

Cincinnati Electronics

NIGHTCONQUEROR NAVAL FIRE CONTROL

Operate from marine environments and fixed installations in adverse weather. Rugged and impervious, the sealed enclosure protects the high-performance NightConqueror infrared camera to image anywhere, anytime. Possessing superior housing integrity, the camera's target detection, recognition, and identification capabilities are unmatched and undiminished in any situation.



OVERVIEW

- Sealed enclosure is rugged and impervious for complete system protection.
- Housings are pressurized with dry nitrogen to protect the NightConqueror infrared camera.
- All platforms feature remote operation using RS-422 or RS-232.
- Sensor unit consists of a dual FOV telescope, infrared sensor, cooler, drive electronics, environmentally sealed enclosure and all necessary hardware.
- CE's proven technology significantly lowers total life cycle costs.



NIGHTCONQUEROR NAVAL FIRE CONTROL

THERMAL IMAGERS FOR SEA APPLICATIONS

CAMERA SYSTEM PARAMETERS

Sensor Type: MWIR InSb Reticulated
 Sensor Size: 640 x 512 Pixels, 28 µm Pitch
 Cold Shield: f/4 (NC 640 100:500);
 f/6 (NC 640 280:840)
 Spectral Band: 3.6-5.0 µm with CO₂ Notch
 System Control: Serial Interface, RS232/422 Selectable
 Video Format: RS-170/CCIR Interlaced and
 14-bit Digital Data

LENS PARAMETERS

F/Number: 4.0 (NC 640 100:500)
 6.0 (NC 640 280:840)

Dual Field of View
 Effective Focal Length

NC 640 100:500

Wide FOV: 100 mm (10.2° x 7.7°)
 Narrow FOV: 500 mm (2.1° x 1.5°)

NC 640 280:840

Wide FOV: 280 mm (3.7° x 2.8°)
 Narrow FOV: 840 mm (1.2° x 0.9°)

FOV Change Time: < 1 sec.

POWER REQUIREMENTS

Power Source: 18-32 VDC
 Power at Steady State: < 50 Watts

MECHANICAL/ENVIRONMENTAL

NC 640 100:500 (with Enclosure)

Weight: 43 lbs.
 Size (inches): 25.0 L x 12.5 H x 12.5 W
 Operating Temperature: -30°C to 55°C

NC 640 280:840 (with Enclosure)

Weight: 45 lbs.
 Size (inches): 14.1 L x 12.3 H x 11.2 W
 Operating Temperature: -30°C to 55°C

TYPICAL PERFORMANCE

Cool-Down Time: 5 minutes typical
 Noise Equivalent Temp Difference @ 25°C: 40 mK

100/500 mm DFOV	Tank		Man		Fields of View	
	100/500 mm DFOV Lens	100/500 mm DFOV Lens	100/500 mm DFOV Lens	100/500 mm DFOV Lens	Full FOV	Instant FOV
Lens	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)	7.1 km	6.6 km	2.6 km	2.5 km	10.2° x 7.7°	0.28 mrad
Target Recognition (NFOV)	8.2 km	7.6 km	3.0 km	2.9 km	2.1° x 1.5°	0.06 mrad
Target Identification (NFOV)	4.3 km	4.1 km	1.5 km	1.5 km		

280/840 mm DFOV	Tank		Man		Fields of View	
	280/840 mm DFOV Lens	280/840 mm DFOV Lens	280/840 mm DFOV Lens	280/840 mm DFOV Lens	Full FOV	Instant FOV
Lens	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)	18.1 km	16.6 km	7.1 km	6.7 km	3.7° x 2.8°	0.10 mrad
Target Recognition (NFOV)	13.4 km	12.2 km	5.2 km	4.9 km	1.2° x 0.9°	0.03 mrad
Target Identification (NFOV)	7.3 km	6.8 km	2.7 km	2.6 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.

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