Seafloor

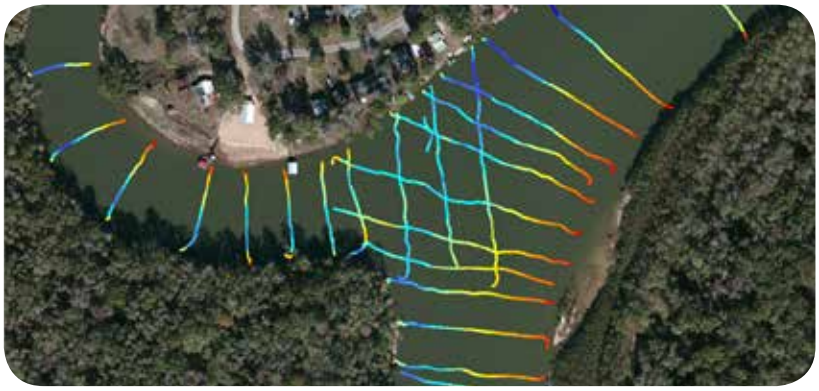
datasheet

CaronEastInc.

HydroLite-TM™

benefits

· portable, integrated hydrographic survey solution
· adaptable to any vessel
· wireless data transfer
· meets IP-65 standards
· quickly export xyz data



Bathymetric image using single beam echosounder.
Image provided by CBEC Engineering, Inc.

about

The HydroLite-TM™ should be included in every survey and engineering company's standard equipment kit for hydrographic surveying. Developed to meet the requirements of the U.S. Army Tactical Dive Teams, the rugged, wireless HydroLite-TM looks and feels like your traditional survey instrument.
It quickly measures and logs depths more accurately than standard systems, making fast work of ponds, rivers, lakes, and more.

HydroLite-TM in river

HydroLite-TM mounted on HyDrone-RCV

Rugged Pelican case

HydroLite-TM™

scope of supply

• Sonarmite Echosounder Kit
• Hydrolite Boat Mount/Pole Kit
• Pelican Case
• User Manual / Training Manual
• 1-year support and warranty

options

· Coast Guard beacon receiver
· PC data acquisition
· digital bar check
· Tide Gauge

echosounder

· frequency 200-KHz
· beam width: 4°
· ping rate: 6-Hz
· depth accuracy: 1cm / 0.1% of depth
· output formats: NMEA, ASCII, Quality
· range: 0.3m–75m
· I/O: serial, Bluetooth
· power: rechargeable 12v battery
· compatibility: Trimble, Leica, Topcon, Sokkia, Epoch, Ashtech, Magellan, Carlson

Caron/East, Inc & Caron/West, LLC
800-25CARON sales@caroneast.com

Rev 08 Jun 2016

Seafloor™ datasheet

CaronEastInc.

HydroLite-DFX™

Dual Frequency Echosounder Kit

About

The HydroLite-DFX™ is a portable dual frequency echosounder. The system combines both low frequency (30 kHz) and high frequency (200 kHz) transducers in one unit enabling penetration through soft sediments to detect hard bottom classification as well as detection of the surface layer. The unique design is also a helpful tool for bottom classification.

Benefits

- Portable, integrated hydrographic survey solution
- Dual frequency
- Adaptable to any vessel
- Bluetooth and serial data transfer
- Meets IP-65 standards
- Quickly export XYZ data

Scope of Supply

- HydroLite-DFX Echosounder Kit
- HydroLite Boat Mount/Pole Kit
- Rugged Shipping Case
- User Manual/ Training Manual
- 1 year support and warranty

Options

- GPS/GNSS Reciever
- Digital bar check
- Tide Gauge
- Motion Sensor

Echosounder

- Frequency: 200/30 kHz
- Beam Width: 9°/20°
- Ping Rate: 6 Hz w/ 2Hz output
- Depth Accuracy: 1cm/ 0.1% of depth
- Output formats: NMEA, ASCII, ODOM, ATLAS
- Range: 0.3 m - 200 m
- Transducer Cable: 5 m
- Power: External 12-18 vdc
- Compatibility: All Data Colletors & Aquisition Software

