

## APPLICATIONS

- Coastal Surveillance
- Border Patrol
- Perimeter Security
- Dockside Security
- Vessel Traffic Monitoring
- Drug Interdiction
- Force Protection
- Training Range

## 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.

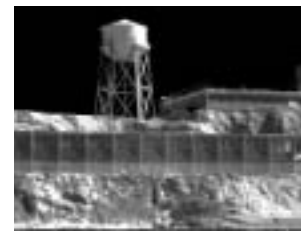
An integrated four-position NUC source/filter wheel assembly contains the room temp/warm source and cold source as well as two warm filters. A three-point NUC (room ambient, warm, and cold) takes less than 20 seconds to perform. The filters are operated for normal and see-spot modes.

### COMMERCIALLY 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.



## SYSTEM SPECIFICATIONS

Focal Plane Array	640 x 512 InSb		
Spectral Band	3 - 5 $\mu\text{m}$		
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		
Pixel-to-Pixel Normalization	3-pt. Non-Uniformity Correction (NUC) <20 sec		
Parameter Storage	4 NUC Tables, including bad pixel mapping		
	Save State		
	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		
Size	5.8" x 2.8" x 2.9" (L,W,H)		
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°	18.2° 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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