

HydroBoat 1200

Multi-purpose USV platform for hydrographic surveys and monitoring



The HydroBoat 1200 is a compact, multi-purpose Unmanned Surface Vehicle designed for professional hydrographic surveys and environmental monitoring. Built on a hydrodynamically optimised carbon-fibre hull shaped through CFD simulation, it integrates a high-precision single-beam echo sounder, a GNSS/RTK directional positioning receiver and an advanced autonomous navigation system in a single platform weighing just 25 kg.

Designed for versatility, the HydroBoat 1200 features a 240 mm moon pool that accepts a wide range of third-party sensors — ADCP, side-scan sonar, dual-frequency sounder, multi-parameter water quality meter — making it the ideal single platform for current measurement, bathymetry, underwater survey and water quality assessment.



Rear view — dual brushless waterjet thrusters



Moon pool — 240 mm opening for sensor integration

NOVATEST S.r.l.

Via Albertini, 36/F8
c/o Center Gross
60131 Ancona (AN)

T. +39 071.2415386
info@novatest.it
P.IVA 02475340424

www.novatest.it

Applications

The HydroBoat 1200 operates in rivers, lakes, reservoirs, coastal areas, ports and canals. Its moon pool architecture and transparent data transmission support the full range of hydrographic and environmental monitoring tasks, including ADCP current profiling, side-scan sonar imaging and multi-parameter water quality surveys — all from a single deployable platform.

Advantages

CFD-optimised hull	Hull geometry developed through Computational Fluid Dynamics simulation for maximum stability and noise reduction under varied water conditions and sensor payloads.
240 mm moon pool	Large central opening for mounting ADCP, side-scan sonar, dual-frequency sounder or water quality probes. Supports transparent data pass-through.
New INS combination algorithm	Measures velocity and orientation changes to maintain accurate positioning even in GNSS-blocked environments such as bridges and canyon sections.
Adaptive water flow control	Precise hovering and efficient trajectory tracking in currents, waves and wind. Follows predefined survey lines with centimetre accuracy.
360° PTZ camera + mm-wave radar	Omnidirectional video surveillance combined with millimetre-wave obstacle avoidance radar for safe, unattended operations.
Smart battery management	Integrated battery protection platform with temperature, over-current and short-circuit monitoring. Auto-return on low battery.

Technical Specifications

Hull dimensions (L × W × H)	1185 × 593 × 397 mm
Weight (excl. batteries)	25 kg
Max payload	25 kg
Material	Carbon fibre, rubber bumper
Weather resistance	Wind force 3 / Wave force 2
Waterproofing	IP67
Moon pool diameter	240 mm
Indicator light	Two-colour
Camera	360° omnidirectional PTZ video
Anti-collision sensor	Millimetre-wave radar, 10–30 m

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Propulsion	2 × brushless waterjet (no rudder)
Maximum speed	6 m/s
Battery endurance	4.5 h at 1.5 m/s per battery — 2 batteries included
Batteries	28.8 V / 34.3 Ah (each)
Control system	Android — SLHydro USV software
Control range	1.3 km on 2.4 GHz / Unlimited on 4G
GNSS constellations	GPS, BDS, GLONASS, Galileo, L-Band
RTK accuracy (H)	±8 mm + 1 ppm RMS
RTK accuracy (V)	±15 mm + 1 ppm RMS
Heading accuracy	0.2° @ 1 m baseline
INS accuracy	2.1°/h, <1 m/20 s
GNSS update rate	200 Hz
Echo sounder — single freq.	200 kHz beam 6.9°±2° range 0.2–200 m acc. ±1 cm+0.1%/h
Echo sounder — dual freq.	200/24 kHz beam 6.9°/34.1° range 0.2–200/0.8–600 m (opt.)
Certifications	IHO Standard, CE

Expandable sensors

ADCP	Acoustic Doppler Current Profiler — current speed and direction profiling
Side-scan sonar	Acoustic imaging of the seabed and submerged objects
Dual-frequency sounder	Optional second frequency (24 kHz) for deep-water and sediment penetration
Water quality meter	Multi-parameter probe for environmental monitoring (turbidity, DO, pH, conductivity, temperature)

Accessories

HydroBoat 1200 unit	Main USV with integrated single-beam echo sounder.
2.4 GHz antenna	RC-NJ-2425-417 mm.
4G antenna	LTE-NJ-0827-320 mm.

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UHF antenna	UHF-460-TNC-300 mm.
Battery chargers	2 × universal charger, input 100–240 V, European plug.
Batteries	2 × 28.8 V / 34.3 Ah with individual transport cases.
Android controller box	Controller with Type-C charger and shoulder strap.
Propeller protection grids	2 × metal grid to prevent vegetation entanglement.
ADCP fastener pack	M screws (20/30/65 mm) + nuts — for ADCP moon pool installation.
ADCP foam sleeves	3 × sleeves for RP1200, RDI and M9 ADCP compatibility.
Tool kit	Pliers, hex keys M1.5–M10, forceps.
Transport case	Hard-shell rigid case, 140 × 72 × 72 cm.
SLHydro USV software	Android boat control software (pre-installed in controller).
SLHydro Sounder software	Windows post-processing software (download via Partner Center).

Product sheet prepared by Novatest S.r.l. Data subject to change without notice.

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