QYSEA

FIFISH X1 brochure

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Manufacturer: QYSEA

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Official source

https://www.qysea.com/products/fifish-x1/

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QYSEA

Mission ROV | High Payload | Enhanced Current Holding

FIFISH X1



Pioneering a New Era of Underwater Non-Destructive Inspection

QYSEA

Offshore • Infrastructure • Shipping
Mission ROV
Powerful Precision, Advanced Add-Ons, Superior Stability

Featuring strong current resistance, a high-payload platform with a full suite of NDT tools, and intelligent systems for navigation, measurement, and mapping, FIFISH X1 redefines inspection workflows across offshore energy, subsea infrastructure, and large vessels, delivering a new paradigm of underwater non-destructive testing with continuous operation.



*Specifications & appearance subject to change without notice.

QYSEA

Lightweight Design High Performance



Powered for Offshore Missions



Efficient Non-Destructive Testing



AI-Empowered Ecosystem



All-in-One Industrial RC Solution



24/7 Direct Power Supply

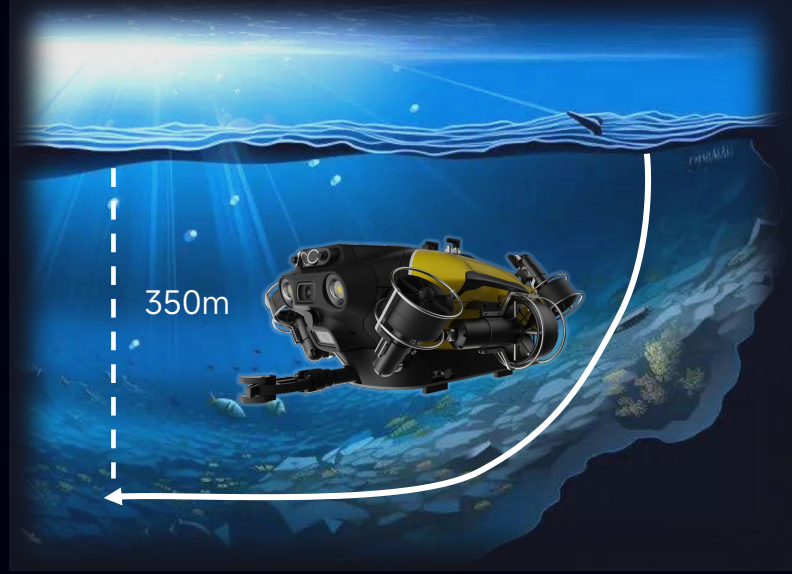


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Lightweight Design, High Performance

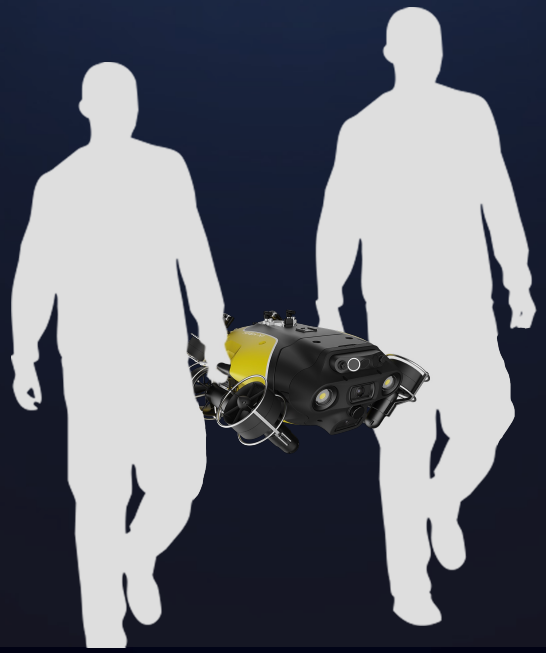
350m Operating Depth
Majority Offshore Scenarios Covered

Proprietary waterproof and pressure-resistant design, enables easy operation at 0–350m depth



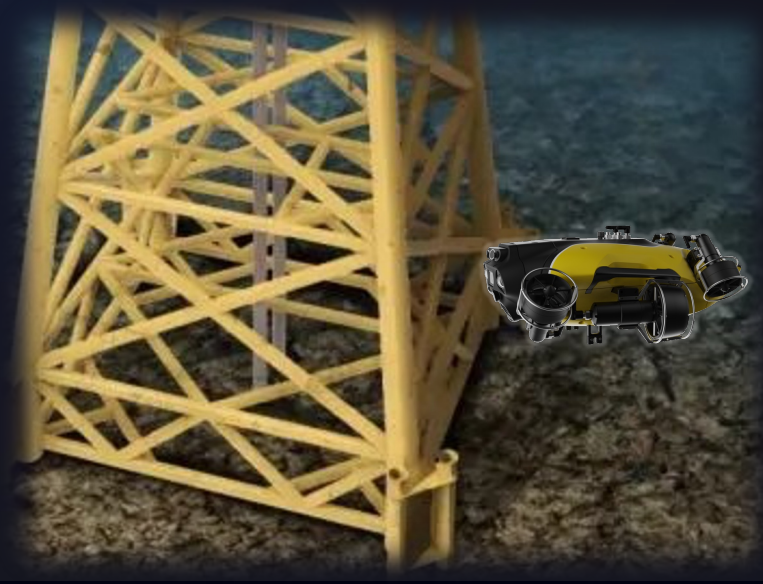
⩽30 kg Unit Weight
Efficiently Deployable by 1–2 People

Lightweight body breaks traditional design, optimizing operational efficiency and costs



0.17m³ Compact Size
Seamless Manoeuvrability in Tight Spaces

Working in tight-space challenges with lightweight, streamlined design for flexible operation



*Specifications and appearance subject to change without notice.

