MACHINE VISION
FOR SAFETY AT SEA

SEA.AI

NOW YOU SEE.

DANGER ALERT

⚠ HAZARD

220m   0kn

Now you see.

SEA.AI alerts crews early and reliably about objects on the surface of the water.

Using latest camera technology in combination with artificial intelligence, SEA.AI detects and classifies objects, including those that escape conventional systems such as Radar or AIS – floating objects, rafts, buoys, boats without AIS and persons overboard.

PIONEERING TECHNOLOGY FOR MARITIME SAFETY

BOOST SITUATIONAL AWARENESS

Intelligent, untiring 24-hour multi-purpose lookout with intelligent alarm functions, displaying safety-relevant information in an easy-to-understand way.

SEE BETTER THAN THE HUMAN EYE

Detection, identification and monitoring of floating obstacles of any size and kind, by day and night even in the most adverse conditions.

MAKE BETTER-INFORMED DECISIONS

On-board cameras with integrated image processing and an intuitive interface provide a complete under-standing of the vessel's surroundings on water.

SEA.AI BRIDGES AWARENESS GAPS

SEA.AI vs. conventional assistance systems	AIS	RADAR	SEA.AI
Detecting land structures	–	✓	–
Detecting squalls / weather fronts	–	✓	–
Detecting ships / large boats	✓	✓	✓
Recognizing ships / large boats	✓	–	✓
Detecting small boats	–	–	✓
Recognizing small boats	–	–	✓
Detecting persons in water	–	–	✓
Detecting other floating obstacles	–	–	✓

How it works

SEA.AI computes input from low-light and thermal on-board cameras to paint a digital landscape of the vessel's surroundings.

High-performance cameras record the sea non-stop from the vessel to the horizon in all directions. Artificial intelligence processes images in real-time, detects floating hazards and warns the crew.

FROM CAMERA INPUT TO ALERTS ON YOUR SCREEN

RISK CALCULATION

CLASSIFICATION

OBJECT DETECTION

REAL-TIME IMAGE

SEA.AI offers smart navigation assistance for advanced situational awareness – from direct camera input through real-time image processing to alarms on your screen.
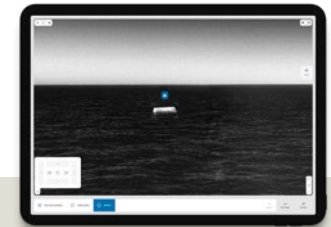
OBJECTS DATABASE

Built and exclusively owned by SEA.AI, our database is at the core of the ongoing training of the system's artificial intelligence.

✓ Over 10 million nautical miles on-water experience around the world

✓ Over 9 million marine objects identified

✓ Continuously gathering data for enhanced detection of objects

CAMERA UNIT

Combination of high-resolution, low-light and thermal cameras with integrated image processors

✓ High resolution images day and night

✓ Detection of temperature differences up to 0.05°C

✓ Image stabilization at pixel-level accuracy

✓ Works stand-alone, no internet connection required

ARTIFICIAL INTELLIGENCE

Integrated image processing software, developed and owned by SEA.AI

✓ Real-time processing of the camera stream

✓ Detection and tracking of objects through proprietary algorithms

✓ Iterative software, constantly gaining competence

ⓘ With every software update the object recognition becomes ever more performing

SITUATIONAL AWARENESS

Control the system using the SEA.AI app on the vessel's onboard multifunction displays, computers or on tablets

✓ Augmented reality video stream

✓ Intelligent alarm-based at threat level

✓ Intuitive design

SEA.AI

The future on open water

> "Engineers know there is a solution to every problem. On deck it's impossible to be 100% alert 100% of the time. The sea doesn't forgive. SEA.AI gives me peace of mind that I will be warned of any obstacle."

Raphael Biancale
SEA.AI Founder

We pioneered the first, maritime AI-driven anti-collision camera sensor in 2018.

AIS, radar and sonar are pillars of maritime technology. SEA.AI goes further. It takes a bold leap forward with the first AI-powered lookout system. No longer confined to traditional methods, our innovation transcends boundaries, ushering in a new era where human and artificial intelligence collaborate seamlessly on the bridge.

