

## Department of Bacteriology

### Technical Specifications for Fluorescent Microscope – 1 NO

S. No	Technical specification	Complied (yes or No)	If compliance given, mention the page no. of your technical document where the details are provided
1	The System must be Infinity-corrected optical system with Royal Microscopical Society (RMS) threaded objectives with a 45 mm par focal distance supporting fluorescence, bright field, color bright field, and phase contrast imaging modes.		
2	System must be a compact integrated unit including: microscope, digital cameras, computer, high power fluorescence lighting system for Neurobiology, Immuno-oncology, Live-cell imaging, 3D cell imaging (e.g., organoids, spheroids), Immunohistochemistry (IHC) applications etc.,.		
3	The instrument should have Illumination through five-position chamber for 4 fluorescence illuminators plus bright field imaging; light illuminators with integrated hard-coated filter set and LED light source with >50,000-hour life; broad selection of standard and specialty LED illuminators. (List of LED illuminators to be attached).		
4	Imaging methods by Single color, multicolor, time lapse, Z-stacking, movie capture.		
5	Condenser - 60 mm LWD condenser; 4-position turret with a clear aperture and 3 phase annuli		
6	System must include mechanical X/Y stage; travel range 120 mm x 80 mm with sub micron resolution, drop-in inserts to receive vessel holders and lockdown holders to fix sample in place.		
7	The system must have automated focus mechanism with sub micron (0.150 um) resolution (single step accuracy) and mechanical focus wheel with single knob for coarse and fine focus.		

8	System must include 5 position objective turret with front mounted control and Plan Flourite 10x, 20x, 40x objectives to be supplied along with instrument. The system must include 03 (DAPI – 357/447 nm, GFP - 470/525 nm and Texas Red - 585/624 nm) independent high output LED illuminators to be supplied along with instrument. The LED illuminators must have independent intensity control		
9	Fluorescence LED illuminators must be single, interchangeable cubes that can be easily removed, installed and automatically recognized by the instrument software and adjust the configuration accordingly.		
10	The system must include an integrated high-sensitivity 3.2 MP or better (2,048 x 1,536) monochrome CMOS sensor with 3.45 µm pixel resolution.		
11	The system must provide a 1-click RGB channel overlay and also able to sequentially acquire a phase contrast image and a fluorescence image with a single mouse click, then overlay them automatically		
12	The system should allow user to review, measure, and annotate captured images and count count cells in fluorescence mode post-acquisition.		
13	The system should allow to perform Stem cell colony dissection with the fluorescence channels.		
14	The system should be compatible with the onstage Incubator for precise control of temperature, humidity, and gases for normoxic or hypoxic conditions allows a wide range of biological studies under physiological conditions.		
15	The Onstage incubator should not have a separate software module or control units and should be controlled by the software and user-interface on the imaging system		
16	The system must include Wizard based software and include downloadable software updates from time to time at no additional cost.		
17	The system with small foot print with Dimensions Approximately (L x W x H) - 18 x 23 x 18 inches preferable.		

18	The System should have networking capability connection through Windows/SMB network via an Ethernet cable connection and USB 3.0 WiFi dongle		
19	System must provide the following output file formats: 16 bit monochrome TIFF or PNG (12 bit dynamic range); 8 bit color TIFF, PNG JPG and BMP.		
20	System should have following output ports: Power, 4 USB 2.0 ports, 1 USB 3.0 port, 1 Display Port, 1 RJ45 network jack.		
21	System should include LCD Display - 18.5" articulated LCD color monitor with 1920x1080 pixel resolution		
22	The system should be supplied with computer configuration Embedded PC with 4 GB RAM. With 10GB SSD and 16GB USB 3.0 memory stick.		
23	Warranty: standard warranty of one year, CAMC for 2 <sup>nd</sup> and 3 <sup>rd</sup> year and AMC for the 4 <sup>th</sup> year.		
24	Suitable UPS for 1 hour backup		