TELOPS
EXOSENS GROUP

FAST-IR Family

HIGH-SPEED THERMAL IMAGING

KEY FEATURES

ULTRAHIGH FRAME RATE

HIGH-SPEED INTERNAL MEMORY

HIGH SENSITIVITY

ADVANCED CALIBRATION

Telops FAST-IR Family offers scientific infrared camera systems optimized for high-speed image acquisition. Featuring market-leading frame rate capabilities and a wide range of image size and spatial resolution capabilities, the FAST-IR series are ideally configured to capture even the most challenging high-speed thermal events.

MIDWAVE SERIES

| SPECIFICATIONS	FAST M3k	FAST M2k	FAST M2k UD
Detector Type	Cooled InSb	Cooled InSb	Cooled InSb
Detector Format	320 x 256 pixels	320 x 256 pixels	640 x 512 pixels
Spectral Range	1.5 – 5.4 µm (3.0 – 5.4 µm optional)	1.5 – 5.4 µm (3.0 – 5.4 µm optional)	1.5 – 5.4 µm (3.0 – 5.4 µm optional)
Detector Pitch	30 µm	30 µm	25 µm
Optical Aperture	F/2.5	F/2.5	F/2.5
Max. Frame Rate (Full Window)	3 100 Hz	1 910 Hz	1 500 Hz
Max. Frame Rate (Subwindow)	100 000 Hz @ 64 x 4	90 000 Hz @ 64 x 4	42 000 Hz @ 64 x 8
Typical NETD	25 mK	25 mK	≤ 23 mK
Minimum Exposure Time	1 µs to full frame rate	1 µs to full frame rate	0.5 µs to full frame rate
Lens Mount	Bayonet	Bayonet	Threaded

MIDWAVE SERIES

SPECIFICATIONS	FAST M1k	FAST M350
Detector Type	Cooled InSb	Cooled InSb
Detector Format	640 x 512 pixels	640 x 512 pixels
Spectral Range	1.5 – 5.4 µm (3.0 – 5.4 µm optional)	1.5 – 5.4 µm (3.0 – 5.4 µm optional)
Detector Pitch	25 µm	15 µm
Optical Aperture	F/2.5	F/3
Max. Frame Rate (Full Window)	1 012 Hz	355 Hz
Max. Frame Rate (Subwindow)	40 000 Hz @ 64 x 8	4 980 Hz @ 132 x 4
Typical NETD	25 mK	20 mK
Minimum Exposure Time	0.27 µs to full frame rate	0.5 µs to full frame rate
Lens Mount	Threaded	Bayonet

LONGWAVE SERIES

SPECIFICATIONS	FAST L200
Detector Type	Cooled InSb
Detector Format	640 x 512 pixels
Spectral Range	7.7 – 9.3 µm
Detector Pitch	15 µm
Optical Aperture	F/2
Max. Frame Rate (Full Window)	234 Hz
Max. Frame Rate (Subwindow)	17 200 Hz @ 160 x 2
Typical NETD	22 mK
Minimum Exposure Time	0.2 µs to full frame rate
Lens Mount	Threaded

EXAMPLES OF TYPICAL USES
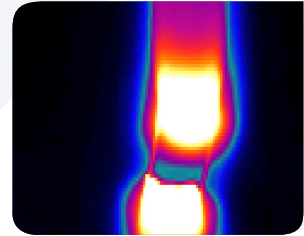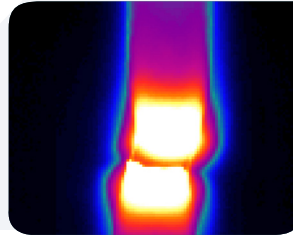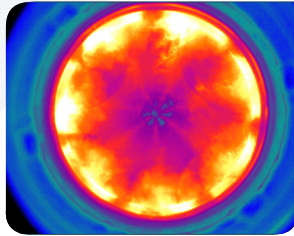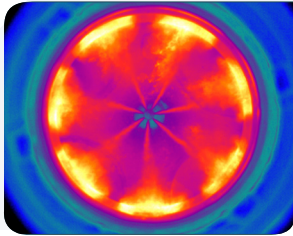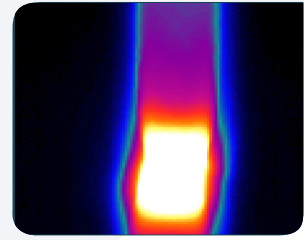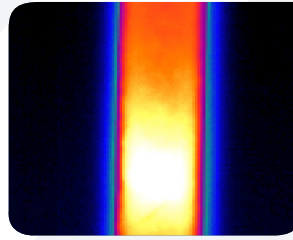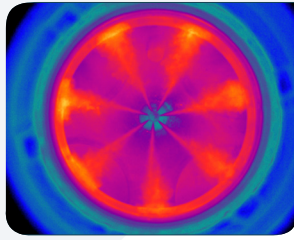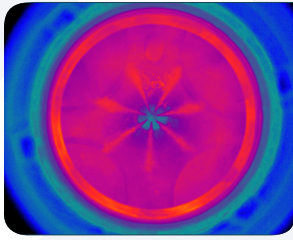
Observation of Fuel Injection

