

Specifications for an upright fixed-stage microscope for electrophysiology

1. The microscope should be an upright fluorescent DIC microscope with a fixed-stage that is designed for electrophysiologists. The focus knobs should ideally be near the front of the scope and not at the side.
2. The fixed Stage should have X and Y Dimension of 250X250mm or better.
3. Transmitted light source of 12V 100W or better.
4. The system should have a swing-type two-position (front/back) nose-piece or better. It is essential that the nose-piece should not interfere with the functioning of the manipulators and not cause vibrations while changing positions during the experiment.
5. The system should have a mechanical Stage with universal mounting frame for petri dishes & slides or better
6. The system should come with a Trinocular Observation tube or better and should allow for imaging with a field of view of 22 mm with a widefield-paired eyepiece of 10x or better.
7. Fluorescence Attachment for Four - position or better fluorescence filter turret with a vibration-free shutter should be quoted.
8. The fluorescence filter turret should come with a 12V/100W or better self-adjusting mercury burner / Metal Halide/Halogen Illumination with High transmission and narrow Band Pass excitation and emission Filters for GFP and RFP or mCherry or better.
9. The mercury/metal halide/halogen burner should provide a constant and non-fluctuating light for fluorescence observation without transferring heat to the scope and come with an appropriate power supply, showing the usage hours of lamp. The light source should have a built in attenuator to vary its intensity.
10. This system should not allow for heat and vibration transfer from the fluorescent light and light source
11. Objectives:
 - a. The microscope should come with a. Plan Neofluar/ Fluorite/ Plan Achromat/Semi-Achromat 10X air objective with a working distance of 3mm or better.
 - b. A plan apochromatic or equivalent 40X or 60X/63X DIC water-emersion objective. The 40X or 60X/63X objectives should have NA of 0.8 or better with a working distance between 1.9mm and 2.2mm.
 - c. A Long-Working Distance Plan apochromat or equivalent 40X or 60X/63X DIC Air Objective with NA 0.75 or better and working distance of 2mm or more.
12. The system should have a condenser with a four-position turret or better for brightfield and DIC applications. Brightfield and DIC applications should be possible with both the objectives
13. The bright field and DIC attachment for 10X and 40X/60X or 63X objectives should come with an analyzer and polarizer attachments, sliders and modules for the respective objectives.

14. The system should be equipped with DIC prisms for the above objectives & should be upgradeable to an IR Imaging system that will allow for simultaneously doing normal imaging and IR DIC imaging.
15. This system will be used along with a set of micromanipulators which will hold electrodes to take electrophysiological recordings from samples, the supplier should make sure that the microscope supplied can have the attachment of the micromanipulators without hindering working on the microscope. They should make sure that micromanipulators from leading companies, can be housed without problems on the scope.
16. The microscope should allow for being fitted with a X-Y translation system from a third party if required.
17. Please quote for a basic CCD camera that can be used with the above system as well as software for the system that will allow one to take basic brightfield, DIC and fluorescent images
18. The system should be quoted for with a suitable workstation computer that will allow for working with PATCHMASTER and pCLAMP 10 Standard electrophysiology software as well as other standard software that can be used for electrophysiological recordings.
19. The workstation should have a hard disc space of 1Tb or better and 8GB RAM or better with DVD R/W, multiple USB ports for USB flash drives.
20. The system should come with a 20" TFT Monitor or better and an original licenced Windows operating system.
21. The system should be supplied with a suitable online UPS system with 45 minutes of back-up time or better.
22. The vendors should indicate a list of installation bases where this microscope is being used for taking electrophysiological recordings.
23. The vendors should allow for upto 3 installations (moving of the microscope to a different location) after the first installation, in case the system needs to be moved to different locations.
24. Comprehensive warranty for 5 years or better for the complete system including hardwares should be provided. The company should also quote both CMC and AMC charges for next 5 years after the expiration of warranty. This should be quoted as optional. We reserve the right to change the final warranty period, and terms and conditions including CMC and AMC.
25. All the specifications should be supported by documentation in the form of original brochure/catalog. Photocopy will not be accepted. We reserve the right to disqualify parties who do not comply with the original documents. Compliance statement should be attached with markings in the original catalog.
26. The party should take an undertaking that they will supply the components of the instrument for the next 10 years after its installation at the site.
27. Technical Support should be available within 48 hrs. Hence, Local post-sale support will be preferred.
28. The installation of the equipment should be within 6-8 weeks of supply.

29. The quoted price should include installation, operator instructions and institutional on-site training.
30. Installation will be considered complete only after successful demonstration of all the applications for which this system is being set up for. On-site training for as long as is required for all required users to be able to optimally use the system should be provided by personnel from the microscope company.
31. We reserve the right to change the final configuration of this system.

Please quote as optional:

A vibration isolation table of size 3.5ftX3ft, for stable recordings should be quoted for. The vendors should quote for an air table or equivalent, which provides an air interface between the room vibrations and the preparations from which recordings will be done.