

# FLIR X8500sc

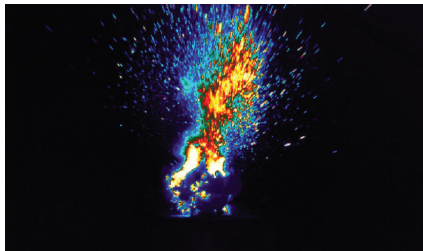
## High-Speed, High Definition Thermal Cameras



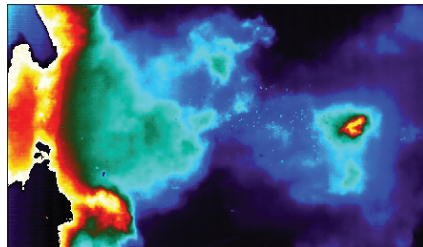
The FLIR X8500sc is a highly sensitive, high-speed, high definition MWIR camera designed for scientists, researchers, and engineers. It has all the features needed for research and science: from on-camera RAM/SSD recording to a four-position motorized filter wheel. Plus, by combining HD resolution with high-speed frame rates, the X8500sc allows researchers to fully image the scene and stop motion on high-speed events – whether they're in the lab or on the test range.

### High-Speed HD Recording

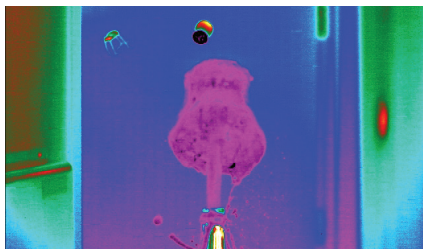
The X8500sc can record 180 frames per second at a full 1280 x 1024 pixel resolution, for true HD high-speed thermal imaging. Windowing allows for even faster frame rates, up to 29,134 Hz. Integration times down to 270 ns at full frame allow for stop-motion action on fast moving and ensure accurate measurements. The X8500sc records up to 36 seconds to on-camera RAM with zero dropped frames. Playback from RAM or save to the removable FLIR DVIR solid-state drive in just 90 seconds, and be ready to begin a new recording.



Synchronizes with events or external instruments



Measures temperatures up to 3000°C (optional calibration)



Fast frame rates and integration time needed to freeze action

### Advanced Spectral Filtering Options

The FLIR X8500sc incorporates an easy access, four-position motorized filter wheel that permits filter exchange in any environment. The camera automatically determines filter ID and corresponding calibrations. Add custom cold filters for more tailored spectral filtering requirements.

### Streaming, Synchronizing, and Triggering

The X8500sc streams high-speed 14-bit data simultaneously over Gigabit Ethernet, Camera Link, and CoaXpress for live viewing, analysis, or recording. Trigger options such as the external BNC connector input make the X8500sc ideal for high-speed, high sensitivity applications. Sync In/Out allows for precisely coordinated image capture of each frame of data.

### Software

The X8500sc camera works seamlessly with FLIR ResearchIR Max software, enabling intuitive viewing and recording, and advanced processing of the thermal data. The GigE Vision®/GenICam compliant Ethernet allows you to plug and play with ResearchIR or third-party software programs, such as Mathworks® MATLAB. An optional Software Developers Kit (SDK) is available, or use industry-standard GigE Vision toolkits.

### Key Features

- 180 Hz, 1280 x 1024 resolution high-speed imaging
- Up to 36 seconds of on-camera RAM recording with FLIR DVIR
- Synchronization with other instruments and events
- Full GenICam support over GigE, CXP, and Camera Link interfaces
- Four-position motorized filter wheel with automatic filter recognition