As marine mobility continues its digital transformation, collaboration between human and machine will play an increasingly vital role. We are a pivotal contributor to ongoing innovation in seafaring through artificial intelligence and machine learning. With a proven track record, we are at the forefront of shaping the future of maritime technology.

SEA.AI ⟔

SEA.AI compatibility

macOS   iOS   Microsoft   Android 🤖

B&G   ⓕFURUNO®   GARMIN

Raymarine   SIMRAD

Established partners in more than 60 countries

Designed to spot the hazard

SEA.AI SENTRY

For commercial and government use as well as on motor yachts

SEA.AI OFFSHORE

Wired-tight safety for sailors

SEA.AI COMPETITION

For ocean racing and performance yachts

SEA.AI systems fit mariners' individual profiles.
From recreational motor and sailing yachts to commercial
fleets, authorities, SAR organizations, first responders and
autonomous vessel manufacturers.

MODEL PROPERTIES	SENTRY	OFFSHORE	COMPETITION
Day view	✓	✓	✓
Night view	✓	✓	✓
Object recognition	✓	✓	✓
Collision avoidance alarm	✓	✓	✓
Perimeter surveillance alarm	✓	–	–
Object tracking	✓	–	–
Manual camera control	✓	–	✓
Electronic zoom	8x	–	–
Rotation	360°	–	±50°

> "Everyone can benefit from it, whether racing boats, commercial boats or cruising sailors. SEA.AI is a proven concept and I think it will save lives."
>
> Samantha Davies
> Skipper of the IMOCA Initiatives Coeur

Light weight, heavy duty

Whether in solo or double-handed races, the crew's safety hinges on cutting-edge onboard systems.

Adding SEA.AI equipment to the vessel confronts one of the gravest concerns at sea. Potential collision with vessels lacking AIS signals and lurking unnoticed on radar. In these critical moments SEA.AI steps in, providing comprehensive situational awareness with 24/7 automatic detection and sounding alarms to alert the crew.

