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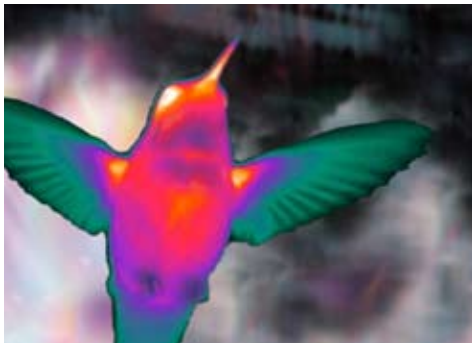
Luma Series

The world's fastest 640 fully-digital MWIR cameras

Santa Barbara **Focalplane**

Up to 500Hz at 640





PD079-051

Luma Series

Discover the digital advantage with the Luma Series MWIR camera. The LumaDR and LumaHS offer sharp integration time and unsurpassed high speed (500 frames/sec for the LumaHS), ultra-low noise, and no cross-talk. The Luma Series uses Lockheed Martin's advanced digital focal plane array (FPA) technology.

Santa Barbara Focalplane (SBF) is a merchant vendor of the very latest in infrared components, imaging systems, cameras and technology. SBF specializes in designing and manufacturing the highest quality indium antimonide (InSb) FPAs in many configurations, from linear to large staring formats. Product groups include FPAs, Integrated Detector/Dewar/Cooler Assemblies, digital camera heads and complete imaging systems.

Specifications

	LumaDR™	LumaHS™
Detector		
Detector	Indium Antimonide (InSb)	Indium Antimonide (InSb)
ROIC	1-Digital Output direct from FPA	4-Digital Output direct from FPA
Spectral Range	<1 μm to 5.2 μm	<1 μm to 5.2 μm
Resolution	640 x 512, windowable	640 x 512, windowable
Pixel Pitch	20 μm	20 μm
Electronics & Data Rate		
Integration Type	Snapshot	Snapshot
Integration Time (Electronic Shutter Speed)	<0.1 μs to full-frame time	<0.1 μs to full-frame time
Integration Turn-on Time	<150 nanoseconds	<150 nanoseconds
Integration Turn-off Time	<30 nanoseconds	<30 nanoseconds
Integration Delay and Jitter after Sync Input	<120 \pm 32 nanoseconds	<120 \pm 32 nanoseconds
Output Dynamic Range	14 bits	13 / 14 bits
Data Rate	40 megapixels/sec	40 megapixels/sec per Digital Output
Max Frame Rate at Full Window	120 Hz	476 Hz
Subwindowing	Predefined and user selectable	Predefined and user selectable
Performance Specifications		
NEI / NETD	<20mK (<14 typical)	<20mK (<13 typical)
Well Capacity	7.0 million electrons	7.0 million electrons
Operability	>99.5 (>99.95 typical)	>99.5 (>99.95 typical)
Camera Specifications		
Sensor Assembly f/#	f/2.3 std, f/4.0 optional	f/2.3 std, f/4.0 optional
Standard Spectral Range (Cold Filter)	CO ₂ Notch (3.3 - 4.2 μm and 4.5 - 4.9 μm)	CO ₂ Notch (3.3 - 4.2 μm and 4.5 - 4.9 μm)
Additional Cold Filter Options	3-5 μm , none	3-5 μm , none
Sensor Cooling	Stirling closed cycle cooler	Stirling closed cycle cooler
Lens Mount	Twist-lock Bayonet	Twist-lock Bayonet
Power at 24-36Vdc	15 W steady state	17 W steady state
Advanced Communication & Data Transfer		
Command, Control and Data Output	Base Camera Link®	Full Camera Link®
Meta-Data	(IRIG-B Optional)	(IRIG-B Optional)
Software	WinIR™ and Software Development Kit	WinIR™ and Software Development Kit
Physical Characteristics		
Size (width x height x length)	4.5" x 5.6" x 7"	4.5" x 5.6" x 7"
Weight	7 lbs	7 lbs
Environmental	Rugged design - 95% non-condensing	Rugged design - 95% non-condensing
Sun Protection (surface and shielding)	Thermal Enamel and Optional Sun Shield	Thermal Enamel and Optional Sun Shield
Optics		
Fixed Focal Length - Industry Std Interface	f/2.3 - {7mm, 13mm, 25mm, 50mm, 100mm}	f/2.3 - {7mm, 13mm, 25mm, 50mm, 100mm}
Multi Position	f/4.0 {DFOV (50/250)mm and TFOV (50/200/500)}	f/4.0 {DFOV (50/250)mm and TFOV (50/200/500)}
Microscope	1x, 2.5x, 4x	1x, 2.5x, 4x

Features

- Unique all-digital large format camera system
 - High-speed digital output up to 160 MSPS
 - Extremely stable non-uniformity correction compared to analog FPAs
 - No crosstalk
 - Ultra-low noise
 - Excellent uniformity
 - Sensitive from UV to 5.3 μm
- Super-sharp integration (>10x faster)
 - Turn-on <150 nanoseconds
 - Turn-off <30 nanoseconds
- Ultra-fast trigger input synchronization
 - Delay to start of integration <120 nanoseconds
 - Jitter < 32 nanoseconds
- Super-framing and preset sequencing modes
- Fully-adjustable integration times and frame rates
- Ruggedized for harsh environment
- SBF offers a standard built-in CO₂ notch cold filter for optimum visibility
- Cold Filter Options:
 - CO₂ notch
 - 3 μm to 5 μm
 - UV to 5.3 μm
- FPA impervious to direct sun exposure
 - No residual after-image of ultra-bright objects
- WinIR™ Software (option for radiometric and superframing)
 - Stream data to disk
 - SDK for custom development
- Integrated IRIG-B + metadata stamped on each frame header

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Front top: PD079-048; Front bottom: PD079-049