

FLIR SC7000 Series

State-of-the-art infrared technology for R&D / Science



The FLIR SC7000 Series are very flexible cameras, with high sensitivity, accuracy, spatial resolution and speed. The SC7000 Series is specifically designed for academic and industrial R&D applications as well as integrators who need a very flexible camera at an affordable cost.

CHOICE OF DETECTOR

The FLIR SC7000 Series is available with a wide range of detectors to address any application in single and multispectral analysis. The researcher has a choice between mid-wave Indium Antimonide (InSb) and Mercury Cadmium Telluride (MCT) detectors. MCT detectors operating in the long-waveband are also available. The FLIR SC7000 series comes standard with a removable, motorized 4 position filter wheel. This allows imaging of events in a select part of the electromagnetic spectrum.

The SC7000 series is available in 640 x 512 or 325 x 256 pixel formats with high sensitivity and noise levels as low as 20 mK.

ULTRA HIGH FRAME RATE WITH WINDOWING

Windowing allows a subset of the total image to be selectively read out with user-adjustable window size at a much higher frame rate. The sub-sample window sizes and locations can be arbitrarily chosen and are easily defined using the camera control software. Depending on the model and detector, the FLIR SC7000 series can deliver thermal images up to a speed of 62,000 Hz.

ADJUSTABLE INTEGRATION TIME & TRIGGERING

Integration time is adjustable in nanosecond increments. The smart external triggering feature allows synchronisation of the image capture to the most fleeting events.

SOFTWARE

FLIR SC7000 Series works seamlessly together with FLIR ResearchIR Max software enabling intuitive viewing, recording and advanced processing of the thermal data provided by the camera.

KEY FEATURES

- MULTIPLE DETECTOR OPTIONS
- ULTRA HIGH FRAME RATES WITH WINDOWING
- REMOVABLE FILTER WHEEL
- MULTIPLE VIDEO OUTPUTS



Signature and Range
phenomenology applications



SC7000 systems offer a solution for every
R&D measurement situation.

Imaging Specifications

System Overview	SC7210-7500 / SC7300	SC7300L / SC7900VL	SC7600-7650 / SC7700	SC7750L / SC7790VL
Waveband	MW	LW	MW	LW
Sensor type	InSb / MCT	MCT	InSb / MCT	MCT
Pixel Resolution	320x256	320x256	640x512	640x512
Pixel Pitch	30µm	30µm	15µm	16µm
Spectral ranges	1.5 - 5.1 µm for InSb (BB) 3.7 - 4.8 µm for MCT	7.7 - 9.3 µm for SC7300L 7.7 - 11.5 µm for SC7900VL	1.5 - 5.1 µm	8.0 - 9.4 µm for the SC7750L 8.0-11.5 µm for the SC7790VL
Measurement				
NETD	<20mK for InSb / <25mK for MCT	<20mK / <25mK	<20mK / <25mK	<30mK / <37mK
Standard Camera Calibration Range	5°C to 300°C for InSb 5°C to 150°C for MCT	5°C to 150°C	5°C to 300°C for InSb 5°C to 150°C for MCT	5°C to 80°C
Optional Camera Calibration Range	-20°C to 300°C / -20°C to 150°C 5°C to 1500°C / 5°C to 500°C up to 2500°C / up to 1500°C up to 3000°C (for InSb only)	-20°C to 150°C 5°C to 150°C up to 1500°C	-20°C to 300°C / -20°C to 150°C 5°C to 1500°C / 5°C to 150°C up to 2500°C / up to 1500°C up to 3000°C for SC7700 -20°C to 250°C / 5°C to 150°C up to 1500°C	-20°C to 80°C 5°C to 80°C 80°C to 300°C 300°C to 1100°C
Digital Full Frame rate	InSb: 190 Hz - 380 Hz full frame up to 3 kHz - 39.8 kHz with windowing MCT: 230 Hz full frame up to 25 kHz with windowing	230 Hz full frame up to 23 kHz with windowing	InSb: 100 Hz full frame up to 3.425 kHz with windowing MCT: 115Hz Full Frame up 3.0 kHz with windowing	115 Hz full frame up to 62 kHz with windowing
Interfaces				
Digital Data Output	GigE, Camera Link	GigE, Camera Link	GigE, Camera Link	GigE, Camera Link
Command & Control	GigE, Camera Link	GigE, Camera Link	GigE, Camera Link	GigE, Camera Link
FPA Windowing	Arbitrary Size and Location (fixed for SC7210)	Arbitrary Size and Location	Arbitrary Size and Location	Arbitrary Size and Location
f/#	f/3.0 for InSb and f/2.0 for MCT	f/2.0	SC7600 f/3.0 SC7650 f/2.5 SC7700 f/3.0	f/2.0
Filter Options	Fixed motorised 4 Position Filter Wheel. Field replaceable Filters	Fixed motorised 4 Position Filter Wheel. Field replaceable Filters	Fixed motorised 4 Position Filter Wheel. Field replaceable Filters. No Filter with the SC7650E (DACH only)	Fixed motorised 4 Position Filter Wheel. Field replaceable Filters
Optics				
Available optics	12mm - 44°x 36° (not available in SWB) 25mm - 22°x 17° 27mm - 20°x 16° in SWB 50mm - 11°x 8.8° 100mm - 5.5°x 4.4° 200mm - 2.75°x 2.2° Close up x1 - 9.6x7.7mm (n.a. in SWB) Close up x3 - 3.2x2.6mm (n.a. in SWB) Close up x1 - 9.6x7.7mm WD 300mm (n.a. in SWB)	12mm - 44°x 36° 25mm - 22°x 17° 50mm - 11°x 8.8° 100mm - 5.5°x 4.4° 200mm - 2.75°x 2.2° Close up x1 - 9.6x7.7mm Close up x3 - 3.2x2.6mm	12mm - 44°x 36° (n.a. in SWB) 25mm - 22°x 17° 27mm - 20°x 16° in SWB 50mm - 11°x 8.8° 100mm - 5.5°x 4.4° 200mm - 2.75°x 2.2° Close up x1 - 9.6x7.7mm (n.a. in SWB) Close up x3 - 3.2x2.6mm (n.a. in SWB) Close up x1 - 9.6x7.7mm WD 300mm (n.a. in SWB)	25mm - 23.6°x 18.1° 50mm - 11.7°x 9.4° 100mm - 5.9°x 4.7°

Imaging performance	
Dynamic Range	14 bit, 16 bit with TRE
Camera Temp Calibration	Yes
Ambient Drift Compensation	Yes
Temp. Measurement Accuracy	+/-1% or +/-1°C
HypercalTM / CNUC™ Functionality	Yes
Interfaces	
Analog Input	Yes
Analog Video	Composite or S-Video

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