QYSEA

FIFISH E-MASTER

All-in-One Solution

Inspection · Measurement · Survey

Industrial ROV

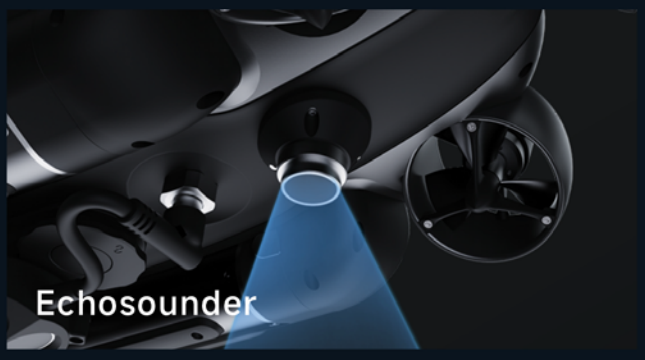
Designed for Masters

Enhanced Efficiency & Endurance

FIFISH E-MASTER is a compact and robust industrial ROV designed to deliver precise inspections, measurements, and surveys across demanding marine environments.

- **Stable Hovering:** Handles >3 knot strong currents for stable operations in challenging environments.
- **Precise Navigation:** Accurate positioning, one-click return, and precise surveys over large ocean areas.
- **Measurement & Surveys:** Achieve advanced intuitive professional-level data collection and visual outputs.
- **Ultra-light Build & Design:** Easy single-person transportation and deployment.
- **Image Revolution:** Wide 4K fisheye lens, 10,000 lumen lights, and AI-enhanced imaging for comprehensive surveys and inspections.
- **Adaptable & Reliable:** Quick component maintenance, hot-swapping power enabling increased mission efficiency.

High-Precision Technologies

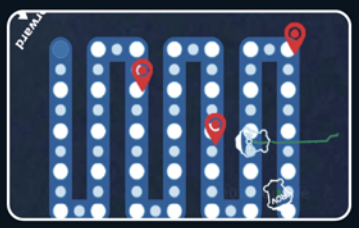


U-INS | Underwater Inertial Navigation System

Achieve Automatic Navigation & Surveying

FIFISH E-MASTER's Underwater Inertial Navigation System (U-INS) uses deep learning and sensor fusion for accurate navigation (position, velocity, heading, and attitude). It offers mission planning, one-click return, and real-time motion tracking, allowing operators to efficiently self-navigate and integrate custom maps with recorded points of interest.

