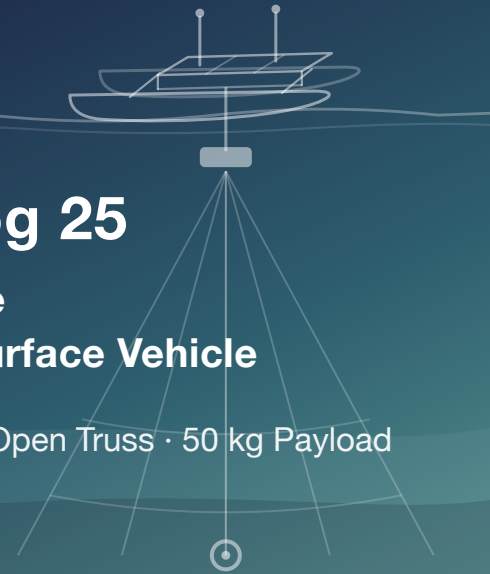




HydroFrog 25

Multi-purpose Unmanned Surface Vehicle

Catamaran Hull · Open Truss · 50 kg Payload



Description

HydroFrog 25 is a multi-purpose unmanned vessel system developed and produced by OPT. 2.5 metres in length, **HydroFrog 25 utilises a catamaran structure with stable rolling**, and an open truss structure in the centre, which allows it to carry single-beam and multi-beam echosounder, sub-bottom profilers, ADCPs, multi-sensor instruments and other equipment to carry out different scenarios and tasks.

The HydroFrog 25 features replaceable and expandable IP65 rated battery packs, electric propulsion and a self-developed power management system for long operating time, safe and stable charging, and environmental friendliness. The main connections can be quickly setup and dismantled, **allowing the vessel to be assembled, mission equipment installed and deployed by one or two people in minutes**. It could be folded up in a small SUV for transport.

HydroFrog 25 is equipped with a self-developed sound velocity profiler winch, which can collect the sound velocity profile data of the target area via surface control software of the USV. We can also provide a full set of mobile USV LARS system, which is suitable for most challenging project areas. Survey project can never be so convenient.

Application

- ▶ Geological and Geophysical Surveys
- ▶ Hydrological and Water Quality Surveys
- ▶ Underwater Rescue and Disaster Warning
- ▶ Hydrographic Surveys of Ultra-Shallow Water, Harbours and Reservoirs
- ▶ Underwater Structural and Offshore surveys
- ▶ Environmental monitoring

Features

- ▶ **IP65 rated swappable battery packs**
Overcharge, over-discharge and overheat protection built in.
- ▶ **Robust flame-retardant hull**
High-toughness special polymer material.
- ▶ **Open truss structure**
Flexible carrying capacity for a wide range of survey instruments.
- ▶ **Modular, one-person setup**
Set up and dismantled in minutes; folds into a small SUV.
- ▶ **Actively cooled equipment compartment**
Protects onboard equipment in high-temperature environments.
- ▶ **Self-developed electric thrusters**
Easily replaceable in the field.
- ▶ **Fully automated operation**
Mission plans uploaded and executed wirelessly.

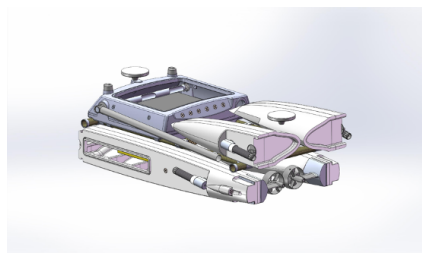
Technical Specifications of HydroFrog 25 USV

Technical Specifications

Dimension (Operation)	2.5 m (L) x 1.25 m (W) x 0.7 m (H)
Dimension (Transportation)	1.6 m (L) x 1.2 m (W) x 0.6 m (H)
Weight	30 kg (incl. lifting fin, excl. battery and accessories)
Payload	50 kg
Seaworthiness	Sea State 3, Wind Force 4
Survey Speed	4 kn
Maximum Speed	10 kn
Duration	10 h at survey speed
Propulsion	2 x 2.5 kW electrical thrusters
Hull Material	Flame retardant and environmentally friendly special polymer materials
Battery	114 Ah, 37 V lithium battery, IP65 waterproof, puncture-resistant and crush-resistant
Onboard Industrial PC	Windows 11 (supports customer-installed payload control software); 13th-gen i5-1340P, 16 GB RAM, 512 GB storage; 3 x Gigabit RJ45, 2 x DB9 RS232, 1 x Thunderbolt 3
Ground Station	Standard 7-inch industrial remote control, range up to 2 km (optional 10-inch large-screen unit); optional mesh bridge extends the link to 3 km
Profile Winch (Optional)	Max cable length 100 m, max spooling speed 0.5 m/s, web browser and remote control supported, payload capacity 6 kg; dimensions 16 x 12 x 12 cm, weight 2 kg



HydroFrog 25 under operation



HydroFrog 25 under transportation (folded)

Instrumentation Options

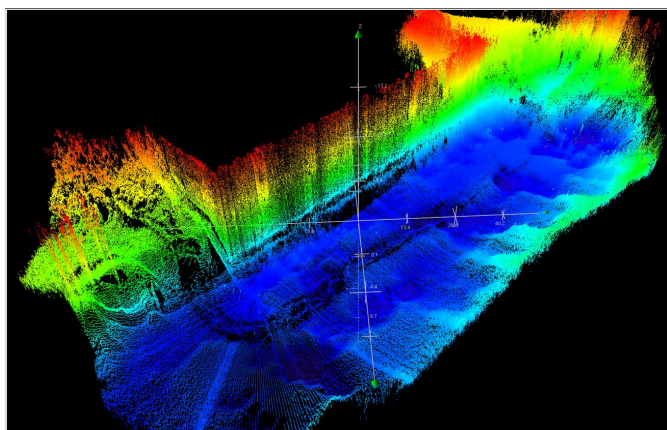
SBES / MBES · Sub-bottom Profiler · Side Scan Sonar · 2D/3D Imaging Sonar · ADCP · Multi-sensor · LiDAR · GNSS Receiver · AIS · Camera · SVP Winch · Towing Winch · Water Sampler

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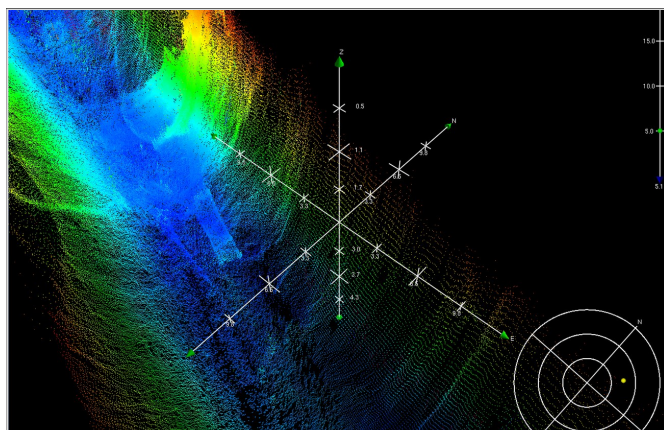
Instrumentation Capability of HydroFrog 25



Data Examples



Ping3DSS 3D side-scan sonar on HydroFrog 25 — 3D point cloud of a breakwater



EdgeTech 6205 bathymetric side-scan sonar on HydroFrog 25 — square structure obstacle in a river survey