

HydroNet Robot Boat

Datasheet

The **HydroNet Robot Boat** is a light and small boat in carbon fiber capable of navigating autonomously on water surfaces of coastal waters, lakes and rivers to perform monitoring tasks without the presence of human operators on board. The robot is provided with propeller motors and a control system consisting of navigation sensors (GPS, digital compass, water speed sensor and laser scanner), on-board computers and navigation software which allow the robot to navigate autonomously in its working environment following a route through a series

of waypoints. The robot is equipped with a probe for monitoring water temperature, turbidity, conductivity, Ph, Dissolved Oxygen and can host in its deckhouse several instruments for surface water sampling and analysis (available on request). The robot communicates wirelessly with a ground control station where a human operator can remotely plan, set and supervise a mission. The robot can be equipped with underwater and/or onboard cameras: images and sensor data are transmitted in real time to the remote control station.

Technical specifications

| | |
|------------------------|---|
| Operational modes | Autonomous navigation through a series of waypoints with obstacle avoidance Station keeping Teleoperation / Remote control |
| Dimensions (l x w x h) | 229 x 112 x 58 cm |
| Hull material | Carbon fiber |
| Weight | 75 kg (sensors excluded) |
| Draught | 25 cm |
| Actuation | Two independent outboard propeller motors, 12V, 30A, thrust 133N |
| Speed | Typical ~ 2.5 Knots, maximum ~ 4 Knots |
| Power | 2 x 12V 55Ah AGM batteries and 90W solar panel |
| Power consumption | ~ 240W (12V 20A) at 2.5 knots |
| Battery runtime | ~ 6 hours at 2.5 knots |
| Navigation sensors | GPS (optional NTRIP correction), digital compass and water current for estimating position; laser scanner for obstacle detection |
| GPS | Novatel FLEX6-D2L-ROG-TTR (GPS) plus FLEX6-D2S-Z00-00N (Align unit) Accuracy: position < 3 cm, heading < 0.1° (NTRIP provided and enough visible satellites) |
| Laser | Hokuyo UTM-30LX- EW (detection range 0.1 – 30m) |
| Water quality sensor | Temperature, turbidity, conductivity, Ph, Dissolved Oxygen |

ROBOTECH srl

main office: largo Ciardelli • 56122 Pisa • ITALY
 registered office: via Mazzini 82 • 19038 Sarzana SP • ITALY
 phone: +39 050 960519 • VAT: IT01185460118
www.robotechsrl.com