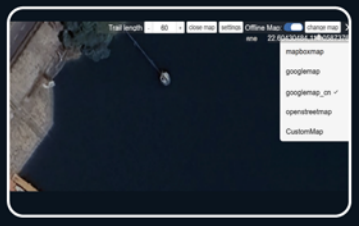
Subsea Mission Planning



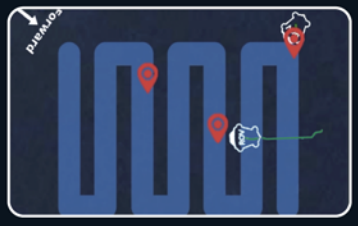
Return-to-home

Real-time ROV Tracking

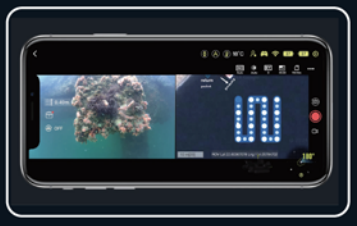
Custom Map Integration



POI Recording



Multiple View Display

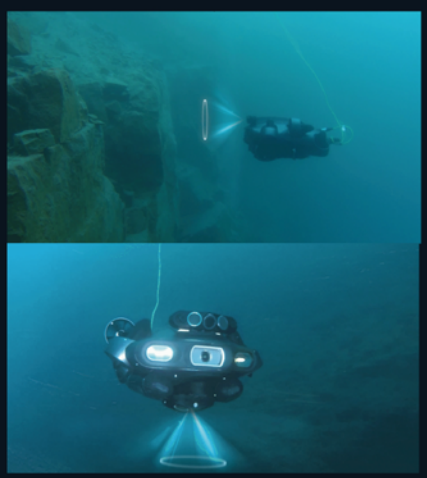


Q-DVL | Station Lock Hovering

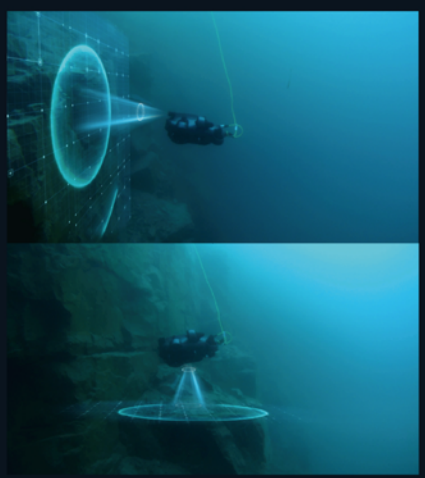
Precise Control in Challenging Waters

FIFISH E-MASTER offers advanced stability and safety features, including Forward and Downward Q-DVLs (distance/speed sensors) for stable hovering and resistance to flows up to 3 knots. Its smart collision avoidance, distance measurement, and altitude maintenance enhance mission safety and inspection efficiency by preventing collisions and ensuring consistent seabed height.

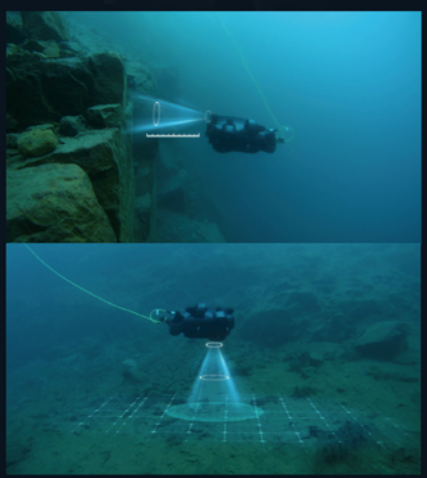
Station Lock Hovering



Smart Collision Avoidance



Distance/Altitude Lock & Track



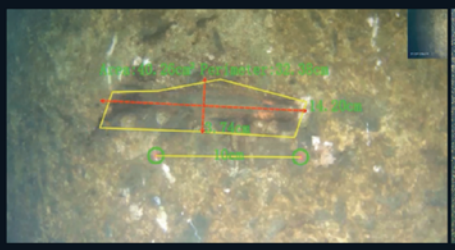
QY-MT | QYSEA Measurement Tool

Experience Real-time Online & Offline Measurements

With the QY-MT (QYSEA Measurement Tool), the FIFISH E-MASTER utilizes proprietary real-time and post-processing software systems to analyze underwater objects, fractures, and damage. The system offers high accuracy, various measurement methods, and real-time data visualization for a non-destructive approach to underwater measurement.