Lightweight Design, High Performance

Dual Camera System
4K UHD &
Ultra-Wide FOV

1/1.8” CMOS Dual Camera Sensors,
Efficient & Coordinated Operation



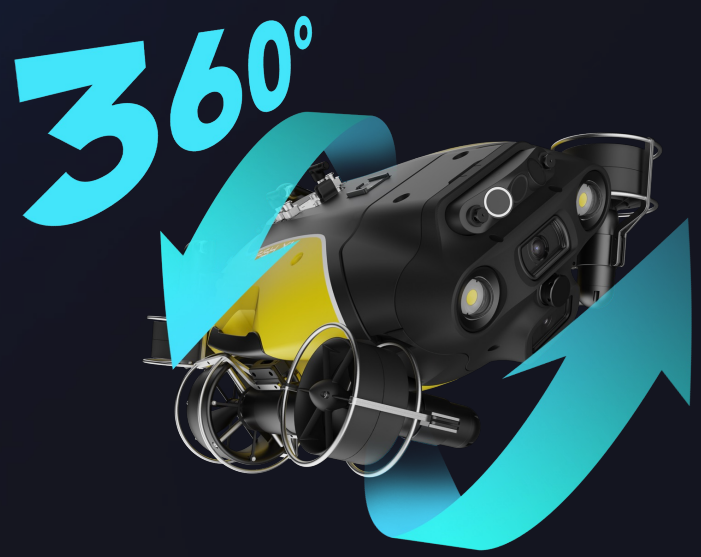
Dual LED Lighting
12,000 Lumens
Unhindered Operation

120° Wide Illumination,
Exceeding Industry Standards



360° Omnidirectional Control

Proprietary Six-Motor Vector Layout,
±0.1° Precise Operational Angle Control



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Power System

Enhanced Propulsion

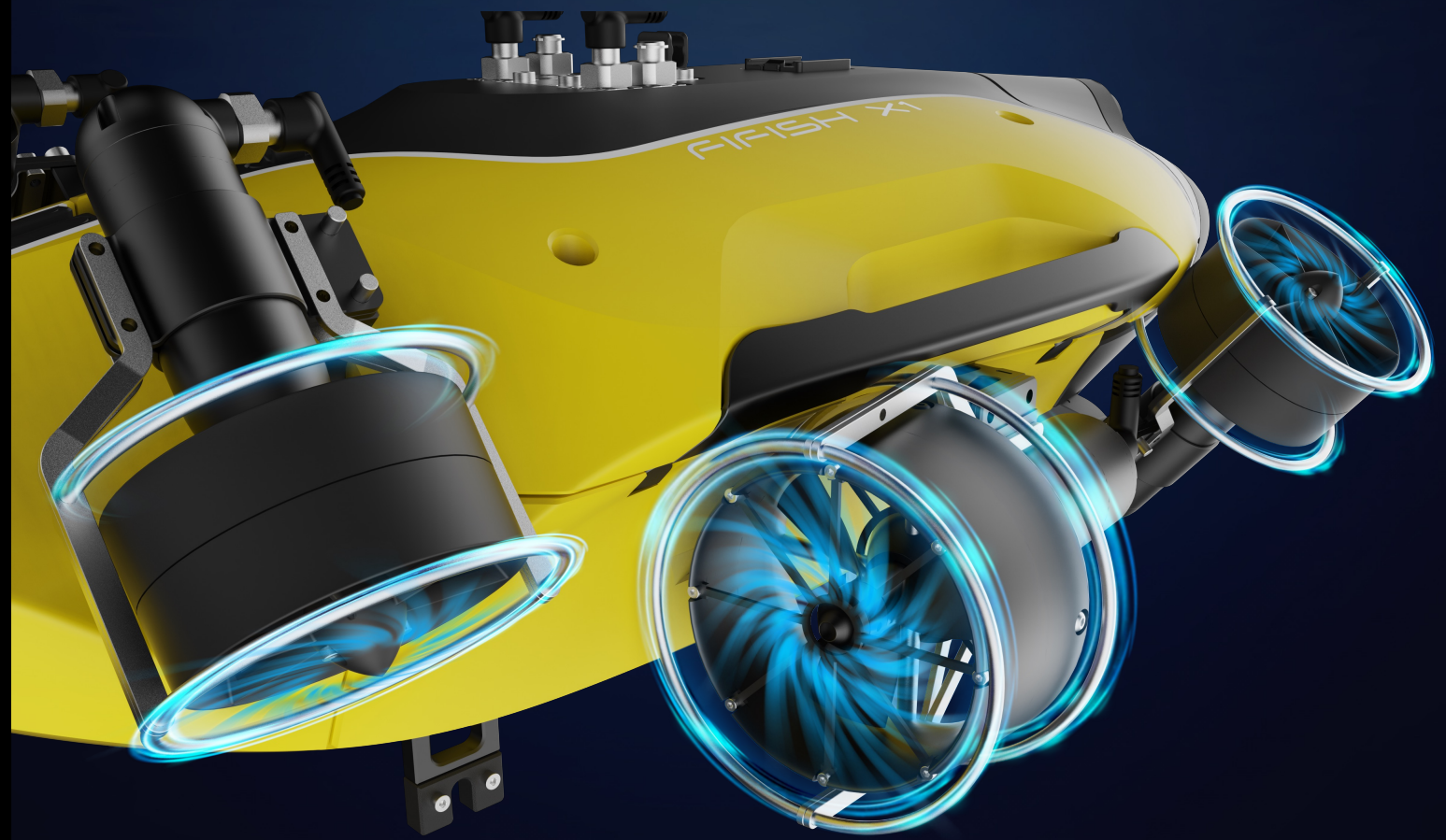
FIFISH X1, powered by the Q-Motor Pro and a six-motor vector layout, enables rapid and precise inspections. Its modular design allows for quick thruster swaps, while built-in alert systems provide adaptive protection against overcurrent, overvoltage, and overload.

