Cincinnati Electronics

NIGHTCONQUEROR CMI

The NightConqueror Compact Modular Imager (CMI) is a High Definition thermal imager with megapixel resolution. A true force multiplier, CE's staring 2D FPA FLIR technology applied in airborne, shipboard and ground-based configurations offers flexibility and synergy in a diversity of deployments.

OVERVIEW

- Sensor module integrates advanced hybridized micro-electronics and unique sensor architecture.
- Tightly compact structure provides lighter weight, lower power consumption and higher system magnification.
- Remote operation using RS-422 serial port 4X electro optical zoom with pan capability.
- Numerous video overlays including time, text cursors and reticules, and sensor diagnostics.
- Multiple temperature ranges available for optimal scene quality.
- Non-uniformity corrections (NUC) are internally supported for both scene and 3-point, operator guided self-calibration.
- CE's proven technology significantly lowers total life cycle costs.

L3

C^{3}ISR > GOVERNMENT SERVICES > AM&M > **SPECIALIZED PRODUCTS**

Cleared by DoD/OoSR for public release under 07-S-1519 on May 30, 2007

Cincinnati Electronics

NIGHTCONQUEROR CMI

Compact Modular Imager

CAMERA SYSTEM PARAMETERS

Sensor Type: MWIR InSb Reticulated
Sensor Size: 640 x 512 Pixels, 20 µm Pitch
Cold Shield: f/3
Spectral Band: 3.6-5.0 µm with CO_2 Notch
System Control: RS-422 Serial Interface (115.2KB)
Video Format: RS-170A (Analog)
HOTLINK-II (Digital)
Firewire IEEE 1394 Camera Link (Optional)

LENS PARAMETERS

F/Number: 3.0
Dual Field of View
Effective Focal Length
Wide FOV: 40 mm (18.2° x 14.6°)
Narrow FOV: 160 mm (4.6° x 3.7°)
FOV Change Time: < 1 sec.

POWER REQUIREMENTS

Power Source: +28 VDC (Mil-704E Normal Conditions)
Power at Steady State: 22 Watts

MECHANICAL/ENVIRONMENTAL

Weight: < 8 lbs.
Size (inches): 10.4 L x 4.0 H x 5.3 W
Operating Temperature: -40°C to 60°C

TYPICAL PERFORMANCE

Cool-Down Time: 5 minutes typical
Noise Equivalent Temp Difference @ 27°C: < 25 mK

FEATURES AND CAPABILITIES

The NightConqueror CMI has many advanced features including:

1) Local Area Processing: The camera automatically adjusts gain and level for each pixel in the image. No part of the scene will be over or under saturated.

2) Auto Focus: The IR imager computes a focus metric and determines a best fit within the local region of interest.

3) Electronic Stabilization: A programmable image filter detects sensor motion and eliminates image jitter while allowing normal pan and tilt of the imager.

4) E-Zoom: Interpolated electronic zoom is accomplished with an algorithm that interpolates between FPA detector signals to produce an image with enlarged detail and a more natural looking appearance.

5) Threshold Based Averaging: Reduces temporal noise that may be visible at increased gain settings - it eliminates the "blur" of other reduction algorithms.

40/160 mm DFOV	Tank		Man			
Lens	40/160 mm DFOV		40/160 mm DFOV		Fields of View	
Atmosphere	Good Tx[2]	Limited Tx	Good Tx[2]	Limited Tx	Full FOV	Instant FOV
Target Detection[1] (WFOV)	4.5 km	4.0 km	1.6 km	1.6 km	18.2° x 14.6°	0.50 mrad
Target Recognition (NFOV)	3.4 km	3.1 km	1.2 km	1.1 km	4.6° x 3.7°	0.13 mrad
Target Identification (NFOV)	2.6 km	2.5 km	0.9 km	0.9 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.

Cincinnati Electronics
Infrared Products
7500 Innovation Way
Mason, Ohio 45040-9699
Toll Free: 1-800-852-5105
Tel: 513-573-6744
Fax: 513-573-6290
www.L-3Com.com/CE

L3 communications
Cincinnati Electronics