

**TECHNICAL SPECIFICATIONS OF INFRARED THERMAL IMAGER**

Sl. No.	GENERAL DESCRIPTION	Remarks
1	The thermal imager should be a hand held imaging camera capable of producing thermal & visual images of the area of interest on its integrated LCD display. This camera will be used for thermal scanning of power, rectifier & dry type transformer under test.	
2	The imager should be able to give direct readings of the temperature of test object along with both thermal & visual image presented as a full image or PIP (picture in picture image).	
3	The imager should have full provision for storing the image in instrument or on a removable memory card. Memory card slot to be provided in the instrument. Memory card reader to be provide for transferring the stored images to PC for analyzing & report generation	
4	The imager package should include suitable software for image analysis & report generation	
5	Imager should be powered with inbuilt chargeable/ordinary battery	
6	Input power supply for chargeable battery pack 230 V +/- 10% , 50 Hz Single phase	
7	Instrument should have power saving features for period of in operation	
8	Display Back lit LCD color VGA display minimum 1.5"x2.0" (320x240 pixel)	
9	Operator control Key pad/ Menu driven for setup, data input, result storage	
10	Operating Environment Temperature: 0- 50 C Humidity: 0-90% non condensing	
11	The test set should have necessary provision for storage of the test results for retrieval and analysis in the associate laptop PC. The required software for Measurements and data storage should also to be supplied along with the test set. The software should be user friendly and Window based.	

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16-03-08



The ranges, resolution & accuracy of the test set for different parameters should be at least as per the points mentioned below		
TEMPERATURE MEASUREMENT		
1	Temperature Range: 300 ° C	
3	Temperature Accuracy – (±) 2.0 % rdg	
4	Measurement Mode: Auto scaling or Manual scaling	
5	On screen emissivity correction/incorporation provision: Yes	
IMAGING PERFORMANCE		
1	Field of View (FOV): 20° X 15°	
2	Spatial Resolution (IFOV): 3 mRad	
3	Minimum Focus Distance: Thermal Lens: 20 cm Visual Lens: 50 cm	
4	Focus type: Manual	
5	Thermal Image Detector: 150x120 focal plane array, Uncooled micro-bolometer	
6	Thermal sensitivity: 0.2° at 30° C	
7	Infra red spectral band: 8µm --- 14µm	
IMAGE PRESENTATION		
1	Image color palettes: Ironbow, Blue-red, Amber	
2	Span & Level Setting: Manual & Auto Minimum Span: 5° C	
3	Visual & IR Blending Picture in picture: IR image at centre surrounded by visual image Full Screen (PIP off): 100% IR image occupying full screen	
4	Screen display parameters Focal point digital temperature readout Display of emissivity value Span temperature display with associated color palette	

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**IMAGE & DATA STORAGE**

1	IR image format: Fully Radio metric, Visual Image: JPEG,BMP	
2	Storage media: Removable memory card at least 1 GB memory with card reader	

**The Test equipment shall be offered complete with the items mentioned below:**

1	Main equipment--- Thermal Imager	
2	Window based PC software for image transfer & report generation Report format color photograph with details temperature reading	
3	Battery charger adaptor	
4	Memory with memory card reader	
5	Two sets of operating and maintenance manuals in English language,	
6	Three sets of calibration reports with following data Calibration date, periodicity, calibration validity duration & next calibration due date At least 20 sample calibration results of which minimum 10 results below 100C range Traceability details of standard used for calibration All documents should be endorsed by authorized signature	
7	Performance & Warranty Certificate Warranty 2 years after commissioning at our works	
8	Storage bag for Imager	
9	Different type of accessories needed to connect the leads to equipment under testing.	
10	Commissioning of the instrument to be done at our work by supplier's representative free of charge	
11	List of critical spare list for 5 yrs trouble free operation to be included	
12	Supplier should provide any other attachment/accessories required for smooth functioning of the instrument	
13	Original technical catalog to be included along with technical bid	

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