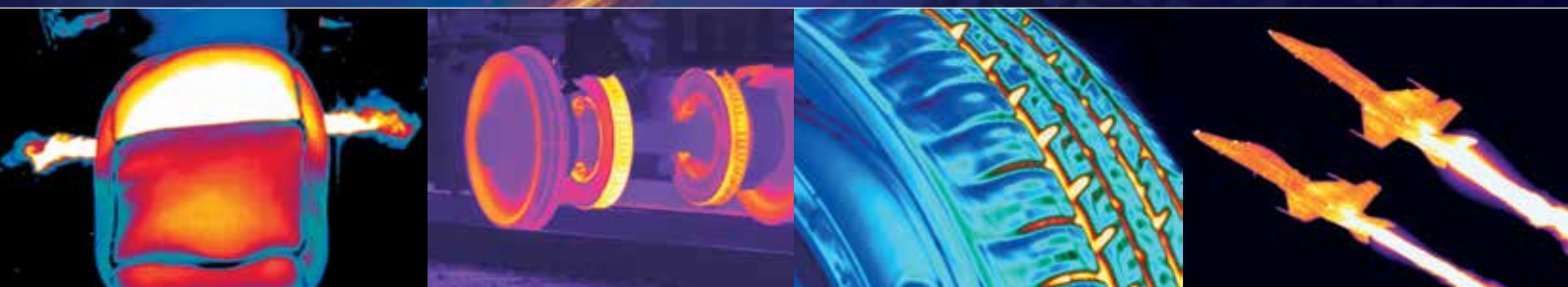


# FLIR R&D/SCIENCE CAMERAS WITH MCT DETECTORS

FOR YOUR MOST DEMANDING RESEARCH NEEDS

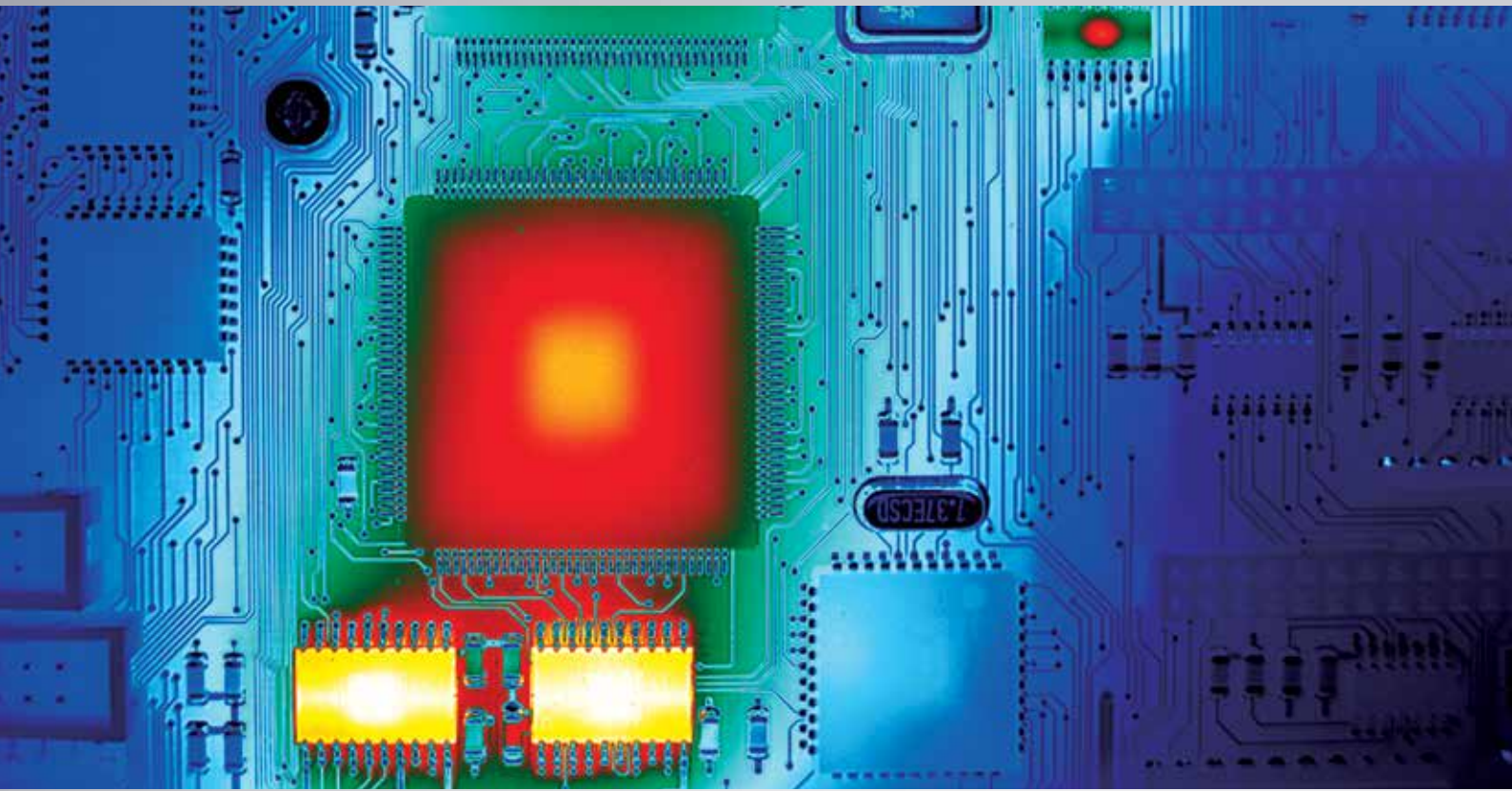
FLIR X6520sc | FLIR X6530sc | FLIR X6570sc



