

FLIR X6530sc

High End Thermal Imaging Camera



The FLIR X6530sc thermal imaging camera is designed to provide the excellent thermal measurement performance together with the most advanced connectivity. It is ideal for Scientists and R&D professionals that are working on the most demanding applications. State-of-the-art connectivity and ease of use allow the user to concentrate on the experiment and not on the camera.

THERMAL IMAGING WITH HIGH SENSITIVITY

The FLIR X6530sc is equipped with a cooled Mercury Cadmium Telluride (MCT) detector that produces crisp thermal images of 640 x 512 pixels. It allows seeing the smallest of details. FLIR X6530sc detects temperature differences smaller than 25mK (18mK typically). With the “lock-in” process temperatures differences as small as 1mK will become clearly visible. The camera automatically adjusts its temperature range to best fit the thermal scene.

The FLIR X6530sc Series contain a 4 slots motorized filter wheel with automatic filter recognition and measurement parameter adjustment. A temperature probe is integrated for improved measurement accuracy.

ULTRA HIGH FRAME RATE WITH WINDOWING

The FLIR X6530sc has an adjustable frame rate of up to 145 Hz full frame. It can deliver images up to a speed of 3,699 Hz in windowing. The sub-sample windows can be arbitrarily chosen and are easily defined.

CONNECTIVITY

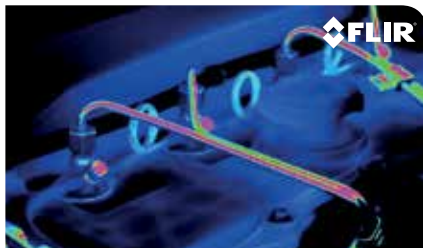
The FLIR X6530sc Series offer a wide range of connectivity options such as Camera Link medium for full bandwidth data acquisition, Gigabit Ethernet for simple connectivity, Standard BNC connectors for often used features such as Detector Sync, Acquisition trigger, analog lockin input, MicroSD-card slot, DVI-output 1080p and IRIG-B connector for external time stamping. An extension port with advanced features and connections is available.

SOFTWARE

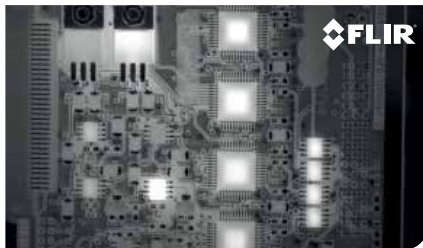
FLIR X6530sc camera works seamlessly together with FLIR ResearchIR Max software enabling intuitive viewing, recording and advanced processing of the thermal data provided by the camera. Each camera comes standard with this especially for R&D applications developed software. A Software Developers Kit (SDK) is optionally available.

KEY FEATURES

- Mercury Cadmium Telluride detector (MCT): 640 x 512 pixels
- High frame rates with windowing
- Removable touchscreen LCD
- Motorized filter wheel



Thermal image of an engine



Thermal image of a PCB board



Imaging Specifications

System Overview	X6530sc
Resolution	640 x 512
Frame rate	145 Hz
Motorized focus mechanism	Yes
Well Capacity	6.36 M electrons
Digital Data Streaming	Simultaneous Gigabit Ethernet and Camera Link Base Camera Link Medium
Focus	USL Mechanism or Manual
Detector	
Detector Type	Mercury Cadmium Telluride (MCT)
Operability	>99.5%
Spectral Range	1.5 – 5.1 μm
Detector Pitch	15 μm
NETD	<25 mk (20 mk Typical)
Sensor Cooling	Closed Cycle Rotary
Electronics / Imaging	
Readout	Snapshot Analog
Readout Modes	Asynchronous Integrate While Read; Asynchronous Integrate Then Read
Synchronization Modes	IRIG-B; Sync In, Trigger In
Image Time Stamp	Internal IRIG-B Decoder Clock / TSPI Accurate Time Stamp
Integration Time	500 ns to Full Frame rate, with auto exposure
Subwindow Mode	User-Defined
Dynamic Range	14-bit, 16 bits with DRX
HD Video	DVI 1080p
Command and Control	Gigabit Ethernet, Camera Link, Detachable LCD Display, WiFi
Measurement	
Accuracy	$\pm 1^\circ\text{C}$ or $\pm 1\%$ of Reading
Calibration	Custom calibration on request
Standard Temperature Range	+5°C to +150°C
Optional Temperature Range	Up to +2,500°C / From -20°C
Optics	
Available optics	12mm-44°x34°-USL Motorized 25mm - 22° x 17° - USL Motorized 50mm - 11° x 8.8° - USL Motorized 100mm - 5.5° x 4.4° - USL Motorized 200mm-2.75°x2.2°- USL Motorized Close up x3 - 3.2 x 2.6m
Camera f/#	3.0
Filtering	4x Position Motorized, with drift compensation and automatic identification
Image Presentation	
On-Camera Display	Detachable Touchscreen LCD Display (800 x 480)
Analog Palettes	Selectable 8-bit
Automatic Gain Control	Manual, Linear, ROI
Display Overlay	Temperature Measurement & Scale
Image Analysis	On-Camera Temperature Analysis
General	
Operating Temperature Range	-20°C to +50°C
Shock / Vibration	operational 15G, IEC 68-2-29 / Operational 2G, IEC 68-2-26
Power	24 VDC
Weight w/o Lens	5.05 kg
Size (L x W x H) w/o Lens	280 x 150 x 180 mm
Mounting	UNC 1/4"–20 + 3xM5 threads



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