WATCH THE VIDEO
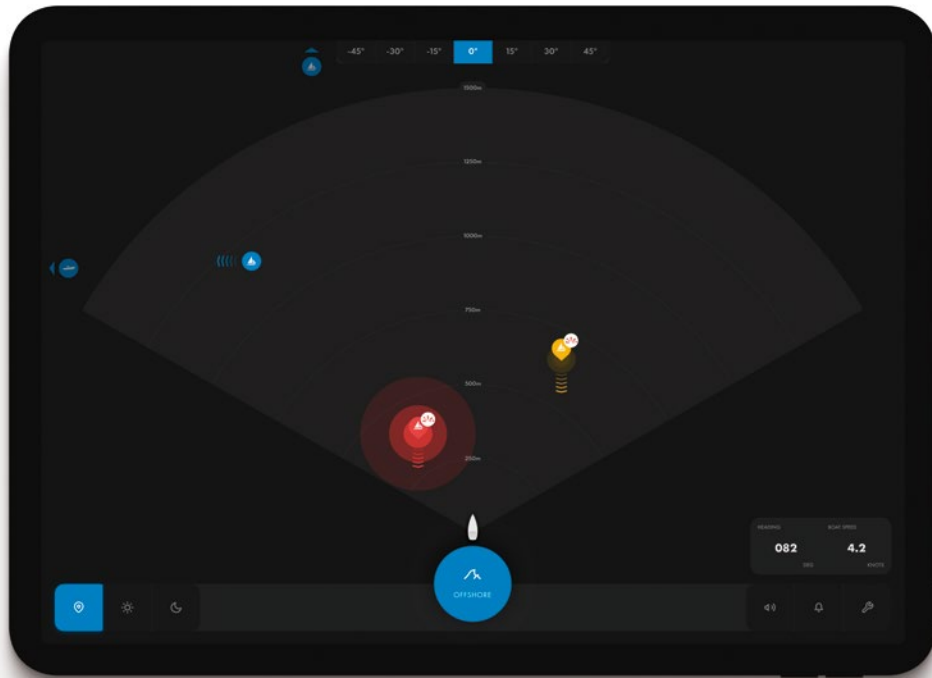
FEATURES

✓ Object detection from nearfield to horizon

✓ Works day and night

✓ 50° field of view by night, 110° field of view by day

✓ +/- 50° rotation

✓ 750g at mast top

✓ Highly-intuitive interface

✓ 3 alarm modes. Harbor, coastal, offshore

✓ 3 view modes. Daylight view, thermal view, map view

✓ Person in water detection up to 150m

✓ Built to fit on rotating masts

✓ Compatible with major brand MFDs, iOS and Android

✓ Constantly gaining performance with each software update

System alarms

AI-trained on real-life objects

Range and speed of detected objects

The choice of pro sailors

SEA.AI collision avoidance systems are at home on IMOCA and Ultim boats as well as on performance yachts, demonstrating their endurance and reliability even in the harshest conditions – allowing for the crew and solo sailors to stay focused.

PRODUCT RECOMMENDATIONS

SEA.AI Competition 640
SEA.AI Competition 320

> **"** I'm really pleased with the system. SEA.AI assists me when I need to do many things at the same time."

John Haurum, owner of an X-Yacht 49' Flux

WATCH THE VIDEO

Smooth sailing

In the zone. SEA.AI systems reduce stress and take considerable weight off skippers' shoulders. Solo and those enjoying time with shipmates.

The system alerts instantly about objects in the vessel's path, be it other boats without signal, buoys, fast vessels on collision course or even icebergs. The integrated thermal camera enables the system's night view and more. Exact temperature sensitivity also allows SEA.AI's machine intelligence to detect persons in the water.
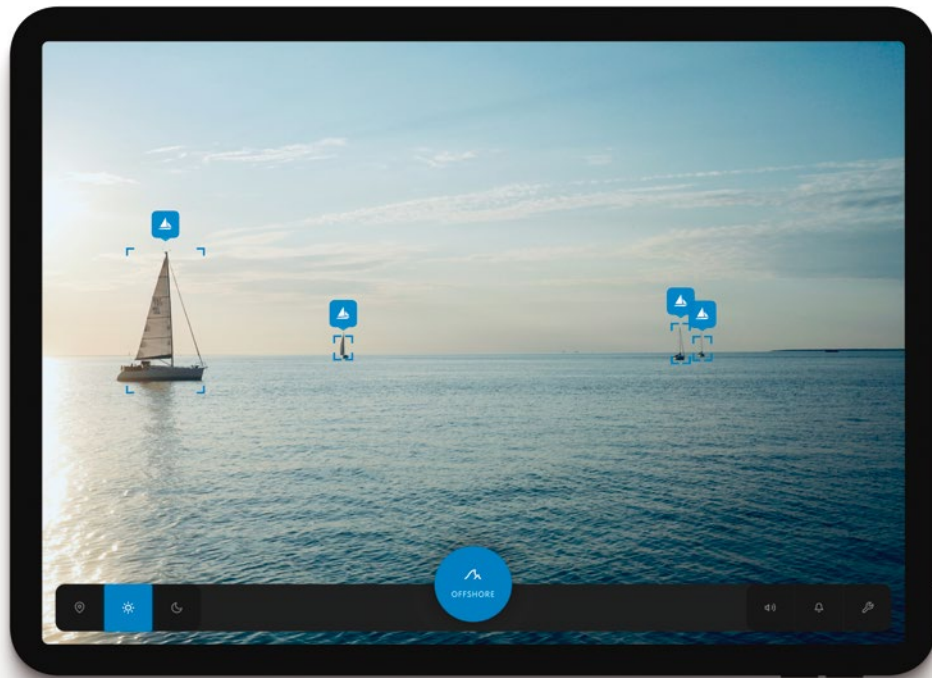
FEATURES

✓ Object detection from nearfield to horizon

✓ Works day and night

✓ Highly-intuitive interface

✓ 3 alarm modes. Harbor, coastal, offshore

✓ 3 view modes. Daylight view, thermal view, map view

✓ Detects persons overboard and fishing buoys up to 150m

✓ Runs simultaneously on multiple screens

✓ Compatible with major brand MFDs, iOS and Android

✓ Constantly gaining performance with each software update

System alarms

AI-trained on real-life objects

Range and speed of detected objects

Navigate and cruise safely with SEA.AI

Rely on SEA.AI's 24/7 automatic detection on night trips or long travel segments. Safe navigation through crowded or otherwise confusing waters, and for detecting small objects.

