



ULTRA-COMPACT MWIR INFRARED IMAGING ENGINE

Onyx Micro SD/HD

	ONYX MICRO SD	ONYX MICRO HD
Camera System Parameters		
Sensor Type	HOT MWIR, reticulated FPA	HOT MWIR, reticulated FPA
Sensor Size	640 x 512 pixels, 15 µm pitch	1280 x 720 pixels, 8 µm pitch
Spectral Band	MWIR	MWIR
f/#	4.0 standard, options for 2.3 and higher	2.3 (Other f/#s available)
System Control	RS-422 serial interface (115.2 kbps)	RS-422 serial interface (115.2 kbps)
Video Format	NTSC/PAL SDI and serial differential Camera Link	Camera Link HD-SDI
Cooler	Linear closed-cycle Stirling	Linear closed-cycle Stirling
Power Requirements		
Power Source	+12 VDC and +5 VDC	+12 VDC and +5 VDC
Operating	< 9 W typical at 23 °C	< 8 W at 25 °C
Cool-Down	< 13 W typical at 23 °C	
Turn On		< 11 W at 25 °C
Mechanical/Environmental		
Weight	< 410 g	
Size	3.0" L x 2.0" W x 2.9" H including cooler electronics	3.0" L x 2.0" W x 2.9" H including cooler electronics
Operating Temperature	-40 °C to +70 °C	-32 °C to +70 °C
Storage Temperature	-40 °C to +85 °C	-40 °C to +85 °C
Typical Performance		
Cool-Down Time	< 6 minutes	< 6 minutes
Operability	> 99.5% of pixels	> 99.4% of pixels



Low size, weight and power (SWaP) and great video in one camera. Onyx is one of the smallest high-resolution mid-wave infrared (MWIR) cooled cameras in the world. Based on our high-operating temperature (HOT) MWIR focal plane array (FPA) technology, this high-performance camera core delivers superior imaging quality and is ideally suited for SWaP sensitive air, sea and land applications. This unit has been designed for easy integration into a variety of applications, including electro-optical payloads, weapon sights, handheld viewers, remote weapon stations and enhanced vision systems. Onyx consists of an integrated detector/dewar cooler assembly and camera electronics combined with our patented image enhancement processing.

Onyx provides a full range of video processing options which allow use of a common module in multiple platforms. The Onyx features local area contrast enhancement, proprietary detail and enhancement algorithm, interpolated electronic zoom up to 4x, 3- or 5-point non-uniformity correction (NUC), autofocus, edge enhancement, adaptive temporal noise reduction, 30 or 60 Hz operation and integration time adjustment. Also included are selectable region of interest for AGLC and ALC, lens control, image polarity (white or black hot), muzzle flash suppression, manual gain and level control, video freeze, video orientation, up to 8 selectable dynamic ranges, scene-based NUC, electronic image stabilization and turbulence mitigation. The system also provides built-in-test and on-board temperature sensors.



BENEFITS

At less than 410 grams and with low power consumption, our Onyx Micro is the perfect high-performance, miniature camera for small SWaP platforms. Small element pixel pitch enables miniaturization of the assembly and optics. L3Harris' image enhancement processing delivers exceptional image quality in all scenes and features automatic gain control and NUC. HOT MWIR FPA technology enables an ultra-small cryocooler. Patented reticulated pixels eliminate FPA "cross talk" resulting in an exceptionally crisp infrared image. Steady-state power consumption is less than 8 W. L3Harris' proven technology enables high sensor reliability and significantly lowers total life-cycle costs.

Ultra-Compact MWIR Infrared Imaging Engine (Onyx Micro SD/HD)

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