CORRIGENDUM

IGIB/7-2NC/63/25-26(249) Dt.31.07.2025

A Global Tender in Two bid system for supply, Installation & Commissioning of Inverted Epi-Fluorescence microscope with Imaging system, dual camera and accessories against Tender ID No. 2025_CSIR_241435_1 on 15.07.2025

The detailed specifications of the item (Annexure-A) may be read as attached herewith.

31/7/25

Store and purchase officer

31/7/25

Specifications Annexure-A

Item: Inverted Epi-Fluorescence Microscope with Imaging System and Dual Camera

1. Microscope Body

1.1 The microscope must have an inverted body with an infinity-corrected optical system.
1.2 The base body must have two active camera ports, one for monochrome and one for color camera.
1.3 The microscope stage must be motorized.
1.4 Light distribution: Eyepiece 100%, Left port 100%, Right port 100%, Eyepiece: camera port 20/80% or 50/50%.
1.5 Transmitted illumination using high-luminescent LED (high-power LED ≥ 100W) with illumination life of ≥ 20,000 hours.
1.6 10X eyepieces with field of view (F.O.V.) ≥ 22 mm and diopter adjustment on both eyepieces.
1.7 Sextuple revolving nosepiece.
1.8 Universal turret condenser with at least 5 positions or more, including phase contrast ring; suitable for bright field and phase contrast; condenser lens with long working distance (NA ≥ 0.52, WD ≥ 27 mm).
1.9 Motorized X-Y stage with joystick controller, with multiple holders for slides/chambered slides, 35/60 mm Petri dishes, and multiwell plates.
1.10 Microscope must support fluorescent and bright field imaging for research requirements.

2. Objectives

2.1 Objectives must be suitable for bright field, phase contrast, and fluorescence.
2.2 Required objectives:

Air objectives: 4X, 10X, 20X (Plan Fluorite or Semi-Apochromat objectives that are compatible for bright field, fluorescence & phase contrast applications)

- Oil objectives: 40X, 60–65X (must be Plan Apochromatic)
- Achromat lenses are not acceptable

3. Fluorescence Attachment

3.1 Fluorescence turret with at least 6 filter positions.
3.2 Intense, broad-spectrum LED illumination covering UV (DAPI excitation) to far-red (Cy5 excitation).
3.3 Operation via remote manual control pod for instant on/off and 0–100% intensity control.
3.4 Light intensity should also be controllable via imaging software and manually.
3.5 The light source must have a trigger port for fast sequential imaging (important for calcium imaging).
3.6 LED illumination life must be ≥ 20,000 hours.
3.7 Required fluorescence filters: DAPI, FITC, TRITC/Texas Red, Cy5.

4. Camera Specifications

4.1 Camera must be a scientific-grade microscopic digital CMOS camera.
4.2 Camera shoul have either dual capability for color and monochrome in one camera; or Separate monochrome and color cameras should be provided.
4.4 Camera type: Scientific CMOS (sCMOS).
4.5 Sensor size: 1-inch or more.
4.6 Resolution: Minimum 10 Megapixels (MP) or higher.
4.7 Pixel size: Approximately 3.45 µm or better.
4.8 Quantum efficiency: ≥ 60% at 550 nm or better.
4.9 Shutter type: Rolling shutter (global shutter acceptable).
4.10 Camera should be able to provide Frame rate ≥ 10 fps (At full resolution, 2K) ≥ 45 fps (At 1k).
4.11 Low readout and dark noise suitable for low-light imaging.

5. Imaging Software

5.1 Software must support TTL/triggered device control.
5.2 Must support multipoint, multidimensional (XYZT) image acquisition, and mosaic imaging.
5.3 Must provide brightness and contrast adjustment tools.
5.4 Must include morphological filters for image enhancement and noise reduction.
5.5 Support for High Dynamic Range (HDR) imaging.
5.6 Support for 2D deconvolution (preferred but not mandatory).
5.7 Must include spectral unmixing tools for fluorescence imaging.
5.8 Must support Bio-Formats and OME standards.
5.9 Must fully integrate with ImageJ/Fiji for advanced processing.

6. Data Processing Unit / Computer

6.1 Processor: Intel Xeon or better for high-performance computing.

6.2 Storage: Primary: Minimum 1TB SSD or more, Secondary: Minimum 5TB HDD or more.

6.3 RAM: 32GB or higher.

6.4 Display: 28–32" high-resolution LED color monitor with multiple HDMI ports.

6.5 OS: Latest Microsoft Windows Professional pre-installed.

6.6 Graphics: Dedicated 2GB–4GB graphics card suitable for imaging.

6.7 Standard keyboard and scroll mouse included.

6.8 Power backup: 2–3 KVA online UPS with 30–40 min backup.

7. Warranty

7.1 The microscope must carry a minimum of three years warranty.

8. Important Clauses

8.1 A black translucent plexiglass enclosure with doors must be provided to protect photosensitive samples (mandatory).

8.2 The company must have installed at least three such systems in India in the last three years.

8.3 The microscope system must be upgradeable for live-cell imaging applications.

8.4 Service support must be available in India via in-house service engineers from the principal company or authorized agents.