Tensile Testing of a Steel Rod

VERY LONGWAVE SERIES

SPECIFICATIONS	FAST V1k*	FAST V500*	FAST V350*
Detector Type	Cooled SLS	Cooled SLS	Cooled SLS
Detector Format	640 x 512 pixels	640 x 512 pixels	320 x 256 pixels
Spectral Range	7.5 – 11.5 µm	7.5 – 11.5 µm	7.5 – 11.5 µm
Detector Pitch	25 µm	25 µm	30 µm
Optical Aperture	F/2.5	F/2.5	F/2
Max. Frame Rate (Full Window)	1 012 Hz	500 Hz	345 Hz
Max. Frame Rate (Subwindow)	40 000 Hz @ 64 x 8	17 000 Hz @ 64 x 8	14 100 Hz @ 128 x 8
Typical NETD	30 mK	30 mK	25 mK
Minimum Exposure Time	0.27 µs to full frame rate	0.27 µs to full frame rate	5.1 µs to full frame rate
Lens Mount	Threaded	Threaded	Threaded

HD & SUPER HD SERIES

SPECIFICATIONS	FAST M3Shd	FAST M2Shd	FAST M200hd	FAST M100hd
Detector Type	Cooled InSb	Cooled InSb	Cooled InSb	Cooled InSb
Detector Format	1920 x 1536 pixels	1520 x 1536 pixels	1280 x 1024 pixels	1280 x 1024 pixels
Spectral Range	1.5 – 5.4 µm	1.5 – 5.4 µm	1.5 – 5.4 µm (3 to 5.4 µm optional)	1.5 – 5.4 µm (3 to 5.4 µm optional)
Detector Pitch	10 µm	10 µm	10 µm	10 µm
Optical Aperture	F/3	F/3	F/3	F/3
Max. Frame Rate (Full Window)	113 Hz	50 Hz	180 Hz	100 Hz
Max. Frame Rate (Subwindow)	2 570 Hz @ 64 x 2	1 425 Hz @ 64 x 2	2 180 Hz @ 64 x 4	1 200 Hz @ 64 x 4
Typical NETD	30 mK	30 mK	30 mK	30 mK
Minimum Exposure Time	0.5 µs to full frame rate	0.5 µs to full frame rate	0.5 µs to full frame rate	0.5 µs to full frame rate
Lens Mount	Bayonet	Bayonet	Bayonet	Bayonet

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, Telops is part of the Exosens Group, expanding even more our technologies, innovation and capabilities.

FEATURES & OPTIONS

OUR INFRARED CAMERAS' KEY FEATURES & SPECS

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

- Rotary-stirling closed cycle sensor cooling.
- Blackbody-free permanent calibration (up to 150 °C).
- Calibration up to 2500 °C (optional).
- High-speed internal memory buffer: up to 32 GB (optional).
- 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).
- 16 bits dynamic range.
- Weight w/o lens: < 6 kg.
- *Weight w/o lens: < 7 kg. (V1k/V500).
- Size w/o lens: 12.6" × 7.8" × 6.9" (321 × 199 × 176 mm).
- *Size w/o lens: 12.9" × 7.8" × 7.7" (199 × 198 × 330 mm) (V1k/V500).
- Operational Vibration: IEC-60068-2-64.
- Operational Shock: IEC-60068-2-27.

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.

sales@telops.com   telops.com

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