4.5 Knots*

Max. Forward Speed

30 KG

Max. Forward Thrust



* Speed: 1 knot ≈ 0.514 m/s; 4.5 knots ≈ 2.3 m/s ; Specifications & appearance subject to change without notice.

Current Holding

Stable Hovering Precise Inspections

QYSEA redefines subsea sonar with the FIFISH X1, equipped with forward- and downward-facing Q-DVL modules and advanced AI algorithms. This integration delivers unmatched stability for inspections around vertical structures and in complex, dynamic environments, even under strong currents.

Dual DVL

Omnidirectional
Station Lock Hovering

4.0 Knots*

Max. Forward
Current Holding



* 1 knot ≈ 0.514 m/s, i.e. 2 m/s ≈ 4 knots ; Specifications & appearance subject to change without notice.

Payload

High Payload, Versatile Applications

FIFISH X1 supports demanding inspection tasks with four Q-Interface power ports and a maximum payload capacity of 15 kg. Its powerful propulsion, combined with QYSEA's core control algorithms, ensures stable, adaptive posture control even under heavy loads, enabling precise and efficient operations.



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Mission Adaptable

Rapid Add-on Tool Integrations

FIFISH X1 features a modular payload design that enables rapid tool changes and integration for maritime and offshore environments. Compatible with a wide range of tools for non-destructive testing, manipulators, and imaging sonars, it delivers enhanced efficiency and adaptability across complex subsea engineering tasks.

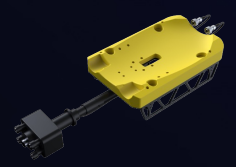
1+N

1 Platform,
NDT & Modular Tool Skid

5 MIN

Rapid Accessories Swap

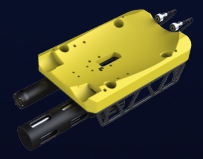




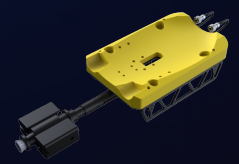
UTG (Ultrasonic Thickness Gauge)



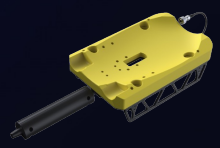
CP (Cathodic Protection)



Explosive Gas Detector



Electric Cleaning Brush



Cavitation Jet Cleaner

*Specifications & appearance subject to change without notice.

Location Tagged Inspections

AI Positioning & Defect Marking

In complex inspection environments, FIFISH X1 uses its deep-fusion underwater navigation system (U-INS Plus) to receive precise positioning in real time. Detected anomalies can be quickly marked, capturing coordinates and data to produce key reports and 3D models, significantly improving maintenance accuracy and efficiency.



*Specifications & appearance subject to change without notice.

Underwater Navigation

AI Inertial Navigation

FIFISH X1 features the U-INS Plus fused navigation system, combining advanced hardware and software. Forward- and downward-facing Q-DVL modules deliver stable current resistance, real-time depth control, 3D route planning, and point marking, making underwater inspections smarter, more intuitive, and efficient.

Multi-Dimensional

Auto Navigation (Vertical & Horizonal)