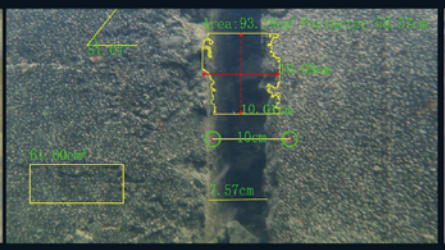
Dynamic, Adaptive & Precise

Perform Multi-angled/Shaped Measurements with **99.7% Accuracy**



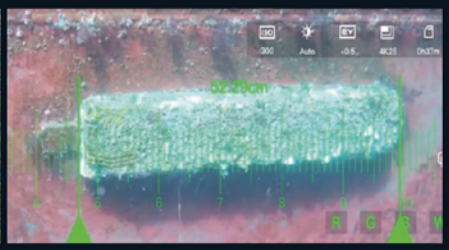
Simultaneous & Customizable

Multi-measurements, Personalized Display



Augmented Reality Enabled

Customizable Real-time AR Ruler



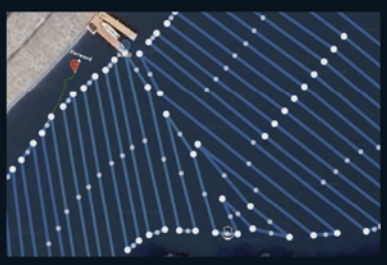
QY-BT | QYSEA Bathymetric Tool

Enable Smart 2D & 3D Seafloor Mapping

FIFISH E-MASTER enable dynamic bathymetric surveying. Users can map seabeds, riverbeds, and reservoirs, create customizable 2D/3D topographic maps, estimate reservoir capacities, and generate data reports with a single click. This system streamlines the mapping process, allowing for efficient data collection, customizable outputs, and seamless data exports.

Automated Data Collection

Collect Depth Data with Automation



Streamlined Mapping Process

Export & Upload Data with Ease

lng	lat	depth	x	y
119.228131	26.0532491	-2.44	13272414.9	3005677.57
119.228131	26.053249	-2.47	13272414.9	3005677.56
119.228131	26.053249	-2.44	13272414.9	3005677.55
119.228131	26.0532489	-2.45	13272414.9	3005677.55
119.228131	26.0532489	-2.47	13272414.9	3005677.54
119.228131	26.0532488	-2.48	13272414.9	3005677.53
119.228131	26.0532487	-2.47	13272414.9	3005677.52
119.228131	26.0532487	-2.46	13272414.8	3005677.52
119.228131	26.0532488	-2.47	13272414.8	3005677.53
119.228131	26.0532489	-2.46	13272414.8	3005677.54
119.228131	26.0532489	-2.49	13272414.8	3005677.54
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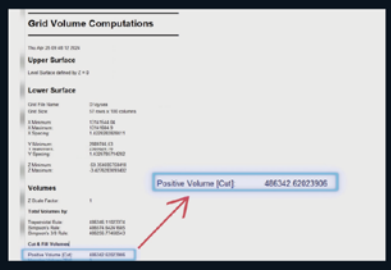
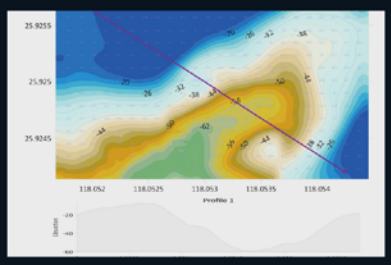
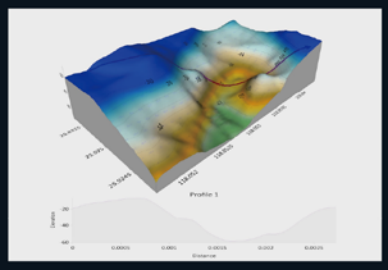


Customizable 2D/3D Maps

Control Appearance of Map Outputs





Reach Greater Speeds

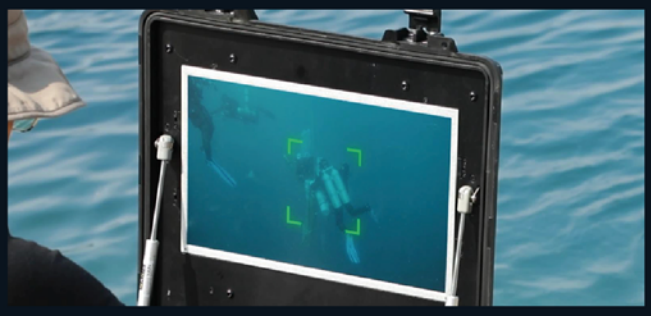
Powerful Ring-Wing Propulsion

FIFISH E-MASTER features an advanced ring-wing motor system that reaches 3 knots and excels in challenging waters. With six high-performance metal wing propellers and a 30% power boost, it offers exceptional reliability, wear resistance, and corrosion protection.

