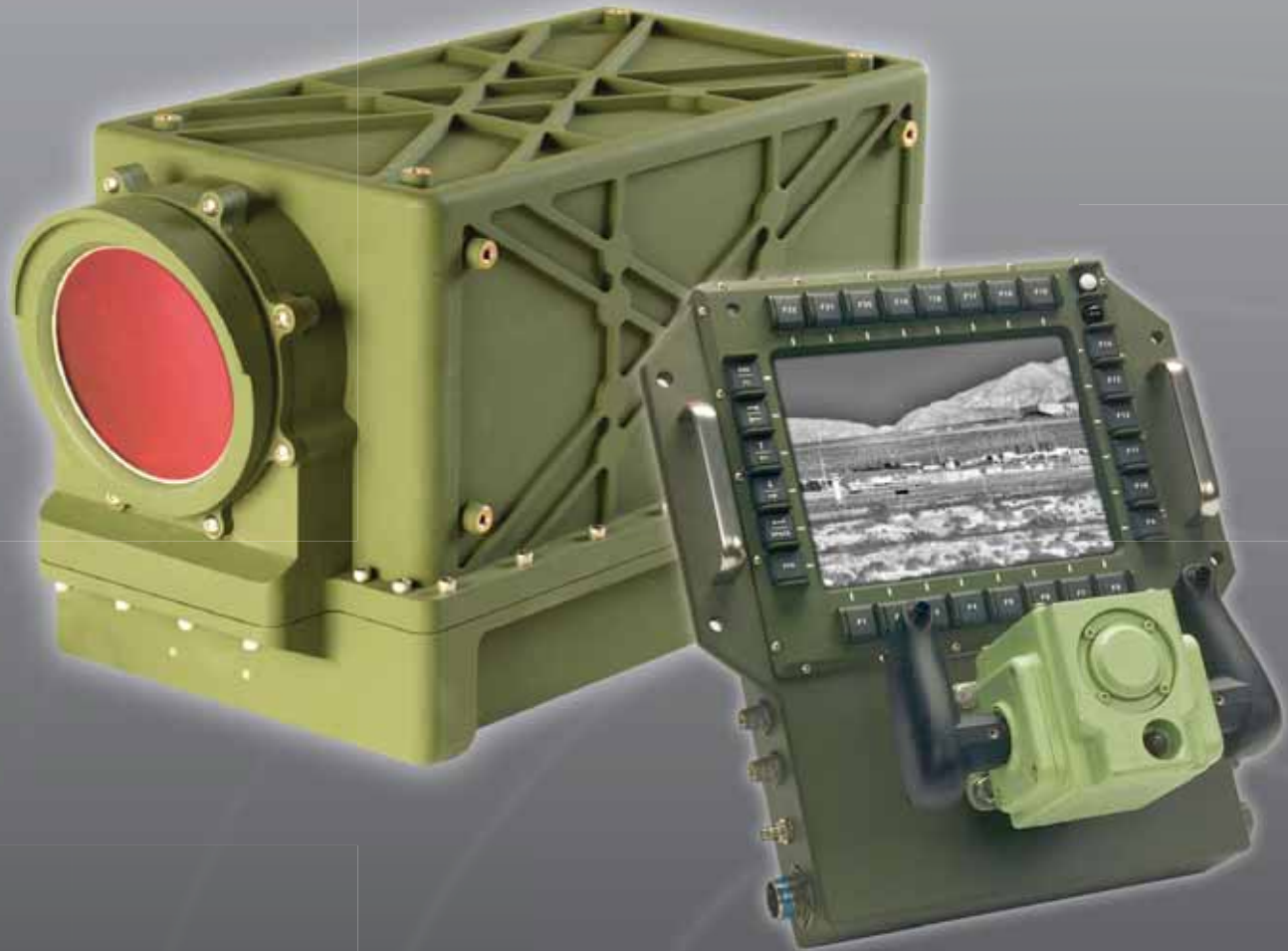


Cincinnati Electronics

AVENGER/C-RAM FLIR RECEIVERS

The NightConqueror provides long range target detection, recognition and identification for the Counter Rocket, Artillery and Mortar (C-RAM) weapon system and new generation Avenger FLIR upgrades. Both weapon systems provide front line protection for high value sites and population centers.