Customizable Paths

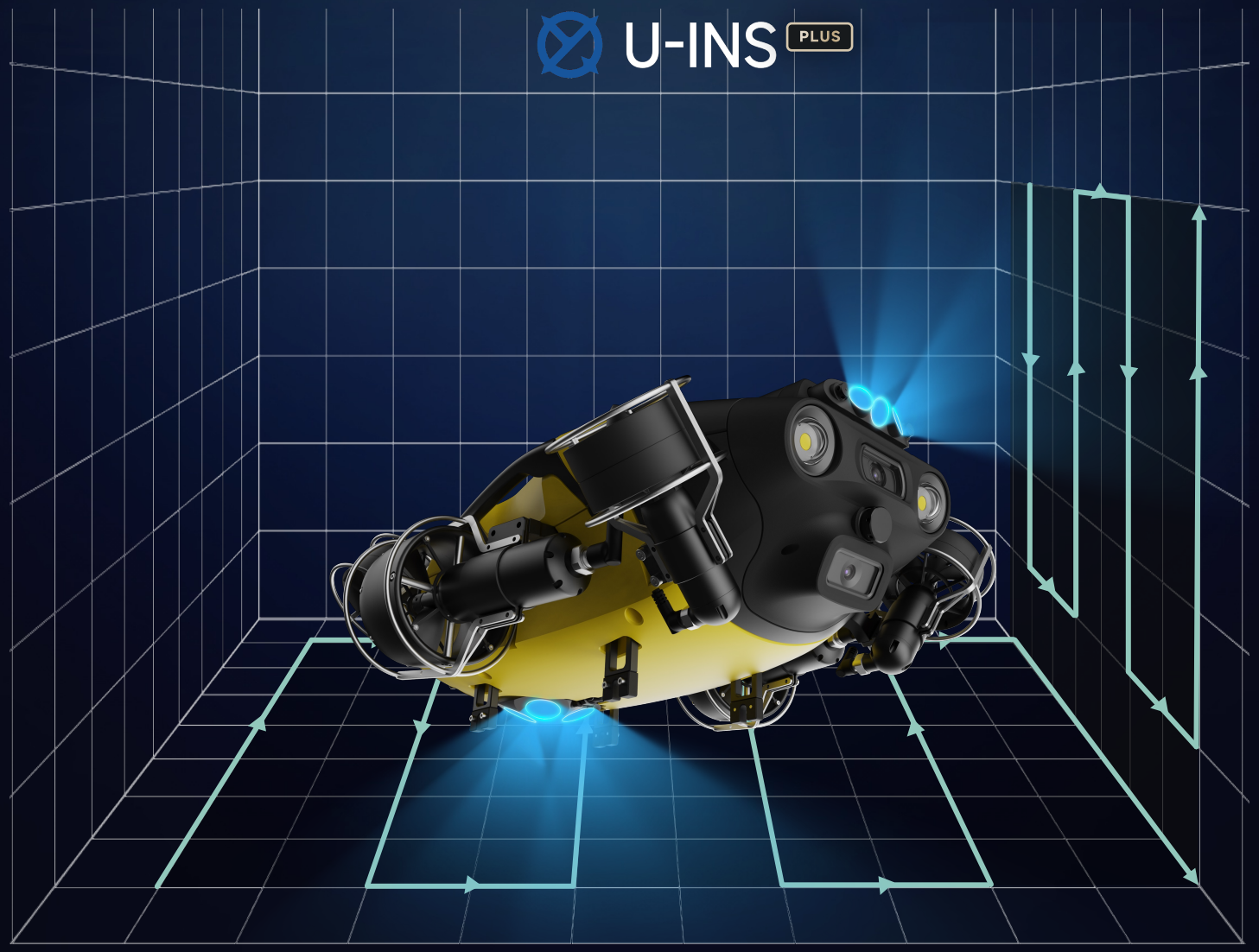
Mission Route Planning

Surface-Following Navigation

Consistent Data-Collection Accuracy

Station Lock Hover

Multi-Dimensional Underwater Inspections



*Specifications & appearance subject to change without notice.