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# FLIR COOLED MCT DETECTOR CAMERAS



## MWIR Lenses

Focal Length	FOV	IFOV	F/number	Minimum Working Distance
25 mm	21.7° x 17.5°	0.60 mrad	f/2.0	10 cm
50 mm	11.0° x 8.8°	0.30 mrad	f/2.0	40 cm
100 mm	5.5° x 4.4°	0.15 mrad	f/2.0	8.0 m
200 mm	2.7° x 2.2°	0.08 mrad	f/2.0	5.0 m
Close-up 1x WD	9.6 mm x 7.7 mm	15 µm	f/2.0	30 cm
Close-up 3x	3.2 mm x 2.6 mm	5 µm	f/2.5	38.8 mm
Close-up 5x	1.9 mm x 1.5 mm	3 µm	f/3.0	18 mm

## LWIR Lenses

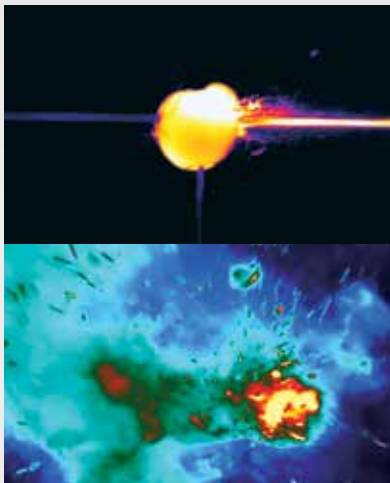
Focal Length	FOV	IFOV	F/number	Minimum Working Distance
12 mm	43.6° x 35.5°	1.25 mrad	f/2.0	50 mm
25 mm	21.7° x 17.5°	0.60 mrad	f/2.0	500 mm
50 mm	11.0° x 8.8°	0.30 mrad	f/2.0	1.0 m
100 mm	5.5° x 4.4°	0.15 mrad	f/2.0	2.8 m
200 mm	2.7° x 2.2°	0.08 mrad	f/2.0	10 mm
Close-up 1x	9.6 mm x 7.7 mm	15 µm	f/2.0	45 mm
Close-up 3x	3.2 mm x 2.6 mm	5 µm	f/2.0	38.8 mm

# SUPERIOR SPEED, SENSITIVITY, AND RESOLUTION

The X6520sc, X6530sc, and X6570sc are ideal for scientists and R&D engineers working on the most demanding applications, whether they're tracking targets at long distances, or searching for hidden hot spots on printed circuit boards.

## FLIR's X6520sc, X6530sc, and X6570sc infrared science cameras offer:

- The best thermal measurement performance
- Short integration times
- Fast, full-resolution frame rates



These X6000sc Series cameras come equipped with cooled mercury cadmium telluride (MCT) detectors that are sensitive enough to detect temperature differences smaller than 25 mK with an accuracy of  $\pm 1\%$ . Integration times as short as 80 ns, combined with full frame rates up to 234 Hz, allows researchers to stop motion on high-speed subjects and obtain accurate temperature measurements on fast thermal transients.

