

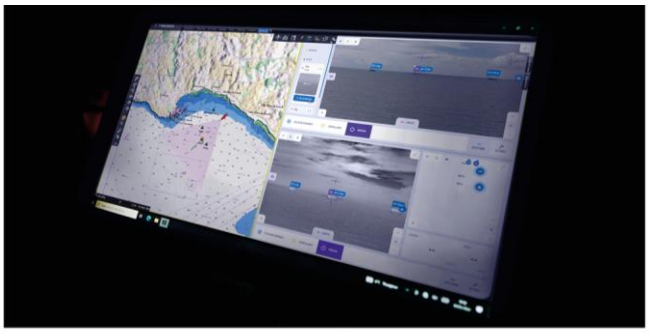


SENTRY

Sentry starts with the AI — the hardware is built around it.

A real-time onboard AI sits at the core, wrapped in a gyro-stabilized pan-and-tilt platform and a dual-lens EO/IR system. Together they autonomously detect, classify, and track surface threats across full 360° coverage, day and night, in any weather. Where conventional cameras show you video, Sentry delivers confirmed alerts.





Applications

- ✓ Search & Rescue
- ✓ Navy, patrol vessels & coast guard
- ✓ Maritime domains awareness & border surveillance
- ✓ Offshore platforms & critical infrastructure
- ✓ Commercial vessel & Marine Mammal Observation (MMO)

Key Capabilities

- ✓ Passive operation incl. passive range estimation
- ✓ Onboard processing, no cloud dependency
- ✓ Persistent multi-target tracking
- ✓ API with Video streams and SEA.AI Targets
- ✓ Seamless integration with existing bridge and security system

PRODUCT SPECIFICATIONS SEA.AI SENTRY

IMAGING SENSORS

Parameter	Specification
Thermal (IR) Sensors	2× 640×512 px — Uncooled LWIR VOx Microbolometer
NEDT	≤ 30 mK
IR Lenses / FoV (H×V)	14 mm wide — 32° HFOV / 55 mm narrow — 8° HFOV (AI on both sensors)
IR Zoom equivalent	4× optical equivalent + 2× digital e-zoom
Electro-Optical (EO) Sensor	2× 5 MP CMOS Low-Light — 2592 × 1944 px
EO FoV (H×V)	8 mm wide — 34° HFOV / 35 mm narrow — 8° HFOV
EO Zoom equivalent	4× optical equivalent + 2× digital e-zoom

MECHANICAL & ELECTRICAL

Parameter	Specification
Dimensions	355 × 202 × 250 mm (H × W × L)
Weight	6.2 kg
Power Supply	24 V DC | 50–70 W
Temperature Rating	–25 °C to +55 °C (operating) +70 °C (storage)
IP Rating	IP67
Shock Resistance	10 G (ISO 16273:2020 § 5.2.2) | controllable up to 45 G at 11ms half-sine

SYSTEM SPECIFICATIONS

Parameter	Specification
Pan / Tilt	360° continuous or panning | ±20° tilt
Inertial Measurement Unit (IMU)	9 DoF — heading, pitch, roll, acceleration
Mechanical Stabilization	2-axis gyro (pan & tilt)
Digital Stabilization	IR + EO — high-frequency vibration & shock compensation
AI Processing	NVIDIA® Jetson AGX Xavier™ — 512-core Volta™ GPU, 8-core ARM® v8.2
AI Detection Rate	Thermal — 8 FPS
Object Classes	Unknown Hazard, Vessel, Motorboat, Sailing boat, Buoy, MOB
AI Modes	Collision Avoidance | Surveillance | Sector Watch
Tracking	AI target tracking (Camera is following a selected target)
Passive Ranging	Camera-only distance estimation — no active emitter (SEA.AI Patent)

DETECTION RANGE*

Target	Detection Range** (narrow lens, 55 mm)
RHIB (6 m × 2 m)	5,250 m
NATO Target (2.3 m × 2.3 m)	3,500 m
Human-sized Target (1.8 m × 0.5 m)	1,450 m
MOB, Buoy (0.4 m × 0.5 m)	700 m

*Theoretical detection range per 2D Johnson Criterion (3 pixels across the target), 85–90% probability (STANAG 4347), computed on the 55 mm narrow thermal lens (8° HFOV, 640 px). **Disclaimer: These are theoretical optical values. The actual achievable detection range is limited by the curvature of the earth and by atmospheric attenuation — under high humidity, rain or fog it can be reduced.

EMC COMPLIANCE & INTERFACES

Parameter	Specification
EMC Directive	EU 2014/30/EU — Electromagnetic Compatibility
EMC Emissions	EN 55032:2015/A11:2020 (Multimedia equipment)
EMC Immunity	EN 55035:2017/A11:2020 (Multimedia equipment)
RoHS	2011/65/EU — Restriction of Hazardous Substances
CE Declaration	SEA.AI GmbH, Linz, Austria — 12 November 2024
Interfaces	Ethernet | NMEA 2000 via ShipModule-3e-N2K
Video Output	H.264 / H.265 / VP9 / RTSP | WebRTC (WebApp)
API & Data Output	Standard API & Extended API | RTSP video (H.264/H.265) | WebSocket image stream | WebRTC | TTM/TLL target output | Pelco-D