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Technical Specification of Motorized Inverted Fluorescence Microscope system with Image analysis (ONE) (Optical Microscope)

Technical Specifications required are as follows:

Technical specifications for Fully Motorized Inverted Fluorescence Microscope System with Digital Camera & Image analysis Software

Inverted Frame: Motorized Ergonomic Stand with in-built Z-focus drive with minimum step resolution of 10-15 nm or better. The system should have a dedicated external TFT/LCD touch screen capable of controlling all the motorized functions of the microscope. The frame should be on-site upgradeable to Laser/LED-based drift compensator for long duration in focus time lapse imaging controlled by both touch screen panel and imaging software at all magnifications

Transmitted Light System: 12V-100W halogen illumination. LED source providing equivalent intensity and would enable DIC imaging is also acceptable.

Condenser: Universal Long working distance condenser NA/ 0.55 W.D 27mm or more , with positions for DIC,PH. built in iris diaphragm. A Polarizer & Analyzer should be quoted

Eyepiece: 10X with F.O.V 22 or better eye pieces-2 nos.

Nosepiece: Six positions motorized revolving nosepiece with Slot for DIC Slider/analyzer to accommodate objectives of different magnifications.

Motorized Stage: mechanical right hand stage with fixed handle. Enough travelling range holders to accommodate glass slides & 35mm petri dish.

Objectives: High performance objectives suitable for brightfield, and fluorescence applications: Apochroma**t** objective 10X/**0.4**, WD 3.1 or better, apochromat objective **20X/0.8**, WD 0.6 (spring or better. High N.A, Extended range of chromatic aberration compensation from 400 nm to 1000 nm. Long working distance Plan Semi Apochromat water immersion objective 40X/**0.8,** W.D. 3.3mm or better **340nm and IR-DIC (900nm) applicable**

Fluorescence Module: Motorized fluorescence attachment with built in motorized shutter and a minimum of 8 position filter cube slots. Narrow Band pass, interference (hard-coated) fluorescent filters Cy5 & Red Fluorescence Protein

Fluorescence Light Source: Pre-centered mercury/metal halide illuminator. 120W/130W with built-in attenuator, with a life time of 2000 Hrs. The light source should be connected to the microscope with a fiber to avoid direct heat transfer from the lamp. The shutter and the attenuator

should be controlled & synchronized by imaging software for time lapse and multi-channel imaging.

part of microscope and imaging software should be communicating for seamless multidimensional applications.

Camera: Digital CMOS Camera, Pixel size 5.86 Microns, Pixel Array 1920 x 1200, Full well capacity 33,000 electrons, Dynamic range 5000: 1, frame rate 64.9 fps at full resolution , QE should be 80% or more , read out noise 6.6 electrons or better, A/D converter 12 Bit, External trigger

The imaging software should be able to control all functions of the camera and the microscope along with intensity measurement, fluorescence unmixing, co-localization, time lapse recording, deconvolution software module. The software should be capable of performing multidimensional (XYZtλ) image acquisition, perform basic measurements. Software for image capturing , Motorized Control of Fluorescence turret & Z Motorized Focus, user experience customization, overlay multiple images, document groups for side by side image comparision, movie playback, Tile image, slice view for orthogonal plane viewing of 3D or time lapse data sets, snap /movie acqusition, Online Deblur / deconvolution should be present, Colocalization, fluorescence unmixing, offline ratio analysis and High dynamic range Imging, time lapse at specific intervals, Z stack, Multiple image allignment, Instantly create Extended focal images (EFI), Live deblurring, Image processing, Image analysis, Count and Measure Basic , automatically compose word report.

Branded intel core i7 processor, 32 GB RAM, 2GB Nvidia card, 2TB HDD, Windows 10 Professional 64 bit. USB III / USB II ports. Extension slot for PCI-Express x1 Rev.1.0a or later.

A Suitable UPS for the system with 30 min Battery Back up

The system should be on site upgradable to Confocal Microscopy and TIRFM system in the future.

Warranty: - One Year