

FLIR SC6000 Series

MWIR science grade camera



HIGH SENSITIVITY, HD THERMAL IMAGES

FLIR SC6000 Series incorporate a cooled Indium Antimonide (InSb) detector that operates in the 3 to 5 or 1 to 5 micron waveband. It produces crisp thermal images of 640 x 512.

Four active preset operating modes provide adjustable integration times, embedded non-uniformity correction, and bad pixel replacement. An exclusive SC6700 4-position motorized filter wheel permits effortless filter exchange in any environment.

FAST FRAME RATES AND TRIGGERING

FLIR SC6000 Series features fast frame rates with a high speed 50 megapixel clock that streams 14-bit digital data up to 126 Hz at full resolution. They support FPA windowing for even higher frame rates. Output frame rates are adjustable from 0.0015 Hz to the maximum frame rate at a given window size and integration time with 0.1 Hz resolution.

Advanced triggering options through external BNC input, IRIG time, or a software trigger; clock out single images, multiple images, or multiple images from multiple presets. IRIG-B timing is built directly into camera for on-board deterministic time-stamping of each frame and advanced triggering options.

INTERFACE FLEXIBILITY

Multiple simultaneous analog and digital outputs include S-video, composite (BNC) NTSC and PAL, SVGA, and industry-standard digital Camera Link and Gigabit Ethernet.

SOFTWARE

The FLIR SC6000 Series cameras work seamlessly together with FLIR ResearchIR Max software enabling intuitive viewing, recording and advanced processing of the thermal data provided by the camera. Each camera comes standard with this especially for R&D applications developed software. A Software Developers Kit (SDK) is optionally available.

MATHWORKS® MATLAB

Control the SC6000 Series and capture data directly into MathWorks® Matlab software for advanced image analysis and processing.

KEY FEATURES

- High image quality: 640 x 512 pixels
- High speed
- Configuration flexibility
- Filter wheel
- On-camera Radiance and Thermographic Calibration



737 across the sun



Stop-motion image of spinning tire



Imaging Specifications

System Overview	SC6100	SC6700
Detector Type	Indium Antimonide (InSb)	
Spectral Range	3.0 – 5.0 μm or 1.5 – 5.0 μm	3.0 – 5.0 μm or 1.0 – 5.0 μm
Resolution	640 x 512	
Detector Pitch	25 μm	15 μm
NETD	<20 mK (18 mk typical)	
Well Capacity	Gain 0: 11 M electrons Gain 1: 8.3 M electrons Gain 2: 5.5 M electrons Gain 3: 2.8 M electrons	7.2 M electrons
Operability	>99.8% (>99.95% typical)	
Sensor Cooling	Closed Cycle Linear	Closed Cycle Rotary
Electronics / Imaging		
Readout	Snapshot (FLIR 4 Channel)	
Readout Modes	Asynchronous Integrate While Read; Asynchronous Integrate Then Read	
Synchronization Modes	Genlock; IRIG-B; Sync In, Sync Out	
Image Time Stamp	Internal IRIG-B Decoder Clock / TSPi Accurate Time Stamp	
Integration Time	10 μsec to 687 sec 480 ns to 687 sec	
Frame Rate (Full Window)	Programmable 0.0015 Hz to 126 Hz	
Subwindow Mode	User-Defined	
Max Frame Rate (@ Min Window)	35.112 kHz (64 x 4)	4.175 kHz (16 x 4)
Dynamic Range	14-bit	
Digital Data Streaming	Simultaneous Gigabit Ethernet and Camera Link	
Analog Video	NTSC, PAL, S-Video, SVGA	
Command & Control	Gigabit Ethernet, USB, RS-232, Camera Link	
Measurement		
Standard Temperature Range	-20°C to 350°C (-4°F to 662°F) - f/2.5 20°C to 500°C (-4°F to 932°F) - f/4.1	-20°C to 350°C (-4°F to 662°F) - f/2.5 -20°C to 500°C (-4°F to 932°F) - f/4.0
Optional Temperature Range	Up to 1,500°C (2,732°F) Up to 2,000°C (3,632°F)	
Accuracy		
	$\pm 2^\circ\text{C}$ or $\pm 2\%$ of reading	$\pm 2^\circ\text{C}$ or $\pm 2\%$ of reading
Optics		
Camera f/#	2.5 or 4.1	2.5 or 4.0
Available Lenses	25 mm, 50 mm, 100 mm, 1000 mm TFOV (50 / 250 / 500 mm) Continuous Zoom (50 / 500 mm)	
Close-up Lenses / Microscopes	1x, 2.5x, 4x, 5x (5x requires f/4.1)	---
Focus	Manual (Motorized & Tactile – Lens-Dependent)	
Filtering	Behind-the-Lens	4x Position Motorized & Behind the Lens
Image Presentation		
Analog Palettes	Selectable 8-bit	
AGC	Manual, Linear, Plateau Equalization, ROI, DDE	
Analog Overlay	Customizable (IRIG-B, Date, Integration Time, Internal Temp, Frame Rate, Sync Mode, Cooler Hours)	
Zoom	1-4x Digital with Pan	
General		
Operating Temperature Range	-40°C to 50°C (-40°F to 122°F)	
Storage Temperature Range	-55°C to 80°C (-67°F to 176°F)	
Altitude	0 to 40,000 Feet Operational; 0 to 70,000 Feet Non-Operational	
Shock / Vibration	40 g , 11 msec ½ sine pulse / 4.3 g RMS Random Vibration, All 3 Axis	
Power	24 VDC (< 50 W steady state)	
Weight w/o Lens	4.5 kg (10 lb)	
Size (L x W x H) w/o Lens	218 x 143 x 158 mm (8.6 x 5.64 x 6.21 in)	
Mounting	2 x ¼" -20, 1 x 3/8" – 16, 4 x 10/24	

PORTLAND
Corporate Headquarters
FLIR Systems, Inc.
27700 SW Parkway Ave.
Wilsonville, OR 97070
USA
PH: +1 866.477.3687

BELGIUM

FLIR Systems Trading
Belgium BVBA
Luxemburgstraat 2
2321 Meer
Belgium
PH: +32 (0) 3665 5100

SWEDEN

FLIR Systems AB
Antennvägen 6,
PO Box 7376
SE-187 66 Täby
Sweden
PH: +46 (0)8 753 25 00

www.flir.com
NASDAQ: FLIR

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NASHUA

FLIR Systems, Inc.
9 Townsend West
Nashua, NH 06063
USA
PH: +1 603.324.7611

UK

FLIR Systems UK
2 Kings Hill Avenue
Kings Hill
West Malling - Kent
ME19 4AQ
United Kingdom
PH: +44 (0)1732 220 011