QY-MT |
QYSEA Measurement Tool

AI Non-Destructive Measurement

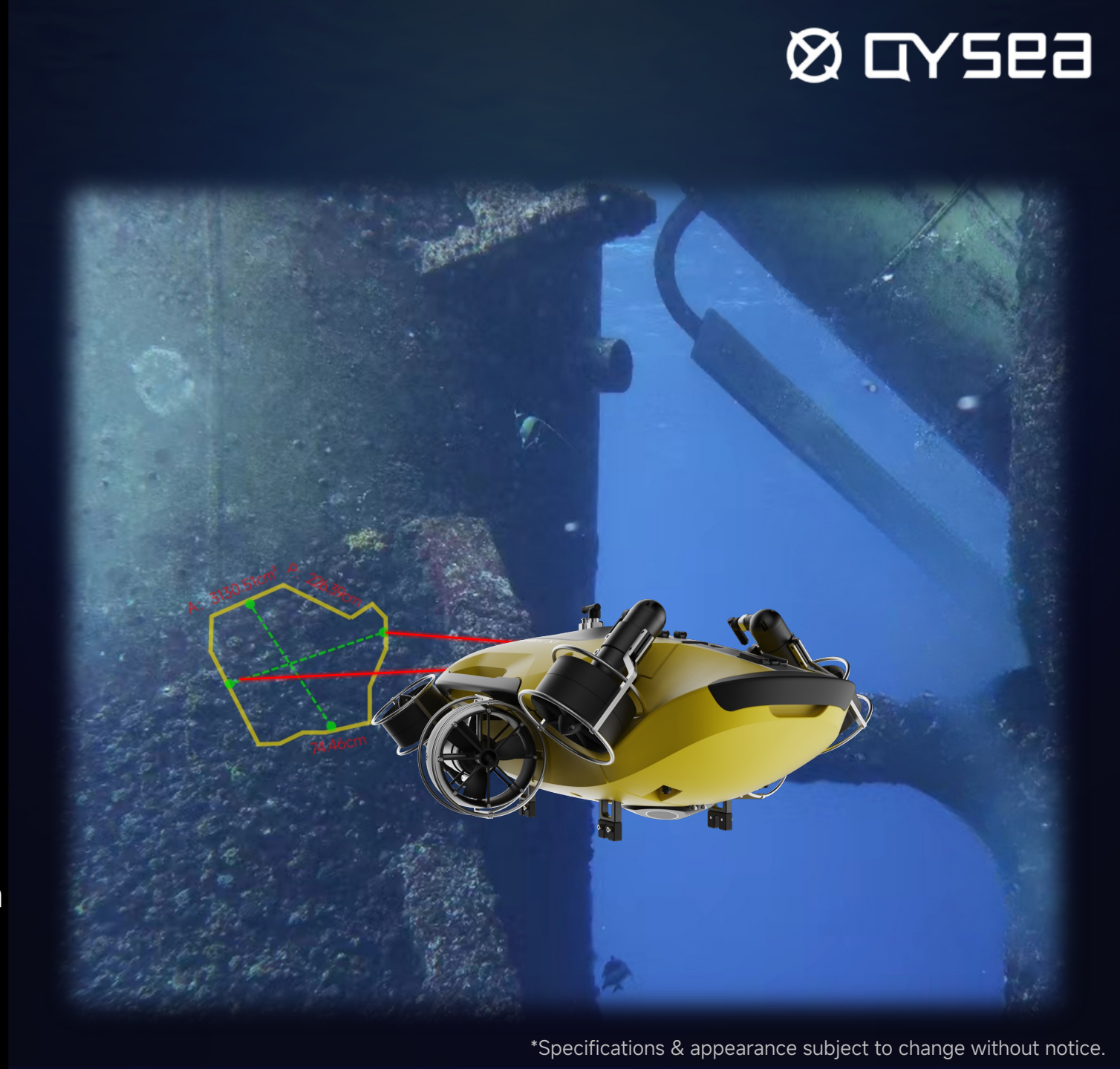
FIFISH X1 features the AI-driven QY-MT NDT system with proprietary vision algorithms, enabling millimeter-accurate measurement of offshore structures, subsea pipeline cracks, bridge scour, and hull coating damage. Offline data capture allows one-click none-destructive measurements, setting a global benchmark for underwater inspections.

Dual Laser

Online & Offline Measurement Modes

±1 cm High-Precision

Non-Destructive Measurement (Linear, Angular, Circumference & Area)

