

Specifications for Small Animal In Vivo Imaging System

Detailed specifications:

- System should be of latest generation fully automated In-Vivo small animal multi-modality optical imaging capability for Bioluminescence, Fluorescence, chemiluminescence and **radioisotopic Cerenkov studies for *in-vivo* and *in vitro* use.**
- System should be capable of imaging multiple fluorophores with capability of spectral un-mixing.
- System should be “Open” platform so that any suitable reagents and consumables can also be used.
- The Complete system inclusive of light tight cabinet, CCD Camera, laser light source, Gas anaesthesia chamber, Clean box & Computer Work station.

Technical specifications:

Light Tight Cabinet:

The Light Tight Cabinet Fitted with **LED / LASER** for photographic imaging, Maximum number of narrow band excitation filters covering the excitation range from 400- 850nm. High transmission wide angle emission filters covering the emission range from 500-900nm. The cabinet should be able to accommodate gas anaesthesia manifold and its tubing.

CCD Camera:

Back illuminated, back thinned, Grade 1 CCD camera, Absolute cooling down to -90°C, ensuring low dark current and low noise, **high resolution imaging.**

Animal handling:

The system should be capable of acquiring images of animal at various depths of focus and images at different Field of View (FOV). The system should be capable of acquiring images of multiple mice simultaneously. The system should have facility to maintain the animal temperature uniform throughout the body. The module should have option for 360 degree surface mapping.

Image acquisition and analysis software including system hardware control

The Software supplied should include complete system hardware control including image acquisition and processing. Software should include image acquisition for Bioluminescence, Fluorescence, and Chemiluminescence imaging. Software should include capability for multicolour fluorescence imaging with capability of spectral separation or un-mixing. Licensed Software package for equipment control, image acquisition and analysis should be supplied.

Software should also be able to do Absolute calibration, background subtraction and the image math algorithms for producing high-quality, reproducible, quantitative results. Software should include capability of viewing the animal in different angles and to also create a cross sectional image planes. The data obtained must be without spectral unmixing which affect the accuracy of the final data and data generated should be in absolute calibrated data according to the National Institute of Standards and Technology (NIST). System should be supplied with unlimited offline analysis licenses.

Computer workstation:

Latest generation control computer compatible with system hardware and software should be provided. Licensed operating system, high resolution HD monitor.