



## EAGLE LONG WAVE INFRARED DETECTOR

Selex ES 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 ES offers a unique level of expertise.

The Eagle Long Wave Infrared (LWIR) detector is a 640 x 512 Mercury Cadmium Telluride (MCT) Integrated Detector Cooler Assembly (IDCA). The Eagle LWIR detector is designed for very high performance imaging in the 8 - 10 $\mu$ m waveband.

Using the Selex ES MCT process, the Eagle LWIR detector provides the highest environmental integrity along with the superior performance of focal plane detectors.

### MAIN FEATURES

- Snapshot or rolling reset operation
- Simple to use
- Long Wave (LW) 8-10 $\mu$ 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
- Highest LW technology performance available in the world
- Longest LW technology DRI ranges
- Reduced stare time, less motion blur than QWIP detectors
- High performance in low scene temperature

### 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 | 24um                   |
| Active Area | 15.36 x 12.29mm        |

### Typical Performance

|                   |        |
|-------------------|--------|
| NETD (median)     | 20mK   |
| Pixel Operability | >99.8% |

### Interface Parameters

|                             |                             |
|-----------------------------|-----------------------------|
| Modes                       | Snapshot or rolling reset   |
| Configuration Control       | Parallel interface          |
| Output Voltage Range        | 2.2V                        |
| Charge Capacity             | $1.8 \times 10^7$ electrons |
| Number of Outputs           | 4                           |
| Pixel Rate                  | Up to 10MHz per output      |
| Intrinsic MUX noise         | 50uV rms                    |
| Array Operating Temperature | Up to 90K                   |
| Nominal Operating Voltage   | 7V                          |
| Minimum Pins for Operation  | 13                          |
| Number of Input Clocks      | 1                           |
| Window Material             | Germanium                   |
| Window Thickness            | 1.73mm                      |
| Cold Filter Material        | Silicon                     |
| Cold Filter Thickness       | 0.4mm                       |

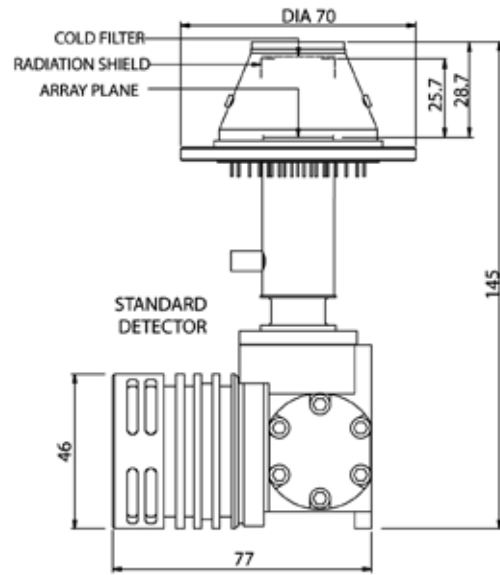
### IDCA

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

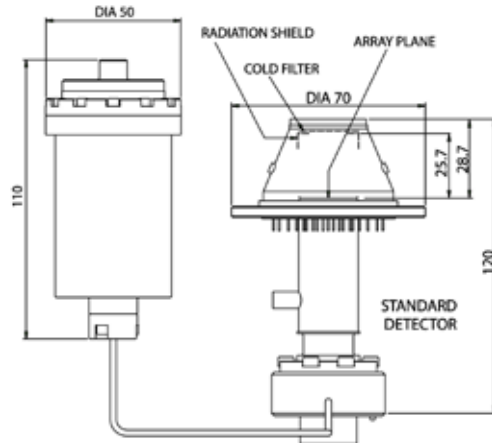
### LINEAR ENGINE VARIANT

|                             |                        |
|-----------------------------|------------------------|
| 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 mm