

Magnix Naval CCD-200

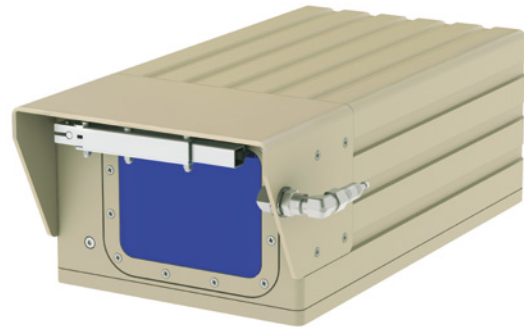
Mid-range RWS camera system

Built for Border Control and Homeland Security



Features

- High-sensitivity colour CCD camera
- Zoom lens 11 to 200 mm (18×)
- Oil-free lens construction
- Temperature range -40°C to +70°C
- Factory pre-aligned bore sighting
- Graphical overlays
- Setup and control by serial interface
- Built-in wiper system



The Magnix Naval CCD-200 is an integrated camera system, based on a highly sensitive colour CCD camera and a powerful zoom lens, ideal for day or night surveillance in harsh environments, such as coastal surveillance and similar applications. The system has an integrated washer-wiper system for keeping the protective window clean.

The camera system is designed to deliver high-performance images, even under the harshest conditions, in temperatures ranging from -40°C to +70°C.

Optical system

The optical system is developed specifically for long-range surveillance. It features a continuous zoom, with a powerful zoom ratio of 11 to 200 mm, auto-iris and focus adjustment from 1.5 m to infinity.

The "Auto-Focus on Demand" lets the camera control the focus at the push of a button.

The lens design incorporates oil-free, low-friction surfaces with special coatings, high-speed motors with zero backlash and high-precision feedback potentiometers. This design was chosen to meet the highest standards for precision and accuracy, with minimal failure rates.

All lens elements are surface coated for optimal response throughout the visible spectrum.

Stay on target with precise bore-sight retention

The Magnix Naval CCD-200 has factory pre-aligned bore sighting, aligned in parallel with the optical reference axis of the system. This makes for easy onsite installation.

Typical bore sighting deviation is ± 0.1 milliradians, the equivalent to staying within a target area of 0.1 m, at a distance of 1 km in NFOV.

Expanded Hi-Dynamic Range (XDR)

XDR is useful in conditions where there are large variations in the brightness of a picture, for example, when there are very dark and very bright areas in the picture. XDR amplifies the signal level in dark areas and reduces it in very bright areas, thereby improving the visibility in the picture.

Graphic Overlays

The system has a built-in graphic overlay generator that allows arbitrary graphic overlays to be inserted into the image output. Typical overlays are text strings, showing azimuth, elevation, GPS data or status of weapon systems and symbols, such as hair crosses or other reticules. Programming the graphic overlay engine is done via the RS-422 / CAN-BUS interface. Graphic overlays can be customized to suit specific user requirements. Below is a typical example of a graphic overlay:



Photo by [Tracy O / CC BY](#)

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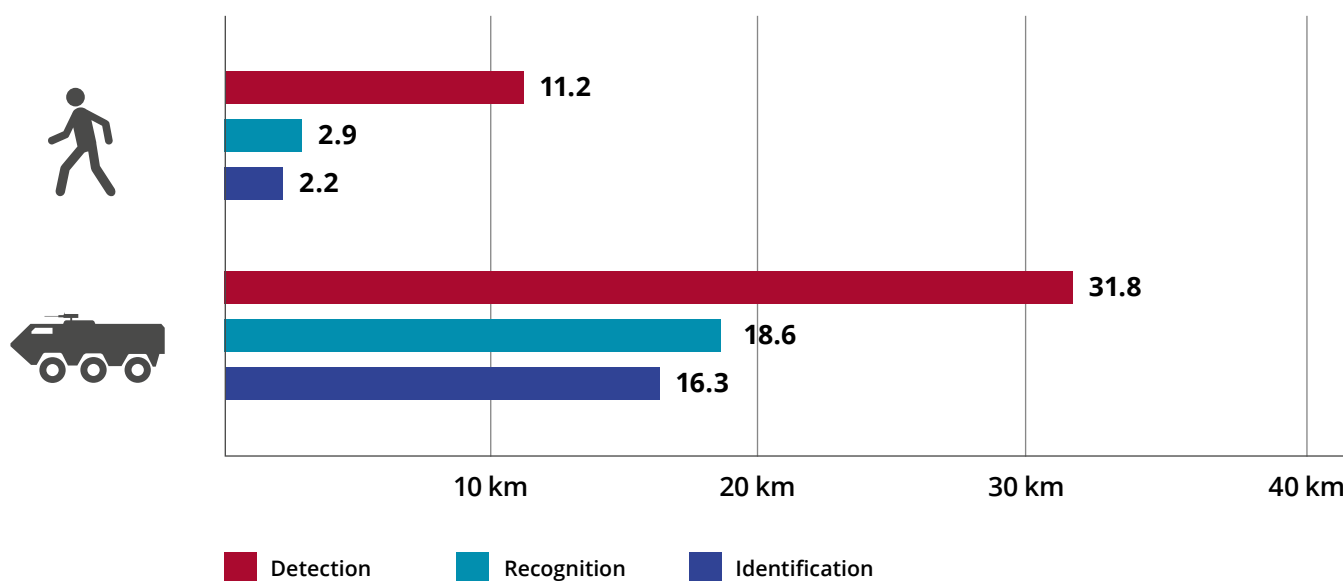
Fog penetration

