



The IP-67 certified enclosure.

HIGH-SPEED INFRARED CAMERAS.

The FAST-IR series includes the fastest infrared cameras available on the market. To analyze dynamic events, the FAST-IR infrared cameras allow high-speed thermal imaging with an impressive temporal resolution at a rapid frame rate. These high-performance infrared cameras are extremely sensitive, enabling the detection of challenging targets.

KEY BENEFITS

ULTRAHIGH FRAME RATE

Thanks to its high data throughput.

High performance electronics produce thermal images at rates of up to 3 000 fps. Sub-windows can even be acquired at rates higher than 100 000 fps.

HIGH-SPEED INTERNAL MEMORY

16 GB memory for more than 50 seconds of recording and autonomous operation.

HIGH SENSITIVITY

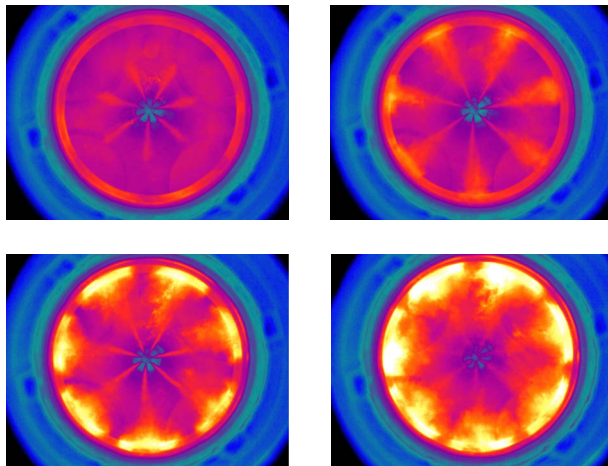
Temperature differences as small as 18 mK are detectable.

ADVANCED CALIBRATION

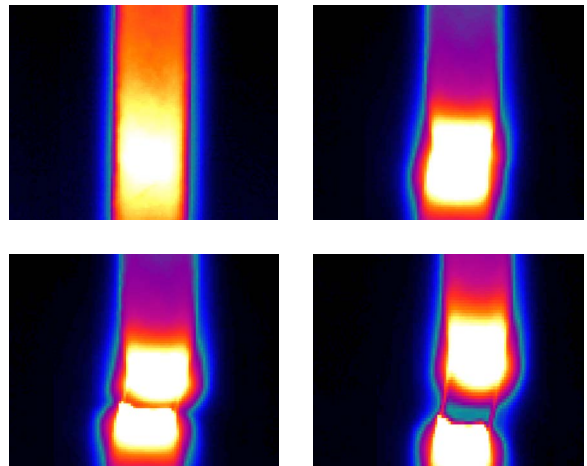
Unique proprietary real-time processing of infrared images including NUC, radiometric temperature, automated exposure control (AEC) and enhanced high-dynamic-range imaging (EHDRI). With these unique features, scientists benefit from ease of use and operation flexibility while getting accurate measurements over the entire camera's operation range.

EXAMPLES OF TYPICAL USES

Observation of fuel injection



Tensile testing of a steel rod



MIDWAVE SERIES

SPECIFICATIONS	FAST M3k	FAST M2k	FAST M1k
DETECTOR TYPE	InSb	InSb	InSb
SPECTRAL RANGE	1.5 μm to 5.5 μm	1.5 μm to 5.5 μm	1.5 μm to 5.5 μm
SPATIAL RESOLUTION	320 \times 256 pixels	320 \times 256 pixels	640 \times 512 pixels
DETECTOR PITCH	30 μm	30 μm	25 μm
APERTURE SIZE	F/2.5	F/2.5	F/2.5
FULL FRAME RATE	3 100 Hz	1 910 Hz	1 000 Hz
MAXIMUM FRAME RATE	100 000 Hz @ 64 \times 4	78 600 Hz @ 64 \times 8 90 000 Hz @ 64 \times 4	10 200 Hz @ 64 \times 64 31 000 Hz @ 64 \times 8
TYPICAL NETD	25 mK	25 mK	25 mK
EXPOSURE TIME	1 μs to full frame rate	1 μs to full frame rate	1 μs to full frame rate
LENS MOUNT	Bayonet interface	Bayonet interface	Bayonet interface