PRODUCT RECOMMENDATIONS

Different models cater to your specific needs:

SEA.AI Offshore 640
SEA.AI Offshore 320
SEA.AI Offshore One

SEA.AI Competition 640
SEA.AI Competition 320

Enjoy the precious moments

SEA.AI enhances cruising safety and comfort by detecting boats and objects missed by conventional systems like AIS or radar. Crews can rely on increased navigational safety thanks to SEA.AI's heightened situational awareness and anti-collision functionality. Enjoy privacy with 360° surveillance mode, alerting the crew about approaching boats and objects within the set alarm radius.

WATCH THE VIDEO
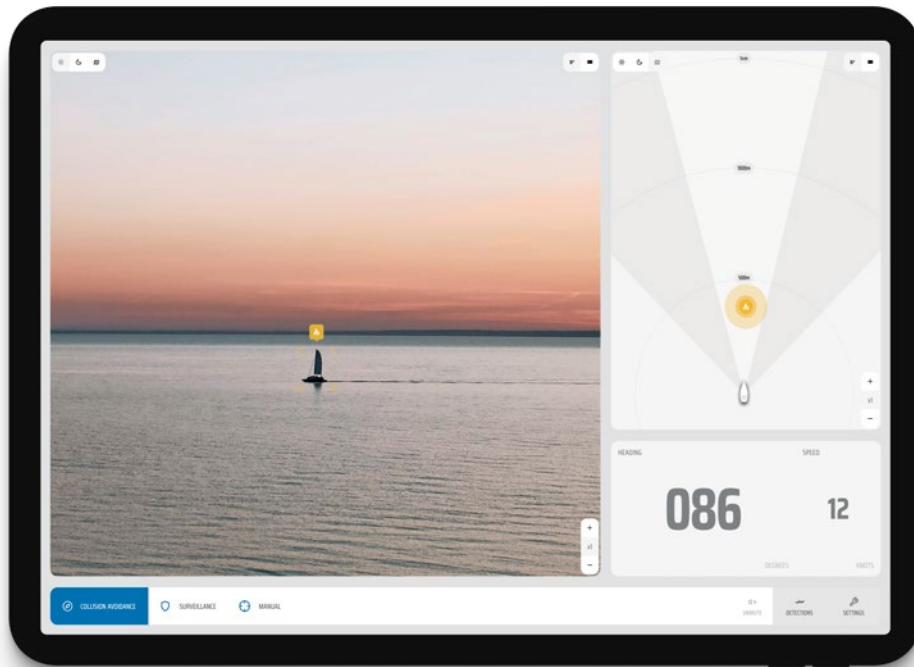
System
alarms

360° perimeter
monitoring

Range of
detected objects

FEATURES

✓ Object detection from nearfield to horizon

✓ Works day and night

✓ Person in water detection up to 700m

✓ Individual alarm settings

✓ Highly intuitive interface with 3 viewing modes.
Daylight camera, thermal camera, map

✓ Manual control with 360° panning, +/- 20° tilt
and 8x zoom

✓ Object tracking mode

✓ High-detection frequency

✓ Image stabilization

✓ Compatible with computers, iPads and MFDs that
support HDMI input

✓ Constantly gaining performance with each software
update

Welcome the uncompromising power of AI-driven detection onboard

✓ **High performance design.** Utilize fast-detection anti-collision mode for secure
navigation at high speed and 360° surveillance for enhanced vessel protection

✓ **State-of-the-art AI-driven image processing** to advance efficiency of security
and navigational safety

✓ **Cutting-edge machine vision technology** trained on millions of real objects on water

PRODUCT RECOMMENDATION

SEA.AI SENTRY

**The first choice for private
yachts of all sizes**
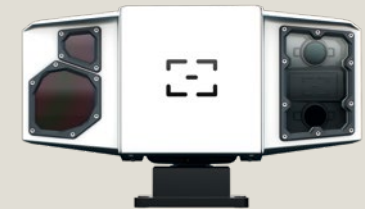
Supreme privacy with SEA.AI

SEA.AI enhances security on private yachts by detecting approaching boats or objects on the water, especially those eluding conventional systems like AIS or radar. In 360° surveillance mode, SEA.AI alerts the security staff 24/7, enhancing the efficiency of their mission.

