

**Technical Specifications of Hyperspectral Imager****Bidder Eligibility Criteria-I**

Sl. No	Bidder Eligibility Criteria-I	Complied / Not Complied	Reference Page No.	Remarks, If any
1	The bidder/OEM should have supplied at least similar items to IITs, NITs, IISERs, CSIR Labs or other Govt. organizations in the last 5 years, PO copies or installation certificates along with contact details of end user need to be submitted as the proof of supply. IIT Madras reserves its right to verify the claims submitted by the bidder and the feedback from the previous customers will be part of technical evaluation.			

**Technical Specifications II****Description:**

Hyperspectral imaging (HSI) is a technique that analyses a wide spectrum of light instead of just assigning primary colours (red, green, blue) to each pixel. The light striking each pixel is broken down into many different spectral bands in order to provide more information on what is imaged. Hyperspectral imaging, like other spectral imaging, collects and processes information from across the electromagnetic spectrum. In hyperspectral imaging, the recorded spectra have fine wavelength resolution and cover a wide range of wavelengths. Hyperspectral imaging measures continuous spectral bands, as opposed to multiband imaging which measures spaced spectral bands. In the medical field, non-invasive scans of skin to detect diseased or malignant cells can now be performed by doctors with the help of hyperspectral imaging. Certain wavelengths are better suited for penetrating deeper into the skin, allowing a more detailed understanding of a patient's condition. Cancers and other diseased cells are now easily distinguishable from healthy tissue, as they will fluoresce and absorb light under the correct stimulation. Sophisticated systems can record and automatically interpret spectral data, leading to significantly expedited diagnoses and rapid treatment of the exact areas of need.

**Detailed specifications:**

SNO	SPECIFICATION		COMPLIED /NOT COMPLIED	REFERENCE PG.NO
1	Pixel Resolution	2 Megapixel or above		
2	Acquisition type	Snapshot type		
3	Camera	Preferably single camera covering entire spectral range.		
4	Spectral Range (minimum)	470 - 850 nm		
5	Number of spectral bands	25 minimum		
6	Dynamic Range	10-bit		
7	Frame rate	15 fps minimum		
8	Additional accessories	Evaluation kit preferred, RGB overlay preferred		
9	Software compatibility	API for either of C, python, National Instruments LabVIEW™		

(Note: It is mandatory for the bidders to provide the compliance statement in tabular column format along with catalogue page number (comply/not comply) for the Above points with document proof as required. Failing which bidders will be technically disqualified)