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PR No. 1000014474 (Rfx No. 6100000361)

Detailed Technical Specifications for Modular Inverted research LED Fluorescence Microscope for Cell Biology and Tissue culture

A modular Inverted Microscope to suit to various laboratory applications for cell biology and tissue culture lab. The microscope should be of modular design with infinity optics and possibility to upgrade to various applications at later stage. The microscope should be capable of Bright field, Phase contrast, **PlasDIC techniques – system should be capable of producing DIC images of samples contained within plastic specimen holders like plastic bottom multi-well plates, tissue culture flasks etc.** and Fluorescence observations with LED illumination and should be upgradable for DIC, Hoffmann contrast.

The microscope should have the following technical features:

- 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.
- **13mm focus lift**
- 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.
- **ECO mode** – when it is switched on the illumination should stop automatically after 15 minutes.
- Microscope should have powerful transmitted light illumination with 12V/35W halogen lamp and should have a provision to switch over to a long-life LED illumination.
- Microscope should have a Quintuple (5x) precision revolving nose piece with provision for DIC sliders.
- Microscope should have a **built-in 4 position reflector** turret for Fluorescence filter blocks with easy filter changing device and with pixel shift free device.
- Microscope should have a built-in Epi fluorescence illumination optical path with high efficiency transmission for optimal fluorescence excitation.
- Fluorescence illumination with long life LED illumination with 4 position LED turret with easy changeover of LED's.
- Fluorescence filter cubes with filters for DAPI, FITC and Texas Red should be included.

- Binocular tube with 45deg inclination with Sidentopf swiveling eyepiece tubes with 100:100 for visualization and camera 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, slides, multiwall plates etc. It should have a provision and possibility to upgrade with motorised scanning stage for advanced applications.
- Long working distance condenser with 0.4 NA, working distance of 53mm and above with slider for Bright field, Phase, PlasDIC. It should have a provision to upgrade to Hoffman modulation contrast.
- Infinity corrected high contrast long working distance Plan Achromatic objectives suitable for Phase contrast, Plas DIC and Fluorescence with magnifications 10x/0.25, 20x/0.35, 40x/0.55. and 100x/1.25 Oil.
- **All the objectives (10x-40x) should be capable of working for PlasDIC.**
- Pair of wide-field 10x eyepieces with FOV of 23mm with focusable front lens and with rubber eyecups suitable for spectacle wearers and should have a provision to insert measuring Graticule with Diopter setting of +/-5.

Camera attachment:

Microscopy camera incl. Driver software 64bit, USB 3.0 PCIe x1 interface, USB 3.0 cable 3 m and IR barrier filter Hoya C5000 (coated)

Dual mode CMOS Camera which should be used for both Color and Monochrome mode

Number of Pixels: 2464 (H) x 2056 (V) = 5.07 Mega pixel color

Pixel size: 3.45 μm x 3.45 μm or better

Spectral range: With IR barrier filter app. 400 nm to 720 nm.

Speed : Frame Rate at full frame (2464 x 2056= 5.07 Megapixel) should be minimum 36 fps

Camera Adapter 1x

The microscope, camera and the software should be from the same manufacturer for the proper synchronization of the system.

Warranty for Microscope: 1 Year