During the cruise, the crew and passengers can rely on increased navigational safety thanks to the heightened situational awareness and anti-collision functionality of SEA.AI.

WATCH THE VIDEO

| System alarms | 360° perimeter monitoring | Range of detected objects |

FEATURES

✓ Object detection from nearfield to horizon

✓ Works day and night

✓ Person in water detection up to 700m

✓ Manual control with 360° panning, +/- 20° tilt and 8x zoom

✓ Object tracking mode

✓ Individual alarm settings

✓ Highly-intuitive interface with 3 viewing modes. Daylight view, thermal view, map view

✓ High-detection frequency

✓ Image stabilization

✓ Compatible with computers, iPads and MFDs that support HDMI input

✓ Constantly gaining performance with each software update

Pioneering AI-driven object detection for heightened situational awareness – unparalleled in the market

✓ State-of-the-art AI-driven image processing to advance efficiency of security and navigational safety

✓ Cutting-edge machine vision technology trained on millions of real objects on water

✓ High-performance design. Utilize fast-detection anti-collision mode for secure navigation at high speed and 360° surveillance for enhanced vessel protection

PRODUCT RECOMMENDATION

SEA.AI SENTRY

The first choice for private yachts of all sizes

GET IN TOUCH
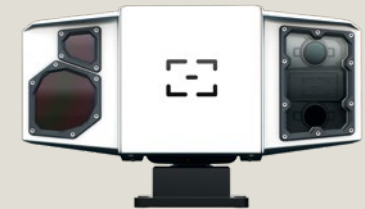
Life-saving support

SEA.AI is the first system to detect persons in water. Whether night or otherwise challenging conditions. SEA.AI's built-in thermal cameras precisely detect objects by temperature differences as small as 0.05°C.

Meticulously designed to bridge awareness gaps left by unsignalling objects effectively bypassing AIS and radar signals, SEA.AI supports efficient rescue and surveillance missions. SEA.AI equips crews with a comprehensive view from a secure vantage point, day and night, allowing for ideal operational speed with unwavering confidence.

FEATURES

✓ Object detection from nearfield to horizon

✓ Works day and night

✓ Person in water detection up to 700m

✓ Automated object tracking

✓ Manual control with 360° panning, +/- 20° tilt and 8x zoom

✓ Highly intuitive interface with 3 viewing modes. Daylight view, thermal view, map view

✓ High detection frequency

✓ Image stabilization

✓ Stand-alone solution

✓ Runs simultaneously on multiple devices, compatible with computers, iPads and MFDs that support HDMI input

✓ Constantly gaining performance with each software update

Detect persons overboard

System alarms

360° perimeter monitoring

Range of detected objects

Enhance operational safety and efficiency with AI-powered detection of objects and persons overboard

✓ **Detect humans and animals.** Enabled by AI-driven thermal image processing, with powerful detection ability day and night, when human eyes face limitations

✓ **Target tracking.** Use the system's object tracking mode for rescue

✓ **Crew alerts.** Alarm alerts when attention is diverted to rescue activities

✓ **Stand-alone system.** Autonomous

PRODUCT RECOMMENDATION

SEA.AI SENTRY

The first choice for SAR and institutions with coastal monitoring and life-saving duties.

