

FLIR X8500sc SLS™

High-Speed LWIR Science-Grade Infrared Camera



The FLIR X8500sc SLS is a highly sensitive, high definition LWIR camera designed for scientists, researchers, and engineers. The strained layer superlattice (SLS) detector offers HD resolution combined with shorter snapshot speeds, wider temperature bands, and better uniformity than current LWIR or MWIR alternatives. With advanced triggering and on-camera RAM/SSD recording, researchers can easily stop motion on high-speed events, whether they're in the lab or on the test range.

Speed and Resolution Without Compromise

Record HD resolution at fast integration times without compromising image resolution

- Freeze action at full 1280 x 1024 resolution, with frame speeds up to 181 Hz
- Reach integration times 12.6x faster than MWIR detectors, down to 270 ns
- Measure consistently across thermally-dynamic events with wide temperature ranges (up to 3000°C)
- Detect subtle temperature changes down to <40 mK at any frame speed
- Boot up and start work quickly with the superior uniformity inherent to cooled SLS detectors

Versatile and Configurable

Customizable features and full-frame recording to on-camera RAM allow you to capture critical data – quickly

- With FLIR'S DVIR™, you can save up to 36 seconds of data to on-camera RAM with a guarantee of zero dropped frames
- Transfer to removable solid-state drive (SSD) in just 90 seconds and be ready to record again
- Advanced trigger and sync, with the option of pre-trigger recording to capture frames leading up to an event
- Exchange filters in the field using easy access, 4-position motorized filter wheel with automatic recognition
- Supports custom cold filters for more tailored spectral filtering requirements

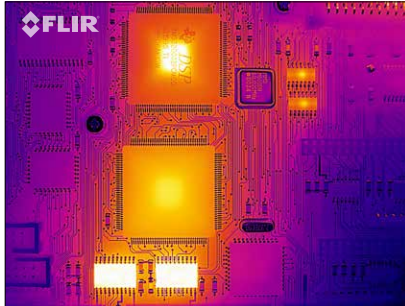
Advanced Streaming and Analysis

Control and analyze data live using industry-leading software and advanced data output

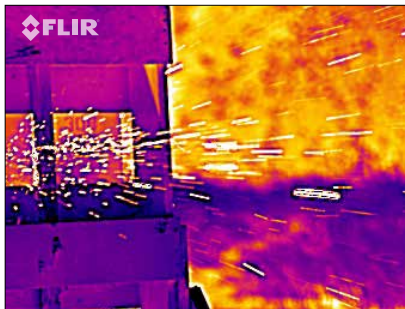
- Stream 14-bit data simultaneously over Gigabit Ethernet, Camera Link Full, and CoaXPress (CXP) for live viewing, recording, and analysis
- Intuitive plug-and-play with FLIR ResearchIR Max or third-party software such as Mathworks® MATLAB
- Integrate radiometric images and data into your enterprise software program seamlessly using the optional Software Developers Kit (SDK)

Key Features:

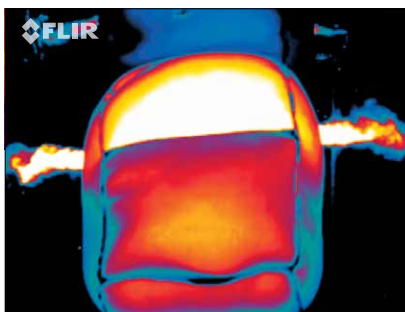
- 181 Hz, 1280 x 1024 full-frame imaging
- Save up to 36 seconds of data to on-camera RAM
- Synchronization with other instruments and events
- Full GenICam support over GigE, CXP, and Camera Link interfaces
- 4-Position warm filter wheel with auto filter recognition