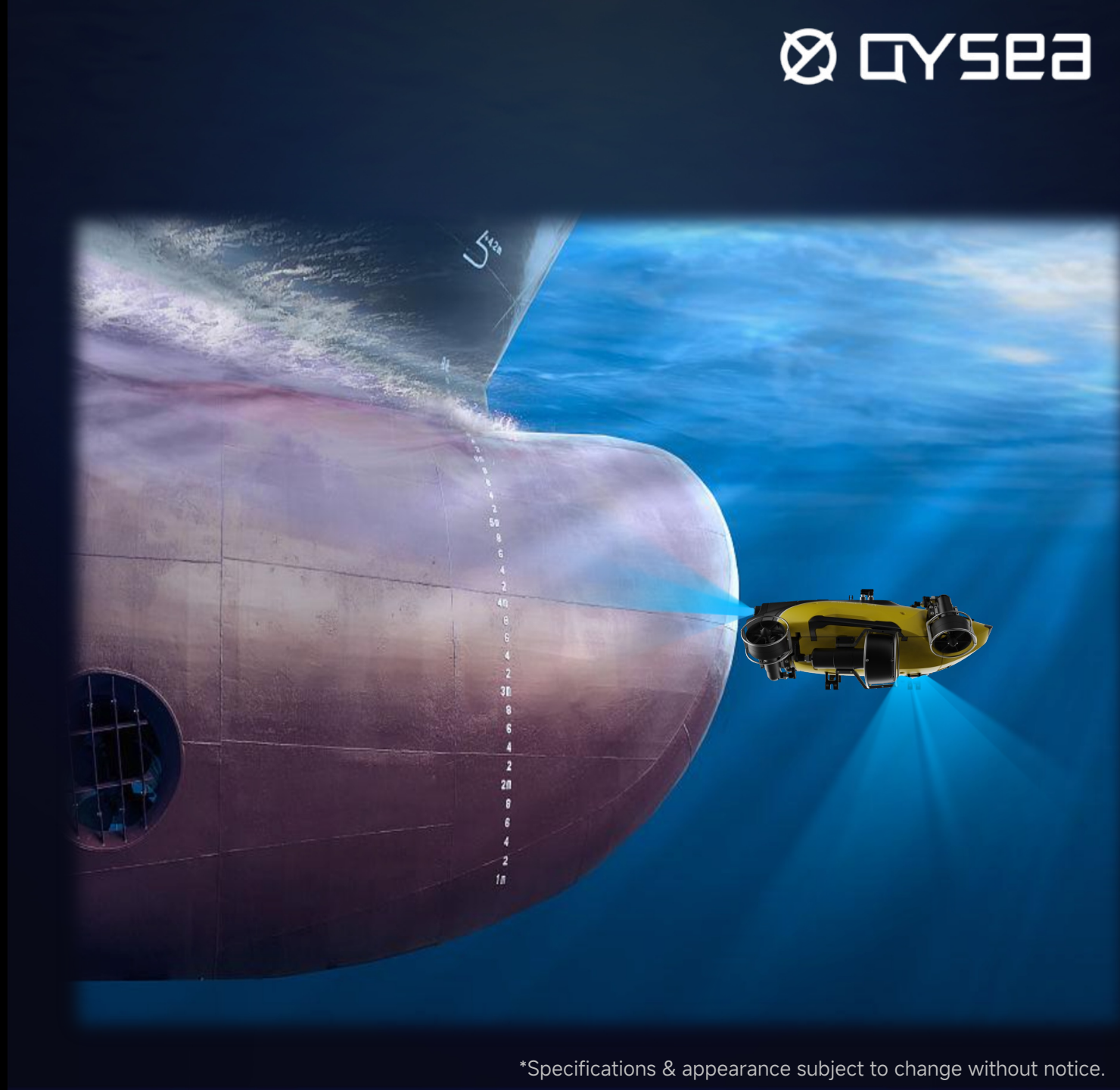


*Specifications & appearance subject to change without notice.

Enhanced Safety

AI Collision Avoidance

FIFISH X1's forward- and downward-facing Q-DVL sonar modules feature AI-powered collision avoidance, using precise distance data to detect risks and predict hazards in milliseconds, effectively navigating complex offshore structures and seabed terrain to reduce accidents or risks, while enhancing operational safety.



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All-In-One Control Solution

Command with Power Deliver with Precision

The FIFISH X1 control system features the new Q-iRC industry remote controller, designed for clarity, endurance, and precision in the field. It supports customizable smart shortcuts, multi-task window displays, and multiple digital expansion interfaces, meeting the diverse needs of complex industry operations.

7-Inches

1600 Nit High-Brightness Screen

8-Hours

Extended Operating Time

8-Buttons

Multi-Functional Features

Multi-Expansion

Real-Time Analysis & Co-ordination



*Specifications & appearance subject to change without notice.

Direct Power Supply System

24/7 Continuous Operation

FIFISH X1 is engineered for maximum uptime, featuring a direct power supply system and adaptive safety protections to ensure uninterrupted performance. Its design supports long-duration missions and demanding industrial workflows, delivering reliability around the clock.



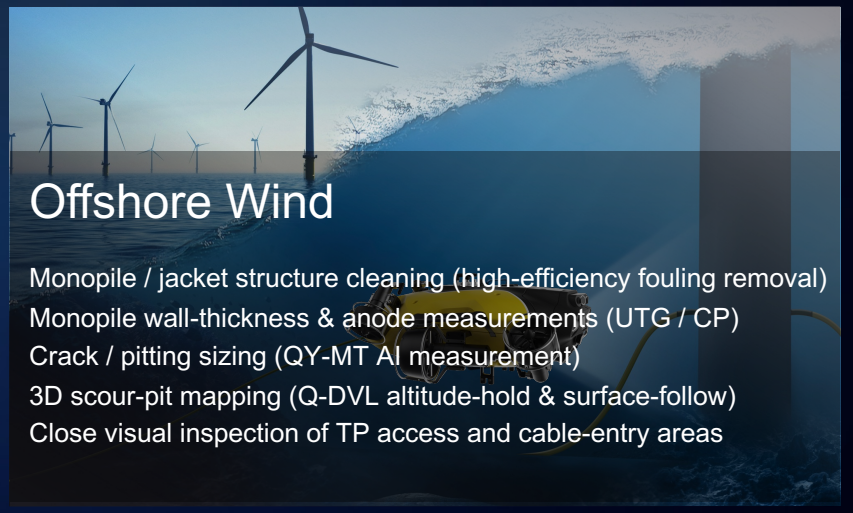
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Industry Applications



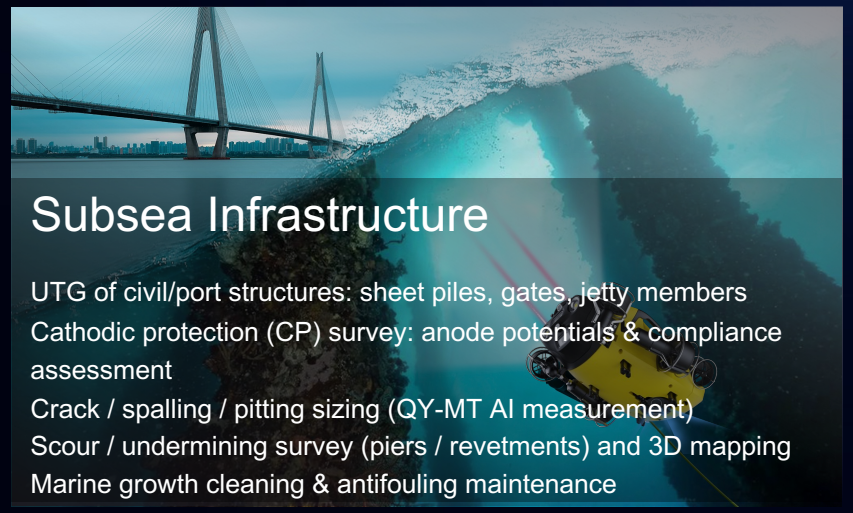
Offshore Oil & Gas

Jacket / pile-foundation inspection (general visual & close visual, weld inspection, defect sizing)
Marine growth removal (barnacles, algae, etc.)
Sacrificial anode potential survey (CP)
Ultrasonic thickness gauging (UTG): wall-loss / corrosion assessment
Scour / undercutting risk assessment (legs / foundations)



