

# Blackbird SXGA

MWIR InSb detector, 1280 x 1024  
10µm pitch, Digital ROIC



## General Description

BLACKBIRD SXGA is SCD's state-of-the-art MWIR High Definition detector, which integrates its newest technology of InSb 10µm 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, 15µm 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	1280×1024
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