FLIR SC2500

High Performance, High Temperature, SWIR Camera

The SC2500 unique features and options make it an ideal choice for research, science, and industrial applications including imaging spectroscopy, astronomy, water or ice detection, laser profiling, medical testing, solar cell inspection, silicon wafer processing, high temperature furnace evaluation, and more.

Embedded 320 × 256 Detector – *With a spectral sensitivity from 0.9 to 1.7 µm.*

Temperature Calibration – *Allows accurate non-contact temperature measurements from 400°C to 3,000°C.*

Smart External Triggering – *Allows synchronization of the image capture to the most fleeting of events.*

Multiple Independent Video Outputs – *Includes analog composite (NTSC or PAL) and digital Gigabit Ethernet.*

Simultaneous Analog Video and Digital Data – *Streams at all window sizes and frame rates.*

Fast Frame Rates – *Streams 14-bit digital data at 340 Hz full frame.*

Adjustable Output Frame Rate – *From 1 Hz to the maximum frame rate at a given window size and integration time with 0.1 Hz resolution.*

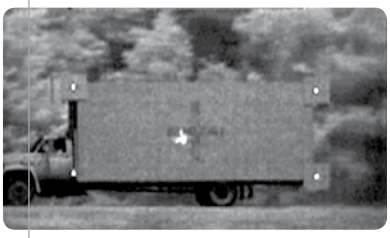
FPA Windowing – *For faster frame rates.*

Lock-in Input Feature – *Brings the detection threshold of the system down below the noise floor of the camera by an order of magnitude or more.*

Removable Lens Interface – *Makes it easy to integrate with custom devices or spectrometers.*

Filtering – *Behind-the-lens slide-in filter slot with included 1" filter holder simplifies filtering process.*

Available Accessories – *Includes ExaminIR radiometric software, factory temperature calibrations, spectral filters, and SDK (C++/Labview).*



Truck with laser spot

Moon

Solar cell

Imaging Specifications

Detector	SC2500
Detector Type	Indium Gallium Arsenide (InGaAs)
Spectral Range	0.9 – 1.7 µm
Resolution	320 x 256
Detector Pitch	30 µm
NEI	Low Gain: <5 x 10^9 ph/s/cm2 High Gain: <3 x 10^{10} ph/s/cm2
Noise	<150 e- RMS (typical)
Quantum Efficiency	>70% @ 1.5 µm
Well Capacity	Low Gain: 3.5 M electrons High Gain: 0.17 M electrons
Operability	99%
Sensor Cooling	TEC (Regulation / Off)
Electronics / Imaging	
Readout	Snapshot (4 Channel)
Readout Modes	Asynchronous Integrate While Read (IWR) Asynchronous Integrate Then Read (ITR) Short Integrate then Read (Fast ITR)
Synchronization Modes	Lock-in, Trigger IN to Start Integration, Frame Keying (image tagging), Trigger OUT (integration signal copy, frame rate signal copy, Trigger IN signal copy)
Image Time Stamp	PC Clock
Integration Time	400 ns to 1 sec; 200 ns steps
Frame Rate (Full Window)	1 Hz to 340 Hz Full Frame
Subwindow Mode	User-Defined
Max Frame Rate (@ Min Window)	11 kHz (128 x 8)
Dynamic Range	14-bit
Digital Data Streaming	Gigabit Ethernet
Analog Video	NTSC, PAL, Composite
Command & Control	Gigabit Ethernet
Measurement	
Optional Temperature Range	400°C to 600°C (752°F to 1,112°F) 600°C to 2,000°C (1,112°F to 3,632°F) 400°C to 3,000°C (752°F to 5,432°F)
Accuracy	±1% of Reading
Optics	
Camera f/#	Lens-Dependent
Available Lenses	6 mm, 12 mm, 16 mm, 25 mm, 35 mm, 50 mm, 75 mm, 100 mm, 1,000 mm
Focus	Manual (Tactile)
Filtering	Built-in Removable Filter Holder
Image Presentation	
Analog Palettes	Selectable 8-bit
AGC	Manual, Min./Max., Mean & Standard Deviation, ROI
General	
Operating Temperature Range	0°C to 50°C (32°F to 122°F)
Storage Temperature Range	-20°C to 65°C (-4°F to 149°F)
Encapsulation	IP54
Shock / Vibration	25 g, IEC 68-2-29 / 2G, IEC 68-2-26
Power	12 VDC
Weight w/o Lens	0.9 kg (1.98 lb)
Size (L x W x H) w/o Lens	82 x 50 x 172 mm (3.22 x 1.97 x 6.77 in)
Mounting	¼"-20, 4 x M20

SC2500 Package: SC2500, 25 mm Lens, Multi-IT, Triggering, Lock-in, ExaminIR Max Software

*Ask your FLIR representative about additional packages

Back Panel

1. Digital Video/ Command & Control - RJ-45 Gigabit Ethernet
2. Video Out - NTSC
3. Power Switch
4. Lock-in - Input Range 0-10 V peak to peak / 1 Hz up to 5 kHz
5. Trigger Input/Output - LVTTL (0 – 3.3 V) under 50 Ohms
6. Power Input

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