Sonarmite™ DFX Echosounder

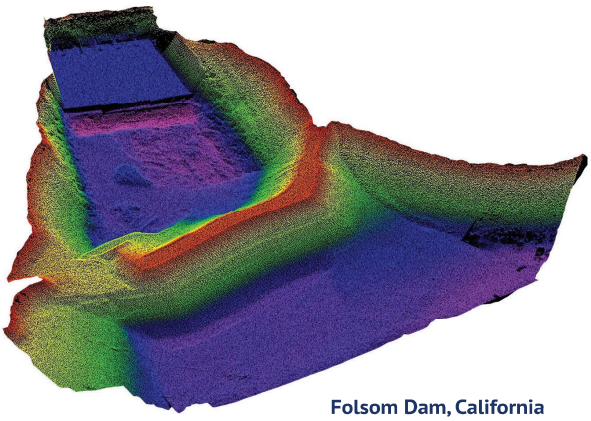
Rugged Peli-type shipping case

Seafloor Systems, Incorporated

HydroLite-MB™

Portable Integrated Multibeam System

Seafloor™



Folsom Dam, California

ABOUT

The HydroLite-MB™ is a portable, turnkey, integrated multibeam system, scalable to meet individual performance and budget requirements. With kits ranging from entry to workhorse and professional levels, Seafloor Systems can provide a solution ranging from low to ultra-high resolution maintaining productivity and performance.

Set-up of the HydroLite is quick and easily fitted to virtually any vessel. With fixed, measured offsets, installations are constant, reliable and repeatable, thereby reducing risks from human error.

The HydroLite-MB can be adapted to any small survey vessel

Hydrolite-MB Default Components

- Multibeam Sonar
- Mounting Pole with fixed position IMU plate and fixed GPS antenna mast
- Sound Velocity Probe
- Sound Velocity Profiler
- Multibeam Data Collection and Processing Software
- Training

SeaBat T20-P Dual Head Multibeam Echosounder

PicoMBES Multibeam Echosounder

SeaBat T50-P Multibeam Echosounder

Each system is pre-configured and pre-calibrated on its mounting frame. The configuration includes:

- Shallow water multibeam echosounder
- Inertial navigation system for heave, pitch, roll, heading and positioning
- Sound Velocity Probe
- Portable Mounting Pole
- On-site operational training (upon request)

Combined with the software for survey planning, data collection, patch test calibration and data processing, the package offers everything required to conduct, collect and analyze important high-resolution multibeam survey data.

CaronEastInc.

HydroLite-MB™

Portable Integrated Multibeam System

SONAR

Frequency: 190 kHz to 420 kHz

Swath: 120° to 210°

Bottom Coverage Per Swath: 3.5xWD to >20xWD

Beam Angle, Along Track: 1.5° to 0.5°

Resolution: 36 mm to 6 mm

Number of Beams: 10-1024

Depth Ranges: 0.5m to 600m

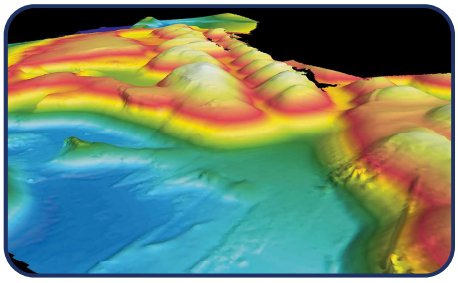
Power: 12W to 300W
12VDC to 24 VDC
110-230 VAC

Weight: Sonar Head - 3 kg to 14 kg

Size: Sonar Head - (200 mm x 170 mm) to (460 mm x 280 mm)

SONAR OPTIONS

- Dual Head
- Roll Stabilization
- Swath Steering
- Head Tilt
- Frequency Modulation
- Adaptive Gates
- Sidescan Output
- Snippets Backscatter Output
- Water Column Output
- MultiDetect (multiple bottom detections per beam for information on items in the water column)
- Splashproof or RackMount Processor
- Integrated INS



Survey data from a SeaBat T50-P Multibeam Echosounder.

