



**The Navigator of  
Unmanned Surface Vehicles**



# Oceanalpha Headquarters



Dock & Harbor



Dock & Harbor

R&D Department

Assembling workshop

Dynamic testing pond

Static testing pond

Hydrographic test facility

Offshore testing site

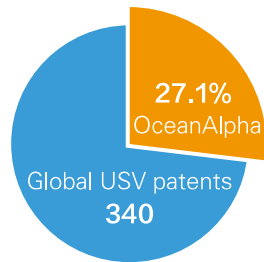
# About OceanAlpha

Oceanalpha established in April 2010, is a global company focusing on Unmanned Surface Vehicle (USV) development and offering world-leading USV solutions with independent intellectual property. The applications include water quality sampling & monitoring, flow measurement, hydrographic survey, oceanographic research, security patrol, search & rescue, maritime affairs and etc. With advanced intelligent technology and deep understanding of user working environment, Oceanalpha autonomous boats have already served clients from industrial company, government, research institute and universities in world-wide.

 **235** Staffs

 **98** Engineers **17** Senior Engineers

**92**  
Patents



Global Rewards





Water surface cleaning

Water sampling & monitoring

Water Discharge Measurement

Hydrographic Survey

Underwater exploration

Fire fighting

Security & Defense

Oceanographic Survey

## *Application Areas*

# About USV

USV (Unmanned Surface Vehicle) is a remote control or autonomous intelligent water surface robot which is able to fulfill multiple tasks. It is modular design with multiple functions and safe replacement for human's work.

## Autonomous Navigation & Intelligent Obstacle Avoidance

- Autonomous Navigation Control system with intellectual property right
- GNSS autonomous navigation due to obstacle avoidance technology and advanced navigation algorithm



## Hull Material

- Composite materials of carbon fiber, fiberglass and Kevlar fabric
- Separated cabin design; Water Proof, Anti-sinking, Anti-Capsizing



## Intelligent Control Terminal

- Base Station—Map download, Mission planning and monitoring, Survey data acquisition, Boat control
- Remote Controller – Manual control, Mission and boat status



## Green Energy

- High Capacity lithiumion polymer battery
- Long endurance and safely packed



## Data Communication

- Long distance radio communication
- Real time data and video transmission



## Multi-Mission Platform

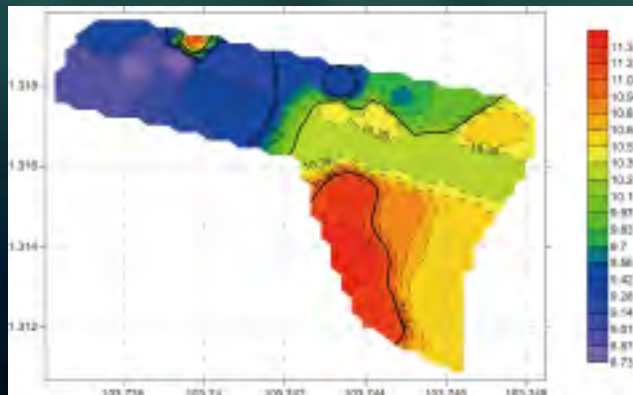
- Universal Data interface, power supply and mechanical structure





# Autonomous Standardized Water Sampling & Monitoring

Automatic water samples taking with tubing pump and compatible with different brands of water quality sondes.



