ULTRA-COMPACT MWIR INFRARED IMAGING ENGINE

Onyx Micro SD/HD

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.

ONX MICRO SD | ONX MICRO HD
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**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 | < 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
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.