Optronics

SPRINT MODULE™
HIGH SPEED BROADBAND INFRARED SENSOR MODULE

Selex ES designs, develops and manufactures infrared 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, covering Mercury Cadmium Telluride (MCT) material growth, Read-Out Integrated Circuit (ROIC) design, volume detector manufacture, electro-optic and environmental test.

Using technology developed for high-performance thermal imaging systems, Selex ES has introduced a unique IR sensor module for scientific instrument applications. The Sprint Module™ uses a 2-Dimensional 384 x 384 pixel Mercury Cadmium Telluride (MCT) Focal Plane Array detector which offers a broad band spectral response from 2.0µm to 12.0µm and beyond, achieved through Selex ES' unrivalled MCT material growth capability.

The Sprint Module™ is based on a high-speed digital-readout circuit ideally suited for fast framing spectral analysing systems.

The Sprint Module™ incorporates a split cycle Stirling Cooling Engine with built in balancer for low vibration, and state of the art Dewar assembly and proximity electronics assembled into a simple to integrate module.

The Sprint Module™ is a high-performance, lightweight, low-power sensor module designed for fast frame-rate scientific applications.

KEY CAPABILITIES
- 384 pixels x 384 pixels array format
- Windowing function down to 16 x 16 pixels
- 20µm pitch
- High speed digital readout
- Offered with low vibration Stirling cooling engine
- Supplied with integrated read-out electronics
- Integrate while read mode of operation
- Fast frame rate >1000fps for full 384 x 384 array
- Low vibration cooler

COLD FILTER
RADIATION SHIELD
ARRAY PLANE

19
22.7
113.2

90
59
89
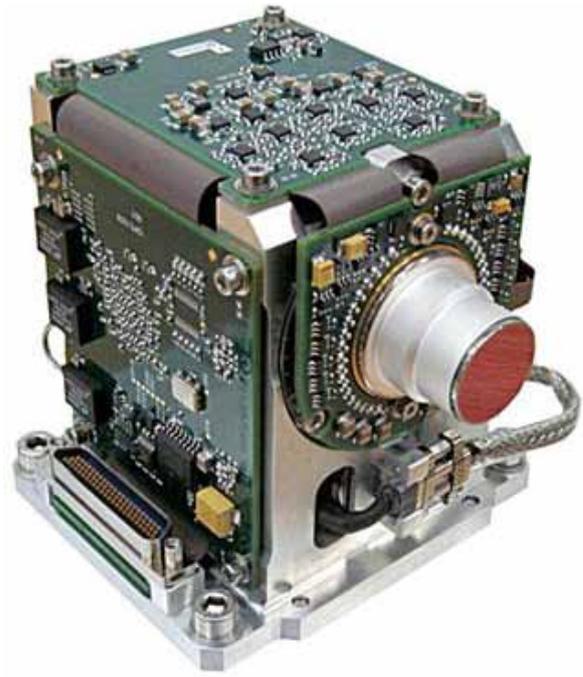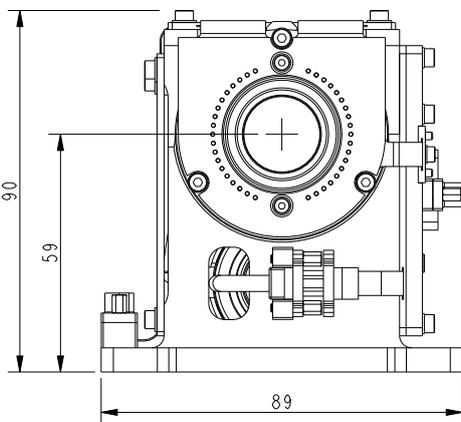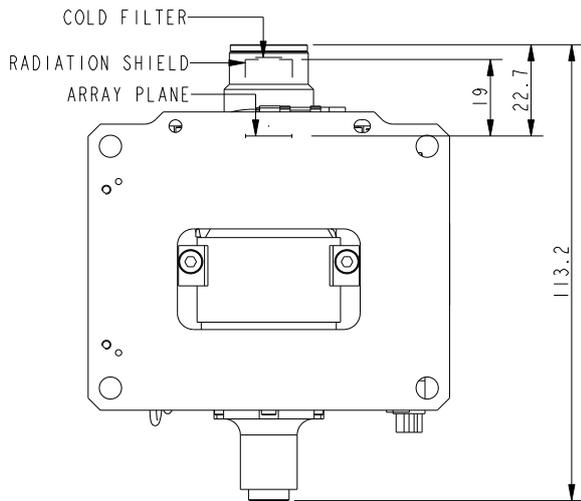
TECHNICAL SPECIFICATION

Format
- Array - 384 pixels × 384 pixels
- Pixel Pitch - 20µm
- Active area - 7.68mm × 7.68mm

Typical performance
- NETD (median) - 24mK at half-well fill
- Pixel operability - 99%

Interface parameters
- Video - Uncorrected 14-bit digital data
- Interface-Medium Configuration Channel Link
- Configuration control-bi-directional serial digital control port
- Pixel data rate - 160 million pixels per second
- >1000fps for full 384 pixels x 384 pixels array
- Supply voltages - 28V for cooler, 12V for remaining system
- Pixel charge capacity - 12 million electrons
- Frame synchronisation-External Frame Demand input (high-speed LVDS) or free-running with programmable frame rate

Physical
- Weight 1kg (2.2lb)
- Steady state power consumption 13W typical at 23ºC
- Operating temperature range -40ºC to +71ºC