Water Quality Contour Map



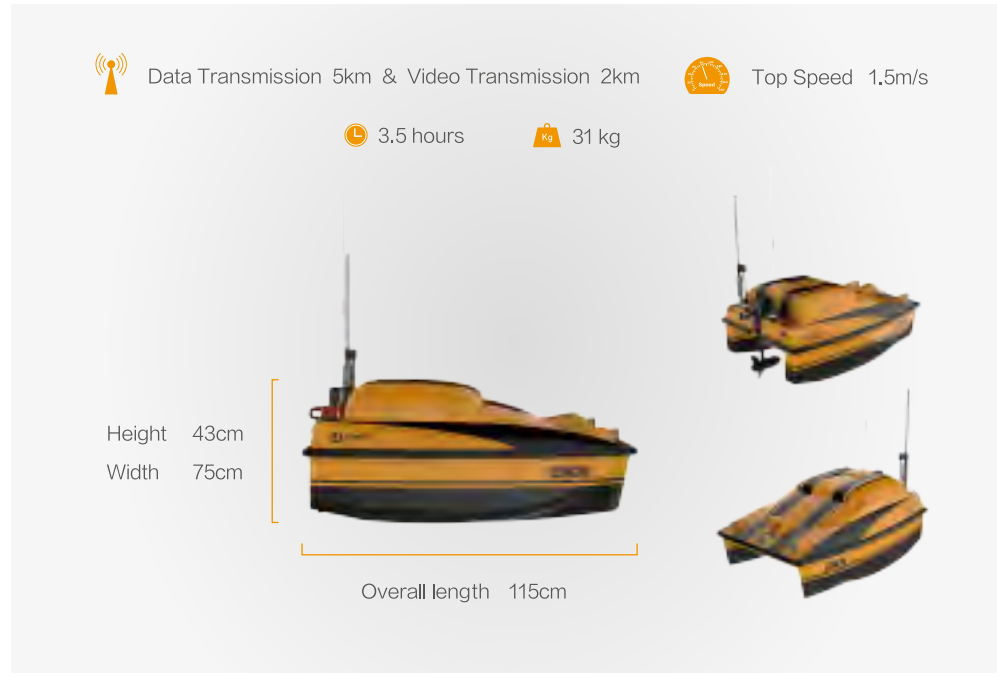
# ESM30

## Autonomous water sampling and monitoring boat

Autonomous water sampling and monitoring boat is extended version of sampling boat by adding online monitoring function with ability to integrate multi-parameters probe. Mostly applied in lake, river, estuary and costal area. It brings great efficiency in surface water quality monitoring and mapping.



Sampling capacity 4 x 1.8L



- Automatic Multi-point water samples taking and water quality monitoring
- Each Sample's volume is configurable between 0–1800ml
- Able to integrate with water quality probe for online monitoring
- Parameters such as, Temperature, PH, DO, Conductivity, Turbidity, Chlorophyll, BGA, Chloride, Nitrate etc.
- Water quality monitoring data output and mapping
- Video monitoring and ultrasonic obstacle avoidance





# Remote control boat with **ADCP**



SONTEK ADCP



RDI ADCP



Linkquest ADCP



# SL20 & CL40Y

## Remote control hydrology measurement boat

SL20 & CL40Y are designed for water discharge measurement and hydrographic survey. They are compatible with different brand ADCP and single beam sonar, like RDI, Sontek, Linkquest and etc.. The boats are maneuverable with compact design, which make them easily be operated by just one person. They could also be carried on the back of a SUV or a trunk. The maximum speed can reach 5.5m/s and 2km control range, so that the boats are suitable for most water current environment.

