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.

The IP-67 certified enclosure.

KEY BENEFITS

ULTRAHIGH FRAME RATE

Maximum data throughput is larger than 1 Gigapixel/s. 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 25 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.
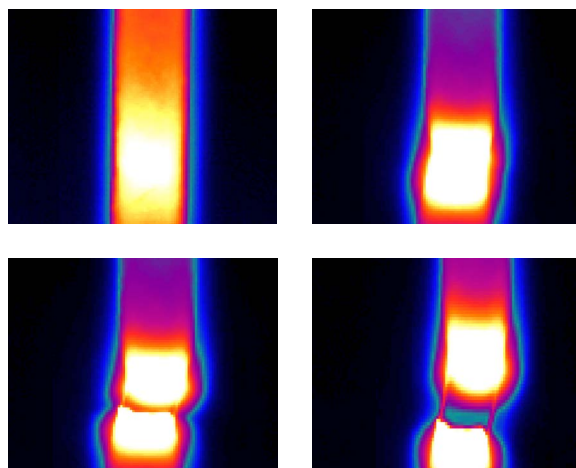
ACCURATE MEASUREMENT

Radiometric temperature accuracy of ±1 °C or ±1 % over the entire range.

EXAMPLES OF TYPICAL USES

Observation of fuel injection
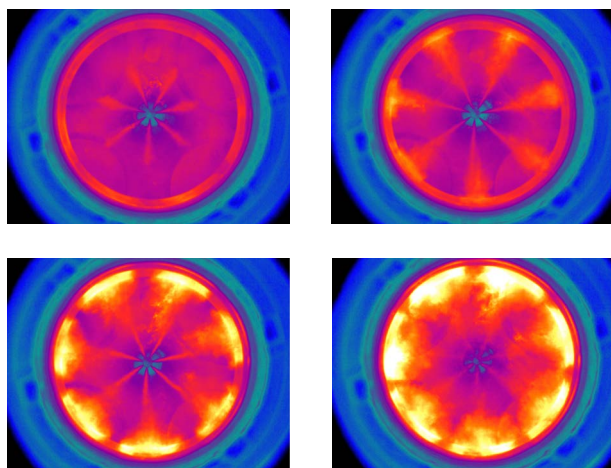
Tensile testing of a steel rod

| MIDWAVE SERIES			
SPECIFICATIONS	FAST M3*k*	FAST M2*k*	FAST M2*kx*
DETECTOR TYPE	InSb	InSb	MCT
SPECTRAL RANGE	3 µm to 5.4 µm	3 µm to 5.4 µm	3.7 µm to 4.8 µm
SPATIAL RESOLUTION	320 × 256 pixels	320 × 256 pixels	320 × 256 pixels
DETECTOR PITCH	30 µm	30 µm	15 µm
APERTURE SIZE	F/2.5	F/2.5	F/2
FRAME RATE	3 000 Hz	1 900 Hz	1 600 Hz
MAXIMUM FRAME RATE	90 000 Hz @ 64 × 4	2 000 Hz @ 320 × 240 90 000 Hz @ 64 × 4	26 700 Hz @ 256 × 2
TYPICAL NETD	25 mK	25 mK	25 mK
EXPOSURE TIME	1 µs to full frame rate	1 µs to full frame rate	0.2 µs to full frame rate
LENS MOUNT	Bayonet interface	Bayonet interface	Bayonet interface
SPECIFICATIONS	FAST M350	FAST M100*k*	FAST M200
DETECTOR TYPE	InSb	MCT	MCT
SPECTRAL RANGE	3 µm to 5 µm	3 µm to 4.9 µm	1.5 µm to 5.1 µm
SPATIAL RESOLUTION	640 × 512 pixels	640 × 512 pixels	640 × 512 pixels
DETECTOR PITCH	15 µm	16 µm	15 µm
APERTURE SIZE	F/3 (other av.)	F/4	F/3
FRAME RATE	350 Hz	115 Hz	200 Hz
MAXIMUM FRAME RATE	670 Hz @ 320 × 256 4 980 Hz @ 132 × 4	120 000 Hz @ 64 × 2	5 600 Hz @ 136 × 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 M200*hd*	FAST M100*hd*	FAST M100*hdx*	FAST M80*hd*
DETECTOR TYPE	InSb	InSb	MCT	MCT
SPECTRAL RANGE	3 µm to 5 µm	3 µm to 5 µm	3.7 µm to 4.8 µm	3.7 µm to 4.8 µm
SPATIAL RESOLUTION	1280 × 1024 pixels	1280 × 1024 pixels	1280 × 1024 pixels	1280 × 720 pixels
DETECTOR PITCH	10 µm	10 µm	15 µm	10 µm
APERTURE SIZE	F/3	F/3	F/3	F/2 or F/4
FRAME RATE	170 Hz	85 Hz	118 Hz	85 Hz
MAXIMUM FRAME RATE	4 700 Hz @ 1280 × 2	4 500 Hz @ 1280 × 2	26 700 Hz @ 256 × 2	6 400 Hz @ 320 × 8
TYPICAL NETD	25 mK	25 mK	25 mK	25 mK
EXPOSURE TIME	1 µs to full frame rate	1 µs to full frame rate	16 µs to full frame rate	50 µs to full frame rate
LENS MOUNT	Bayonet interface	Bayonet interface	Bayonet interface	Bayonet interface