OVERVIEW

- Advanced environmental enclosure with superior ruggedization of camera ensures continuous operation in the harshest of vibration and temperature environments.
- Day or night, in adverse weather the NightConqueror's 640 MWIR imaging system provides superior IR imaging for countering insurgent activity by identifying rockets, artillery and mortar rounds for early response.
- CE's proven design extends operational life with dramatically reduced life cycle cost.



LEADING.

C³ISR > GOVERNMENT SERVICES > AM&M > SPECIALIZED PRODUCTS

Cleared by DoD/OoSR for public release under 06-S-0357 on January 5, 2006.

AVENGER/C-RAM FLIR RECEIVERS

SYSTEM PARAMETERS & PHYSICAL CHARACTERISTICS

CAMERA SYSTEM PARAMETERS

Sensor Type: MWIR InSb Reticulated
 Sensor Size: 640 x 512 Pixels, 28 µm Pitch
 Cold Shield: f/4
 Spectral Band: 3.6-5.0 µm with CO₂ Notch
 System Control: Avenger Unique Serial Interface (RS-422 Available)
 Video Format: RS-170A

LENS PARAMETERS

F/Number: 4.0
 Effective Focal Length: Continuous Zoom 48/342 mm
 Selectable Fields of View
 Wide FOV: 48 mm (21.2° x 15.9°)
 Rain FOV: 86 mm (12.0° x 9.0°)
 Narrow FOV: 205 mm (5.3° x 4.0°)
 Ultra Narrow FOV: 342 mm (3.0° x 2.3°)
 FOV Change Time: < 1 sec.

POWER REQUIREMENTS

Power Source: 20-31 VDC
 Power at Steady State: < 50 Watts

MECHANICAL/ENVIRONMENTAL

Weight: 48.0 lbs.
 Size (inches): 19.0 L x 10.3 H x 9.1 W
 Operating Temperature: -32°C to 60°C

TYPICAL PERFORMANCE

Cool-Down Time: 5 minutes typical
 Noise Equivalent Temp Difference @ 25°C: 40 mK
 Pixel Operability: > 99.5%

AVENGER VIDEO DISPLAY PARAMETERS

Size (inches): 15.7 W x 17.5 H x 5.0 D
 Display Weight: 27 lbs.
 Handstation Weight: 10 lbs.

POWER REQUIREMENTS

MIL-STD-1275 power compliant
 Input Voltage: 18-32 VDC
 Power Consumption: < 75 Watts typical after warm-up

DISPLAY CHARACTERISTICS

Display Type: AMLCD
 Screen Size (diagonal): 10.4 inches
 Viewing Area (inches): 8.3 x 6.2
 Resolution: 1024 x 768 (XGA)

COMPUTER CHARACTERISTICS

Mobile Pentium 1.4 GHz
 1GB RAM
 Internal Compact Flash Memory

TOUCHSCREEN CHARACTERISTICS

Resolution: 127 x 95, 64 x 48 Beams, 0.13 in. spacing
 Sunlight Readable
 Serial Port Interface

48/342 mm Continuous FOV

Tank

Man

Lens	48/342 mm FOV Lens		48/342 mm FOV Lens		Fields of View	
	Good Tx ⁽²⁾	Limited Tx	Good Tx ⁽²⁾	Limited Tx	Full FOV	Instant FOV
Atmosphere	Good Tx ⁽²⁾	Limited Tx	Good Tx ⁽²⁾	Limited Tx	Full FOV	Instant FOV
Target Detection ⁽¹⁾ (WFOV)	3.6 km	3.5 km	1.3 km	1.3 km	21.2° x 15.9°	0.58 mrad
Target Recognition (NFOV)	5.9 km	5.6 km	2.1 km	2.1 km	3.0° x 2.3°	0.08 mrad
Target Identification (NFOV)	3.1 km	2.9 km	1.1 km	1.1 km		

1. The standard target model is 2.3 x 2.3 meters NATO panel and 0.75 x 0.75 meters for a standing man. The panel target temperature delta is 1.25°C while the man target temperature delta is taken to be 2°C. 50% probability target detection criteria: 0.75 cycles for detection, 3 cycles for recognition, 6 cycles for identification.

2. The Good Tx atmospheric transmission is 1976 US Standard Model with Rural-Vis=23 km Aerosol and the Limited Tx is Tropical Model with Navy Maritime Aerosol per NVTherm-Sept 2002.

L-3 Communications
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