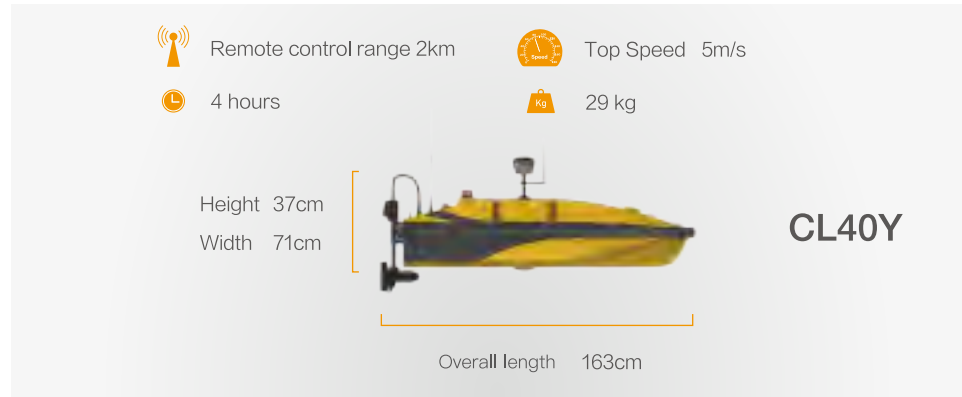


Remote control range 2km  
4 hours  
Top Speed 5m/s  
29 kg

Height 37cm  
Width 71cm

Overall length 163cm

**CL40Y**

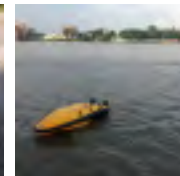


Remote control range 2km  
2 hours  
Top Speed 5m/s  
14 kg

Height 30cm  
Width 55cm

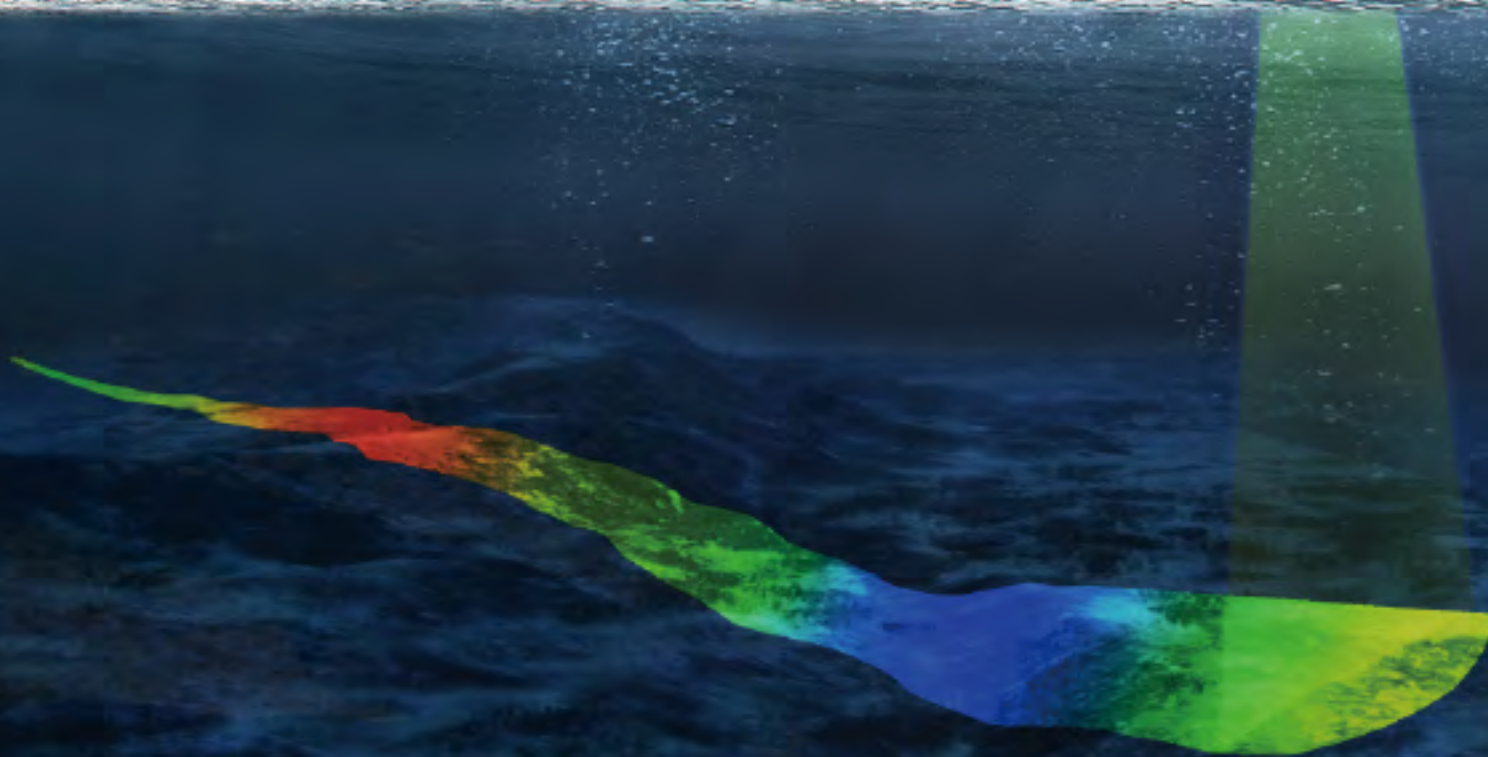
Overall length 105 cm

**SL20**



# Survey more & Save more

Autonomous Hydrgraphic Survey Vessel



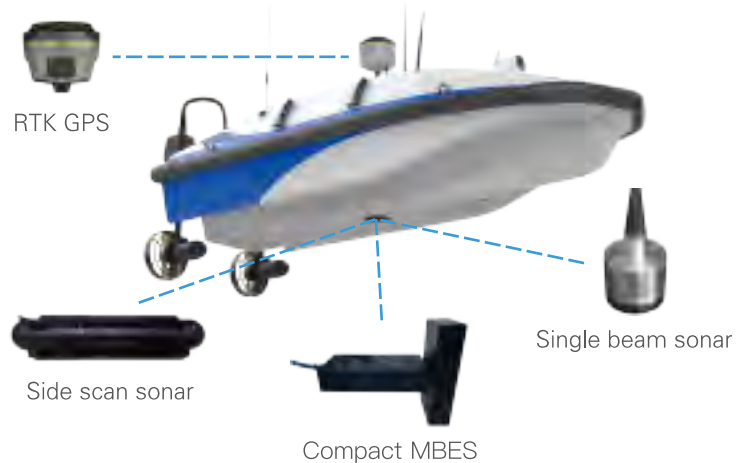


# ME40

## Autonomous hydrographic survey boat

Autonomous survey platform ME40 is designed for hydrographic survey with great efficiency. By replacing conventional workboat, autonomous platform is able to acquire bathymetry data without time-consuming and human safety risk. Mission planning, navigation control and real-time data acquisition are integrated in one package software, offering maximum efficiency to surveyors.

