

Specification of Enclosed Laser (Point) Scanning Confocal Microscope

1. Table Top & Enclosed Point Scanning Laser Confocal Imaging System based on Inverted microscope imaging technique.
2. The system should be box type covered design so that it can be installed and used in standard laboratory area without any dark room facility for fluorescence confocal imaging applications.
3. Fully motorized software controlled operation of Lasers for Confocal Imaging.
4. The system should have two Fluorescence PMT detectors for two color simultaneous imaging and capability of more colors under sequential imaging process.
5. The system should also have one transmitted light PMT detector for Phase contrast/DIC imaging.
6. The system should have four long life diode lasers 405nm, 473/488nm, 559/561nm & 635nm, for imaging applications for Fluor chromes/dyes under visible spectrum.
7. The system should be equipped with XY motorized scanning stage for scanning of entire slide or Petri dish.
8. The system should be supplied with high resolution Apochromat objective lenses for imaging capabilities from 10X to 600X.
9. The system should be capable of providing specific magnification values between 10X-600X with step increments as low as 0.1X, means user can decide at what magnification he/she wish to image the samples.
10. The system should have scanning capability from 256x256 to 1024x1024 for all colors. It should have single motorized pinhole.
11. The system should have Z step resolution of minimum 10nm or lower.
12. The system should have built in anti-vibration platform for reduction of vibration.
13. The system should be supplied with a tried and tested computer/CPU system form manufacturers only for better system compatibility. Minimum 24" TFT/LCD Monitor is required for comfortable operation of the system.
14. The system should be box type covered design so that it can be installed and used in standard laboratory area without any dark room facility for fluorescence confocal imaging applications.
15. System software should have following minimum features:

- a. **Image Acquisition:** Map Image, one shot, time lapse (XYT), Z-Stack (XYZ), Z-Stack time lapse (XYZT) and multi area Z-Stack time lapse (multi Area XYZT).
 - b. **Specimen Setting:** Automatic setting of fluorescence channel and laser according to dye selected.
 - c. **Image Display:** Display by Channel, overlapping display & image in process review.
 - d. **Cross talk reduction:** Line sequential action (2 channel) or frame sequential action (3 channel & 4) channel.
 - e. **Image format:** Olympus Image format (OIF,OIB), Multi -TIFF Format, JPEG,BMP & TIFF.
 - f. **Image editing:** Pseudo color setting, contrast adjustment, comment, inputting graphic, text, scale etc. image extraction, combination.
 - g. **Image Processing:** Various type of Image Filters: Median, Enhanced edge etc. Calculations: inter-image, arithmetic & logical operation.
 - h. **Image Analysis:** Background correction, region measurement, area measurement, perimeter, 3D
 - display & animation, Intensity profile, Histogram, Series Analysis, Line series analysis, Co-localization &
ratio measurement.
16. The supplier should provide a separate computer system for offline analyses. Minimum 27-28" TFT/LCD Monitor is required for comfortable operation of the system. The system should also have minimum 1 TB hard drive, 8 GB RAM and suitable offline software for the offline analyses.
17. The system should be supplied with suitable online UPS.
18. The system should be supplied with 5 years comprehensive warranty.
19. The supplier should provide a suitable sturdy table with granite top for installation of the system in IISER- Mohali.
20. The supplier should provide a detailed list of users of the quoted system in India with contact details.