SPECIFICATIONS	FAST M350	FAST M100k	FAST M200
DETECTOR TYPE	InSb	MCT	MCT
SPECTRAL RANGE	1.5 μm to 5.4 μm	3 μm to 4.9 μm	1.5 μm to 5.1 μm
SPATIAL RESOLUTION	640 \times 512 pixels	640 \times 512 pixels	640 \times 512 pixels
DETECTOR PITCH	15 μm	16 μm	15 μm
APERTURE SIZE	F/3 (other av.)	F/4 (other av.)	F/3
FULL FRAME RATE	355 Hz	115 Hz	210 Hz
MAXIMUM FRAME RATE	672 Hz @ 320 \times 256 4 980 Hz @ 132 \times 4	120 000 Hz @ 64 \times 2	5 600 Hz @ 136 \times 2
TYPICAL NETD	20 mK	17 mK	18 mK
EXPOSURE TIME	0.5 μs to full frame rate	0.2 μs to full frame rate	0.17 μs to full frame rate
LENS MOUNT	Bayonet interface	Bayonet interface	Bayonet interface

MIDWAVE *hd* SERIES

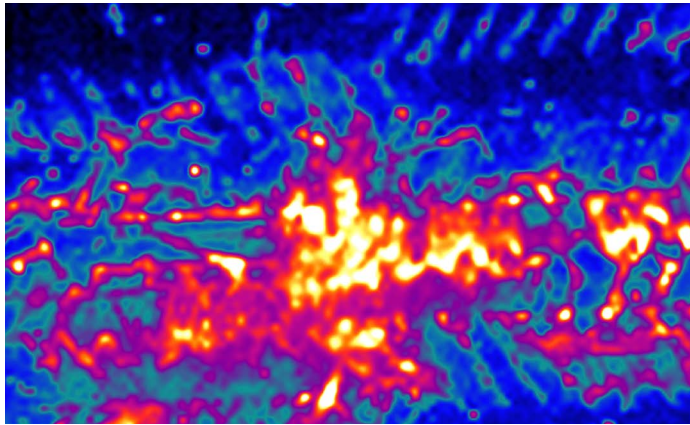
SPECIFICATIONS	FAST M100hd	FAST M80hd
DETECTOR TYPE	InSb	MCT
SPECTRAL RANGE	3 μm to 5 μm	3.7 μm to 5 μm
SPATIAL RESOLUTION	1 280 \times 1 024 pixels	1 280 \times 1 024 pixels
DETECTOR PITCH	15 μm	8 μm
APERTURE SIZE	F/3	F/2.8
FULL FRAME RATE	105 Hz	59 Hz
MAXIMUM FRAME RATE	2 900 Hz @ 136 \times 8	14 000 Hz @ 64 \times 4
TYPICAL NETD	25 mK	20 mK
EXPOSURE TIME	1 μs to full frame rate	50 μs to full frame rate
LENS MOUNT	Bayonet interface	Bayonet interface

LONGWAVE SERIES		
SPECIFICATIONS	FAST L100k	FAST L200*
DETECTOR TYPE	MCT	MCT
SPECTRAL RANGE	8 to 9.4 μm	7.7 μm to 9.3 μm
SPATIAL RESOLUTION	640 \times 512 pixels	640 \times 512 pixels
DETECTOR PITCH	16 μm	15 μm
APERTURE SIZE	F/2	F/2
FULL FRAME RATE	115 Hz	188 / 234 Hz
MAXIMUM FRAME RATE	120 000 Hz @ 64 \times 2	14 625 / 17 200 Hz @ 160 \times 2
TYPICAL NETD	32 mK	22 mK
EXPOSURE TIME	0.2 μs to full frame rate	0.2 μs to full frame rate
LENS MOUNT	Threaded interface	Threaded interface

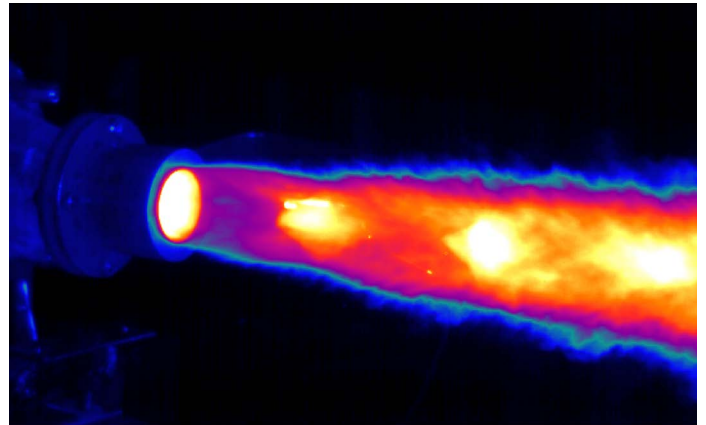
* Fastest frame rate not available in some countries

