

M-Wave InSb

Mid Wave Infrared Camera

The M-Wave InSb mid wave camera offers the sensitivity and resolution found only in cooled InSb cameras. With temperature sensitivity of <25 milliKelvin, the M-Wave is suitable for demanding thermal imaging requirements including non destructive testing, surveillance, spectroscopy and R&D applications. The M-Wave is based on a 320 x 256 InSb focal plane array with a 30 micron pixel size. Snapshot exposure and short integration times make the M-Wave a perfect solution for rapidly changing dynamic events.

The M-Wave offers both analog video and simultaneous 14 bit CameraLink digital output. A variety of interchangeable optics, including microscope lenses, are available. Up to four non uniformity correction tables can be stored in the camera which is also equipped with an internal NUC flag. The camera is controlled via a serial communications interface.

For data acquisition and analysis, IRcameras offers both turnkey packages as well as custom designed application specific software solutions.

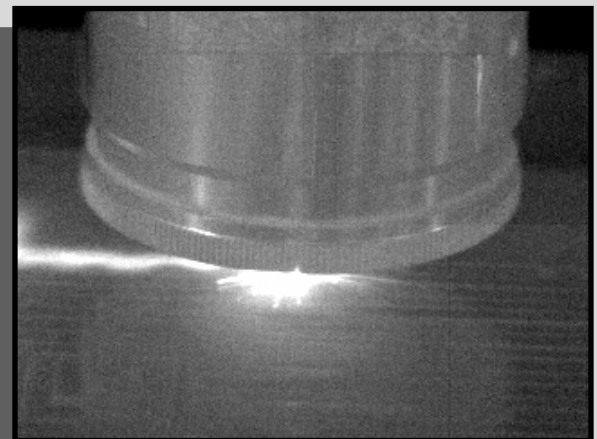


Key Product Features

- 3.0 μ m - 5.0 μ m spectral response; 1.5 μ m - 5.0 μ m optional
- <25 $^{\circ}$ mK thermal sensitivity
- 14 bit digital CameraLink & RS-170 video outputs
- Interchangeable optics
- Dual temperature NUC flag
- Variable integration times
- Four on board NUC tables
- Compact & lightweight

Applications

- Scientific imaging
- Non destructive testing
- Surveillance
- Research & development
- Process equipment monitoring
- Micro-electronics inspections



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System Specifications

FPA Specifications		
Detector type	Photovoltaic Indium Antimonide	
Array Format	320 x 256	
Readout IC	0.6 µm CMOS, Snapshot Mode Integration	
Pixel Size / Fill Factor	30 x 30 µm / 100%	
Spectral Range	1.5 - 5.5 µm, Cold Filter Limited to 3.0 - 5.0 µm	
Dynamic Range	> 1000:1 Typical	
Operability	> 99.5%, > 99.7% Typical	
FPA Operating Temperature	77°K	
NEdT (camera level)	<25 mK, 15mK Typical (including optics and window)	
Dewar / Cooler Specifications		
Cooler Type	Integral Rotary Stirling Cycle	
Cool down Time	<6 Minutes @ 25° C ambient, <8 Minutes @ 50° C ambient	
Cooler MTTF	>8000 hours	
Cold Shield F#	f/ 2.5 standard, others available on special order	
Cold Shield Efficiency	100% when used with specified optics	
Camera Performance		
Analog Video	NTSC or PAL (factory set)	
FPA Frame Rate	59.94 frames/sec NTSC, 50 frames/sec PAL	
Digital Video	14 - Bit (uncorrected, corrected, pixel replaced)	
Non-Uniformity Correction Tables	Up to 3 available on board; user upload enabled	
Video A/D Resolution	14 Bits	
Calibration Flag	Ambient and Elevated Temp, automated/periodic one point refresh	
External Timing	External Synch and External Clock	
Remote Control	RS232, RS422 full duplex or factory set	
Power Input	+12 VDC or +24 VDC Nominal (factory set)	
Power Consumption	<9 W typical @ 25°C ambient, <14W typical during cool down	
Mechanical		
Dimensions	4.00" H x 3.5" W x 7.75" L minimal (w/o optic and rear I/O panel)	
Weight	3.5 lbs minimal (w/o lens)	
Operating Temperature	-20° to 50° C	
Storage Temperature	-40 to 70° C	
Water Resistance	NEMA 4	
Humidity	10% - 95% non condensing	
f/2.5 Optics		
Focal Length	Minimal Focus	FOV
25mm	6 inches	21° x 16.8°
50mm	12 inches	10.5° x 8.4°
100mm	22 inches	5.2° x 4.2°
200mm	120 inches	2.6° x 2.1°
50 / 250mm DFOV	12 inches	10.5° x 8.4° / 2.1° x 1.7°
50 / 200 / 500mm TFOV	12 inches	0.5° x 8.4° / 2.6° x 1.1° / 1.1° x 0.8°

All specifications subject to change without notice. Export of the commodities described herein from the United States is strictly prohibited without a valid export license issued by the U.S. Department of State or U.S. Commerce Department (jurisdiction contingent on specific product).

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