Data Transmission 2km & Video Transmission 2km    Top Speed 5m/s  
4 hours    33 kg  
Height 37cm  
Width 71cm  
Overall length 163cm



- Mission planning and autonomous survey
- Existing GNSS instrument can be installed
- Data acquisition integrated in USV software
- Customized option for other instruments
- Maximum 5m/s speed
- Excellent performance in shallow water

# Big payload, Great Stability

Flexible payload installation and meeting costal application





# ME70 & ME120

## Autonomous survey platform

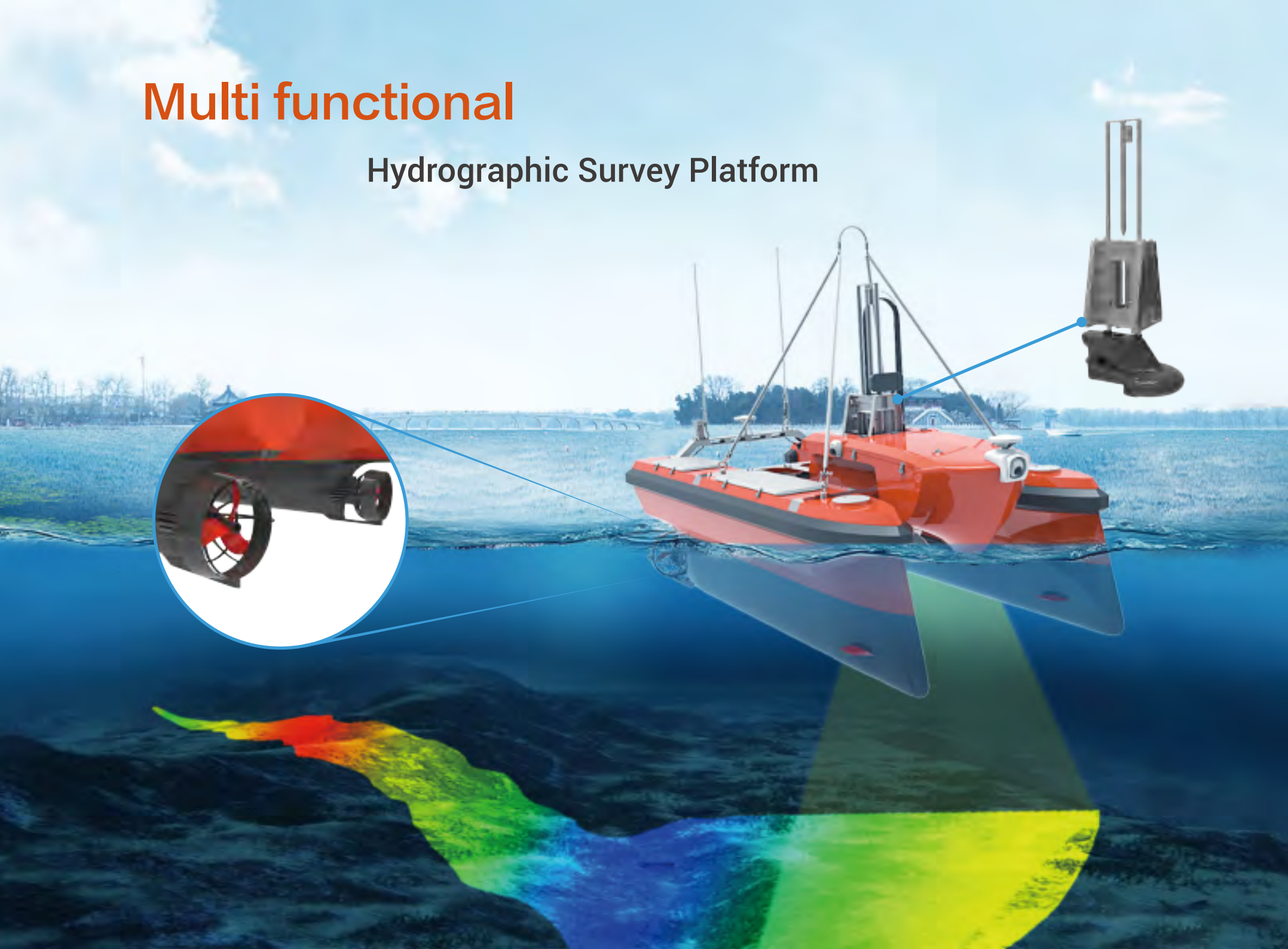
Autonomous survey boats ME70 & ME120 are medium sized platforms designed for hydrographic survey in harbor and costal area. With catamaran design and flexible payload for instruments, ME70 & ME120 are developed to provide surveyors and Service Company with multi-mission work in harbors or inland waters. Navigation control and real-time data acquisition are easily operated at base station computer. ME70 & ME120 are also universal deployable platforms to execute other mission like water quality monitoring and harbor surveillance.