Enhanced Diver Safety

AI Diver Tracking & Monitoring

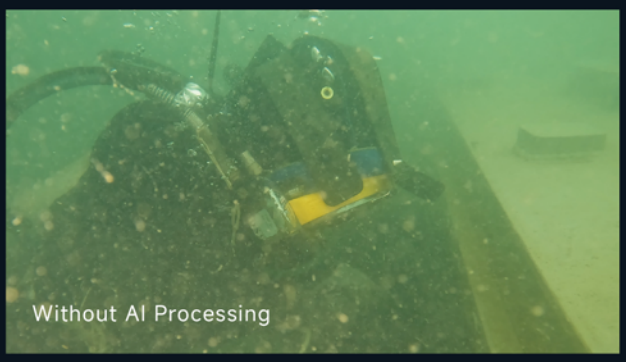
QYSEA's AI Diver Tracking Function combines a proprietary underwater image filtering algorithm with visual recognition technology to track single or group divers in real time. This ensures precise monitoring of their safety and provides real-time updates on underwater conditions from shore, making it a reliable companion.

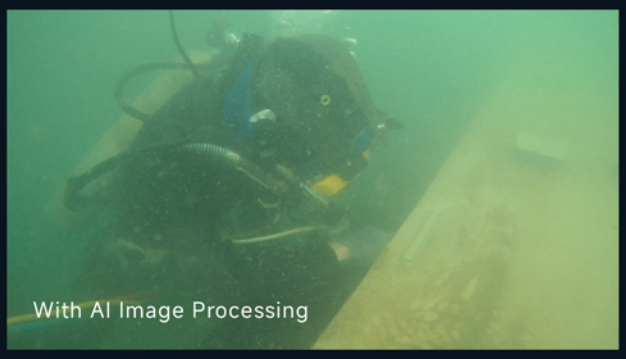


Crystal-Clear Imaging

AI Dehazing Algorithm, Plankton Filtering

Enhance image clarity and improve decision-making efficiency for underwater operations by identifying and filtering out the snowflake effects caused by suspended underwater particles.





Achieve Immersive Clarity

Expansive Distortion-free Vision

Featuring an innovative ultra-wide-angle camera lens, FIFISH E-MASTER provides a 176° super-wide surface view and a 146° underwater panoramic perspective, enabling operators to capture the entire underwater scene. The E-MASTER is equipped with a 1/1.8-inch CMOS sensor for 4K UHD filming and RAW format image capture.

Attain Brilliant Illumination

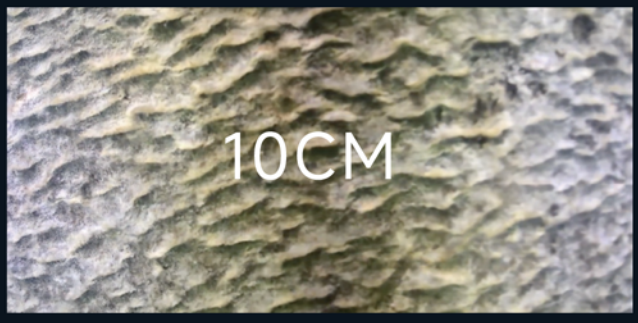
Vivid Four-Lamp Lighting System

Boasting multi-lamp LED lights, the FIFISH E-MASTER delivers up to 10,000 lumens of brightness with a 160° beam angle. The adjustable intensity, available in three levels, allows for optimal illumination in various underwater conditions, enhancing visibility and detail for more precise inspections and observations.

Macro Focus Precision

10cm Extreme Close-Up Focus

Supporting a 10cm extreme close-up focus underwater, FIFISH E-MASTER ensures precise imaging even in murky waters. Its automatic focusing capabilities allow for close-range observation, capturing accurate images and preserving every detail.



Fluid Modular Design

Quick & Effortless Maintenance

The E-MASTER's modular architecture integrates essential components—motor, imaging, lighting, and battery—allowing for rapid assembly, disassembly, and precise troubleshooting. Battery and accessory removal takes seconds, while spare part replacement can be done in 5 minutes, significantly enhancing operational efficiency.

