



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY  
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**Technical Specifications of Chemiluminescence Gel Documentation System**  
**RFx No. 6100001094 (Reference No. 1000025735)**

	Item Description
	Latest, state of the art model should be supplied with ready to use system, with all essential hardware accessories, darkroom, CCD camera, and advanced software for image analysis.
System Requirements	System should be capable of doing following applications <ul style="list-style-type: none"><li>• Chemiluminescence</li><li>• Fluorescence</li><li>• Colorimetry</li><li>• Gel Documentation</li></ul>
	<ol style="list-style-type: none"><li>i. Effective imaging area: not less than 20cm (W) x 15cm (H) (for UV, white light and Chemi applications)</li><li>ii. System should have provision for upgradation to multiplex fluorescence western blotting capability using RGB, IR and NIR LED modules.</li><li>iii. System should be able to capture multiple Chemi images with user defined range of exposure times.</li><li>iv. System should have options for choosing automatic or manual exposure and adjust the binning level.</li><li>v. System should have an onboard computer (4GB RAM) with touchscreen interface and screen size should be at least 10 inch or above for efficient visualization and capture of gels and blots on the system itself.</li><li>vi. System should have an external hard drive to store the data generated.</li><li>vii. System should have USB Ports to connect USB devices and Ethernet port to allow users to transfer image</li><li>viii. System should have safety switch to prevent accidental UV exposure when door is open.</li><li>ix. System should have 2 years of warranty.</li><li>x. System should have low read noise and low dark current.</li></ol>
Camera Requirements	<ol style="list-style-type: none"><li>i. The camera should be greater than 5MP resolution having no image quality compromise for bigger prints.</li><li>ii. 16bit monochrome CCD camera</li><li>iii. It should have high quantum efficiency @ 425nm more than 68%</li><li>iv. Camera sensor should be CCD and cooling to allow noise free long exposure pictures.</li><li>v. Auto Focus: System should have precalibrated focus for any zoom setting or sample height.</li></ol>
Software Requirements	<ol style="list-style-type: none"><li>i. The system should be complete with license free image acquisition and analysis software.</li></ol>

	<ul style="list-style-type: none"> <li>ii. The software license should be available for more than one computer so that offline analysis can be done.</li> <li>iii. Software should have highest level of automation in hardware calibration, image optimization, capture, and analysis.</li> <li>iv. It should give various options to user to select the Epi light source, trans light source, applications, stains/dye selection, protocols selection etc. for better results.</li> <li>v. Should have automated image capture driven by a selected gel or blot application.</li> <li>vi. The analysis software automated lane and band detection, pre-loaded DNA ladder standards; simple quantification and automated report creation.</li> <li>vii. Software should have automated normalization feature for normalizing western blot signals of target band with either a housekeeping protein band or total protein load of a sample.</li> <li>viii. Should generate publication ready images with user defined dpi, dimension .</li> <li>ix. Software should have easy copy/paste functionality, crop, zoom, 3D and colors.</li> <li>x. Software should have provision for easy optimization of exposure time for chemiluminescent detection.</li> <li>xi. Software should be able to export images in multiple formats with minimum options of exporting in .tiff, .png, .jpg and .bmp</li> <li>xii. Free life time upgrade for analysis software should be available freely on the internet.</li> <li>xiii. System should be supplied with Standard computer for image analysis</li> </ul>
Others	<ul style="list-style-type: none"> <li>i. Vendor should provide list of installation in India.</li> </ul>