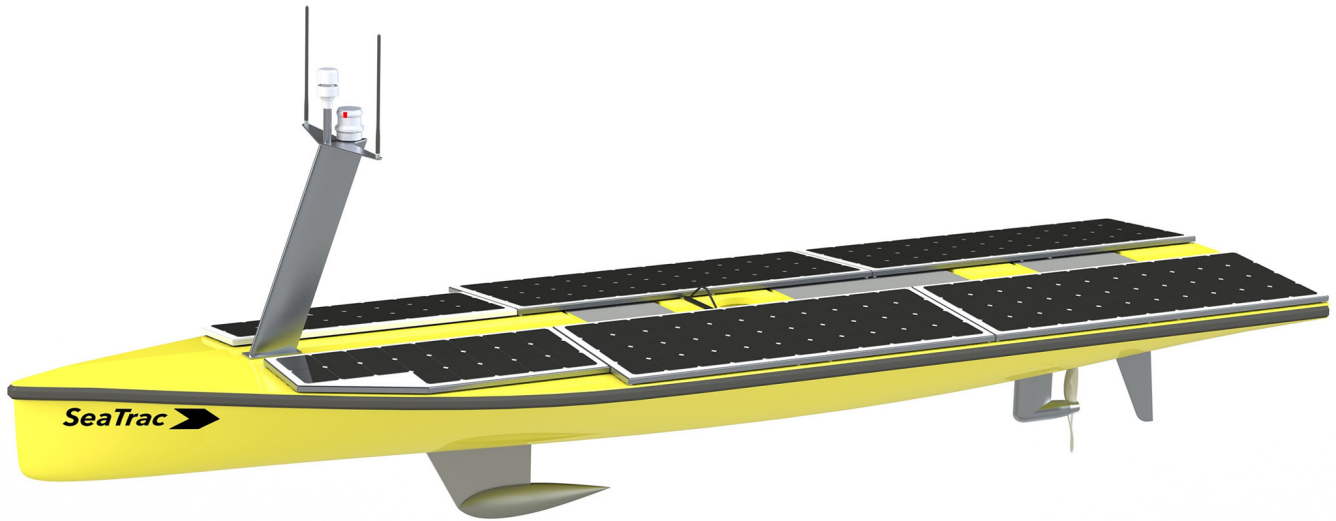




The Next Wave of Autonomous Surface Vehicles



## SeaTrac SP-48: Multi-Purpose Solar Powered ASV

The SeaTrac SP-48 is a versatile, persistent, solar powered autonomous surface vehicle, perfect for real-time ocean observation, data collection, intelligence, surveillance and reconnaissance missions. Built to operate in all marine environments—from near shore to open ocean—the SP-48 has an efficient self-righting hull and electric motor that frees it from reliance on wind or waves for propulsion. Powered by solar energy with a large battery and payload capacity, the SP-48 is a flexible maritime platform for a wide variety of commercial, defense, and scientific applications.

The SeaTrac SP-48 autonomy functions include programmable course navigation with real-time on the fly changes, waypoint settings, station keeping and Automatic Identification System (AIS) vessel detection and avoidance.

The Dashboard Software Suite offers an intuitive chart-based interface that supports NOAA charts and provides satellite displays, waypoint and route entry, display and control of system parameters and settings, telemetry control, mission playback and power management.

The SP-48 platform can support a wide range of third-party instrumentation such as ADCPs, acoustic modems, acoustic positioning systems (USBL, LBL), acoustic hydrophones, side scan sonars, multibeam sonars, sub-bottom profilers, inertial navigation systems, motion reference units and water quality measurement systems. Custom sensor integrations are available.

### KEY FEATURES

- Long endurance with around the clock 24 hour continuous operation
- Large battery storage for persistence during inclement weather
- Over the horizon operations utilizing satellite communications
- Ease of deployment – center lift and trailer-friendly design
- Self-righting keel
- Collision avoidance capability
- Large payload capacity
- Data transmission for sensor and vehicle data

### APPLICATIONS

- Metocean and Oceanographic Data Collection
- Environmental Monitoring
- Hydrographic and Subsea Surveys
- Passive Acoustic Monitoring
- Data Gateway and Data Harvesting
- Subsea Positioning (USBL, LBL)
- Mobile Buoy
- Security and situational awareness

PHYSICAL	
Length	4.8 m (15.7 ft)
Width	139 cm (4.6 ft)
Empty weight	< 250 kg (550 lb)
Payload capacity	< 70 kg (154 lb)
Draft	42 cm (1.4 ft)
Freeboard	21 cm (0.7 ft)
POWER	
Propulsion	500 W Brushless Motor
Battery capacity	6.75 kWh
Max payload power	Up to 500 W
Solar power	750 W @ 1 kW/m <sup>2</sup> irradiance
COMMUNICATIONS	
Cellular	3G and 4G
Radio	900 MHz line of sight
Satellite	Global coverage via Iridium SBD / Optional: Globalstar, Iridium Certus or Rudics
Automatic Identification System (AIS)	AIS transceiver
TELEMETRY	
Live user feed	Relay service through data server
Data server	Local database / Remote enterprise class cloud based database
NAVIGATION	
Auto pilot cross track error	+/- 5 m max
Station keeping	10 m
Global Positioning System (GPS)	Marine grade GPS receiver
CONTROL AND AUTONOMY	
Direct (manual)	Remote control via 900 MHz line of sight RF link (up to 2 miles)
Supervised autonomy	Man in the loop
Full autonomy	Programmed missions
PERFORMANCE	
Top speed	4.5 knots
Typical cruise speed	3 knots
Sea State – function	Up to and including Beaufort 7
Sea State – survive	Beaufort 11
Endurance	Months
SENSORS – STANDARD	
Apparent wind speed and direction	Speed: 10 - 78 knots, +/- 5%, direction: +/- 2° RMS
Air temperature and pressure	Temperature: +/- 1.1° C, pressure: +/- 1 mbar
Water temperature	+/- 0.5° C
Boat heading and speed through water	Heading: +/- 1°, speed: +/- 0.1 knots
GPS location, speed and direction over ground	3 m Position Accuracy 95% of the time

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