



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

Maximum data throughput is larger than 1 Gigabit/s. High performance electronics produce thermal images at rates of up to 1 012 fps. Sub-windows can even be acquired at rates higher than 40 000 fps.

### HIGH-SPEED INTERNAL MEMORY

16 GB (expandable) memory for autonomous operation.

### HIGH SENSITIVITY

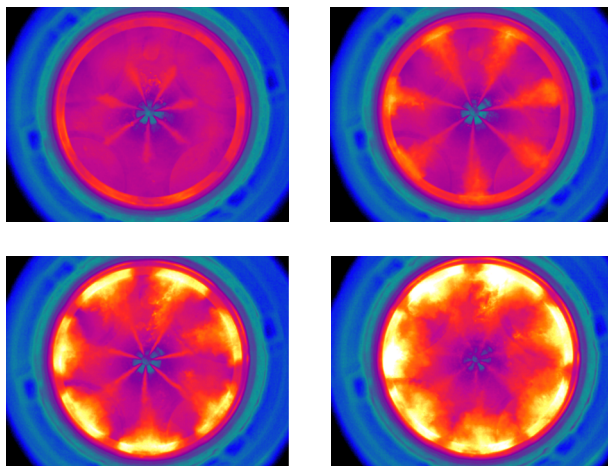
Temperature differences as small as 25 mK are detectable.

### ADVANCED CALIBRATION

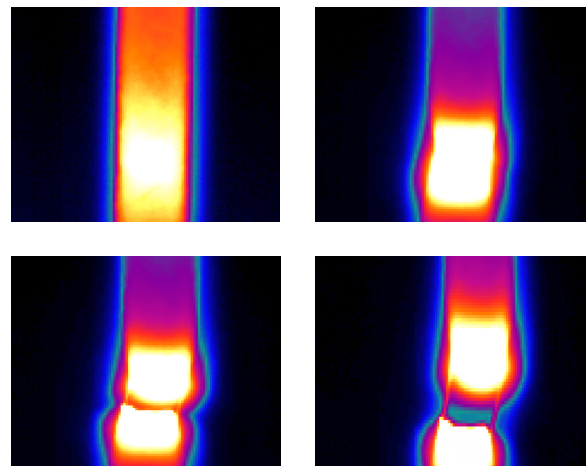
Unique proprietary real-time processing of infrared images including NUC, radiometric temperature, automated exposure control (AEC) and enhanced high-dynamic-range imaging (EHDRI). With these unique features, scientists benefit from ease of use and operation flexibility while getting accurate measurements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

## EXAMPLES OF TYPICAL USES

Observation of fuel injection



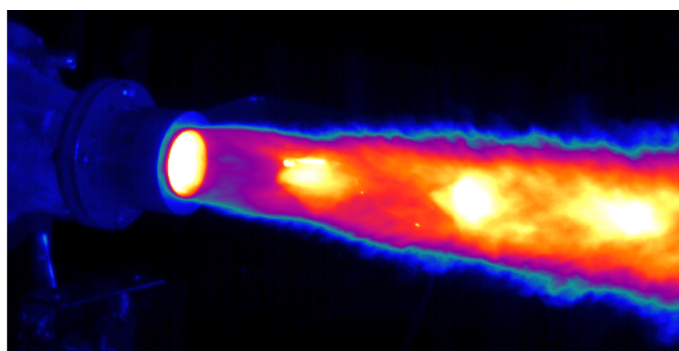
Tensile testing of a steel rod



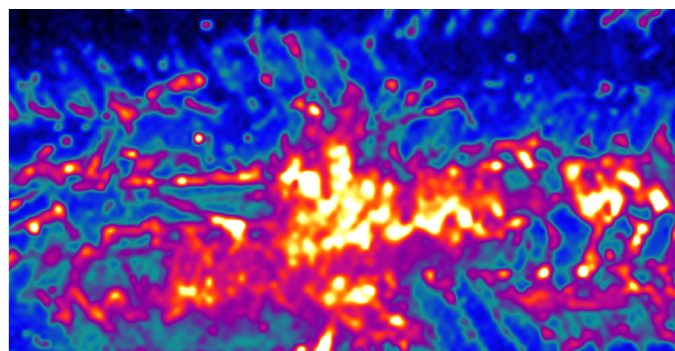
FAST M1k	
SPECIFICATIONS	FAST M1k
DETECTOR TYPE	Cooled InSb
SPECTRAL RANGE	1.5 $\mu\text{m}$ to 5.4 $\mu\text{m}$
SPATIAL RESOLUTION	640 $\times$ 512 pixels
DETECTOR PITCH	25 $\mu\text{m}$
APERTURE SIZE	F/2.5
FRAME RATE	1 012 Hz
MAXIMUM FRAME RATE	11 000 Hz @ 64 $\times$ 64 40 000 Hz @ 64 $\times$ 8
ENVIRONMENTAL RESISTANCE	IP67
OPERATIONAL SHOCK	IEC-60068-2-27
OPERATIONAL VIBRATION	IEC-60068-2-64
OPERATIONAL TEMPERATURE	-15 $^{\circ}\text{C}$ to +50 $^{\circ}\text{C}$
STORAGE TEMPERATURE	-35 $^{\circ}\text{C}$ to +60 $^{\circ}\text{C}$
TYPICAL NETD	25 mK
EXPOSURE TIME	0.27 $\mu\text{s}$ to full frame rate
LENS MOUNT	Bayonet interface



The FAST M1k  
is also  
available with  
LN2 Dewar!



Pulsed detonation rocket engine



Impact of a projectile in the back of a composite material

OTHER SPECS & FEATURES	
Rotary-stirling closed cycle sensor cooling	Gig-E
Blackbody-free permanent calibration (up to 150 $^{\circ}\text{C}$ )	Camera Link
Calibration up to 2 500 $^{\circ}\text{C}$ (optional)	Trigger In, Trigger Out
16 bits dynamic range	SDI, GPS, IRIG-B, RS232 and thermistor ports
High-speed internal memory buffer: up to 32 GB	Lock-In (optional)
Automatic exposure control (AEC)	Weight w/o lens: < 6 kg
Enhanced high-dynamic-range imaging (EHDMI)	Size w/o lens: 12.6" $\times$ 7.8" $\times$ 6.9" 321 mm $\times$ 199 mm $\times$ 176 mm

FOR MORE INFORMATION | [TELOPS.COM](http://TELOPS.COM)

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