INERTIAL NAVIGATION SYSTEM

Positioning: 2 m to 8 mm

Roll/Pitch: 0.05° to 0.01°

Heading: 0.06° to 0.01°

Heave: 5 cm to 2 cm

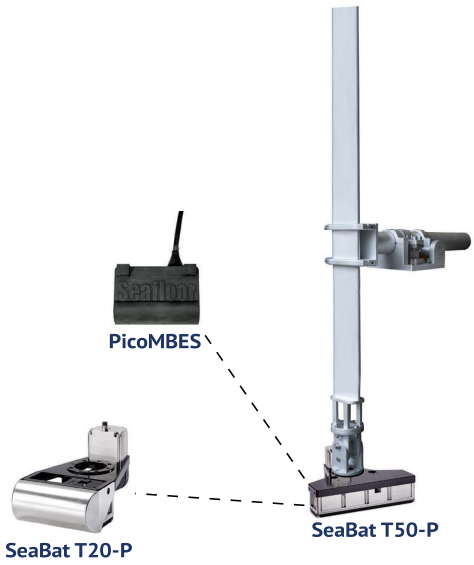
True Heave

RTK

EQIUPMENT & SOFTWARE OPTIONS

- PC or Laptop
- Head-Tilt Adaptor (15,30,45)
- Hydrographic Data Collection and Processing SW
- Onsite Installation and Training
- Extended Warranties
- Cube Editing
- Bottom Classification Capability
- Post Kinnematic Aided Intertial Post Processing SW

Seafloor's HydroLite-MB Portable Integrated Multibeam System is adaptable to fit a variety of components needed to complete your survey.



Seafloor™

HyDrone™
Unmanned Surface Vehicle

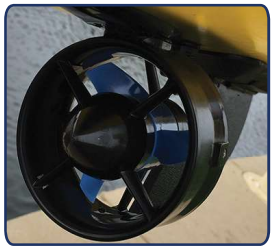
Seafloor™

The **HyDrone™** is a lightweight and unmanned surface catamaran developed for hydrographic survey applications.

This highly economical platform provides the same survey results as more expensive remote-controlled survey systems.

One Man Portable

Differential Thrusters



AutoNav™ Control System

Preplanned survey using Mission Planner

Survey data overlay using Mission Planner

TRANSPORTATION AND DEPLOYMENT

HyDrone™ is one person portable, allowing easy access to remote and dangerous areas. The lightweight, wide-profile, and watertight construction provide stability and ruggedness. HyDrone™ is manufactured from high-quality marine materials and easily disassembles for transport and shipping.

SEMI-AUTONOMOUS AND REMOTE CONTROL

Remote control of HyDrone™ is easy using a long-range, remote control unit (RCU). The RCU offers up to 2km range with a survey endurance of over eight hours at a speed of 3 knots on a single battery bank.

Key Features:

- Monitor the vessel underway in both Auto and Manual modes.
- Maneuver easily with powerful differential thrusters.
- HyDrone™ is semi-autonomous with the AutoNav™ ControlSystem.
- Mission Planner runs on a base station laptop connected through a radio telemetry link. Real-time geographical position and progress are displayed against a backgroundmap of the survey area. Battery, voltage, current, andcapacity remaining is also monitored with this link.

DATA COLLECTION

All data is stored via an on-board PC with a direct cable connection.

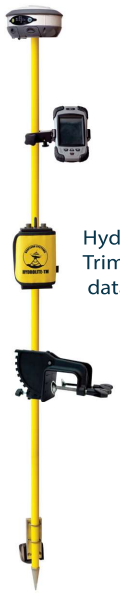
SOFTWARE COMPATIBILITY

HyDrone™ is compatible with hydrographic data acquisition software such as Hypack, Carlson, EPOCH, Leica, Sokkia, Topcon, and Trimble.

CUSTOMIZATION

While HyDrone™ is compatible with most survey systems, HydroLite™ Portable Echosounder Kits are well-suited for the catamaran. The rugged HydroLite-TM and the HydroLite-DFX look and feel like traditional survey instruments, quickly measuring and logging depths more accurately than standard systems.

- The desired depth sounder can be pre-installed or supplied ready to accept existing equipment from the user's surveypool.
- HyDrone™ can be outfitted with singlebeam, multibeam, sidescan sonar systems and ADCPs .
- Maintain line & fixed heading for ADCP Surveys.
- For professional hydrographic survey requirements, HyDrone™ may be tailored for individual customer specifications. Additional features are available, please contact your Seafloor representative.



