

MERLIN MEDIUM 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.

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 μ m waveband.

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

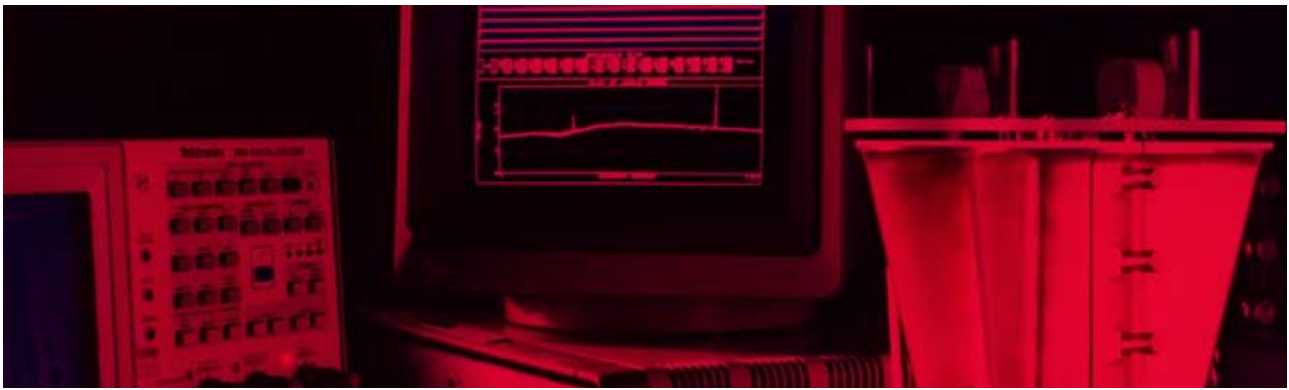
MAIN FEATURES

- Snapshot or interlaced operation
- Simple to use
- Medium Wave (MW) 3 - 5 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
- 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

Merlin Medium Wave Infrared Detector



Detector analysis and testing facilities

TECHNICAL SPECIFICATIONS

Format

Array	1024 x 768 pixels
Pixel Pitch	16µm
Active Area	16.38 x 12.29mm

Typical Performance

NETD (median)	17mK (12mK interlaced mode)
Pixel Operability	>99.98%

Interface Parameters

Modes	Snapshot, interlaced or rolling reset
Configuration Control	Single serial interface
Output Voltage Range	2.5V
Charge Capacity	7 x 10 ⁶ electrons (14 x 10 ⁶ interlaced mode)
Number of Outputs	8
Pixel Rate	Up to 10MHz per output
Intrinsic MUX noise	50 µV rms
Array Operating Temperature	80 to 110K
Nominal Operating Voltage	6V
Minimum Pins for Operation	20
Number of Input Clocks	1
Window Material	Germanium
Window Thickness	1.73mm
Cold Filter Material	Silicon
Cold Filter Thickness	0.4mm

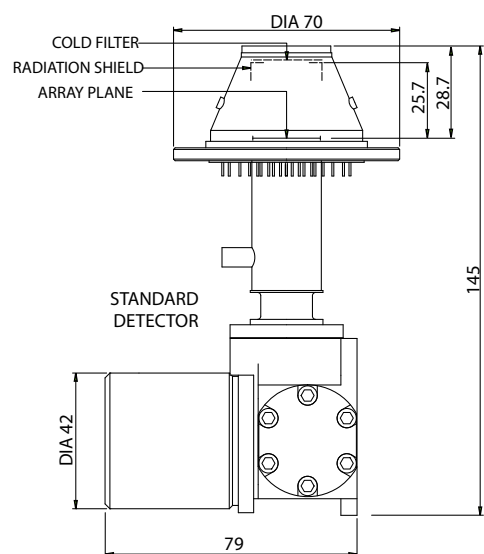
IDCA

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

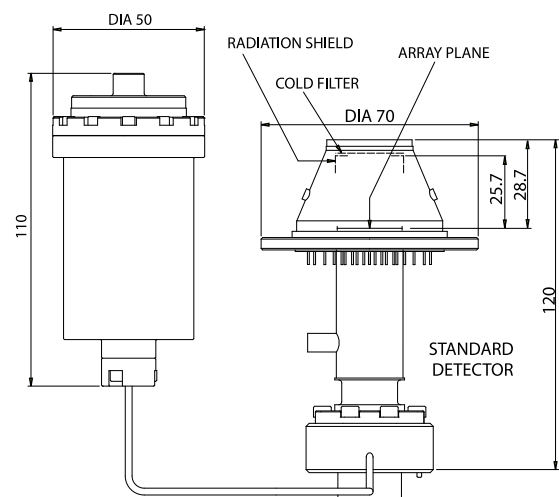
LINEAR ENGINE VARIANT

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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