ZAFIRO[®]640 MICRO

zafiro

COOLED PERFORMANCE IN A SMALL, LOW POWER PACKAGE

Leonardo DRS' Zafiro[®]₆₄₀ Micro is a low power, ultracompact MWIR 640 x 480 camera core for the most demanding imaging applications. Weighing less than 0.9 pounds and requiring only 5 W of power at room temperature, this sensor, complete with corrected video, enables both battery-powered and very space-restrictive applications.

At the heart of the camera core is Leonardo DRS' Integrated Dewar Cooler Assembly (IDCA). Utilizing a 12 μ m pitch HgCdTe Focal Plane Array (FPA) that enables smaller and lighter optics, along with Leonardo DRS' industry leading long-life cooler technology, the IDCA enables all the performance of a long-range capable cooled MWIR sensor in a small, quiet, low power package. With camera-ready electronics included, the Zafiro[®]₆₄₀ Micro compact thermal imager enables new solutions for the dismounted soldier, small gimbal payloads and other low size, weight and power (SWaP) applications.

HIGHLIGHTS

- HgCdTe HDVIP® Technology
- Industry-leading small package
- Low power operation
- 14-bit corrected digital video





ZAFIRO® 640 MICRO



FOCAL PLANE ARRAY

Array Format	640 x 480
Detector Material	HgCdTe
Detector Pitch	12 μm
Spectral Response	3.4 μm - 4.8 μm (standard)
ROIC FEATURE	S
Modes	 Snapshot operation Direct inject input circuit Read then integrate Programmable integration time Blooming control Programmable gain Mode control through serial interface
Well Capacity	7.7E6 carriers
Output Dynamic Range	70 dB
Readout Noise	150 μV RMS
Maximum Pixel Output Rate	80 MHz
Frame Rate	30 Hz default 60 Hz capable
MECHANICAL	CONFIGURATION
Package Type	Tactical Dewar with integrated cooler and interface electronics
Size (H x W x L)	2.35 x 1.95 x 2.20 inches
Weight	< 0.9 lbs. (with IDCA and Electronics in Chassis) < 0.6 lbs. (IDCA only)
ColdShield	Standard Configuration: f/3.25 Optional Configuration: f/4.0

Nominal ColdShield HT: .46 inches

(free space equivalent at operating

temperature)

PERFORMANCE

COMPONENT	DESCRIPTION	
Noise Equivalent Temperature Difference	25 mK typical	
Operability	99.5%	
COOLER RELIABILITY		
Run Life	>20,000 hours demonstrated	
ENVIRONMENT	AL PERFORMANCE	
Operating Temperature	-40°C to 71°C (-40°F to 160°F)	
Cooldown Time	< 2.5 minutes typical at room temperature	
SYSTEM ELECT	RICAL INTERFACE	
Voltage	16 VDC to 32 VDC 24 VDC Nominal	
Input Power Steady State @ 23°C	5 Watts typical	
Input Power Steady State @ Maximum Ambient	8.0 Watts typical	
Max Input Power During Cooldown	15 Watts typical	
Input Timing Signals	Frame sync / Pixel clock / Serial command data	
Output Video Format	Base Camera Link, Monochrome NTSC	
Serial Interface	via Camera Link or LVDS full duplex	
Image Polarity	Selectable	



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ColdShield

Information

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