

CONDOR III DUAL WAVEBAND 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.

The Condor III 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 μ m Medium Wave Infrared (MWIR) and 8 - 10 μ m Long Wave Infrared (LWIR) wavebands.

Each of the 640 x 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. A sample and hold circuit in each pixel enables both wavebands to be integrated consecutively, with no delay, before being read out of the device.

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

MAIN FEATURES

- Snapshot or interlaced readout operation
- Simple to use
- Consecutive 3 - 5 μ m and 8 - 10 μ m integration
- Dedicated 3 - 5 μ m operation
- Dedicated 8 - 10 μ m operation
- High electro-optic performance with low crosstalk, automatic anti-blooming at the pixel level and excellent sensitivity
- Interlace mode doubles the storage capacity at each pixel for significantly improved NETD
- 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

Condor III Dual Waveband Infrared Detector



Detector manufacture and test facilities

TECHNICAL SPECIFICATIONS

Format

Array	640 x 512 pixels
Pixel Pitch	20um
Active Area	12.80 x 10.24mm

Typical Performance

NETD (median) LW	28mK (28mK dedicated LW)
NETD (median) MW	28mK (14mK 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	9.1×10^6
MW	9.1×10^6
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	Germanium
Window Thickness	1.73mm
Cold Filter Material	Silicon
Cold Filter Thickness	0.4mm

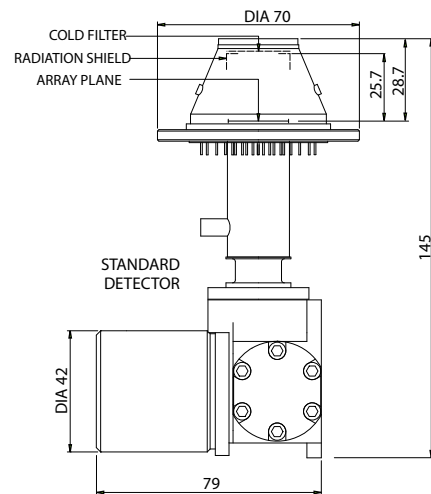
IDCA

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

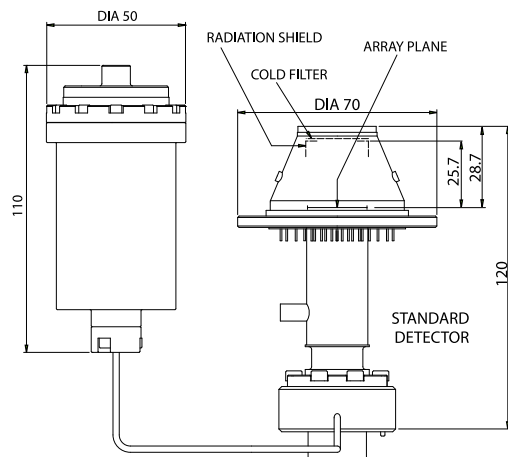
LINEAR ENGINE VARIANT

Weight	950g
Power Consumption	<15W steady state
Cooling Engine	Linear Stirling engine
Operating Temperature Range	-40 °C to +70 °C

IDCA



LINEAR ENGINE VARIANT



All dimensions in millimetres

For more information please email infrared.sales@selexgalileo.com

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