

## MEDIUM WAVE INFRARED DETECTOR

The company 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, we offer a unique level of expertise.

The Merlin Medium Wave InfraRed (MWIR) detector is a 1024 x 768 Mercury Cadmium Telluride (MCT) Integrated Detector Cooler Assembly (IDCA). The Merlin MWIR detector is designed for very high performance imaging in the 3 - 5 $\mu$ m waveband.

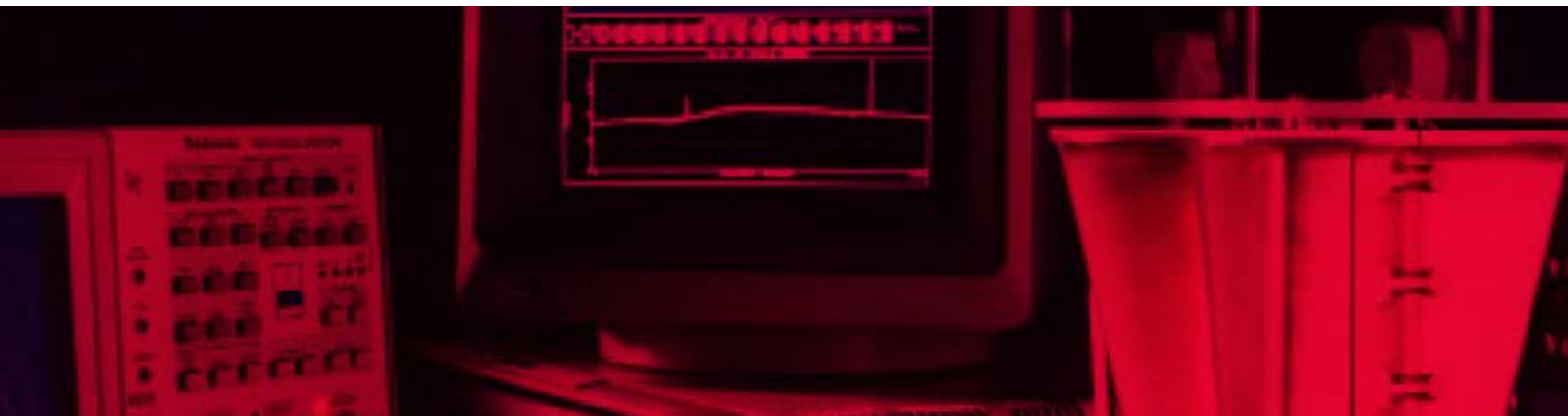
Using the MCT process, the Merlin MWIR detector provides the highest environmental integrity along with the superior performance of focal plane detectors.

### MAIN FEATURES

- Snapshot or rolling readout operation
- Simple to use
- Medium Wave (MW) 3 - 5 $\mu$ 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
- Small element pitch enables miniaturisation of the Dewar assembly and optics
- Higher operating temperature than InSb.
- Longer cooler life
- Less in-service support
- Lower through-life cost.

### KEY BENEFITS

- Low cost
- Compact
- Ultra high resolution
- High sensitivity.

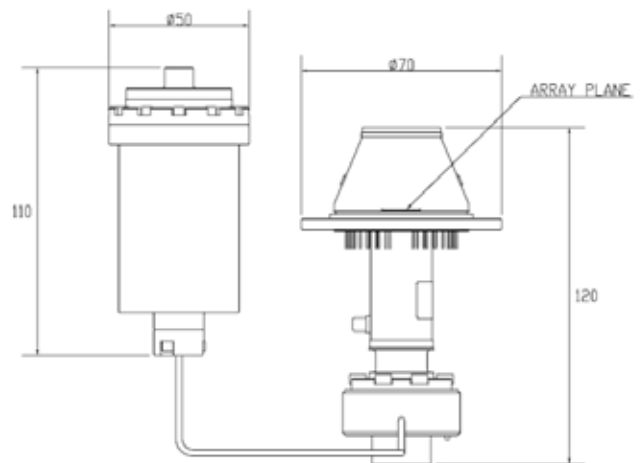


Detector analysis and testing facilities

## TECHNICAL SPECIFICATION

FORMAT	
Array	1024 x 768 pixels
Pixel Pitch	16µm
Active Area	16.38mm x 12.29mm
TYPICAL PERFORMANCE	
NETD (median)	15mK
Pixel Operability	>99.5%
Signal Uniformity (s/median)	<5%
ARRAY MULTIPLEXER	
Operating Waveband	3 - 5µm
Scan Format	Snapshot or rolling readout
Interface Output	Yes
Output Dynamic Range	2V
Pixel Integration Capacitor	0.37pF
Charge Capacity	8 x 10 <sup>6</sup> 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 140K
Max. Operating Voltage	7V
Power Consumption	40mW
Minimum Pads for Operation	16
Input Clocks	1
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

## LINEAR ENGINE



## IDCA

