MWIR
HKMW1280 Series



SCD Blackbird 1280 – Advanced HOT MWIR Imaging Technology

Next-Generation Thermal Imaging with 150K HOT Technology & Low SWaP-C

The SCD Blackbird 1280 combines advanced High Operating Temperature (HOT) technology with Low SWaP-C (Size, Weight, Power, and Cost), delivering exceptional thermal imaging performance in a compact and lightweight design.

150K HOT Technology – Compact & Lightweight Design

Powered by SCD's next-generation XBn detector technology, the Blackbird 1280 delivers high-quality, low-noise thermal images at an elevated operating temperature of 150K (approximately –123°C).

This advanced HOT technology reduces the cooling requirements, enabling a camera module weighing less than 350 g while supporting extended cooler lifetime and improved system reliability.

Ideal for weight-sensitive applications, including UAVs, airborne platforms, and portable thermal imaging systems.

High-Resolution SXGA Imaging with 10 µm Pixel Pitch

Featuring a high-resolution 1280 × 1024 detector array with a fine 10 µm pixel pitch, the Blackbird 1280 delivers significantly greater image detail than conventional VGA (640 × 480) MWIR cameras.

Its high pixel density enables improved Detection, Recognition, and Identification (DRI) capabilities, supporting long-range thermal observation and target identification when paired with suitable optics.

Advanced On-Board Image Processing

The SCD Blackbird 1280 features an integrated image processing engine, enabling advanced real-time thermal image enhancement directly within the camera core.

Key image processing functions include:

- **Non-Uniformity Correction (NUC):** Ensures consistent image quality across the detector array.
- **Bad Pixel Replacement (BPR):** Corrects defective pixels for improved image clarity.
- **Automatic Gain Control (AGC):** Optimizes image contrast for enhanced thermal visibility.
- **Digital Zoom:** Enables closer observation of selected areas within the thermal image.

These integrated processing capabilities deliver high-quality, real-time thermal imaging for demanding defense, aerospace, and industrial applications.

APPLICATIONS

• Long-Range Border & Coastal Surveillance

Enables continuous, high-resolution thermal surveillance and tracking of small vessels, vehicles, and pedestrians at extended distances, potentially reaching tens of kilometers depending on target size, optics, and atmospheric conditions.
Supports day-and-night monitoring in challenging environmental conditions.

• Tactical UAVs & Airborne Gimbal Payloads

The ultra-lightweight thermal imaging core enables compact airborne payload designs, reducing overall system weight and helping extend UAV flight endurance.
Ideal for small tactical UAVs, surveillance drones, and airborne imaging platforms where size, weight, and power efficiency are critical.

• Armored Vehicle Sights & Reconnaissance Systems

Provides reliable day-and-night target acquisition and thermal observation in demanding ground combat environments.
Designed to support stable thermal imaging performance under challenging conditions, including dust, vibration, and mechanical shock.

SPECIFICATION

Feature	HKMW1280GE		HKMW1280IP	
Sensor Information				
Sensor	SCD Blackbird1280 23KVE	SCD Blackbird1280 15FVE	SCD Blackbird1280 23KVE	SCD Blackbird1280 15FVE
Focal Plane Array	1280 x 1024			
Technology	XBn	InSb	XBn	InSb
Spectral Response	3.5 ~ 4.2um	3.6 ~ 4.9um	3.5 ~ 4.2um	3.6 ~ 4.9um
Pixel Pitch	10µm			
FPA Temperature	150K	80K	150K	80K
F#	2	4	2	4
NETD@70% of the full signal range	<25mK			
Cooling Time	< 7Minute (@23°C) (Max)			
Camera Performance				
Protocol	GigE Vision (UDP protocol)		ONVIF (RTSP protocol)	
Image Processing	Image Correction(BPR&NUC&NR) / Image Enhancement(DRC)		Image Correction(BPR&NUC&NR) / Image Enhancement(DRC)	
Frame rate	30fps		30fps	
Environmental Conditions				
Operation Temperature	-10°C ~ 60°C		-10°C ~ 60°C	
Operation Relative Humidity	maximum 80% non-condensing		maximum 80% non-condensing	
Storge Temperature	-40°C ~ 85°C		-40°C ~ 85°C	
Storage Relative Humidity	maximum 80% non-condensing		maximum 80% non-condensing	
Mechanical Interface				
Size (H x V x D) (w.o Lens)	127 x 87 x 209.9mm	105 x 96 x 224.9mm	127 x 87 x 209.9mm	105 x 96 x 224.9mm
Weight (w.o Lens)	< 3kg		< 3kg	
Power connector	DC Jack / PoE		DC Jack / PoE	
Power Consumption (Max)	< 35W			

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