Efficient Multi-tasking

Six-Port Add-on Expansion Dock

Through a meticulous internal redesign, FIFISH E-MASTER is equipped with dual load interfaces on both the top and bottom of the body. Utilizing professional expansion docks (optional), it can accommodate up to 6 operational tools simultaneously.

Continuous Efficiency

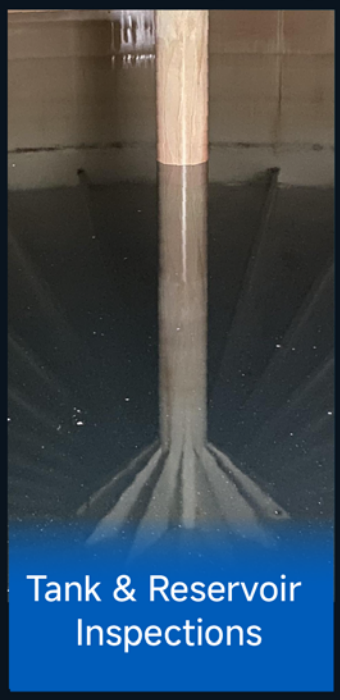
Swappable Dual Power System

FIFISH E-MASTER features an upgraded circuit design with a dual-battery system and hot-swappable technology, enabling seamless battery replacement without shutting down. This ensures instant power restoration for critical tasks and missions.

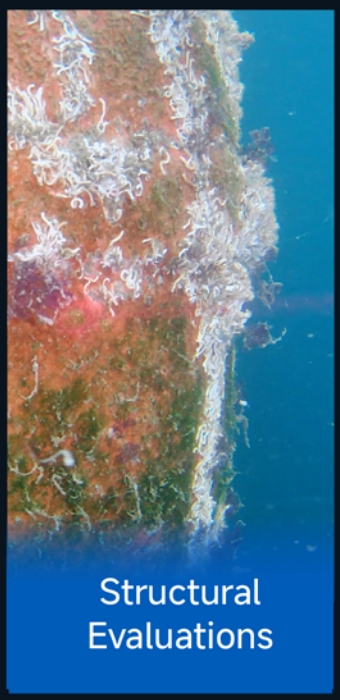
Smart & Portable Charging Station (Optional)

FIFISH E-MASTER includes the portable Q-Energy Station, which supports two battery modules and provides 1–4 hours of operational time on a full charge. It reaches 90% charge in just 50 minutes, ensuring fast recharging for extended underwater missions without power concerns.

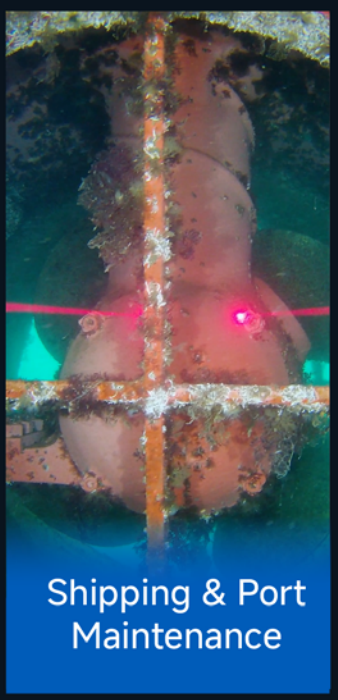
Industry Applications



Tank & Reservoir Inspections



Structural Evaluations



Shipping & Port Maintenance

Environmental Monitoring & Surveying

E Series Comparison

FIFISH ROV		E-MASTER		E-GO
				
Model		**NAVI**	**PLUS**	-
Depth Rating		200m	200m	100m
Forward Inline Q-DVL	Forward Inertial Navigation	✓	✓	Optional
	Forward Station Lock Hovering	✓	✓	Optional
	Forward Collision Avoidance	✓	✓	Optional
Laser Scaler	Smart & Adaptive Measurements	✓	✓	Optional
Echosounder/ Altitude Meter	Bathymetric Survey	✓	✓	Optional
	Altitude Track & Lock	✓	✓	Optional
Downward Q-DVL	Downward Station Lock Hovering	✓	Optional	Optional
	Downward Collision Avoidance	✓	Optional	Optional
GNSS Locator	Inertial Navigation	Optional	Optional	Optional

