HEXABLU™ 1280-MW

6 µm Cooled Thermal Core

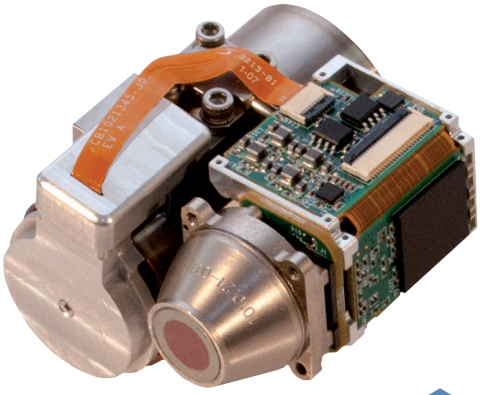
UNPRECEDENTED PIXEL SIZE. UNPARALLELED HD PERFORMANCE. UNLIMITED POSSIBILITIES

Pioneering infrared sensor technology once again, Leonardo DRS has changed the face of cooled thermal imaging with the introduction of HexaBlu™ cryo-cooled thermal camera modules. HexaBlu™ camera modules employ a revolutionary 6 µm pixel pitch HgCdTe detector technology that leverages DRS' proprietary HDVIP® (High Density Vertically Integrated Photodiode) to deliver high sensitivity mid-wave infrared (MWIR) detection in an incredibly small Integrated Dewar Cooler Assembly (IDCA).

The 6 µm pitch 1280 x 960 focal plane array (FPA) is the first of its kind. This new pixel design enables HexaBlu's miniature form factor, weighing in at under 320 grams and displacing just 80 cm^3. It is ideal for a variety of applications requiring fully corrected, long-range imaging performance in a low-profile payload.

HIGHLIGHTS

- Revolutionary 6 µm pitch Mercury Cadmium Telluride (MCT) sensor technology
- High sensitivity HD resolution MWIR imaging and unparalleled SWaP benefits
- Small package displaces just 80 cm^3 and weighs less than 320 grams



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FOCAL PLANE ARRAY

COMPONENT	DESCRIPTION
Array Format	1280 x 960
Detector Material	HgCdTe
Detector Pitch	6 µm
Spectral Response	3.4 - 4.8 µm (standard)

ROIC FEATURES

Modes	• Snapshot operation • Direct inject input circuit • IWR (default), ITR, or RTI Programmable integration time • Blooming control • 2 x 2 Pixel Binning Mode • Frame Invert / Revert
Window Modes	Programmable down to 128 x 1
Well Capacity	4.8E6 carriers
Output Dynamic Range	72 dB
Readout Noise	150 µV RMS
Frame Rate	30 Hz default 60 Hz capable

MECHANICAL CONFIGURATION

Package Type	Tactical Dewar with integrated cooler and interface electronics
Size (H x D x L) Sensor Module	4.6 x 6.1 x 6.8 cm (1.8 x 2.4 x 2.7 inches) 80 cm3 displacement 191 cm3 overall dimensions
Weight	320 grams (0.70 lbs.)
ColdShield Information	Standard Configuration: f/2.6 Optional Configuration: f/2.3 Nominal ColdShield HT: .46 inches (free space equivalent at operating temperature)

PERFORMANCE

COMPONENT	DESCRIPTION
Noise Equivalent Temperature Difference	< 30 mK typical
Operability	99.5%

COOLER RELIABILITY

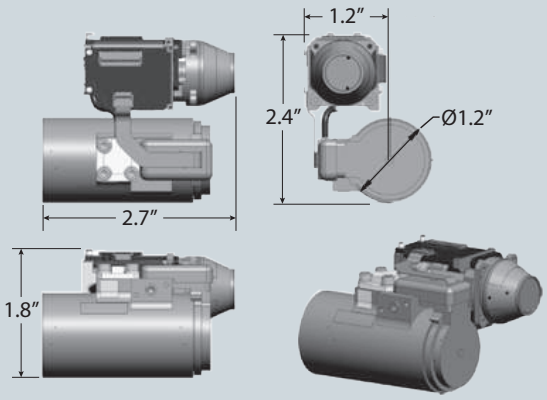
Run Life	> 25,000 hours demonstrated

ENVIRONMENTAL PERFORMANCE

Operating Temperature	-40°C to +71°C (-40°F to +160°F)
Cooldown Time	3 min. typical at 23°C

SYSTEM ELECTRICAL INTERFACE

Processor Input Power (SS)	5 Volts 2.5 Watts typical
Cooler Input Power @ 23˚ C (SS)	12 Volts 2.5 Watts typical
Typical Cooler Input Power During Cooldown (at 71°C)	9 Watts
Sensor Control	LVDS UART or 2.5 V LVCMOS (optional external frame sync)
Sensor Output	• Camera Link® Digital Corrected Video or Parallel Single-Ended (14-bit) • Sensor Status Messaging
Image Processing	• Non-Uniformity Correction • Bad pixel replacement • Switched median filter



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MR-2018-04-696_Rev02

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