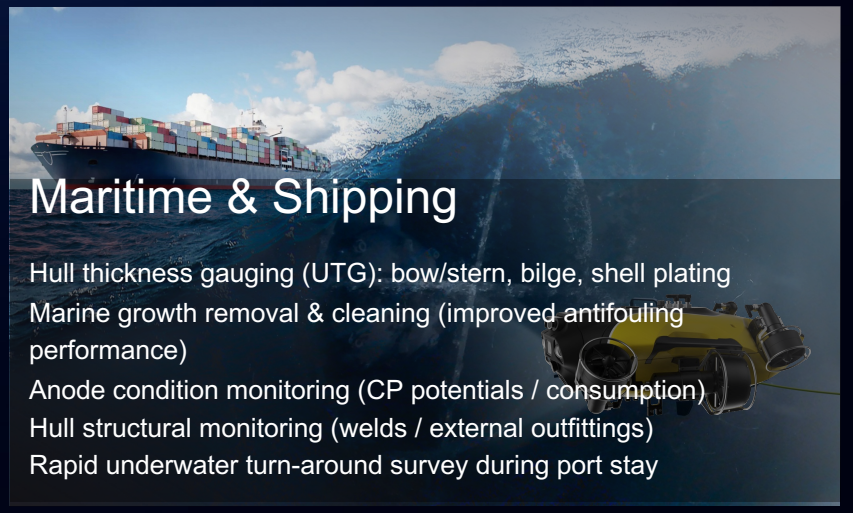
Offshore Wind

Monopile / jacket structure cleaning (high-efficiency fouling removal)
Monopile wall-thickness & anode measurements (UTG / CP)
Crack / pitting sizing (QY-MT AI measurement)
3D scour-pit mapping (Q-DVL altitude-hold & surface-follow)
Close visual inspection of TP access and cable-entry areas



Subsea Infrastructure

UTG of civil/port structures: sheet piles, gates, jetty members
Cathodic protection (CP) survey: anode potentials & compliance assessment
Crack / spalling / pitting sizing (QY-MT AI measurement)
Scour / undermining survey (piers / revetments) and 3D mapping
Marine growth cleaning & antifouling maintenance



Maritime & Shipping

Hull thickness gauging (UTG): bow/stern, bilge, shell plating
Marine growth removal & cleaning (improved antifouling performance)
Anode condition monitoring (CP potentials / consumption)
Hull structural monitoring (welds / external outfittings)
Rapid underwater turn-around survey during port stay

*Specifications & appearance subject to change without notice.

Add-Ons List

Standard



Main ROV Unit ×1
(incl. Forward Q-DVL/Range Laser & Downward Q-DVL)

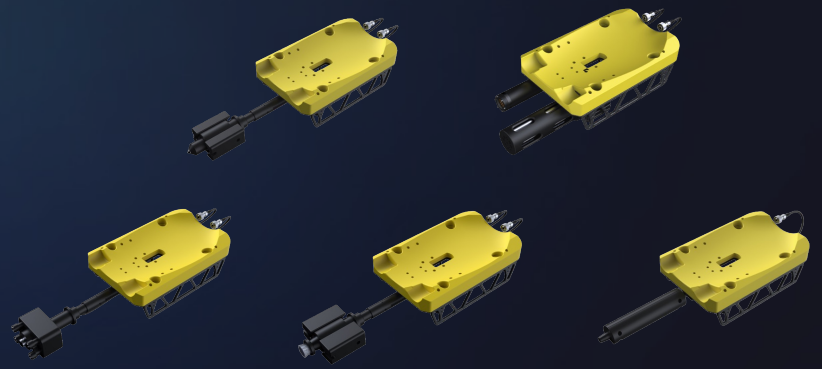


Industrial Remote Controller*1



350m Direct Power Supply System

Optional



NDT Non-Destructive Testing Add-Ons



Single-/Multi-Axis Arm Manipulator



2D Image Sonar

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*Specifications & appearance subject to change without notice.

