COMPACT MODULAR CAMERA CORE THAT ENDURES VIBRATION, TEMPERATURE AND MARINE ENVIRONMENTS

FEATURES AND BENEFITS
Designed to meet demanding applications that often require long stand-off ranges, the APACHE features superior sensitivity, high frame-rates, high resolution, long focal length, and high f-number optics. Additionally, the compact APACHE meets the system constraints of airborne platforms with limitations on payload size, power, and weight.

The APACHE is the ideal small, high-performance, and affordable mid-wave infrared (MWIR) camera core for insertion into remote surveillance sensors, handheld and airborne applications.

CONSTRUCTION
The APACHE camera core consists of the detector/dewar/cooler assembly (DDCA), the cooler controller, camera electronics, a mechanical housing, and interconnect cabling. The electronics consist of a digitizer, mounted local to the DDCA; a main controller board; and a power supply module which provides sensor power and controls a non-uniformity correction (NUC) source and filter wheel mechanism.

An integrated four-position NUC source/filter wheel assembly contains the room temp/warm source and cold source as well as two warm filters. A three-point NUC (room ambient, warm, and cold) takes less than 20 seconds to perform. The filters are operated for normal and see-spot modes.

COMMERCIAL DEVELOPED, MILITARY QUALIFIED
APACHE, as with many FLIR Systems products, is commercially developed and military qualified (CDMQ). APACHE is MIL-STD-810E qualified and able to withstand the environmental conditions anticipated throughout its product life.

INDUSTRY STANDARD INTERFACES
The APACHE camera core provides convenient control via RS-232, video output in RS-170A format, and requires only two DC inputs to operate.
**Focal Plane Array**
640 x 512 InSb

**Spectral Band**
3 - 5 µm

**FPA Cooling**
Closed-cycle Stirling - 1/3 W Rotary cryocooler

**Aperture**
f/3.9 standard

**Integration Modes**
Integrate While Read (IWR)  
Asynchronous Integrate While Read (AIWR)

**Thermal Sensitivity**
0.0015°C @ 23.0°C

**Automatic Gain Control (AGC) Types**
Plateau  
Histogram  
Linear  
Manual

**Parameter Storage**
4 NUC Tables, including bad pixel mapping  
Elapsed Time Meter

**Video Output**
RS-170A

**Frame Rates**
30 Hz for 640x512; 60 Hz for 320x256

**Image Display Orientation**
Invert and/or Revert

**Digital Zoom**
2x

**Video Polarity**
White Hot or Black Hot

**Region of Interest**
User definable, to set AGC

**Image Control**
Freeze frame

**Camera Control**
RS-232

**Weight**
1.95 pounds

**Input Power**
Requires 5 VDC and 15 VDC Supplies

**Power Dissipation**
14 W steady state

**Vibration**
7.15 g

**Operating Temperature**
-37°C to +75°C

**Non-Operating Temperature**
-46°C to +75°C

**Nominal Field of View**
320 x 256  
640 x 512

- **WFOV**
  - 50mm: 11.0° x 8.8°  
  - 12.8° x 14.6°

- **NFOV**
  - 250mm: 2.2° x 1.8°  
  - 3.7° x 2.9°

  - 500mm: 1.1° x 0.9°  
  - 1.8° x 1.5°

**Digital Output**
14-bit A/D converter

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