HydroLite-TM™ with Trimble GPS and data collector

HyDrone™ ASV with Trimble SPS 585 and TSC3

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sales@caroneast.com | 800-25CARON

HyDrone™

Unmanned Surface Vehicle

Specifications

Typical Survey Speed	2 - 3 kn
Top Speed	6 kn
Hull Length	116 cm / 45.6 in
Hull Width	21cm / 8.2 in
Hull Material	UV Resistant HDPE
Hatches	4 x 7" Twist-Out Watertight Closure
Frame	Aluminum Powder Coated
Hardware	Stainless Steel
Empty Hull Weight & Batteries	9.8 kg / 25 lbs
Battery Endurance	8 hours at Survey Speed
Payload	15 kg / 35 lbs
Power	2x 14.8 vdc 16 Ah Battery LiPo
Motor	2 x Brushless Thruster
R/C	2.4 GHz/900MHz Long Range RCU (US) 2.4 GHz/868MHz Long Range RCU(EU)
Remote Range	Up to 2 km
ECU (Electronic Controller Unit)	2 x 120 amp

Instrumentation Options

Auto Pilot Module	AutoNav ™ Control System Built-In Telemetry System Embedded GPS and Compass
HydroLite-DFX™	Dual Frequency Echosounder 200 / 30 KHz
HydroLite-TM™	HydroLite ™ Pole Kit
PC Laptop	SonarMite™ MILSpec Echosounder
Radio Telemetry	Rugged Shipping Case
RTKGPS	Mission Planner Application USB Radio Telemetry

Seafloor™

EchoBoat-160™

Unmanned Survey Vessel

Seafloor™

The EchoBoat-160™ is an unmanned surface vessel developed for hydrographic survey applications.

This highly portable survey platform features multipayload capacity, swappable sensor suites, and both manual and autonomous control.

TRANSPORTATION AND DEPLOYMENT

- Two-person portable.
- Allows access to remote and dangerous environments.

AUTONOMOUS AND REMOTE CONTROL

- Up to 2km remote control range.
- Maneuver easily with powerful differential thrusters.
- Can be monitored within line-of-sight range.

DATA COLLECTION

- Data is stored via an on-board PC with a direct cable connection.
- Full equipment and data control is accomplished using a remote data link.

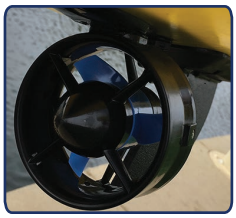
SOFTWARE COMAPATABILITY

- Compatible with hydrographic data acquisition software.
  - Hypack, PDS2000, EIVA, and QINSY.

CUSTOMIZATION

- The boat may be purchased with the desired depth sounder pre-installed, or supplied ready to accept existing equipment from the user's survey pool.
- Customized cabling can be included to accept existing GPS, GNSS, and RTK positioning systems.
- EchoBoat-160™ can be outfitted with singlebeam, multibeam, and sidescan sonar systems.
- Additional features are available, please contact your Seafloor representative to discuss vessel requirements.

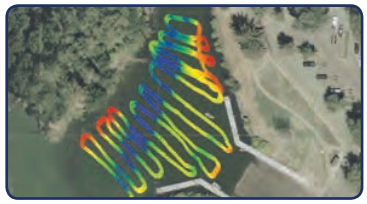
Two-Person Portable



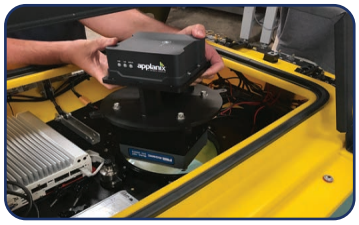
Differential Thrusters

Launch & Recovery System

Preplanned survey using Mission Planner



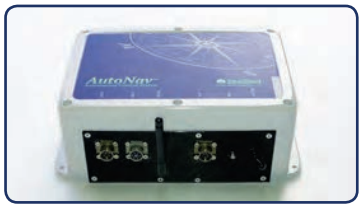
Survey data overlay using Mission Planner



R2 Sonic MultiBeam, Applanix POS MV Surfmaster

EchoBoat in BC, Canada

EchoBoat Launch Via Crane



AutoNav™ Control System

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EchoBoat-160™

Unmanned Survey Vessel

Specifications

Typical Survey Speed	3 kn
Top Speed	5 kn (payload dependent)
Hull Length	1.68 m
Hull Width	0.8 m
Battery Endurance	Up to 8 hours
Payload	29 kg / 65 lbs
Power	12-24 VDC
Motor	2x Brushless DC Outdrive
Hull Material	UV Resistant HDPE
Hull Weight (Without Batteries or Payload)	45 kg / 100 lbs
Hardware	Stainless Steel
R/C	2.4 GHz/900MHz Long Range RCU (US) 2.4 GHz/868MHz Long Range RCU(EU)
Remote Range	Up to 2 km Optional or Direct Connection
GPS	Customer Specified
Communications	2.4 GHz UHF Telemetry

