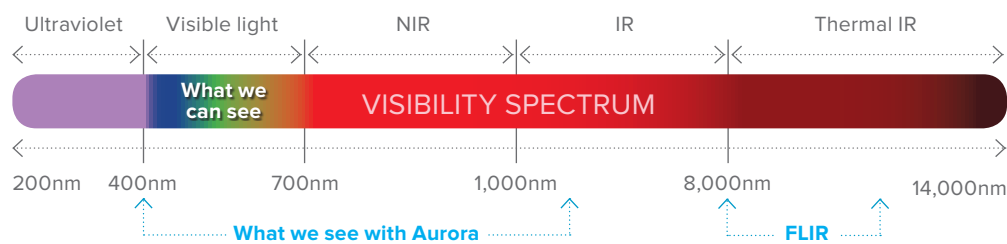
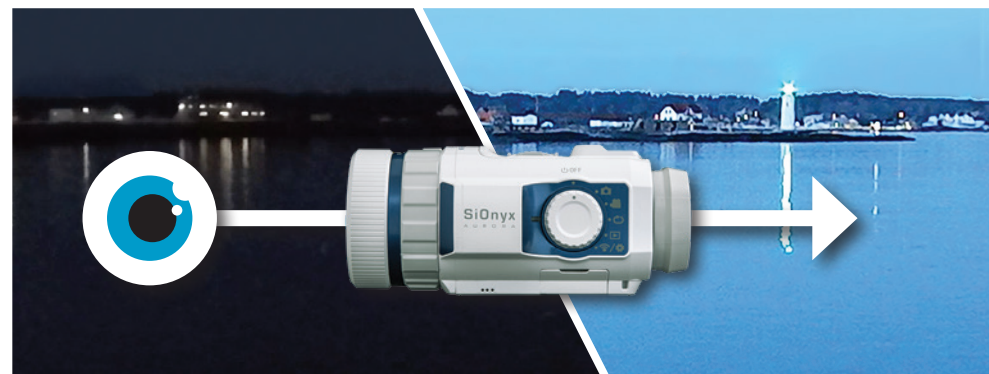


Night Vision

How technology makes seeing in the dark possible

By Doug Thompson



The technology has improved and prices have dropped, so equipping your boat with night vision makes sense for almost every boat owner. Not only can you see at night, but one manufacturer's product delivers images in color and lets you record video. Night vision products from companies such as FLIR and SiOnyx use sensors that take in data from the infrared (IR) spectrum.

SiOnyx

"The IR spectrum is very large," explains Dan Cui, vice president of sales for SiOnyx, based in Beverly, Massachusetts. "Our SiOnyx sensor is at one side of the IR spectrum called Near IR (NIR), and FLIR is at the other end called Long Wave (Thermal) IR. Digital night vision (NIR) produces clearly defined details, while FLIR sees temperature differences."

The SiOnyx Aurora Sport is used as a navigation aid and can take 720-pixel color video of night events. The night vision action camera can mount on your boat and operates remotely from 100 feet away through an iOS or Android device; however, it doesn't connect to your multifunction displays. It retails for \$399.

"Because we design and produce the sensors, we not only have cost advantages, but technology advantages by being first to market and providing consumers with next-gen technology that might not normally be available to consumers for years, says Cui."

FLIR

FLIR's experience in the night vision market is substantial, and its wide array of products gives consumers many choices.

"In the marine space, the FLIR Ocean Scout TK is our lowest-priced handheld at five-hundred ninety-nine dollars," says Jim McGowan, FLIR Maritime's Americas marketing manager. "This device is a fully waterproof monocular that can take digital stills and video in thermal. It uses our one hundred-sixty by one hundred-twenty resolution FLIR Lepton thermal core. The Ocean Scout TK is a great entry point into thermal imaging for boaters." The Ocean Scout will pick up targets like other boats,

buoys, and navigation aids out to about 300 feet, while a person in the water is visible to about 150 feet. FLIR's other models offer increased range and detail, but they are much more expensive.

For example, the FLIR Scion OTM (Outdoor Thermal Monocular) starts at \$2,495 and uses the company's latest generation FLIR Boson thermal core. It has a higher resolution than the Ocean Scout TK that gives it a much farther range capability and detail, a 4x digital zoom, and can record video and capture still images. It's available with built-in GPS and compass which is great for geo-tagging images. "It also has built-in Wi-Fi and Bluetooth that will allow it to stream video to other devices wirelessly," says McGowan.

Future Development

SiOnyx is working on ways to integrate more features into the Aurora Sport. "The Aurora Sport is the latest addition to our Aurora color night vision product line and is our primary marine offering," says Cui. "In a future update, the Aurora Classic (black version) will offer advanced Augmented Reality (AR) features. This includes being able to see AIS information when looking at boats at night right on the display."

For FLIR, equipping boats with fixed night vision systems has become part of making low-light operation safer. Fixed thermal camera systems are gaining popularity on boats 25 feet and longer thanks to some breakthroughs that have significantly reduced their price.



FLIR's Scion OTM (Outdoor Thermal Monocular)

"FLIR's M232 thermal camera, for example, is priced at three thousand, four hundred and ninety-nine dollars and offers full pan, tilt, and zoom capability," says McGowan. "The ultra-compact camera fits just about anywhere and can display on leading MFDs from Raymarine, Garmin, and Furuno. The M232 can integrate with your chartplotter and radar, too. Touch the chart or radar scope, and the M232 can slew to that position or track that radar target."

Anyone who has sat through a night watch will appreciate the ClearCruise IR Analytics when paired with a Raymarine

Axiom MFD. Working together, the FLIR M232 thermal camera and Axiom MFD will automatically detect, highlight, and alert those on watch to non-water objects in the thermal camera's field of view.

"It's like having an extra set of eyes on watch, which is especially nice at night if you are alone on board," says McGowan. "Floating debris, navigational aids, unlit boats, and any other non-water objects at or below the horizon will be highlighted with a yellow tracking box and optionally announced with an audible peep when detected."

The system can even estimate the range to those targets. If it happens to be another vessel broadcasting AIS or a charted navigation aid, the Augmented Reality ID tag will track that item across the screen so you know exactly what it is.

Determining whether to buy a handheld or a fixed-mount system depends on usage and budget. You can take a handheld on board for a night trip and then bring it home to use for a camping trip. Boaters who do lots of extended night cruising on boats with an enclosed helm or pilothouse should consider a fixed-mount camera. The integration with other onboard electronics makes them easy-to-use, very powerful tools.

Night vision can make boating safer and possibly help save lives in an emergency.

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