The fog penetration function is designed to automatically increase visibility under conditions such as fog, haze and fire smoke. The camera continuously analyses the picture and once it detects a low-contrast condition, it will automatically enhance the contrast.

Digital Noise Reduction (DNR)

The Digital Noise Reduction in the Magnix Naval 12200/336W camera system is a function that analyses the video image and reduces the noise, particularly in low-light conditions. The analysis is based on a 2- and 3-dimensional algorithm.

Visual Range Performance



Conditions for SSIP CAM program: Visual band 400-1000nm, Contrast 30%,
Over cast daylight, Sky ratio 3, Visibility 3km, 50% probability
Dimensions Man: 0.45m × 1.7m. Vehicle dimensions NATO target 2.3m × 2.3m

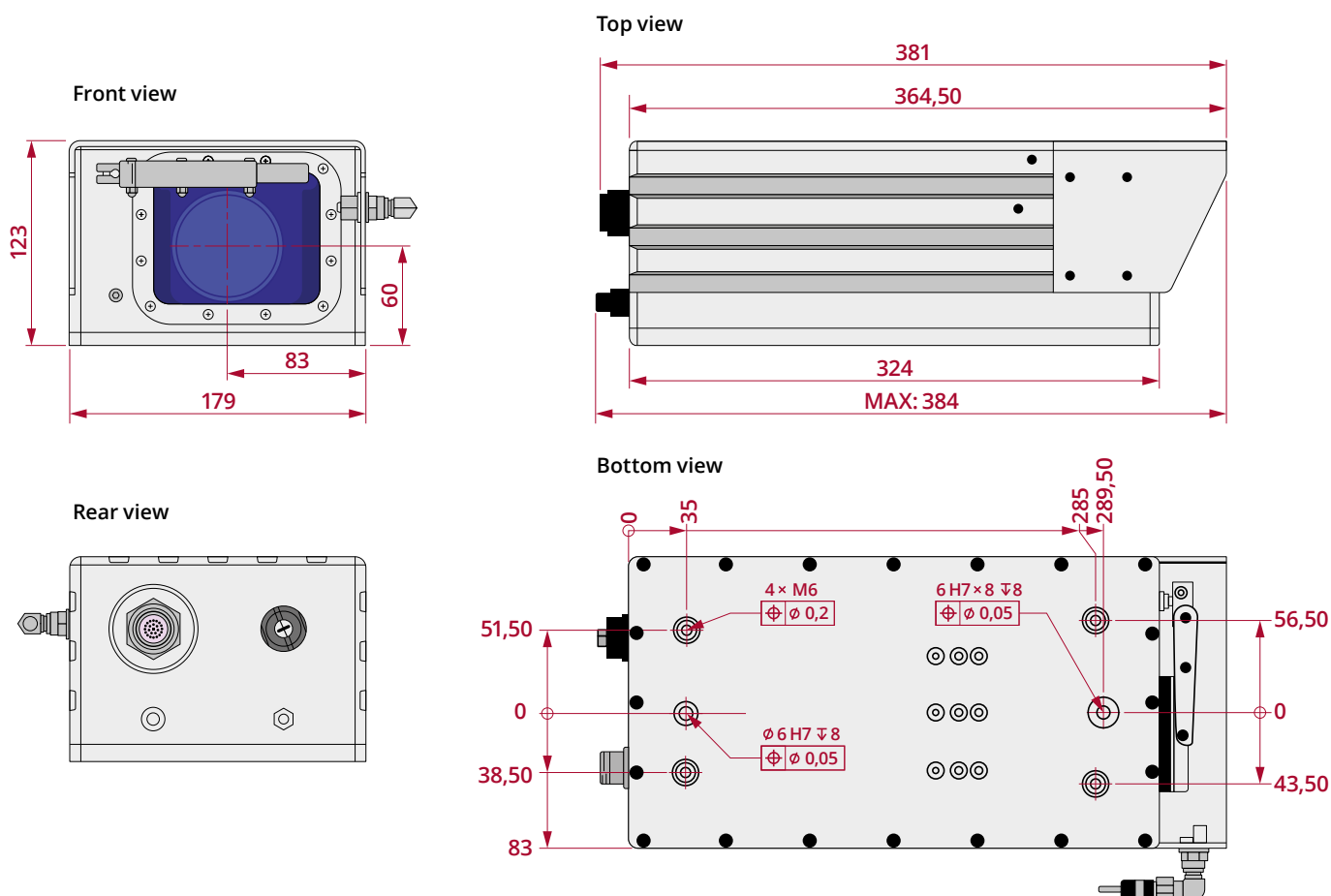


Coastal surveillance



Naval surveillance

Mechanical outline and dimensions



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Technical Specifications

	PAL	NTSC
Image system		
Sensor	1/3" colour CCD with complementary mosaic	
Effective pixels (H × V)	976 × 582	976 × 494
Aspect ratio	4:3	
Video output	Composite CVBS and YC, 1 Vpp, 75 ohm	
Video resolution, CVBS	560 TVL (15% video modulation, with lens)	
Sensitivity	0.015 lx, 25% video, F1.9, AGC on	
Spectral response	Visible + Near-IR (depending on IR-cut filter configuration)	
Signal to noise ratio	> 52 dB, AGC off	
Scanning system	2:1 Interlace	
Horizontal frequency	15.625 kHz	15.734 kHz
Vertical frequency	50 Hz	59.94 Hz
Focal length	11mm – 200mm zoom (18×)	
Field of view	Narrow: Horizontal 1.4°, Vertical 1° / Wide: Horizontal 25.1°, Vertical 18.9°	