By combining the resolution offered by their 640 x 512 detectors with optional close up lenses, the X6000sc Series cameras can resolve details as small as 3  $\mu\text{m}$ .



## Open to export

A frustration for research teams working in multiple universities or across borders is the export restriction imposed on many IR cameras. FLIR MCT detector cameras, such as the X6520sc, X6530sc, and X6570sc, are not subject to International Tariff Arms Regulations (ITAR). This means open research environments such as universities can transfer the camera between departments and locations, for greater flexibility of use.



## Optics to fit your needs

X6000sc Series cameras are compatible with a range of optics, from 12 mm wide angle to 200 mm telephoto lenses, plus close-up options.

## FLIR 12 mm and 18 mm lens extension rings can be a low-cost alternative to close-up lenses.

FLIR lens extension rings offer:

- An affordable alternative to purchasing multiple lenses
- The ability to inspect small objects using a standard lens
- Increased magnification through ring stacking
- Transmission of lens temperature information, for more accurate measurement than traditional extension rings

System Overview	X6520sc	X6530sc	X6570sc
IR Resolution	640 x 512		
Sensor Material	Mercury cadmium telluride (MCT)		
Pitch	15 $\mu$ m		
Spectral Range	3.7 – 4.8 $\mu$ m	1.5 – 5.5 $\mu$ m	7.7 – 9.3 $\mu$ m
Thermal Sensitivity/ NEtD	< 25 mK (18 mK typical)	< 25 mK (18 mK typical)	< 25 mK (20 mK typical)
Sensor Cooler Type	Closed cycle (rotary) Stirling cooler		
Operability	> 99%		
<b>Electronics/Imaging</b>			
Synchronization Modes	IRIG-B, Sync In/Out, Trigger In	IRIG-B, Sync In/Out, Trigger In	IRIG-B, Sync In/Out, Trigger In
Integration Time	80 ns to 20,000 $\mu$ s	80 ns to 20,000 $\mu$ s	10 $\mu$ s to 20,000 $\mu$ s
Max Frame Rate (Full Frame)	146 Hz	146 Hz	234 Hz
Subwindow Modes	320 x 256 160 x 128 Arbitrary size, down to 132 x 8	320 x 256 160 x 128 Arbitrary size, down to 132 x 8	320 x 256 160 x 128 Arbitrary size, down to 160 x 1
Max Frame Rate (Subwindow Mode)	528 Hz: 320 x 256/IWR 1510 Hz: 160 x 128/IWR 3699 Hz: 132 x 8/IWR	528 Hz: 320 x 256/IWR 1510 Hz: 160 x 128/IWR 3699 Hz: 132 x 8/IWR	871 Hz: 320 x 256 @ 10 $\mu$ s/ITR 2872 Hz: 160 x 128 @ 10 $\mu$ s/ITR 14550 Hz: 160 x 1 @ 10 $\mu$ s/ITR
Dynamic Range	14-bit, 16-bit with DRX		
Digital Data Streaming	Simultaneous Gigabit Ethernet and Camera Link Base / Camera Link Medium		
Video Output	DVI 1080p		
Command & Control	Gigabit Ethernet, Camera Link, detachable LCD display, Wi-Fi		
<b>Measurement</b>			
Accuracy	$\pm 1^{\circ}\text{C}$ or $\pm 1\%$ of the reading		
Standard Temperature Range	5 $^{\circ}\text{C}$ to 150 $^{\circ}\text{C}$		
<b>Optics</b>			
Camera f/number	f/4.0	f/3.0	f/2.0
Focus	Manual		
Filtering	4-slot motorized filter wheel		
<b>Image Presentation</b>			
On-Camera Display	Detachable touchscreen LCD display (800 x 480 pixel)		
Analog Palettes	Selectable 8-bit		
Automatic Gain Control	Manual, Linear, ROI		
Display Overlay	Temperature measurement & scale		
Image Analysis	On-camera temperature analysis		
<b>General</b>			
Operating Temperature Range	-20 $^{\circ}\text{C}$ to 50 $^{\circ}\text{C}$		
Shock / Vibration	Operational 6 ms, 25 g, IEC 68-2-29 Operational 2 g, IEC 68-2-26		
Power	24 VDC		
Weight w/o Lens	4.80 kg with LCD 4.3 kg w/o LCD		
Size (L x W x H ) w/o Lens	23 x 15 x 22 cm with LCD 23 x 15 x 18 cm w/o LCD		
Mounting	UNC 1/4"-20		

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