0.18 mm or better.
 - Universal Plan Apochromat 100X Oil, N.A. 1.45 or higher, W.D. 0.13 mm or better.
 - Immersion Oil 500ml
9. **Analyzer & Polarizer:** It should be the standard part of the system.
10. **Stage:** Mechanical stage with ceramic coating, with double slide holding capacity.
11. **Condenser:** At least 5 position Turret condenser for Brightfield (B.F.), Phase contrast & Dark field.
12. **Epi-Fluorescence:** At least 6 Position Epi-fluorescence turret & should accommodate 6 filter cubes. Intense, broad-spectrum LED fluorescence illumination with life time of at least 20,000 hours or better for imaging most of the fluorescent stains. Three different Fluorescence Filters for dyes like DAPI, FITC, TRITC, and Cy5. The Turret should accommodate at least 3 more different filter cubes as & when required by the Lab.
13. **Digital Imaging System:** Independent dedicated microscopy color camera suitable for stained/ bright field & fluorescence imaging. CMOS sensor camera resolution ≥ 20 Megapixel or better, sensor size should-be at least 1 Inch or more having Pixel size 3.45 X 3.45 or higher. Full HD Resolution, 12 bit depth, USB 3.0 interface. Camera should work in color and monochrome mode as per sample and requirement.

14. **Image Analysis Software:** Software for image & movie acquisition with advanced features like annotation, user experience customization, overlay multiple images, Document groups for side-by-side image comparison/live compare, tile view (multiple images in a single data set shown side-by-side), fluorescence channel mixing & unmixing, time lapse at specified interval, region & line measurements, object counting, scale bar, objective calibration, capturing data saving (metadata), etc. The quoted microscope, camera & software should strictly be from the same manufacturer.

15. **Branded desktop with monitor:** i) Branded Computer with Intel i7 Processor, 64 bit OS, 16 GB RAM, DVD R/W, Minimum 1TB HDD Hard Disk, 24 inch LED screen, keyboard & optical mouse, original Microsoft Windows 11 pro (licensed). Suitable USB port for camera along with UPS. Online 1KVA UPS with at least 30 min backup.

ii) For Offline analysis - Branded All-in-One Desktop PC (Hp/Dell), 13th generation, i7 processor, 16GB RAM or higher, DDR4, 1TB or higher SSD, Antiglare, Wireless keyboard and mouse combo, 27 inch (68.6cm) screen, full HD (at least 1000p) primary camera, original Windows 11 pro (licensed). Suitable USB ports for camera along with UPS. Online 1KVA UPS with at least 30 min backup.

16. Other Mandatory Conditions:

- Point-wise compliance should be enclosed along with the link to the manufacturer's website for confirmation of compliance with tender specifications.
- The supplier should have direct technical and application support from the Principal Company in India.
- The quoted microscope should be CE & FDA certified.
- If required, we may call for demonstration of the quoted system.
- One extra set of LED bulbs may be provided.
- Lens Cleaning Tissue should be included.
- Equipment must be quoted with minimum 3-5 years warranty.