



## General Description

BLACKBIRD SXGA is SCD's state-of-the-art MWIR High Definition detector, which integrates its newest technology of InSb 10 $\mu$ m pixel.

This 1280x1024 FPA is based on SCD's mature InSb technology and includes a digital readout circuit implemented in advanced CMOS process. The FPA overall size is ~70% larger than SCD's PelicanD VGA, 15 $\mu$ m format detector. Nevertheless, it is packaged in the same PelicanD Dewar. The proximity electronic board supports Video Engine capabilities at low power consumption. This yields a very large format detector with outstanding image quality, high frame rate, and compact size.

## Applications

- Persistent surveillance
- Long/medium range Surveillance & Targeting
- IRST
- MWS
- Thermography

## Main Features

- High sensitivity: Low readout noise, Low dark current, High Quantum Efficiency
- Range of gain possibilities
- High frame rate: up to 180 Hz in full frame
- Simple electronic interface - Keeps the legacy Camera link interface
- Option for 1280x720 Video Format
- Video Engine capabilities:
  - \* (Features shall be released in several versions)
    - Non Uniformity Correction (NUC)
    - Bad-Pixel Replacement (BPR)
    - Dynamic Range Compression (DRC)
    - Auto Focus support (Q-Factor)
    - Zoom & Graphic support
    - Spatial & Temporal Noise reduction





## Typical Performance

Parameter	Value
Detector type	InSb 2D array
FPA spectral range	1 – 5.4 $\mu\text{m}$
Format	1280 $\times$ 1024
Pitch	10 $\mu\text{m}$
Integration modes	ITR, IWR, others
Integration capacitors and their Floor Noise (FN) *	0.3Me- ; FN = 60e- 0.5Me- ; FN = 90e- (ITR mode only) 2.0Me- ; FN = 380e- 3.5Me- ; FN = 950e-
Maximum frame rate	180 Hz
Video output	Camera Link Digital output
Digital signal resolution	13 bit
Readout mode	Normal / 2x2 Binning
Readout direction	Bottom-up / Left-Right
Windowing	Flexible: at 4 row / column steps
NETD (2Me- Cap.)	< 25mK at 70% well fill capacity
Local Residual Non Uniformity	< 0.04% STD/DR at 10-80% well fill capacity
IDCA optical parameters **	F/3, spectral range: 3.6 – 4.9 $\mu\text{m}$ (defined by cold filter)
Cooler options	Rotary 0.5W cooler (standard) Others, optional per request
Dimensions	Weight – approx. 720 Gm Length (optical axis) – 140 mm

\* ITR and IWR modes are possible unless otherwise noted. Floor noise is specified in IWR mode. Floor noise in ITR mode expected to be equal or lower than IWR mode.

\*\* Other optical configurations are possible.

Specification are subject to changes without further notice