VERY LONG WAVE SERIES			
SPECIFICATIONS	FAST V1k	FAST V350	FAST V300
DETECTOR TYPE	SLS	SLS	MCT
SPECTRAL RANGE	7.5 μm to 11.5 μm	7.7 μm to 11.8 μm	7.7 μm to 11.8 μm
SPATIAL RESOLUTION	640 \times 512 pixels	320 \times 256 pixels	320 \times 256 pixels
DETECTOR PITCH	25 μm	30 μm	30 μm
APERTURE SIZE	F/2	F/2	F/2
FULL FRAME RATE	1 005 Hz	345 Hz	300 Hz
MAXIMUM FRAME RATE	2 400 @ 320 \times 256 31 000 Hz @ 64 \times 8	14 100 Hz @ 128 \times 8	79 000 Hz @ 64 \times 2
TYPICAL NETD	30 mK	25 mK	25 mK
EXPOSURE TIME	0.5 μs to full frame rate	5.1 μs to full frame rate	0.5 μs to full frame rate
LENS MOUNT	Threaded interface	Threaded interface	Threaded interface
SPECIFICATIONS	FAST V500	FAST V100k	
DETECTOR TYPE	SLS	MCT	
SPECTRAL RANGE	7.5 μm to 11.5 μm	7.8 μm to 11.4 μm	
SPATIAL RESOLUTION	640 \times 512 pixels	640 \times 512 pixels	
DETECTOR PITCH	25 μm	16 μm	
APERTURE SIZE	F/2	F/2	
FULL FRAME RATE	500 Hz	115 Hz	
MAXIMUM FRAME RATE	15 000 Hz @ 64 \times 8	120 000 Hz @ 64 \times 2	
TYPICAL NETD	30 mK	32 mK	
EXPOSURE TIME	1 μs to full frame rate	1 μs to full frame rate	
LENS MOUNT	Threaded interface	Threaded interface	

Specifications are subject to change without notice. Other configurations are available upon request.



Impact of a projectile in the back of a composite material



Pulsed detonation rocket engine

COMMON SPECS & FEATURES

Rotary-stirling closed cycle sensor cooling	Gig-E
Blackbody-free permanent calibration (up to 150 °C)	Camera Link
Calibration up to 2 500 °C (optional)	Trigger In, Trigger Out
16 bits dynamic range	SDI, GPS, IRIG-B, RS232 and thermistor ports
High-speed internal memory buffer: up to 16 GB	Lock-In (optional)
Automatic exposure control (AEC)	Weight w/o lens: < 6 kg
Enhanced high-dynamic-range imaging (EHDRI)	Size w/o lens: 12.6" × 7.8" × 6.9" 321 mm × 199 mm × 176 mm
Operational Vibration: IEC-60068-2-64	Operational Shock: IEC-60068-2-27



FOR MORE INFORMATION:

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ABOUT US

Telops is a leading supplier of high-performance scientific infrared cameras for the defence, academic, industrial, and environmental research industries. Telops also offers R&D services for optical systems technology development.

Since its beginning in 2000, Telops has distinguished itself with the quality of its technical personnel and its innovative approach to many technological challenges in the optics field. Today, the expertise of its scientists, engineers and technologists and the performances of its infrared cameras and hyperspectral imagers are internationally recognized.



Quebec City's Château Frontenac in infrared

FEATURES & OPTIONS



OUR INFRARED CAMERAS' KEY FEATURES

All our infrared cameras offer advanced features to address the most demanding research applications. They include:

- Blackbody-free permanent calibration
- Calibration up to 2500 °C (optional)
- High-speed internal memory buffer: up to 16 GB
- Gig-E
- Camera Link
- Trigger In, Trigger Out
- SDI, GPS, IRIG-B, RS232 and thermistor ports
- Lock-In (optional)
- Automatic exposure control (AEC)
- Enhanced high-dynamic-range imaging (EHDMI)

OUR INFRARED CAMERAS' LENS OPTIONS

Telops offers a variety of lens options depending on your camera configuration using either a flanged, threaded, or bayonet mount interface.

Customized optics are available, as well as many accessories such as telescopes and microscopes.