

## M-20 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 M-20 Medium Wave Infrared (MWIR) detector is a 640 x 512 Mercury Cadmium Telluride (MCT) Integrated Detector Cooler Assembly (IDCA). The M-20 MWIR detector is designed for very high performance imaging in the 3 - 5 $\mu$ m waveband.

Using the SELEX Galileo MCT process, the M-20 MWIR detector provides the highest environmental integrity along with the superior performance of focal plane detectors.

### MAIN FEATURES

- Snapshot, Integrate while read (IWR) or interlaced 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
- High performance in low scene temperature
- Higher operating temperature than InSb.
  - Longer cooler life
  - Less in-service support
  - Lower through-life cost

### KEY BENEFITS

- Low cost
- High resolution
- High frame rate
- High sensitivity



Detector analysis and testing facilities

**TECHNICAL SPECIFICATIONS**

**Format**

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

**Typical Performance**

NETD (median)	15.5mK
Pixel Operability	>99.5%

**Interface Parameters**

Modes	Snapshot, ITR, IWR or rolling reset
Configuration Control	Single serial interface
Output Voltage Range	2.8V
Charge Capacity	9.1 x 10 <sup>6</sup> electrons
Number of Outputs	8
Pixel Rate	Up to 10MHz per output
Intrinsic MUX noise	50uV rms max
Array Operating Temperature	90 to 120K
Nominal Operating Voltage	6V
Minimum Pins for Operation	25
Number of Input Clocks	1
Window Material	Germanium
Window Thickness	1.73mm
Cold Filter Material	Silicon
Cold Filter Thickness	0.4mm

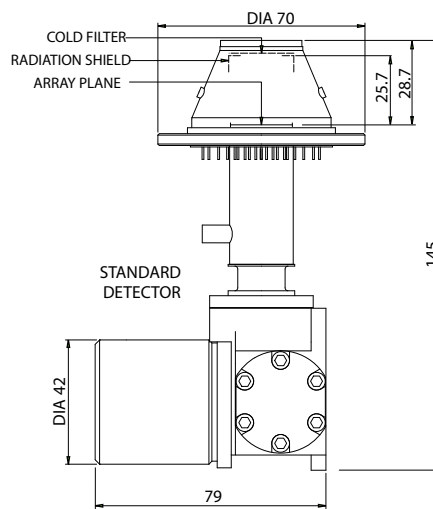
**IDCA**

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

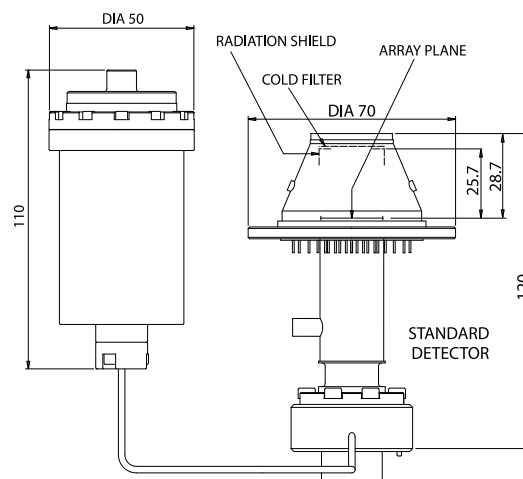
**LINEAR ENGINE VARIANT**

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