LONGWAVE SERIES			
SPECIFICATIONS	FAST L100*k*	FAST L350	FAST L200
DETECTOR TYPE	MCT	T2SLS	MCT
SPECTRAL RANGE	8 to 9.4 µm	8 µm to 9.5 µm	7.7 µm to 9.3 µm
SPATIAL RESOLUTION	640 × 512 pixels	640 × 512 pixels	640 × 512 pixels
DETECTOR PITCH	16 µm	15 µm	15 µm
APERTURE SIZE	F/2	F/1.6	F/2
FRAME RATE	115 Hz	360 Hz	230 Hz
MAXIMUM FRAME RATE	120 000 Hz @ 64 × 2	5 000 Hz @ 132 × 4	17 200 Hz @ 160 × 2
TYPICAL NETD	32 mK	28 mK	22 mK
EXPOSURE TIME	0.2 µs to full frame rate	1 µs to full frame rate	0.2 µs to full frame rate
LENS MOUNT	Threaded interface	Threaded interface	Threaded interface

VERY LONG WAVE SERIES			
SPECIFICATIONS	FAST V1*k*	FAST V350	FAST V300
DETECTOR TYPE	SLS	SLS	MCT
SPECTRAL RANGE	8 µm to 12 µm	7.5 µm to 12 µm (other av.)	7.7 µm to 11.8 µm
SPATIAL RESOLUTION	640 × 512 pixels	320 × 256 pixels	320 × 256 pixels
DETECTOR PITCH	25 µm	30 µm	30 µm
APERTURE SIZE	F/2	F/2	F/2
FRAME RATE	1 000 Hz	344 Hz	300 Hz
MAXIMUM FRAME RATE	2 500 @ 320 × 256 33 000 Hz @ 64 × 8	12 000 Hz @ 128 × 8	79 000 Hz @ 64 × 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 V100		FAST V100*k*
DETECTOR TYPE	SLS		MCT
SPECTRAL RANGE	7.5 µm to 12 µm (other av.)		7.8 µm to 11.4 µm
SPATIAL RESOLUTION	640 × 512 pixels		640 × 512 pixels
DETECTOR PITCH	15 µm		16 µm
APERTURE SIZE	F/2		F/2
FRAME RATE	120 Hz		115 Hz
MAXIMUM FRAME RATE	3 800 Hz @ 64 × 8		120 000 Hz @ 64 × 2
TYPICAL NETD	25 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.
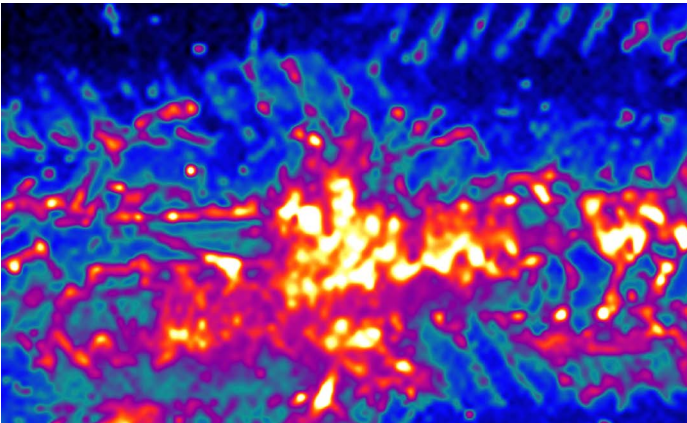
Impact of a projectile in the back of a composite material
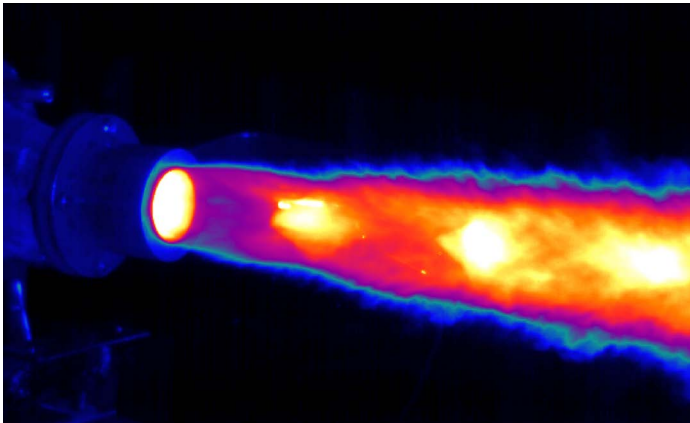
Pulsed detonation rocket engine

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

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 (EHDRI)

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.