Instrumentation Options

Sonar Modules	Multibeam Echosounder SinglebeamEchosounder ADCP Side Scan Sonar SubbottomProfiler Magnetometer
GPS/GNSS	RTK/GNSS DGPS INS
Auxiliary Sensors	Sound Velocimeter Velocity Profiler or CTD Wi-Fi Remote Desktop HD Thermal Camera Remote Controlled Profiling Winch LiDAR

Seafloor™

HydroCat-180™

Unmanned Surface Vehicle

Seafloor™

The **HydroCat-180™** is a USV capable of transiting from inshore to nearshore environments while carrying high-resolution payloads to conduct fully autonomous hydrographic surveys .

The HydroCat-180 is an 18-ft (5.5 m) catamaran, with individually articulated hulls, a gimballed deck, and dual, actuated electric motors. Additionally, the vessel can be transported via trailer, has a retractable sonar mount, SVP winch, and is capable of operating autonomously.

FEATURES

- Wifi Data Communication System
- Onboard Industrial PC
- Individually Articulated Hulls
- Gimballed Deck
- Mast
- Remote Controlled Sonar Deployment System with Locking Piston
- 2 batteries (+ 2 spares) - 48 volt 150 Ah
- 2 x 10HP Torqueedo Motors
- AutoPilot
- Trailer
- Nav Aids (Strobe, Nav Lights, Day Shapes)

AVAILABLE SYSTEMS

- Single or Dual Head Ultra-High Resolution Multibeam Echosounder
- 180 - Degree HD Video Camera
- Sound Velocity Profiling Winch
- LIDAR
- Sidescan Sonar
- Magnetometer
- Sub Bottom Profiler

SPECIFICATIONS

Length	18 ft (approx. 5.5 m)
Width	8 ft (approx. 2.5 m)
Overall Height	9 ft (2.75 m)
Endurance	8-12 hours
Payload	700 lbs
Propulsion	Dual Electric Outboards
Cruise Speed	3 kn
Max Speed	6.9 kn

Gimballed Deck

High-powered payload, like Teledyne's IDH T-50

HydroCat-180 can be easily transported via trailer

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ECHOBOAT-240™

Unmanned Surface Vehicle

Seafloor™

The EchoBoat-240™ is an unmanned surface vehicle developed for hydrographic survey applications requiring the highest-resolution sensor suite available. With the new EchoBoat-240 platform, the user no longer has to sacrifice performance to meet payload capacity. This is a highly mobile survey platform featuring; multi-payload capacity, both manual and autonomous control, and interchangeable sensor suites.

While underway, the vehicle can be monitored within line-of-sight range, with over-the-horizon monitoring possible when running additional hardware. All data is stored via an onboard PC with a direct cable connection. Full equipment contol and data aquisition is accomplished with a remote data link.

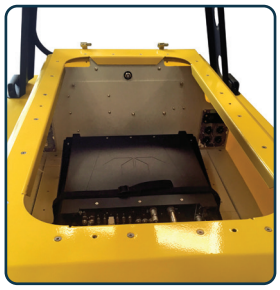
Switching from autonomous to remote control on the survey boat is easy using a long range remote control unit (RCU) that offers up to 2km range, with a survey endurance of up to 8 hours on a single charge.

For professional hydrographic survey requirements, the EchoBoat-240™ may be tailored to individual customer requirements. The boat may be purchased with the desired sensor payload pre-installed, or supplied ready to accept existing equipment from the User's survey equipment pool. Similarly, customized cabling can be included allowing the boat to accept existing GPS, GNSS and RTK positioning systems.

For a turnkey survey-grade system, the EchoBoat-240™ can be outfitted with singlebeam, multibeam, and side scan sonar systems.

The EchoBoat-240™ is compatible with hydrographic data acquisition software such as Hypack, PDS2000, EIVA and QINSy.

