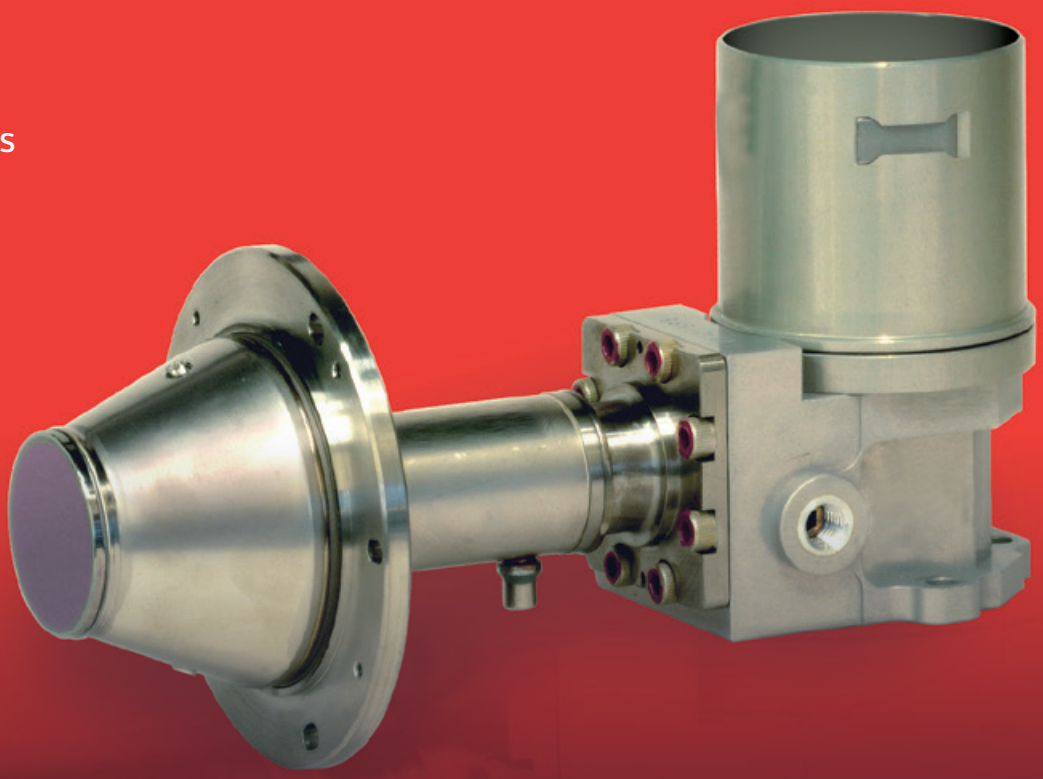
LEONARDO ELECTRONICS



Condor HD

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 HD Dual Waveband Infrared (DWIR) detector is a 1280 x 1024 Mercury Cadmium Telluride (MCT), Integrated Detector Cooler Assembly (IDCA), designed for high performance imaging in the 3 - 5µm Medium Wave Infrared (MWIR) and 8 - 10µm Long Wave Infrared (LWIR) wavebands.

Each of the 1280 x 1024 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.

The Condor HD DWIR Detector is an evolution of the Condor II Detector, halving the pixel pitch from 24µm to 12µm, increasing the number of pixels by a factor of four within the same active sensor area and detector dewar.

Each DWIR pixel can either operate in Integrate-Then-Read (ITR) mode a MWIR or LWIR ‘single-band mode’, or in Integrate-While-Read IWR mode in both single-band modes, and an interleaved MWIR/LWIR ‘dual-band mode’.

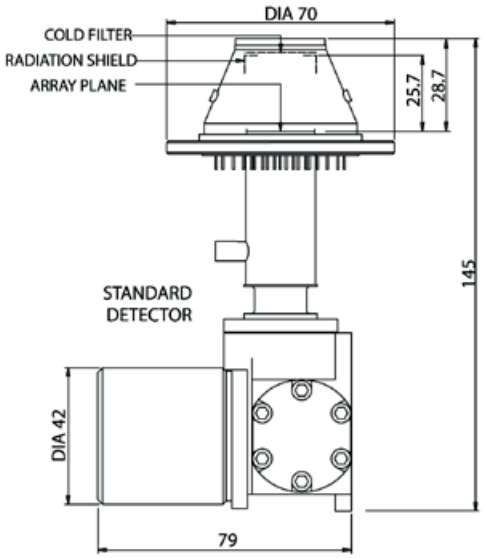
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Main features

- → Snapshot or interlaced operation
- → 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
- → Reduced pixel pitch provides more pixels on target over 3rd 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



→ IDCA

Technical specification

Format

Array	1280 x 1024 pixels
Pixel Pitch	12um
Active Area	15.36 x 12.29mm

Typical Performance

MW NETD (median)	12mK
LW NETD (median)	26mK
Pixel Operability	>99% (MW and LW array respectively)

Interface Parameters

Modes	Snapshot or interlaced
Configuration Control	Single serial interface
Output Voltage Range	2.8V
Charge Capacity (dedicated)	3Me- or 11 Me- Selectable
Number of Outputs	8
Pixel Rate	Up to 10MHz per output
Array Operating Temperature	80K nominal
Nominal Operating Voltage	3.6V
Minimum Pins for Operation	30
Number of Input Clocks	1
Window Material	Germanium
Window Thickness	1.73mm
Cold Filter Material	Silicon
Cold Filter Thickness	0.4mm

ICDA

Weight	<750g
Power Consumption	<10W steady state
Cooling Engine	Rotary Stirling engine
Operating Temperature Range	-40°C to +70°C

For more information:
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