- Mission planning and autonomous survey
- 60Kg/25Kg(ME120/ME70) payload for flexible instrument options
- Applied in river or costal area
- Customizable for various equipment (Muti-parameter probe, CCTV camera, ADCP, Side Scan sonar and etc.)

# Multi functional

## Hydrographic Survey Platform





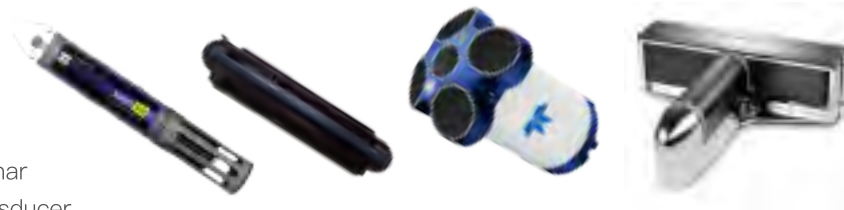
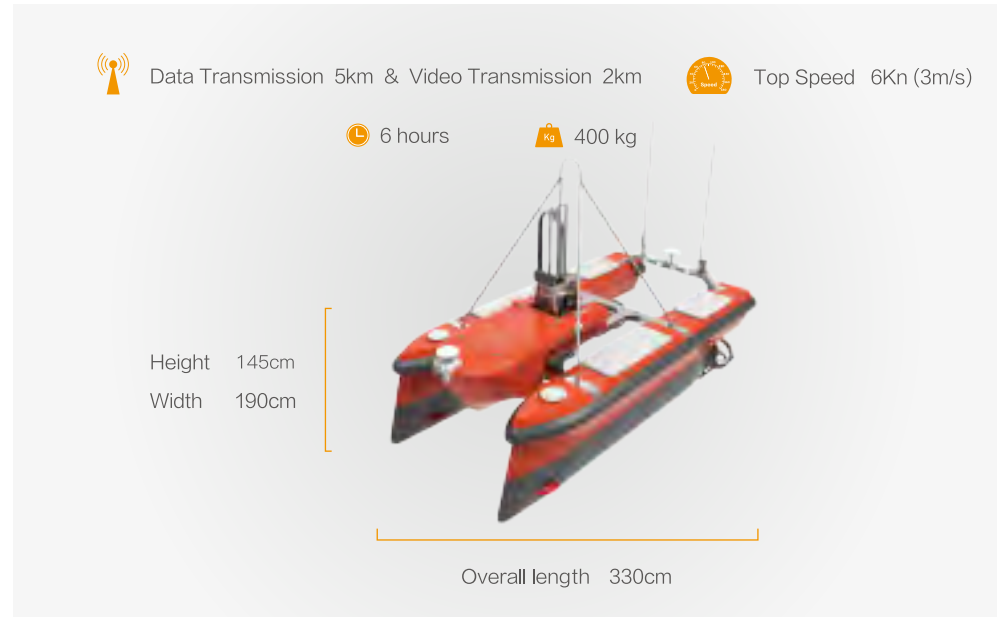
# M40

## Autonomous survey platform

Autonomous survey boat M40 is medium sized platform designed for hydrographic survey in coastal area and deep ocean water. With modular catamaran design and flexible payload for instruments, M40 is developed to provide high performance survey with multi beam sonar and different kinds of hydrographic and monitoring instruments in ocean.