Teledyne Reson T50



Internal Deck

Twin Servo Thruster

R2 Sonic 2024

Instrumentation Options

Sonar Modules

Multibeam Echosounder
Singlebeam Echosounder
ADCP/DVL
Side Scan Sonar
Subbottom Profiler
Magnetometer

Auxiliary Sensors

Sound Velocimeter
Sound Velocity Profiler / CTD
Wi-Fi Remote Desktop
HD Thermal Camera
Remote SVP Winch
LiDAR

GPS/GNSS

RTK/GNSS
DGPS
INS

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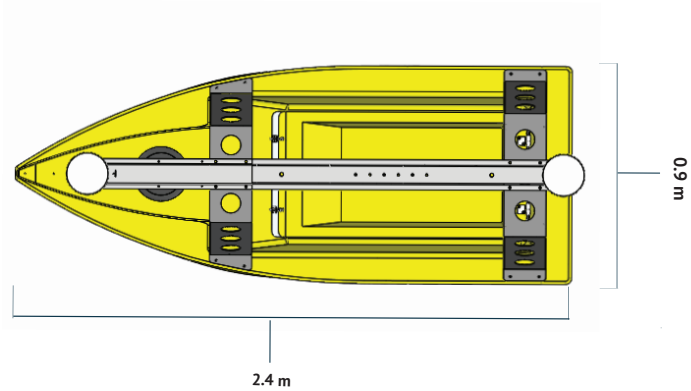
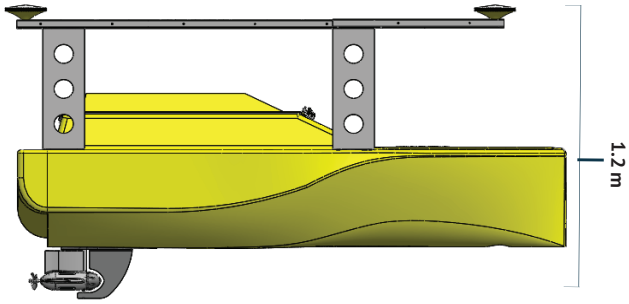
ECHOBOAT-240™

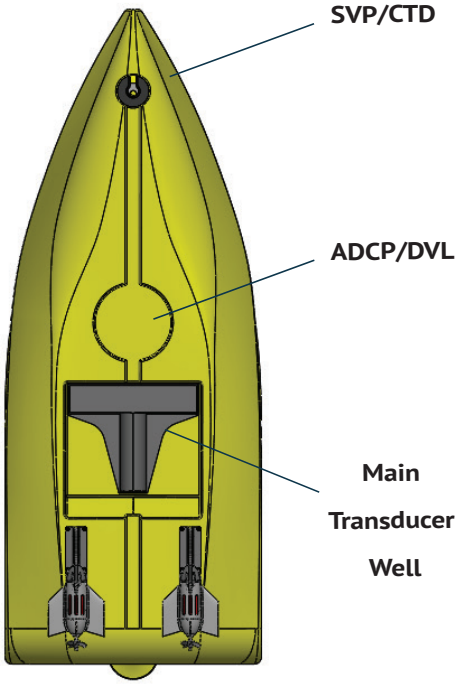
Unmanned Surface Vehicle

Specifications *(All specifications are subject to change..)*

Typical Survey Speed	2 knots
Top Speed	4 knots
Hull Length	2.4 m
Hull Width	0.9m
Battery Endurance	Up to 8 hours
Payload	90.7 kg / 200 lbs
Power	25.2 VDC
Motor	2x Brushless DC Outdrive
Hull Material	UV Resistant HDPE
Empty Hull Weight & Batteries	158.75 kg / 350 lbs
Transducer Wells	3: Main, ADCP/DVL, SVP
Hardware	Stainless Steel
R/C	2.4 GHz/900MHz Long Range RCU (US) 2.4 GHz/868MHz Long Range RCU(EU)
Remote Control Range	Up to 2 km
GPS	Customer Specified
Communications	2.4 GHz UHF Telemetry







Additional Features Include

- 2 x 25.2 VDC auxiliary power sockets
- Internal power switches
- Intelligent power supply with protected power managment
- Wave piercing displacement hull design
- Independant activated thrusters
- Non-corrosive, rugged HDPE hull constructions
- Isolated battery compartment
- Configurable cargo deck
- Integral industrial PC, WiFi and/or 4G communication