Technical Specifications

ROV

Dimensions	770mm(l) x 560mm(w) x 400mm(h)
Weight	≤30 kg
Depth Rating	350m
Payload	15kg
Speed	Forward: 4.5 knots
	Reverse: 3.5 knots
	Lateral: 2.5 knots
	Vertical: 1.5 knots
Current Hold	Up to 4.0 knots (2.0 m/s)
Maneuverability	Six Degrees of Freedom
	Direction: Lateral (Left/Right), Vertical Up/Down), Forward/Backward
	Rotation: 360° Roll, 360° Pitch, 360° Yaw
Propellers	Propeller Material: Aluminum alloy with hard anodized finish
	Quantity: Six arranged in a vector configuration
	Forward Thrust: 30 kg, Reverse Thrust: 24 kg, Lateral Thrust: 15 kg, Vertical Thrust: 21 kg
Operating Temp.	-10 °C ~ 50 °C
Navigation	Underwater Integrated Navigation and Positioning System (U-INS+)
Transport	Dedicated Flight Case (with Wheels)

Dual Camera System

Quantity	Dual 4K Camera System
Front Camera	Aperture: f/2.5
	FOV-Vertical (Underwater): 69°
	FOV-Horizontal (Underwater): 120°
	FOV-Diagonal (Underwater): 146°
	Focus Range: 0.1m~ + ∞
Lower Camera	Aperture: f/1.8
	FOV-Vertical (Underwater): 52°
	FOV-Horizontal (Underwater): 87°
	FOV-Diagonal (Underwater): 96°
	Focus Range: 0.3m~ + ∞
Sensor	1/1.8" CMOS
Features	Simultaneous Multi-View Display / Instant Screen Switching
Pixels	12 MP
Shutter Speed	5-1/5000 Second
Burst Shooting	1/3/5/10 Frames

ISO	100–6400 (Auto/Manual)
White Balance	2800–9000K (for Seawater & Freshwater, Auto/Manual)
Exposure Compensation	-3.0 EV to +3.0 EV (Auto/Manual)
Photo Resolution	4:3 = 4000 × 3000 16:9 = 3840 × 2160
Photo Format	JPEG, DNG
Video Resolution	4K UHD: 25/30 fps
	1080p FHD: 25/30/50/60/75/90 fps
	720P HD: 25/30/50/60/75/90 fps
Video Encode	H.264
Video Format	MP4 (AVC)
Stabilization	Electronic Stabilization (EIS)
Color System	NTSC & PAL
External Storage (Removable SD Card)	External TF Card, FAT32 File System (128GB*2 Standard, Upgradeable to 256/512GB*2)

*Specifications & appearance subject to change without notice.

Technical Specifications

QYSEA

Dual DVL & IMU sensors

Downward DVL	Detection range: 0.1m-100m	Station Lock & Collision Avoidance
Forward DVL	Detection range: 0.15m-10m	
Gyroscope	±0.1°	Posture Lock: ±0.1° pitch angle or ±0.1° roll angle, moving in any direction
Accelerometer	±0.1°	
Magnetometer	±1°	
Depth Sensor	Suspension within ±1 cm	Depth Lock
Temp. Sensor	±1°	

Dual LED & Dual Laser

Brightness	6000 Lumen LED * 2	
CCT	5500K	
Beam Angle	120°	
Brightness Levels	3	
Dual Laser Scaler	Type: Dual Spot Laser	Smart Measurement
	Wavelength: 660nm (Red)	
	Distance: 10cm Apart	

Port Interface

Quantity	4
Material	Stainless Steel 316
Interfaces	29V @ 5A ETHERNET, UART
Adjustable Power	Adaptive Voltage Range for External Add-on Accessories
Secure Plug	Self-diagnostic Tests & Leakage Prevention

Tether & Spool

Cable length	350m
Cable diameter	9.5mm
Tensile strength	300kgf
Spool Dimension	600mm(l) × 430mm(w) × 540mm(h)
Spool Weight	53kg
Protection Level	IP66
Transportation	Dedicated Flight Case (with Wheels)

Direct Power Supply | Surface Unit

Dimensions	460mm(l) × 360mm(w) ×190mm(h)
Weight	8.4kg
AC Power Input	AC 110V / 220V
Max. Surface Power Output	2.2 kW
Protection Level	IP55 (Lid Opened) IP66 (Lid Closed)

Direct Power Supply | Underwater Unit

Dimensions	130mm(l) × 130mm(w) ×260mm(h)
Weight	3.8kg
Input Voltage:	700–800V DC
Output Voltage:	29.2V
Maximum Output Power:	1.8 kW
Depth Rating	350m

Control Console | Q-iRC

Wireless Network	2.4GHz & 5GHz WiFi: 802.11 a/b/g/n/ac
Weight	1420g
Usage Time	Up to 8 hours
Screen Size	7 Inches
Brightness	1,500 nits
Protection Level	IP54
External Ports	TF*1、Ethernet*1、HDMI*1、USB-A*1、Type-C*1, ROV*1
Customization	8 Customizable Buttons
Storage	LPDDR4x 4GB RAM + 64GB eMMC Storage

AI Tools

QY-MT	QYSEA Measurement Tool (with built-in laser scaler)
QY-BT	QYSEA Bathymetric Tool (with optional Echosounder add-on)
U-INS Plus	Underwater Inertial Navigation System (with built-in dual DVLs, and optional GNSS compass add-on)
Vision Lock	Vision-Based Intelligent Subject Locking
Visual Enhancement	Image De-Hazing & Plankton Filtering

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QYSEA

UNDERWATER AI SOLUTION PROVIDER

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