

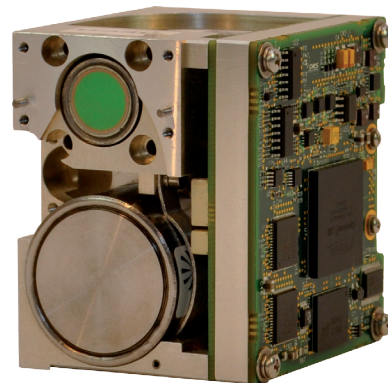
COOLED PERFORMANCE IN A SMALL, LOW POWER PACKAGE

ZAFIRO[®]₆₄₀ MICRO

Leonardo DRS' Zafiro[®]₆₄₀ Micro is a low power, ultra-compact **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 DRS' Integrated Dewar Cooler Assembly (IDCA). Utilizing a **12 μm pitch HgCdTe Focal Plane Array (FPA)** that enables smaller and lighter optics, along with 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.

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



ZAFIRO[®] 640 MICRO

FOCAL PLANE ARRAY

COMPONENT	DESCRIPTION
Array Format	640 x 480
Detector Pitch	12 μ m
Detector Material	HgCdTe
Spectral Response	3.4 μ m - 4.8 μ m (standard)

ROIC FEATURES

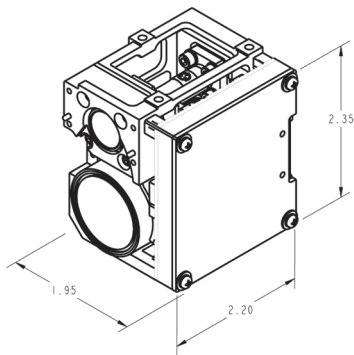
Modes	Snapshot operation Direct inject input circuit Read then integrate Programmable integration time Blooming control Programmable gain Mode control through serial interface
Well Capacity	7.7E6 carriers
Output Dynamic Range	70 dB
Readout Noise	150 μ V
Maximum Pixel Output Rate	80 MHz
Frame Rate	30 Hz/60 Hz nominal/120 Hz max

ENVIRONMENTAL

MTTF	12,000 hours
------	--------------

PERFORMANCE

Noise Equivalent Temperature Difference	25 mK Typical
Operability	>99%



Camera Core

SYSTEM ELECTRICAL INTERFACE

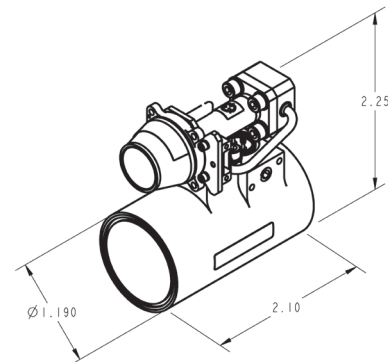
COMPONENT	DESCRIPTION
Voltage	16 VDC to 32 VDC 24 VDC Nominal
Input Power Steady State @ 23°C	5 W typical
Input Power Steady State @ Maximum Ambient	8.0 W typical
Max Input Power During Cooldown	15 W
Input Timing Signals	Frame Sync / Pixel clock / Serial command data
Output Video Format	Base Camera Link, Monochrome NTSC
Serial Interface	via Camera Link or LVDS full duplex
Image Polarity	Selectable

ENVIRONMENTAL PERFORMANCE

Operating Temperature	-40°C to 71°C (-40°F to 160°F)
Cooldown Time	< 2.5 minutes typical at room temperature

MECHANICAL CONFIGURATION

Package Type	Tactical Dewar with integrated cooler, interface electronics and cooler 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. with IDCA only
f/no.	f/3.25 nominal, f/4.0 available New design upon request



Integrated Dewar Cooler Assembly (IDCA)

The information in this data sheet is to the best of our knowledge, accurate as of the date of issue. Leonardo DRS reserves the right to change this information without notice. Nothing herein shall be deemed to create any warranty, expressed or implied. Export of the commodities described herein is strictly prohibited without a valid export license issued by the U.S. Department of State, Directorate of Defense Trade Controls, prescribed in the International Traffic in Arms Regulations (ITAR), Title 22, Code of Federal Regulation, Parts 120-130. Copyright © Leonardo DRS 2016 All Rights Reserved.

Approved for Release MR_2012-01-463_Rev05