- 65kg payload, compatible with multi-beam sonar
- Automatic lifting system, fully protect the transducer



# Maximum survey efficiency on *OCEAN*



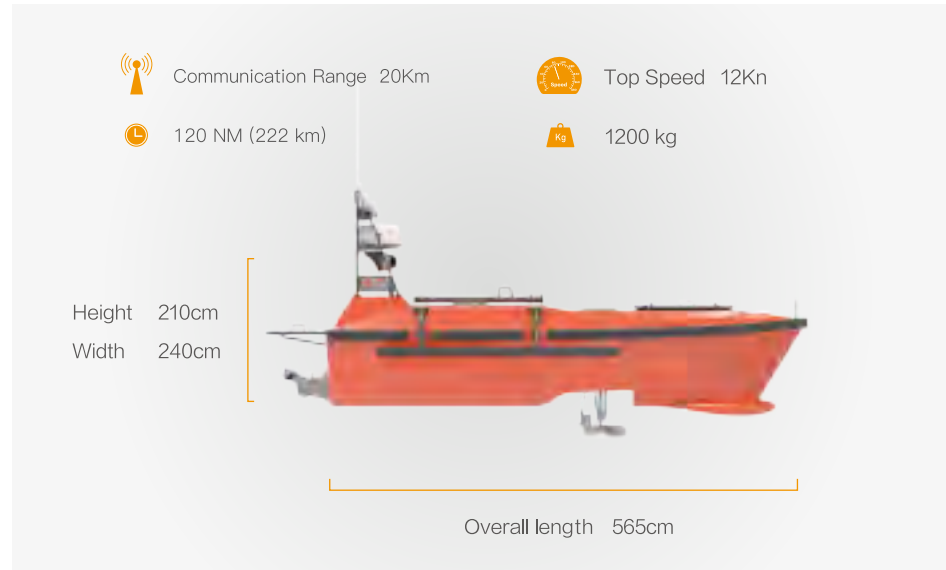
1. Precisely GPS navigating & autopilot
2. Automatic Identification System (AIS) to identify target
3. Equipped with Obstacle Avoidance Radar, Sensing Camera, Obstacle Avoidance Sonar, ensuring sailing safety & anti-collision both on the surface & underwater



# M80B

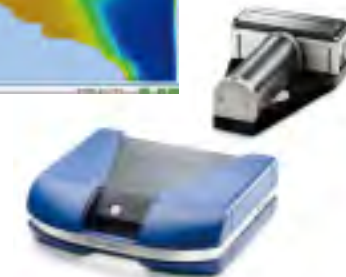
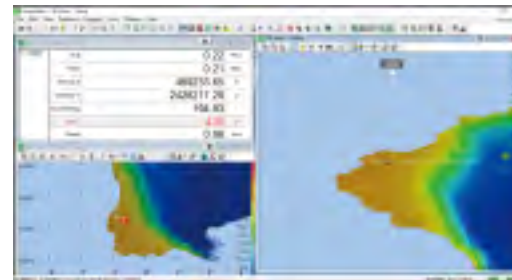
## Autonomous survey platform

M80B unmanned survey boat platform is designed to meet high requirement in hydrographic and oceanographic survey, the stabilization wings offer the best stability in ocean environment with minimum size of the boat. M80B platform is able to deploy and integrate with variety of instruments such as multi beam sonar, side scan sonar, sub-bottom profiler, gravimeter and magnetometer, water quality sensors etc. Autonomous navigation and obstacle avoidance provide efficient and safe operation.



### Recommend Deployed Equipment

NO.	Description	Model NO.
1	Signal Beam Echo Sounder	Odom Echotrac CV200 / CV100 Haiying HY1601 / 1602 South SDE-18
2	Multibeam Echo Sounder	Reson T20 Odom MB1 / MB2
3	ADCP	Sontech M9/S5 RDI Rujiang Linquest Nortek
4	Side Scan Sonar	Beijing Lanchuang Shark S450U
5	Forward-looking Sonar	BlueView M-450 Kongsberg M3
6	Online Multi-Parameter Water Quality Instrument	HACH DS5 / MS5 YSI EXO Series Sailhero XHFP / XHMP



- Self righting function
- Powerful water-jet propeller
- Support with manned mode

