

SENSOR XP 360-DEGREE SHIPBOARD ELECTRO OPTICAL/INFRARED IMAGING SYSTEM

Sensor XP offers automatic image processing, stitching and networked client interface for manual control/display of 360-degree electro optical/infrared (EO/IR) views.

DESCRIPTION

The Sensor XP maritime autonomous EO/IR imaging system provides the above-deck sensor unit (ADSU) and below deck interface electronics unit (IEU) for 360-degree views in both visible and mid-wave infrared (MWIR) spectrums. It offers automatic image processing, stitching and networked client graphical user interface (GUI) for manual control and display of 360-degree views and supports network video streaming of any desired view within its field-of-view (FOV). The system provides an active two-axis stabilization module for up to Sea State 5.

The interface supports a client application for GUI display and control of the Sensor XP system. Refer to the display format (Figure 1). The GUI displays fore and aft 180-degree image streams on top and bottom of the display with a zoomed image stream in the center and camera controls above the imaging windows. The GUI displays MWIR and visible image streams simultaneously.

The Sensor XP system also provides a window washer built into the visible module.



Figure 2 - Sensor XP Sensor Head

Each of the MWIR and visible sensor modules are hermetically sealed modules with dry nitrogen.

The Sensor XP system consists of the ADSU (Figure 2), interface cable and the IEU. The ADSU consists of a 360-degree rotating infrared sensor, a 360-degree visible staring array, window-washer manifold and a stabilizer platform. The below deck IEU consists of the server, power supply and client computer.

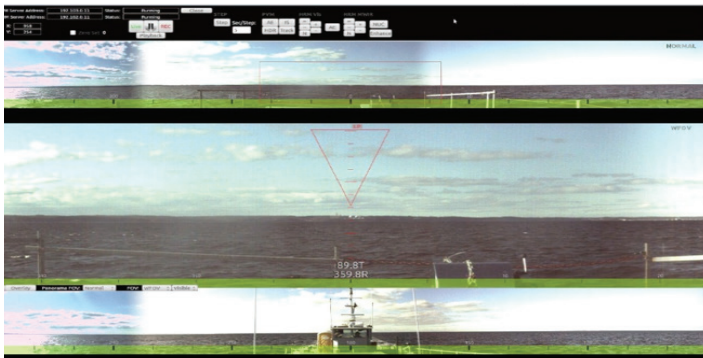


Figure 1 - Sensor XP GUI Display



FEATURES

- > 360-degree x 35-degree FOV visible spectrum
- > 360-degree x 15-degree FOV MWIR spectrum
- > Window-washing system
- > Two-axis stabilized
- > IP 67 enclosure

SENSOR XP SPECIFICATIONS

- > Size: 28.8" height x 24.2" width (73.2 cm height x 61.5 cm width) size includes stabilizer
- > Weight: 180 lb
- > Power: 464 watts

MWIR 360

- > Spectrum: 3-to-5 μm
- > Focal length: 48 mm
- > Aperture: F/2
- > Spinning array: 1280 x 720 pixels
- > FOV: 360 degrees X 15 degrees (-7.5 degrees to 7.5 degrees)
- > IFOV: 205 μr
- > Pixel pitch: 10 μm
- > Frame rate: 1.3 fps

VISIBLE 360

- > Spectrum: 0.45-to-0.65 μm
- > Focal length: 16 mm
- > Aperture: F/1.8-to-F/16
- > DAS: 4.4M x 3K (8 ea. 4K cameras)
- > FOV: 360 degrees x 35 degrees (-17.5 degrees to 17.5 degrees)
- > IFOV: 215 μr
- > Pixel pitch: 3.45 μm
- > Frame rate: 24 fps

STABILIZED PLATFORM

- > Travel: ± 20 degrees in roll and pitch
- > Rate: up to 10 degrees/second
- > IMU: built-in IMU

WINDOW-WASHER MANIFOLD

- > Dual air/liquid
- > Air pressure: 90-to-100 psi
- > Liquid: 60 psi ± 10

SENSOR XP-TO-SERVER INTERFACE CABLE

- > 100 ft length (30.5 m)
- > Waterproof

INTERFACE ELECTRONICS UNIT

- > Enclosure: 18.8" height x 22.7" width x 34.5" depth (47.8 cm height x 57.7 cm width x 87.6 cm depth)
- > Server:
 - Dual socket multi-core Linux server; dual NVIDIA Turing/Volta series GPUs
- > Camera interfaces:
 - 10GigE vision SFP+
 - Quad CoaXPress CXP-12
- > Power supply: 1,000 watts
- > Client computer

CAPABILITIES

- > 360-degree detection and tracking
- > Day or night operation
- > Autonomous or manual
- > Passive ranging of surface objects of interest

SENSOR XP

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1025 W. NASA Boulevard
Melbourne, FL 32919
t 413 586 2300 | f 413 586 1324
ProductSales@L3Harris.com