



HARRIER LONG WAVE INFRARED DETECTOR

SELEX Galileo, designs, develops and manufactures InfraRed (IR) detectors at its dedicated facility in Southampton, UK. With a reputation for providing customers with the best in high performance and cost-effective technology for IR camera systems, SELEX Galileo offers a unique level of expertise.

Currently in development, the Harrier Long Wave InfraRed (LWIR) detector is a 640 x 512 Mercury Cadmium Telluride (MCT) Integrated Detector Cooler Assembly (IDCA). The Harrier LWIR detector is designed for very high performance imaging in the 8 - 10 μ m waveband.

Using the SELEX Galileo MCT process, the Harrier LWIR detector provides the highest environmental integrity along with the superior performance of focal plane detectors.

MAIN FEATURES

- Snapshot or rolling readout operation
- Simple to use
- Long Wave (LW) 8 - 10 μ m
- High electro-optic performance with low crosstalk, automatic anti-blooming at the pixel level and excellent sensitivity
- Windowing gives enhanced frame rates over selected areas of the array
- Highest LW technology performance available in the world
- Longest LW technology DRI ranges
- Reduced stare time, less motion blur than QWIP detectors
- High performance in low scene temperature.

KEY BENEFITS

- Low cost
- High resolution
- High frame rate
- High sensitivity.



Detector analysis and testing facilities

TECHNICAL SPECIFICATIONS

Format

Array	640 x 512 pixels
Pixel Pitch	24µm
Active Area	15.36mm x 12.29mm

Typical Performance

NETD (median)	20mK
Pixel Operability	>99.5%
Signal Uniformity (σ/median)	<5%

Array Multiplexer

Operating Waveband	8 - 10µm
Scan Format	Snapshot or rolling readout
Output Dynamic Range	2V
Pixel Integration Capacitor	1.0pF
Charge Capacity	2.5 x 10 ⁷ electrons
Number of Outputs	8
Pixel Rate	Up to 10MHz per output
Output Impedance	80 ohms
Technology	CMOS
Intrinsic MUX Noise	50µV rms
Operating Temperature	Up to 90K
Max. Operating Voltage	7V
Power Consumption	40mW
Minimum Pads for Operation	13
Input Clock1	

IDCA

Weight	< 850g
Power Consumption	<10W steady state
Cooling Engine	Rotary Stirling engine
Operating Temperature Range	-55 °C to +70 °C

Linear Cooler

Weight (including cooler)	<1100g
Power Consumption	<15W steady state
Cooling Engine	Linear Stirling engine
Operating Temperature Range	-55 °C to +70 °C