Record crisp, microscopic thermal imagery



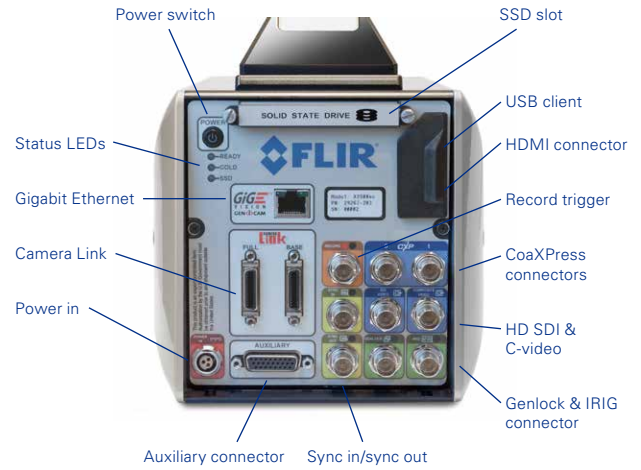
Synchronizes with events or external instruments



Integration times 12.6x faster than similar MWIR models

Specifications

X8500sc SLS LWIR	
Detector Type	Strained layer superlattice (SLS)
Spectral Range	7.5 - 10.5 μm
Resolution	1280 x 1024
Detector Pitch	12 μm
Thermal Sensitivity/NETD	< 40 mK
Well Capacity	3.0 M electrons / 11.5 M electrons
Operability	> 98%
Sensor Cooling	Closed cycle linear
Electronics	
Readout Type	Snapshot
Readout Modes	Asynchronous integrate while read Asynchronous integrate then read
Synchronization Modes	Genlock, Sync-in, Sync-out
Image Time Stamp	Internal IRIG-B decoder clock TSP1 accurate time stamp
Minimum Integration Time	270 ns
Pixel Clock	355 MHz
Frame Rate (Full Window)	Programmable; 0.0015 Hz to 181 Hz
Subwindow Mode	Flexible windowing (steps of 32 columns, 4 rows)
Dynamic Range	14-bit
On-Camera Image Storage	RAM (volatile): 16 GB, up to 6500 frames, full frame, SSD (non-volatile): 512 GB (supports >4 TB)
Radiometric Data Streaming	Simultaneous Gigabit Ethernet (GigE Vision), Camera Link Full, CoaXPress (CXP)
Standard Video	HDMI, SDI, NTSC, PAL
Command and Control	GigE, USB, RS-232, Camera Link, CXP (GenICam protocol supported over GigE or CXP)
Temperature Measurement	
Standard Temperature Range	-20°C to 650°C (-4°F to 1202°F)
Optional Temperature Range	Up to 1,500°C (2,732°F) Up to 2,000°C (3,632°F) Up to 3,000°C (5,432°F)
Accuracy	$\pm 2^\circ\text{C}$ or $\pm 2\%$ of reading
Optics	
Camera f/Number	f/2.5 or f/4.1
Available Lenses	7.5 - 12 μm : 17 mm, 25 mm, 50 mm, 100 mm, 200 mm (Uses FLIR HDC Optics)
Lens Interface	FLIR HDC (4-tab bayonet)
Focus	Manual
Filtering	4-Position warm filter wheel, standard 1-inch filters
Image/Video Presentation	
Palettes	Selectable 8-bit
Automatic Gain Control	Manual, Linear, Plateau equalization, ROI, DDE
Overlay	Customizable (Timestamp, Date, Integration time, Internal temp, Frame rate, Sync mode, Cooler hours)
Video Modes	HD: 720p/50/59.9 Hz, 1080p/25/29.9 Hz
Digital Zoom	1x, 4x, 4:3
General	
Operating Temperature Range	-20°C to 50°C (-4°F to 122°F)
Shock/Vibration	40 g, 11 msec ½ sine pulse/4.3 g RMS random vibration, all 3 axes
Power	24 VDC (< 50 W steady state)
Weight w/Handle, w/o Lens	6.35 kg (14 lbs)
Size (L x W x H) w/o Lens, Handle	249 x 158 x 147 mm (9.8 x 6.2 x 5.8 in.)
Mounting	2 x ¼ in. -20 1 x 3/8 in. -16 4 x #10 -24



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