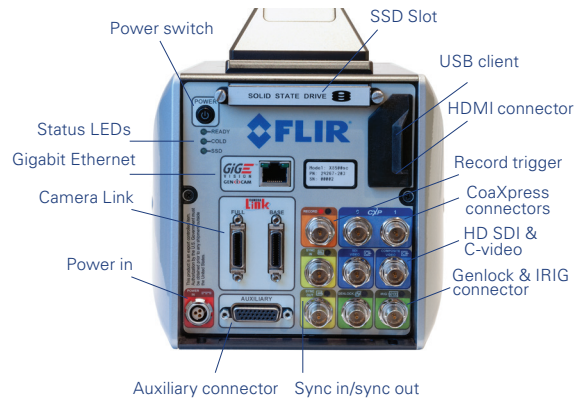
# Specifications

System Overview		X8500sc MWIR	
Detector Type		FLIR indium antimonide (InSb)	
Spectral Range		3.0 – 5.0 µm or 1.5 – 5.0 µm	
Resolution		1280 x 1024	
Detector Pitch		12 µm	
Thermal Sensitivity/NEΔT		< 20 mK*	
Well Capacity		3 M electrons/11.5 M electrons	
Operability		> 99.5% (> 99.95% typical)	
Sensor Cooling		Closed cycle linear	
Electronics/Imaging			
Readout		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 180 Hz	
Subwindow Mode		Flexible windowing down to 64 x 4 (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): >4 TB	
Radiometric Data Streaming		Simultaneous Gigabit Ethernet (GigE Vision®), Camera Link, CoaXPress (CXP)	
Standard Video		HDMI, SDI, NTSC, PAL	
Command and Control		GigE, RS-232, Camera Link, CXP (GenICam protocol supported over GigE, CXP, or Camera Link)	
Temperature Measurement			
Standard Temperature Range		-20°C to 350°C (-4°F to 662°F)	
Optional Temperature Range		Up to 3000°C (5,432°F)	
Accuracy		± 2°C or ± 2% of reading	
Optics			
Camera f/Number		f/2.5 or f/4	
Available Lenses (Uses FLIR HDC Optics)		3-5 µm: 17 mm, 25 mm, 50 mm, 100 mm, 200 mm Broadband (1.5-5 µm): 25 mm, 50 mm, 100 mm	
Close-up Lenses/ Microscopes		1x, 4x (3-5 µm, requires f/4.1 camera)	
Lens Interface		FLIR HDC (4-tab bayonet)	
Focus		Manual	
Filtering		Filter wheel, standard 1-inch filters (2 filters/wheel position)	
Image/Video Presentation			
Palettes		Selectable 8-bit	
Automatic Gain Control		Manual, Linear, Plateau equalization, ROI, DDE	
Overlay		Customizable (IRIG-B, Date, Integration time, Internal temp, Frame rate, Sync mode, Cooler hours)	
Video Modes		HDMI/HD-SDI: 720p/25/29.9/50/59.9 Hz, 1080p/25/29.9 Hz Composite: NTSC, PAL	
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	
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 1/4-20 tapped holes 1 x 3/8-16 taped holes 4 x 10-24 tapped holes Side: 3x 1/4-20 tapped holes	

\* NEΔT is measured at 50% well-fill, using a 25°C scene

Specifications are subject to change without notice.

For the most up-to-date specifications, go to [www.flir.com](http://www.flir.com)



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

**NASHUA**  
FLIR Systems, Inc.  
9 Townsend West  
Nashua, NH 03063 USA  
PH: +1 866.477.3687

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

**CANADA**  
FLIR Systems, Ltd.  
920 Sheldon Court  
Burlington, ON L7L 5K6  
Canada  
PH: +1 800.613.0507

**CHINA**  
FLIR Systems Co., Ltd  
Rm 1613-16, Tower II  
Grand Central Plaza  
138 Shatin Rural  
Committee Road Shatin  
New Territories  
Hong Kong  
PH: +852 2792 895

**LATIN AMERICA**  
FLIR Systems Brasil  
Av. Antonio Bardella, 320  
Sorocaba, SP 18085-852  
Brasil  
PH: +55 15 3238 7080

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