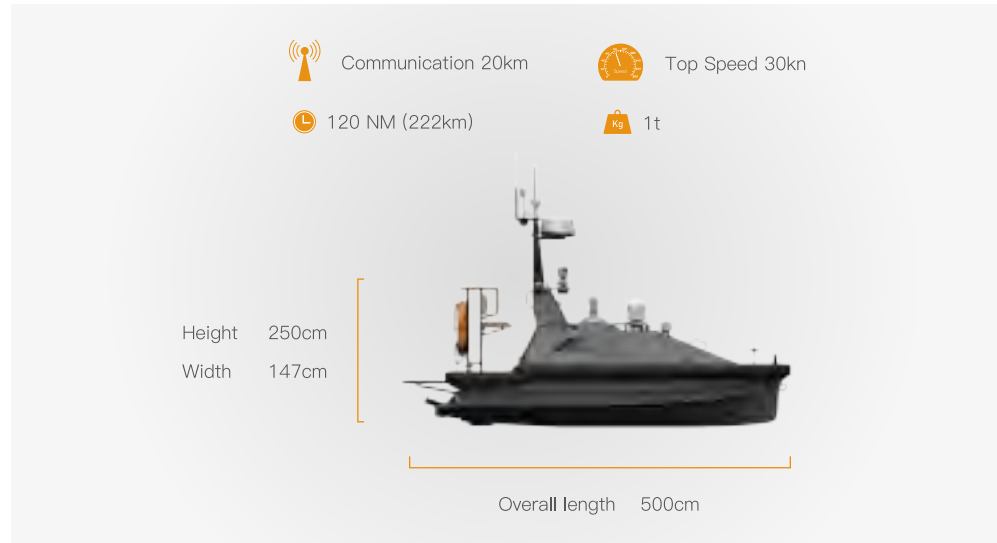




# M75

## Security patrol & rescue platform

M75 is specified to apply in security, patrol, Search & rescue, investigation and evidence collection areas. With high speed propulsion system, M75 could arrive target place at the first moment. It is also available to switch between manned and unmanned mode, so that you can choose how to control it based on the situation.



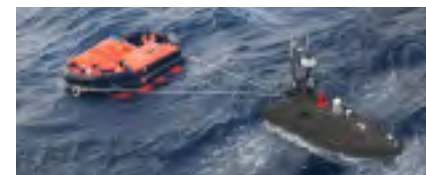
### Survival Equipment Parameter

Crew Onboard	6 Persons
Package Dimension	0.46x0.8 M
Weight	about 35kg
Dimension	1.82x1.82x1.2 M
Items in Life Raft	fresh water, food, medicine etc

### Application



Cooperate with police



Deployed with night search equipment,unmanned surface rescue boat can work day and night 24/7.



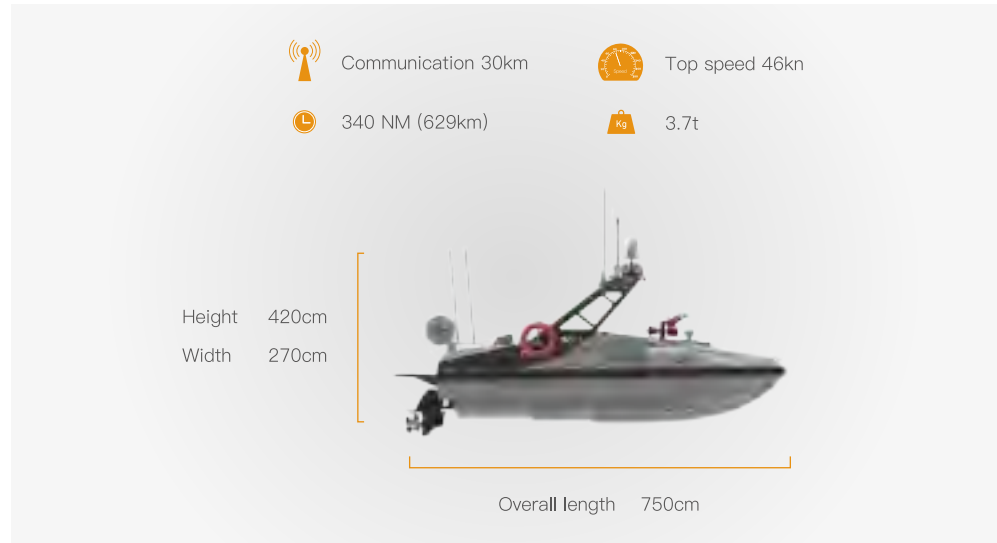
**Firefighting Application**



# L30

## Fire Fighting & Rescue Vessel

L30 is a big platform for fire control on water. It carries professional fire water cannon equipment with 50m distance, and also life rafts & buoys. The life raft could be released by remote control to rescue the drowning personnel. There is a cockpit similar to a yacht which makes it available for 4–6 crews on board. The speed of this vessel is up to 45 kn, fast enough for most sea condition and emergency response.