Focus range	1.5m to ∞	
Iris range	f/1.9 to 22 @ WFOV	
Zoom control, travel time	≤ 6 seconds (25°C, both ways, wide to narrow FOV)	
Focus control, travel time	≤ 5 seconds (25°C, both ways, 1.5m to ∞)	
Functions		
Electronic shutter, fixed	1/50 to 1/10,000 sec.	
Gamma correction	0.45 / 1.0	
Automatic gain control	Maximum 36 DB Analog + 6 DB DGC	
White balance	Automatic, Tracking and One-Push	
Noise reduction	2D and 3D Digital Noise Reduction	
Fog penetration	Image contrast enhancement	
Auto focus	On demand	
Continuous digital zoom	2× range zoom window position	
Configuration, serial interface	RS-422 interface(galvanic separation), VISCA/CST protocol (optional CAN-BUS with CST protocol)	
Mechanical		
Overall dimensions – mm (W × H × L)	179 × 123 × 381 (including connectors & sunshield)	
Net weight	< 10kg	
Housing material	Aluminium with corrosion protection coating	
Protective housing integrity	IP 67	
Window cleaning system	Wiper and washer nozzle	
Connector (power, data, control)	22-pin circular – In accordance with MIL 38999	
Bore-sighting retention	±0.2 milliradians @ NFOV	
Environmental		
Operating voltage	15 to 36 VDC (power supply ground isolated from camera housing)	
Current consumption	< 30W including active heater in window	
Operating temperature	-40°C to +70°C	
Salt fog	In accordance with MIL-STD-810E	
Storage temperature	-40°C to +70°C	
Vibration	Wheeled vehicle MIL-STD 810G	
Shock	30g at 11ms	
Operating voltage	30,000 hours (MIL-HDBK-217-F)	

*Specifications are subject to change, without prior notice.

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