

Ø QYSEA

# FIFISH E-MASTER



Inspection · Measurement · Survey  
Industrial AI ROV

# Designed for Masters

## Next-Generation Efficiency & Endurance

The FIFISH E-MASTER is an industrial AI underwater robot and all-in-one solution, meticulously engineered for high-precision measurements, inspections, and surveys in complex marine environments. Featuring advanced built-in sensors and sonars, the E-MASTER delivers unparalleled accuracy and reliability.

- **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.



## Q-DVL | Dynamic & Steady Hovering

### Enable Precise Control in Challenging Waters

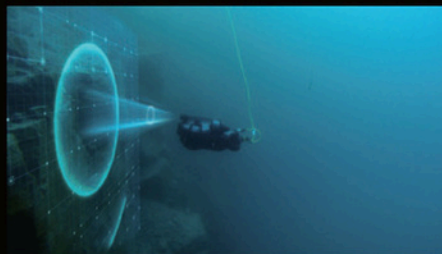
The FIFISH E-MASTER provides advanced stability and safety features, including forward and downward Q-DVLs for stable hovering and resistance to flows up to 3 knots. It ensures reliable operation in turbulent conditions with smart collision avoidance, distance measurement, and altitude maintenance, enhancing mission safety and inspection efficiency by automatically preventing collisions and maintaining consistent seabed height.



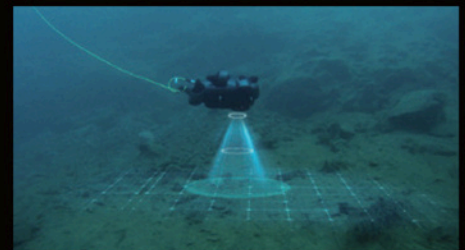
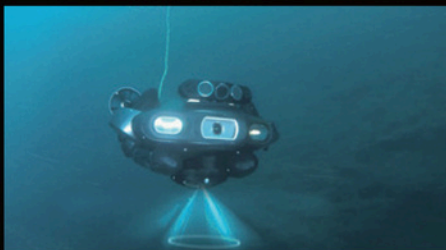
Station Lock Hovering



Smart Collision Avoidance



Altitude/ Distance Lock & Track



# U-INS | Subsea Automatic Navigation

## Survey Effortlessly with Precision & Accuracy

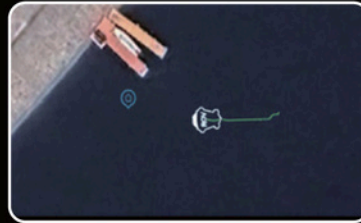
The E-MASTER's Underwater Inertial Navigation System (U-INS) offers advanced autonomous navigation by leveraging deep learning and sensor data for precise position, velocity, heading, and attitude information. It supports automated subsea mission planning, one-click return, and real-time motion tracking with visual references of historical paths. Operators benefit from efficient, self-guided movement, including custom maps and points-of-interest recording.



3D Path Planning



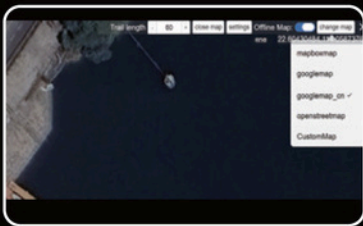
Return-to-home



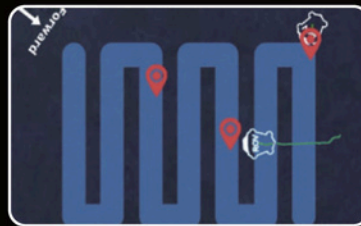
Real-time Motion Tracking



Custom Maps



POI Recording



Multiple View Display



# QY-MT | Real-time & Offline Smart Measurements

## Experience Dynamic Measurement Capabilities

The QY-MT is QYSEA's AI-powered underwater measurement system. Using the Forward Q-DVL and laser on the E-MASTER, along with proprietary AI visual algorithms, it analyzes underwater objects, fractures, and damage in real-time. The system offers high accuracy, multiple measurement methods, and real-time data visualization, providing a new, non-destructive approach to underwater measurement.



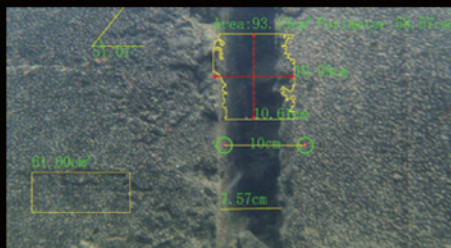
Dynamic, Adaptive & Precise

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



Simultaneous & Customizable

Multi-measurements, personalized display



Augmented Reality Enabled

Customizable Real-time Virtual Ruler



# QY-BT | 2D & 3D Seafloor Mapping

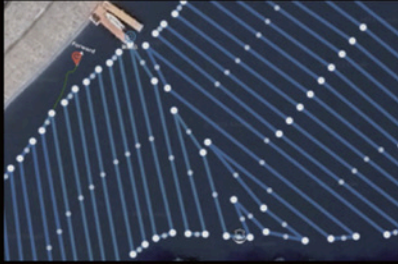
## Achieve Detailed Seafloor Visualization & Insights

The integrated Q-DVL and Echosounder on the 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. The system streamlines the mapping process, allowing for efficient data collection, customizable map outputs, and seamless data export and upload.



