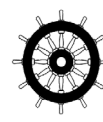
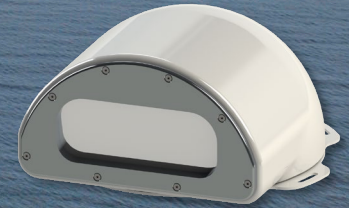


NIGHT VISION CERTIFIED TO THE IMO HSC CODE & WHEELMARK

NN 1000 Series



BENEFITS

- **Rugged, maritized, low maintenance** design
- **Intensifies available light on a scene** where the human eye cannot distinguish any elements, to provide a clear understanding of surroundings while navigating at sea at high speed.
- **Provides a clear, highly detailed image**, in HD, even when the object has the same temperature as its surroundings (log in the water, kayak in the water, ...)
- **Protected from excessive light exposure** through its ultra-fast auto-gating mechanism
- **Integrates on-screen display (OSD)** of lubber line, trim position, preset position, heading and more.
- **Performs** self-diagnostics, evaluating internal communications and various components, including controller IP address, software versions, internal temperature, humidity level and the pan and tilt parameters.
- **Configured as single payload** with no junction boxes or interface modules simplifies installations and retro-fits, while reducing maintenance.
- **Designed to withstand marine environmental conditions** and proven by over 10 years and hundreds of successful operating installations worldwide.

RUGGED. MARITIME. LOW MAINTENANCE.

The Night Navigator™ HSC is a High-Definition maritized Night Vision camera system, **certified for the HSC code and Wheelmark by the Lloyd's Register classification society, following the requirements of the IMO in Resolution MSC.94(72)**. It is designed for night navigation at high speed on High Speed Craft carrying passengers or crew.

The Night Navigator HSC is a critical equipment for safe navigation at high speed, providing visibility of potential obstacles in the navigation path, withstanding their temperature difference with the water. It is the HSC code certified night vision camera system of choice on HSC worldwide.

APPLICATIONS

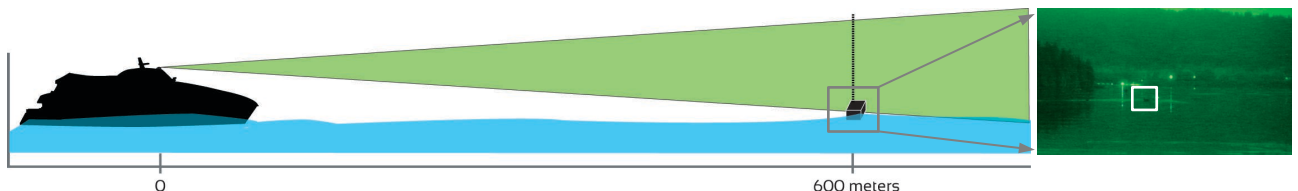
- High Speed Passenger Vessel
- High Speed Offshore Supply vessel

IMO DETECTION REQUIREMENT FOR ISO 16273 – IMO RESOLUTION MSC.94(72)

The Night Navigator HSC detects standard IMO target beyond the required 600 meters

HSC code IMO target definition:

Black metal target, 50% immersed in the water, in the water at least 24 hours before test at night
Target size 1.5m (L) x 1.5m (l) x 1m(H)



SYSTEM FEATURES

GATED IMAGE-INTENSIFIED HD NIGHT VISION

Sensor Type	4G
Resolution	1280x1024 pixels
Pixels	1,310,720
Spectral Response	450 - 950 nm
Luminous Sensitivity	0.15 MicroLux
Field of view	20°
Focus Control	Via controller
Window Coating	Anti-reflective & hydrophobic

PLATFORM SPECIFICATIONS

Dimensions	16.6cm (Height) x 34.8cm (Width) 6.53" x 13.70"
Weight	±5kg (11 lbs)
Pan Range	Preset positions 0° / 10° / 20° port & starboard
Tilt range	±9°
Voltage	24VDC (nominal)
Pressurized Camera Enclosure	

VIDEO DISPLAY AND SIGNAL

Standard Size	13.3" TFT Liquid Crystal Display module
Features	LED backlight technology
Viewable Angle	70° (H) 60° (V) (typical)
Power Consumption	Operating: 20W (typical) - 30W (maximum)
On-Screen Information Display	Lubber line, preset position, heading, range lines
Format	DVI or HD-SDI
The Hatteland Series X display range is a flexible monitor solution designed and type approved for the professional maritime segment, where reliability and long-life time are key pre-requisites for the industry	

TOUCHSCREEN CONTROLLER

Standard Size	8.0" TFT Liquid Crystal Display module
Features	LED backlight technology
Power Consumption	Operating: 20W (typical) - 30W (maximum)
The touch screen is based on Projected Capacitive Technology (PC Touch), which includes full multi touch support. Dimmable for Night Operation	

OPTION FOR HONG KONG NAVIGATION

Hong Kong Requirement	23° Field of View Secondary controller 20/10/10/20 button module Secondary monitor
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ENVIRONMENTAL

Ingress Protection Mark	IP67
Standards	MIL SPEC connectors
Operational temperature	-20°C to +50°C

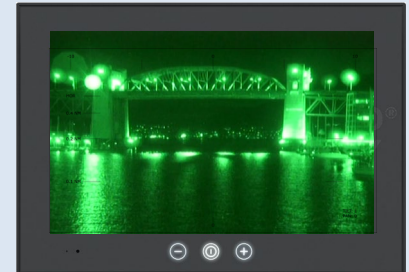
NN HSC INCLUDES



Payload platform & cables



Hatteland 8" Touchscreen control



Hatteland 13.3" Monitor

Specifications subject to change or improvement without notice. All Night Navigator sales are conditional to Canadian export license approval

HSC code - Type approval certification

ISO 16273:2003	Night vision equipment for high-speed craft Operational and performance requirements, methods of testing and required test results
IEC 60945 (2002)	Maritime navigation and radio communication equipment and systems – General requirements Methods of testing and required test results
IEC 62288 Ed. 1.0	Maritime navigation and radio communication equipment and systems - Presentation of navigation-related information on shipborne navigational displays - General requirements, methods of testing and required test results
MSC.36 (63)	International Code of Safety for High Speed Craft, 1994
MSC.94 (72)	Performance Standards for Night Vision Equipment for High-Speed Craft
MSC.97 (73)	International Code of Safety for High Speed Craft, 2000
MSC.191 (79)	Performance Standards for the Presentation of Navigation-Related Information on Shipborne Navigational Displays
Wheelmark	MarED European Marine Equipment Directive – EU Directive 2014/90/EU (MED)



CURRENT

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