E-MASTER Specifications

ROV

Dimensions	430mm(l) x 345mm(w) x 185mm(h)
Weight	PLUS: 6.5kg / NAVI = 6.7kg
Depth Rating	200m
Payload	5kg
Speed	>3 Knots (>1.5 m/s)
Propellers	6 Propellers, Hard Anodized Aluminum Alloy
	6 Degrees of Freedom
	Movement: left & right, up & down,forward & backward, 360° yaw, 360° pitch, 360° roll
Operating Temp.	-10 °C ~ 60 °C (Operational Temp. Range)
Power	1-4h (Dependent on Work Environment)
	69.12wh * 2 Capacity
	Hot-Swappable Power System
	Smart Battery Management
	Quick Charging: 90% Full Power in 1h (Actual Charging Speed May Differ)
Navigation	Underwater Inertial Navigation System (U-INS)

Sensors

Downward DVL	Detection range: 0.15m-60m	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, in any direction
Accelerometer	±0.1°	
Magnetometer	±1°	
Depth Sensor	Suspension within ±1 cm	Depth Lock
Altitude Meter/ Echosounder	Detection range: 0.3m-50m	Bathymetric Survey, Altitude Track/Lock
Temp. Sensor	±1°	Smart Measurement
Laser Scaler	Wavelength: 660nm (Red)	
	Type: Dual Spot Laser	
	Distance: 10cm Apart	

Port Interface

Quantity	2 Ports, Expandable to 6 Ports (Extension Dock Required)
Material	Stainless steel 316
Interface	11V-24V @ 5A ETHERNET, UART
Adjustable Power	Adaptive Voltage Range for External Add-on Accessories
Secure Plug	Self-diagnostic Tests & Leakage Prevention

Charger

ROV	Input: 100-240 V, 50/60 Hz， 2.5A MAX
	Output: 18V ⎓ 10A
Controller	Input: 100-240V, 50/60 Hz, 0.5A MAX
	Output: 5V ⎓ 3A

Camera

Sensor	1/1.8"
Pixels	12MP
Aperture	f/2.5
Field of View	Above Water: 176° / Underwater: 146°
Focus Range	0.1m~+∞
Shutter Speed	5-1/5000 Second
Burst Shooting	1/3/5/10 Frames
ISO	100–3200 (Auto/Manual)
White Balance	2500K-7500K (Seawater/Freshwater, Auto/Manual)
Exposure Comp.	-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
Stabilization	Electronic Stabilization (EIS)
Color System	NTSC & PAL
Internal Storage	External MicroSD Storage (128GB Standard, Supports up to 512GB)
AI Functions	Vision Lock, Diver Tracking, Imaging Dehazing

Lighting

Brightness	5000 Lumen LED * 2
CCT	5500K
Beam Angle	160°
Brightness Levels	3

Controller

Wireless Network	5GHz WiFi: 802.11a/n/ac
Usage Time	Up to 4 hours
Download Format	FAT32 & EXFAT (128GB Max. Storage Support)
HDMI Output	HDMI Box Required

Tether Spool

Cable Length	200m
Tensile Strength	120kgf
Cable Diameter	4.6mm
Tether Weight	Neutral Buoyancy (Underwater)
Waterproof Rating	IP65

Robotic Arm (Optional)

Grip Strength	10kgf
Supply Voltage	9V-12V
Max. Current	3A
Grip Size	120mm

※ Specifications are subject to change without prior notice. Please contact QYSEA for detailed parameters.

Connect with QYSEA

QYSEA Website

QYSEA Media

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