



Blackbird 1920 HD MWIR Video Engine

InSb detector, 1920 x 1536 10 μ m
pitch, Digital ROIC



General Description

The Blackbird VE is a MWIR engine designed for high performance and ultra high resolution thermal imaging. The engine resolution is 1920 x 1536 with a 10 μ m pixel size. The product is compatible with F/3 and F/4 optics (other apertures are available upon request).

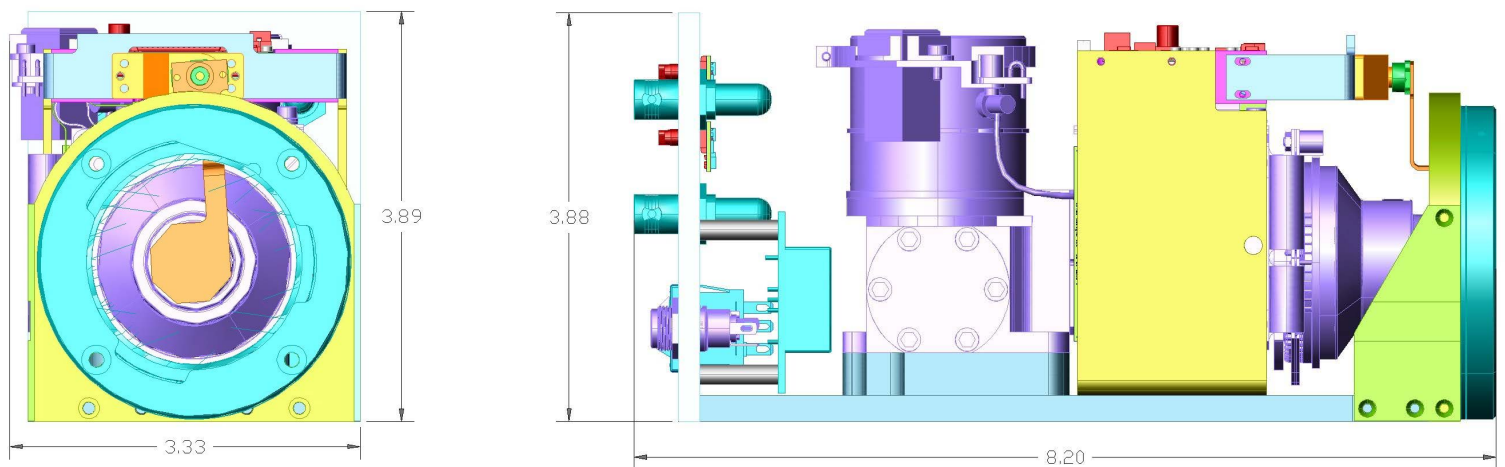
Applications

- Surveillance and Security
- Infrared Search & Track (IRST)
- Missile Warning System (MWS)
- Thermography
- Spectrometry

Main Features

- Large format MWIR InSb detector
- Multiple Gains
- <25mK typical NETD @ 70% well fill
- HD-SDI and Medium Camera Link outputs
- 13 bits digital output
- 30fps nominal @ 1920 x 1536 window size (higher rates available with windowing)

Mechanical Dimensions





Typical Performance

| Parameter | Value |
|--|--|
| Format | InSb standard, XBN (HOT InAsSb) optional |
| FPA spectral range | 3.6-4.9 μm standard, optional (HOT) 3.6-4.2 μm |
| Format | 1920 \times 1536 |
| Pitch | 10 μm |
| Integration modes | ITR & IWR |
| Integration capacitors and their Floor Noise (FN) * | 0.4Me- ; FN = 60e- 0.7Me- ; FN = 90e- (ITR mode only) 2.5Me- ; FN = 370e- 4.5Me- ; FN = 950e- |
| Maximum frame rate (full format, 4 video ports) | up to 90 F/s |
| Video output | Digital output, 4 / 2 / 1 ports** (LVDS, 32:4 Channel link) |
| Digital signal resolution | 13 bit |
| Readout mode | Normal / 2 x 2 Binning |
| Readout direction | Bottom-up / Left-Right |
| Windowing | Flexible: at 2 row steps |
| NETD (2.5Me- Cap.) | < 25mK at 70% well fill capacity |
| Local Residual Non Uniformity | 0.04% STD/DR at 10-90% well fill capacity |
| IDCA optical parameters *** | F/3 standard, F/2 and F/4 optional spectral range: 3.6-4.9 μm (defined by cold filter) |
| Cooler options | Full specification: 1W cooler- Ricor K543 or equivalent Reduced specification (e.g. 1920 \times 1080 format, 60Hz): 0.75W cooler- Ricor K548 or equivalent |
| Dimensions (with Ricor K543 1W integral rotary cooler) | Weight – approx. 1.1Kg Length (optical axis) – 150 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.

** Full frame output is enabled with 1, 2 or 4 video ports. Compared to 4 ports the 2 or 1 video ports enable lower power consumption while max. frame rate is reduced.

*** Other optical configurations are possible.

Specifications are subject to change without notice



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