INNOVATION AWARDS WINNER
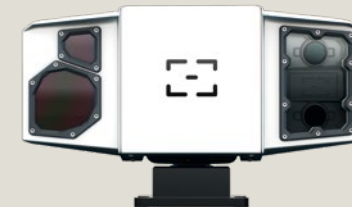
SEA.AI SENTRY

Superior 360° situational awareness for motor yachts and surveilled maritime areas – day and night. Comprehensive optical and thermal camera setup, complemented with a powerful processing unit.
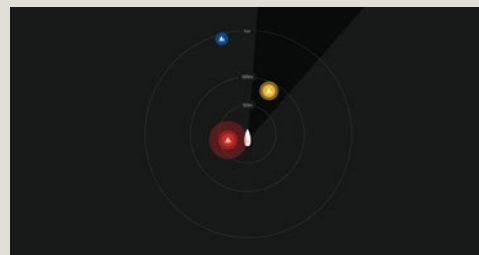

AWARD WINNER 2021 — INNOVATION AWARDS

TARGET TRACKING

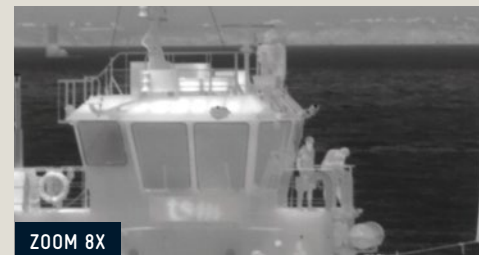Keep selected object center-screen, e.g. monitoring a person overboard or tracking a tender.
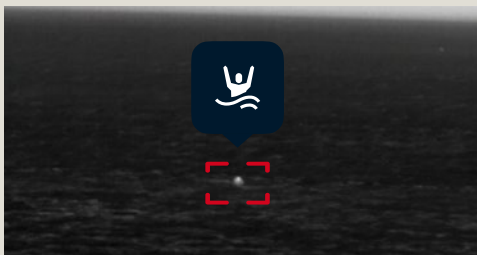
PERIMETER SURVEILLANCE

360° scanning of the surroundings on water. Intelligent alerts of approaching objects entering a selected perimeter.

MANUAL CONTROL

Investigate areas and objects of interest using 8x electronic zoom.

ZOOM 8X

COLLISION AVOIDANCE

Forward panning. Intelligent alarm alerts of impending collision risk with objects in the vessel's path.

MODEL FEATURES	SENTRY
DETECTION ANGLE DAYLIGHT & TWILIGHT	360°
DETECTION ANGLE NIGHT	360°
DETECTION FREQUENCY	10/sec
RESOLUTION	2x thermal: 640 x 512 px 2x low-light: 2592 x 1944 px
IMAGE STABILIZATION	yes (gyro + digital)
PAN	360°
TILT	+/- 20°
WEIGHT	5.4 kg

DETECT PERSONS OVERBOARD

Built-in thermal cameras measure temperature differences as small as 0.05°C for detection of persons overboard.

DETECTION RANGES

Detection range varies depending on weather conditions.

up to 700 m	up to 3,000 m	up to 7,500 m	horizon
BUOY, PERSON IN WATER, ETC.	DINGHY, RIB, INFLATABLE	MOTORBOAT, SAILBOAT	LARGE VESSEL

SEA.AI OFFSHORE

State-of-the-art AI safety and convenience for blue water sailing.

SEA.AI OFFSHORE ONE

The compact sailing SEA.AI system

An extra slim design integrating 3 cameras and the AI processor into one housing. Shorter detection ranges for slower boats.

SEA.AI OFFSHORE 320

The ocean wanderer's SEA.AI system

Standard detection range for safe offshore cruising with an eye on energy consumption. Advanced electronic image stabilization and 6 frames per second detection frequency for reliable performance even in unfavorable sea conditions.

SEA.AI OFFSHORE 640

The ultimate SEA.AI system for sailing yachts

Full processing power and the highest resolution thermal cameras deliver. Higher display resolution, improved zoom capabilities and superior detection performance with extended range for smaller objects. Offshore sailing in uncompromising safety.

