MULTI MODE NON-INVASIVE IMAGING SYSTEM WITH RODENT ANESTHESIA CHAMBER

Sr. No.	Technical Specifications
1	**Multi-mode in vivo imaging system** • Optical imaging technology to help with non-invasive longitudinal monitoring of disease progression, cell trafficking and gene expression patterns in living animals. • Optimized set of high efficacy filters and spectral un-mixing algorithms that could help take advantage of bioluminescent and fluorescent reporters across blue to near infrared wavelength region. • Offer single view 3D tomography for both fluorescent and bioluminescent reporters that can be analysed in an anatomical context using animal atlas. • For advanced fluorescence imaging, use transillumination or epi-illumination to illuminate in vivo fluorescent sources. • 3D diffuse fluorescence tomography can be performed to determine source localization and concentration using the combination of structured light and trans illumination fluorescent images. • Equipped with 10 narrow band filters (30 nm bandwidth) and 18 narrow band emission filters (20 nm bandwidth) that assist in significantly reducing autofluorescence by the spectral scanning of filters and the use of spectral unmixing algorithms. • Spectral unmixing tool should allow to separate signals from multiple fluorescent reporters within the same animal.
	• Grade 1 cooled CCD (-50ºC to-90ºC) • CCD size approximately 22.5 x 2.5 cm • An operating temperature of -50ºC to -90ºC • Imaging pixels approximately 2048 x 2048 • Quantum efficiency >85% 500-700 nm; >30% 400-900nm • Pixel size approximately 13 microns • Minimum detectable radiance 70 photons/s/sr/cm^2 • Field of View (FOV) approximately 4 x 4 cm to 24 x 24 cm. • Minimum image Pixel Resolution: 5-20 microns (at f/t) • Read noise <3 electrons for bin =1,2,4: <5 electrons for bin=8,16 Dark Current (Typical) <100 electrons/s/cm^2
	Rodent Anaesthesia system • Anaesthesia system should help with real-time in-vivo imaging to monitor and record molecular and genetic activity in mice and rat using gas aesthetic (like isoflurane) • Deliver anaesthesia to two instruments like an anaesthesia chamber and a benchtop accessory simultaneously. • Compact and lightweight design • Portable • Vacuum system for active scavenging of manifolds and benchtop accessories. • Separate exhaust for induction chamber to prevent anaesthesia exposure while opening. • Oversized vented induction chamber to accommodate rats.
2.	**Workbench** • 200-250 kg capacity
3.	• Vendor should have a good track record of selling similar systems with at least 10 installations across India especially in institutes like IITs, IISERs, IISc, CSIR labs • Vendor should submit at least 3 performance certificates for similar systems

	• Vendor should have a local presence with good track record of after sales support in Chennai
4.	• **Free installation and training to technicians** • **Warranty:** 5 years warranty and 2 years AMC included on all components