

## Specification for Fluorescence Microscope

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1	The system must be Infinity- corrected optical system with Royal Microscopical Society (RMS) threaded objectives with a minimum 45 mm parfocal distance supporting fluorescence, bright field, and bright color field phase-contrast imaging modes.
2	The 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 a 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, and Z-stacking movie capture.
5	Condenser: 60 mm LWD condenser, 4 position turret with a clear aperture and 3 phase annuli.
6	The system must include a 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 the sample in place.
7	The system must have an automated focus mechanism with sub-micron (0.150 $\mu$ m) resolution (single-step accuracy) and a mechanical focus wheel with a single knob for coarse and fine focus.
8	The system must include 5-position objective turret or better with front-mounted control and Plan Flourite 10x, 20x, 40x, and 60x objectives to be supplied along with the instrument.
9	The system must include 03 (DAPI – 357/447 nm, GFP - 470/525 nm, and Texas Red - 585/624 nm or better) independent high output LED illuminators to be supplied along with the instrument. The LED illuminators must have independent intensity control.
10	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.
11	The system must include an integrated high-sensitivity 3.2 MP or better (2,048 x 1,536) monochrome CMOS sensor with 3.45 $\mu$ m pixel resolution.
12	The system must provide a 1-click RGB channel overlay and able to sequentially acquire a phase-contrast image and a fluorescence

	image with a single mouse click, then overlay them automatically.
13	The system should allow the user to review, measure, and annotate captured images and count cells in fluorescence mode post-acquisition.
14	The system should allow performing stem cell colony dissection with the fluorescence channels.
15	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.
16	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.
17	The system must include Wizard-based software and have downloadable software updates from time to time at no additional cost.
18	The system with a small footprint with Dimensions Approximately (L x W x H) - 18 x 23 x 18 inches or better preferable.
19	The system should have a networking capability connection through Windows/SMB network via an Ethernet cable connection and USB 3.0 WiFi dongle.
20	The 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 or better.
21	The system should have the following output ports: Power, 4 USB 2.0 ports, 1 USB 3.0 port, 1 Display Port, 1 RJ45 network jack.
22	The system should include LCD Display - 18.5" articulated LCD color monitor with 1920x1080-pixel resolution or better.
23	The system should be supplied with a computer configuration Embedded PC with 4 GB RAM. With 10 GB SSD and 16GB USB 3.0 memory stick.
24	Warranty: Minimum 3 years warranty with 2 years free service.
25	The PC should meet the minimum requirements such as desktop with the i-5 processor, 8 GB RAM, 1 TB, Windows 10 home basic or better, and 28 inches or more LED monitor.
26	Vendor eligibility criteria: (i) A list of at least 3 Institutions/R&D units/Industries where similar instruments have been supplied in India, including contact details (name of the person-in-charge, email, and phone number), should be provided. (ii) The quoted model's three

	performance certificates in reputed institutions in India should be enclosed duly signed and stamped by the concerned scientist.
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