MODEL FEATURES	OFFSHORE ONE	OFFSHORE 320	OFFSHORE 640
DETECTION ANGLE DAYLIGHT & TWILIGHT	50°	110°	110°
DETECTION ANGLE NIGHT	50°	50°	50°
DETECTION FREQUENCY	3/sec	6/sec	6/sec
RESOLUTION	2x thermal: 256 x 320 px (combined to 512 x 320 px)	2x thermal: 256 x 320 px (combined to 512 x 320 px)	2x thermal: 512 x 640 px (combined to 1024 x 640 px)
	1x low-light: 2592 x 1944 px	1x low-light: 2592 x 1944 px	1x low-light: 2592 x 1944 px
WEIGHT	990g	990g	990g
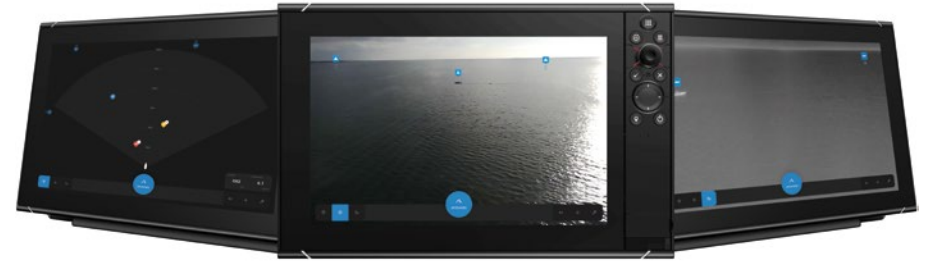
Easy to use

The user interface displays three viewing modes. Map view, low-light camera augmented reality and thermal camera augmented reality view.

DETECTION RANGES

Detection range varies depending on weather conditions.

		BUOY, PERSON IN WATER, ETC.	DINGHY, RIB, INFLATABLE	MOTORBOAT, SAILBOAT	LARGE VESSEL
SEA.AI OFFSHORE ONE		up to 100 m	up to 250 m	up to 1,000 m	horizon
SEA.AI OFFSHORE 320		up to 100 m	up to 450 m	up to 1,300 m	horizon
SEA.AI OFFSHORE 640		up to 150 m	up to 750 m	up to 2,000 m	horizon

SEA.AI COMPETITION

Ultra-lightweight units on offshore raceboats and performance yachts are reliable and detect immediately.

SEA.AI COMPETITION 320

The reduce-to-the-max racing SEA.AI

Ultra-lightweight 750g masthead camera unit for rotating masts. Standard detection range, electronic image stabilization, automatic mast rotation compensation, +/-50° manual panning.

SEA.AI COMPETITION 640

The radical racing SEA.AI

Ultra-lightweight 750g masthead camera unit for rotating masts. Extended detection range, advanced electronic image stabilization, automatic mast rotation compensation and +/-50° manual panning.

MODEL FEATURES	COMPETITION 320	COMPETITION 640
DETECTION ANGLE DAYLIGHT & TWILIGHT	110°	110°
DETECTION ANGLE NIGHT	50°	50°
DETECTION FREQUENCY	3/sec	3/sec
RESOLUTION	2x thermal: 256 x 320 px (combined to 512 x 320 px) 1x RGB: 1920 x 1080 px	2x thermal: 512 x 640 px (combined to 1024 x 640 px) 1x RGB: 1920 x 1080 px
PAN	+/–50°	+/–50°
WEIGHT	750g	750g

Easy to use

Control your SEA.AI system with the SEA.AI app on multiple devices, the chart plotter or an onboard computer.

DETECTION RANGES

Detection range varies depending on weather conditions.

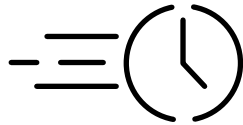|	SEA.AI COMPETITION 320	SEA.AI COMPETITION 640
BUOY, PERSON IN WATER, ETC.	up to 100 m	up to 150 m
DINGHY, RIB, INFLATABLE	up to 450 m	up to 750 m
MOTORBOAT, SAILBOAT	up to 1,300 m	up to 2,000 m
LARGE VESSEL	horizon	horizon

INSTALLATION SUPPORT

For professional installation of SEA.AI units and ongoing support, please find your nearest dealer on www.sea.ai

UPDATES AND PERFORMANCE IMPROVEMENTS

SEA.AI detection excellence draws from an ever-growing database and updated algorithms. Regular software updates constantly enhance the system.

REMOTE SOFTWARE SERVICE SUPPORT

Remote support wherever your SEA.AI system is headed or stationed – including the most remote corners of the planet.

SEA.AI

Machine Vision at Sea

Find us on

www.sea.ai

For any information:
contact@sea.ai