### Water Cannon Parameter

Range	≥30 Meter
Flow Rate	40 (L/S)
Working Pressure Range	0.8 MPa
Maximum Spary Pressure	0.2 - 1.4 MPa
Maximum Spary Angle	≥95°
Pitching Angle	30°~ 90°
Horizontal Rotation Angle	360°



Fire Rescue Scene



Surveillance



Water Cannon Equipment



Singapore



Sweden



Korea



Greece



Canada



Australia



US.



Peru



Poland



France



Macao



Hongkong

# Worldwide Applications



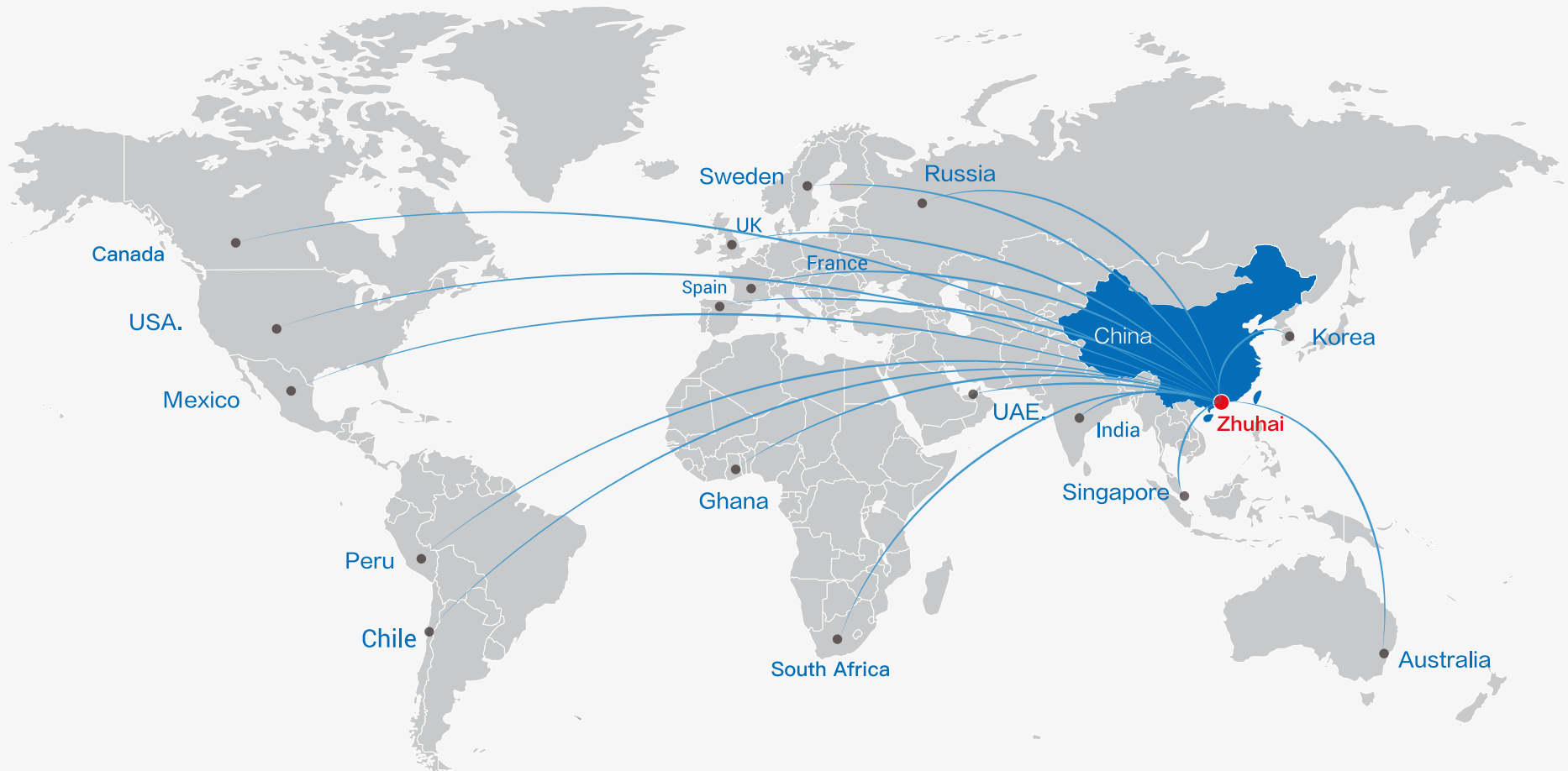
Until 2018, oceanalpha has been delivered USV technology to 16 different countries. We would put our best effort to let human being know better about water in everywhere.


Edit by IBD





***Antarctica***


# Global Sales Network



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