



The HDR-IR.

HIGH-DYNAMIC-RANGE INFRARED CAMERAS.

The HDR-IR infrared cameras cover extended scene temperature ranges. These cameras maximize camera sensitivity for any static or dynamic scene. With their unique AEC+ (fast ND-Swap capability), these cameras find the best exposure time depending on the scene, and allow to resolve targets up to 2 500 °C automatically.

KEY BENEFITS

ULTRA HIGH DYNAMIC RANGE

Unique Telops proprietary non-linearity correction and exposure time independent calibration algorithms ensure observation of scene targets with the highest possible contrast and accuracy. Fast automated attenuation filters are also included to measure scenes with extreme temperature variations.

HIGH DATA RATE

High-performance electronics produce full-frame thermal images at rates up to 1 900 fps.

ADVANCED CALIBRATION

Real-time processing of infrared images including NUC, radiometric temperature, automated exposure control (AEC) and enhanced high-dynamic-range imaging (EHDMI).

EXAMPLES OF TYPICAL USES

Tank Muzzle Flash Analysis



Sparkle combustion analysis



MIDWAVE SERIES			
DETECTOR SPECIFICATIONS	HDR M350	HDR M100k	HDR M2K
DETECTOR TYPE	Cooled InSb	Cooled MCT	Cooled InSb
SPECTRAL RANGE	3 μm to 5.4 μm	3 μm to 4.9 μm	1.5 μm to 5.4 μm
SPATIAL RESOLUTION	640 \times 512 pixels	640 \times 512 pixels	320 \times 256 pixels
DETECTOR PITCH	15 μm	16 μm	30 μm
OPTICAL APERTURE	F/3	F/4	F/2.5
TYPICAL PERFORMANCES			
MAXIMUM FRAME RATE IN FULL WINDOW	355 Hz	115 Hz	1 900 Hz
MAXIMUM FRAME RATE IN SUBWINDOW (STATIC FILTER WHEEL MODE)	4 980 Hz @ 64 \times 4	120 000 Hz @ 64 \times 2	90 000 Hz @ 64 \times 4
TYPICAL NETD	20 mK	17 mK	25 mK
ELECTRONIC SPECIFICATIONS			
MINIMUM EXPOSURE TIME	0.5 μs to full frame rate	0.2 μs to full frame rate	1 μs to full frame rate
CAMERA CONSTRUCTION			
LENS MOUNT	Bayonet interface	Bayonet interface	Bayonet interface

MIDWAVE <i>hd</i> SERIES	
DETECTOR SPECIFICATIONS	HDR M100 <i>hd</i>
DETECTOR TYPE	Cooled InSb
SPECTRAL RANGE	3 μm to 5 μm
SPATIAL RESOLUTION	1280 \times 1024 pixels
DETECTOR PITCH	15 μm
OPTICAL APERTURE	F/3
TYPICAL PERFORMANCES	
MAXIMUM FRAME RATE IN FULL WINDOW	105 Hz
MAXIMUM FRAME RATE IN SUBWINDOW (STATIC FILTER WHEEL MODE)	2 900 Hz @ 132 \times 8
TYPICAL NETD	20 mK
ELECTRONIC SPECIFICATIONS	
MINIMUM EXPOSURE TIME	1 μs to full frame rate
CAMERA CONSTRUCTION	
LENS MOUNT	Bayonet interface

VERY LONG WAVE SERIES	
DETECTOR SPECIFICATIONS	HDR V300
DETECTOR TYPE	Cooled MCT
SPECTRAL RANGE	7.7 μm to 11.8 μm
SPATIAL RESOLUTION	320 \times 256 pixels
DETECTOR PITCH	30 μm
OPTICAL APERTURE	F/2
TYPICAL PERFORMANCES	
MAXIMUM FRAME RATE IN FULL WINDOW	309 Hz
MAXIMUM FRAME RATE IN SUBWINDOW (STATIC FILTER WHEEL MODE)	79 000 Hz @ 64 \times 2
TYPICAL NETD	25 mK
ELECTRONIC SPECIFICATIONS	
MINIMUM EXPOSURE TIME	0.5 μs to full frame rate
CAMERA CONSTRUCTION	
LENS MOUNT	Threaded interface

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

COMMON SPECS	
SENSOR COOLING	Rotary-stirling closed cycle
STANDARD SCENE TEMPERATURE RANGE	Up to 1 500 $^{\circ}\text{C}$
WINDOWING TO INCREASE FRAME RATE	Yes
DYNAMIC RANGE	16 bits
MEASUREMENT ACCURACY	1 K or 1% ($^{\circ}\text{C}$) from -15 $^{\circ}\text{C}$ to 150 $^{\circ}\text{C}$
SIZE W/O LENS	13.8" \times 8.5" \times 9.3" 352 mm \times 216 mm \times 236 mm
WEIGHT W/O LENS	< 13 kg



The automated 3-position filter mechanism.

FOR MORE INFORMATION | TELOPS.COM

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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 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 32 GB (optional)
- Gig-E
- Camera Link
- Trigger In, Trigger Out
- SDI, GPS, IRIG-B, RS232 and thermistor ports
- 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.