

## DUAL WAVEBAND 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 Condor II Dual Waveband Infrared (DWIR) detector is a 640 x 512 Mercury Cadmium Telluride (MCT), Integrated Detector Cooler Assembly (IDCA), designed for high performance imaging in the 3 -  $5\mu$  Medium Wave Infrared (MWIR) and 8 -  $10\mu$  Long Wave Infrared (LWIR) wavebands.

Each of the  $640 \times 512$  pixels in the array can be switched between MWIR and LWIR sensitivity mode by changing the bias voltage on the device, ensuring spatial coherence between the two bands.

By integrating the photocurrent from each band in separate storage cells at the pixel, both bands can be captured and output within a single frame period, optimising the temporal coherence between bands.

The entire storage capacity for each pixel can also be dedicated to either of the MWIR or LWIR bands, thus providing user selectable and interchangeable high performance MWIR, LWIR or DWIR operation.

Using the MCT process, the Condor II DWIR detector provides the highest environmental integrity along with the superior performance of focal plane detectors.





## **MAIN FEATURES**

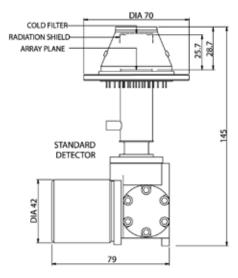
- Snapshot or interlaced operation
- Simple to use
- Concurrent 3 5μm and 8 10μm operation
- Dedicated 3 5µm operation
- Dedicated 8 10μm operation
- High electro-optic performance with low crosstalk, automatic anti-blooming at the pixel level and excellent sensitivity
- Windowing gives enhanced frame rates over selected areas of the array
- Single sensor solution for Medium Wave (MW) and Long Wave (LW) without compromise
- Combination of wave bands provides improved DRI over 1st & 2nd Generation
- Wave band switching to optimise performance in all imaging conditions.

## **Key Benefits**

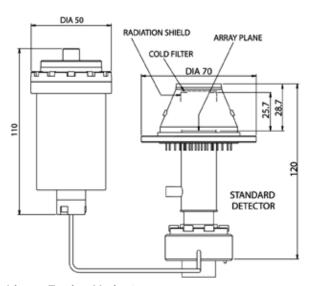
- Low cost
- High resolution
- High frame rate
- High sensitivity
- Reduction in false alarm detection.

## **TECHNICAL SPECIFICATION**

Array 640 x 512 pixels  Pixel Pitch 24um  Active Area 15.36 x 12.29mm  TYPICAL PERFORMANCE  NETD (median) LW 28mK (22mk dedicated LW)  NETD (median) MW 28mK (11mk dedicated MW)  Pixel Operability >99%  INTERFACE PARAMETERS  Modes Snapshot or interlaced  Configuration Control Single serial interface  Output Voltage Range 2.8V  Charge Capacity (dedicated) LW 8 x 106 electrons  MW 8 x 106 electrons  Number of Outputs 8  Pixel Rate Up to 10MHz per output  Intrinsic MUX noise 50uV rms max  Array Operating Temperature 80K nominal  Nominal Operating Voltage 6V  Minimum Pins for Operation 26  Number of Input Clocks 1  Window Material Silicon  Cold Filter Mickness 1.73mm  Cold Filter Thickness 0.4mm  ICOA  Weight <750g  Power Consumption <10W steady state  Cooling Engine Rotary Stirling engine  Operating Temperature Range -40°C to +70°C  LINEAR ENGINE VARIANT  Weight 950g  Power Consumption <15W steady state  Cooling Engine Linear Stirling engine  Operating Temperature Range  -40°C to +70°C	FORMAT	
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**IDCA** 



**Linear Engine Variant** 



For more information please email infomarketing@leonardocompany.com

Leonardo MW Ltd

First Avenue - Milbrook Industrial Estate - Southampton - Hampshire - SO15 OLG - Tel: +44 (0) 2380 702300
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