

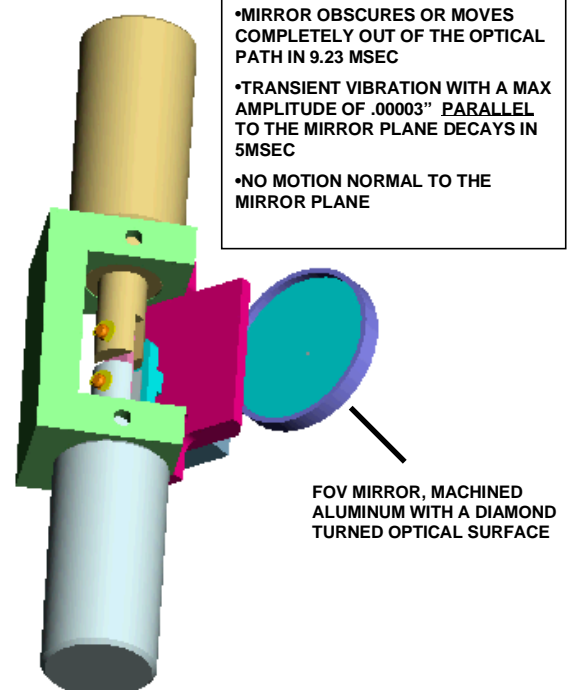
Thermal Imager

BAE SYSTEMS offers a Thermal Imager sensor with a fast lens change over that consists of an Infrared Camera with dual lens and a lens-switching assembly housed in a single weatherproof enclosure. The BAE SYSTEMS design incorporates a proven mirror switching technique to switch between two 500mm and 100mm fixed focus lenses. The increase in speed allows continuous tracking with minimum disturbance while switching between lens. The 500mm lens is used as the reference lens and it has less than 0.1 milliradians boresight shift in all orientations. It is designed so the mirror is not in the optical path with the 500mm lens selected. When the 100mm lens is selected, the boresight error is less than 1.0 milliradian, or 1% of the Field of View (FOV), in all orientations.

The 500mm and 100mm lens have approximately a 1.0 and 5.0 degree horizontal FOV, respectively. The camera and lens are controlled by an RS-422 serial interface that includes real-time video image exposure control and FOV switching. A scaleable AGC is used to control detector saturation versus using a conventional iris which degrades overall performance and picture quality due to loss of sensitivity and vignetting of the image as the iris closes.

The BAE SYSTEMS Thermal Imager meets or exceeds the following specifications:

- Spectral range: 3.6-5 μ m
- Detector technology: InSb
- Active pixel area: 256 x 256
- MRTD: <0.025K
- Cooling Type: Stirling
- Temperature Range:
 - Operating -10°C to +50°C
 - Non-Operating -20°C to +70°C
- Field of View: Approx 5.0 and 1.0 degree HFOV
- FOV Switching Time: Less than 16.6ms, synchronous with Vertical Blanking Time
- Type of zoom control: Motorized switching between two fixed-focus lens
- Environmental enclosure
- X-Y mounting plate



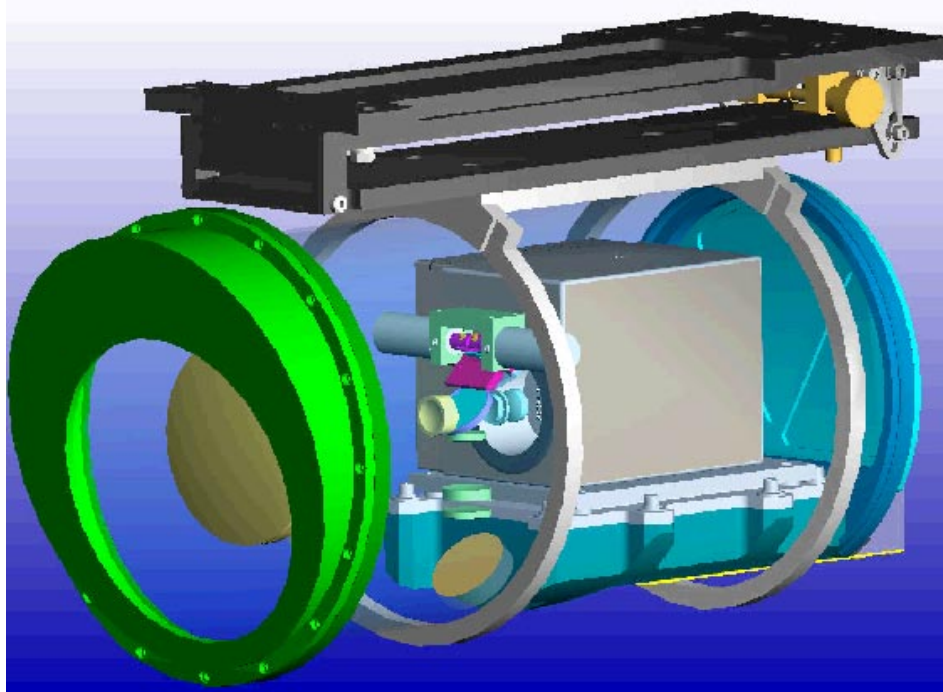
BAE SYSTEMS Technical Services

557 Mary Esther Cutoff
Fort Walton Beach, Florida 32548
Tel: (850) 244-7752
Fax: (850) 244-7782

www.ts-technicalservices.com

Thermal Imager

- Sensor: Raytheon Radiance HS (NTSC Video Output)
- F/4.0, 500mm focal length refractive optical system, focused from 500 meters to infinity
- F/4.0, 100mm focal length, refractive optical system, focused from 100 meters to infinity
- FOV switching in less than 16.6 milliseconds
- Less than 1.0 milliradian repetitive boresight shift in wide FOV
- Less than 0.05 milliradian repetitive boresight shift in narrow FOV (no moving parts in NFOV)
- Optical droop less than respective FOV errors
- Camera functions controlled through RS-422 interface
- Pseudo color capability
- 2X Digital Zoom
- 75 Ohm video connector
- RS-422 controlled FOV switching with internal video timing board to select FOV switch between frames
- O-ring sealed enclosure - outer environmental o-ring, inner EMI o-ring
- High gloss white paint IAW MIL-P-23377 and MIL-C-85285
- Conductive EMI window with AR coating both sides, minimum transmission 90%
- MS-3114-E connectors (one power and one signal)
- Single 24 volt DC input <15 amps
- Operating Temperature -20°C to +50°C, 0-100 percent humidity
- Storage/ transportation temperature -20°C to +70°C, 0-100 percent humidity



For more information contact:
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