### Automated Data Collection

Collect Depth Data with Automation



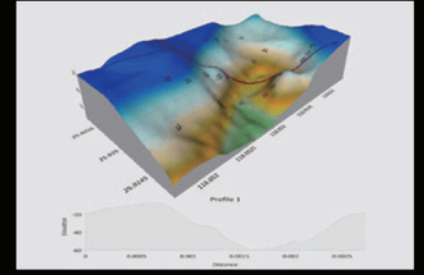
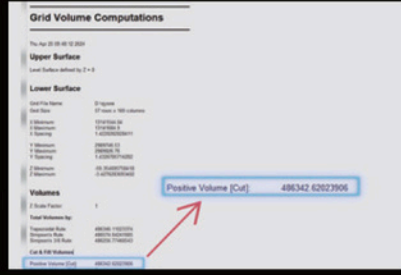
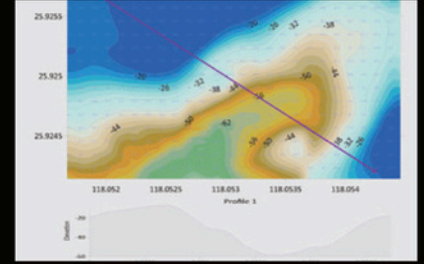
### Streamlined Mapping Process

Export & Upload Data with Ease

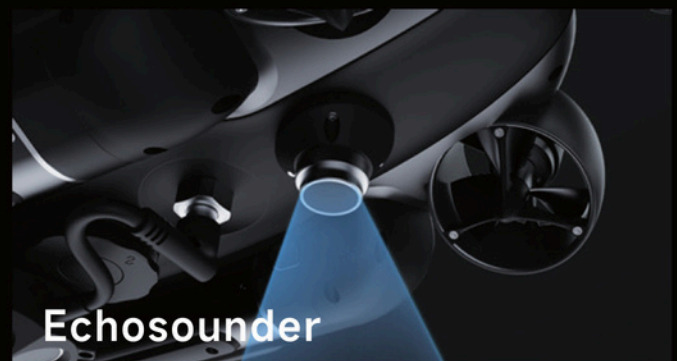
lng	lat	depth	x	y
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119.228131	26.053249	-2.47	13272414.9	3005677.56
119.228131	26.053249	-2.44	13272414.9	3005677.55
119.228131	26.0532489	-2.45	13272414.9	3005677.55
119.228131	26.0532489	-2.47	13272414.9	3005677.54
119.228131	26.0532488	-2.48	13272414.9	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
119.228131	26.0532488	-2.49	13272414.9	3005677.53

### Customizable 2D/3D Maps

Control Appearance of Map Outputs



## High-Precision Technologies



## Reach Greater Speeds

### Powerful Ring-Wing Propulsion System

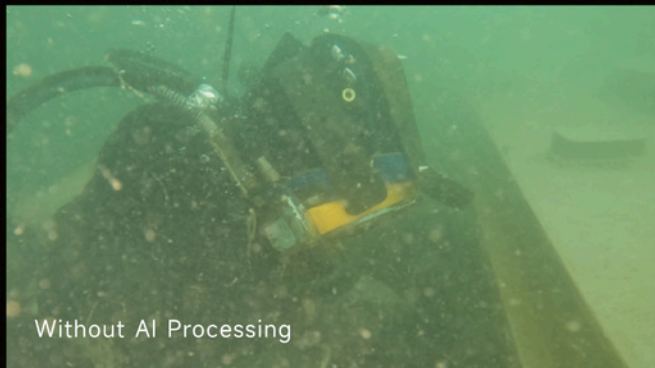
FIFISH E-MASTER features an advanced ring-wing motor system that reaches 3 knots and excels in challenging waters. With six high-performance metal wing propellers and a 30% power boost, it offers exceptional reliability, wear resistance, and corrosion protection.



## Crystal-Clear Imaging

### AI Dehazing Algorithm, Plankton Filtering

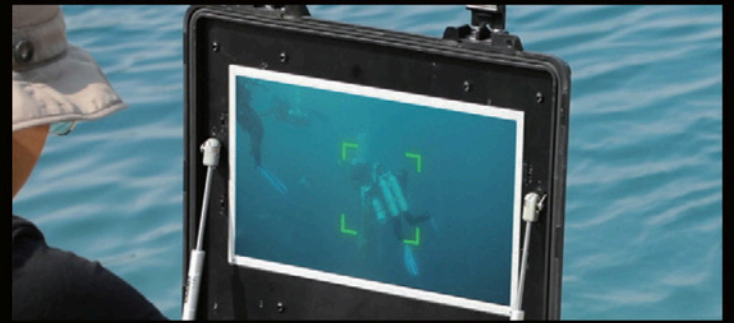
Enhance image clarity and improve decision-making efficiency for underwater operations by identifying and filtering out the snowflake effects caused by suspended underwater particles.



## Enhanced Diver Safety

### AI Diver Tracking & Monitoring

QYSEA's brand-new self-developed underwater AI technology — AI Diver Tracking Function, integrates QYSEA's proprietary AI underwater image filtering algorithm. Through QYSEA's independently developed underwater visual recognition technology, it identifies divers' movement poses in the footage, performs real-time automatic computation and analysis, achieving precise underwater visual locking and tracking! Serving as a safeguard for divers' lives and providing real-time monitoring of underwater situations from shore, it is indeed a reliable diving companion.



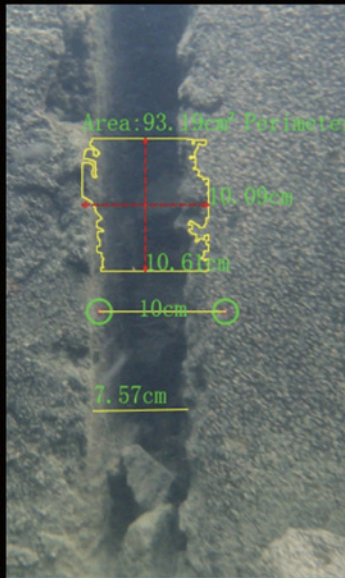
## Achieve Immersive Clarity

### Expansive Distortion-free Vision

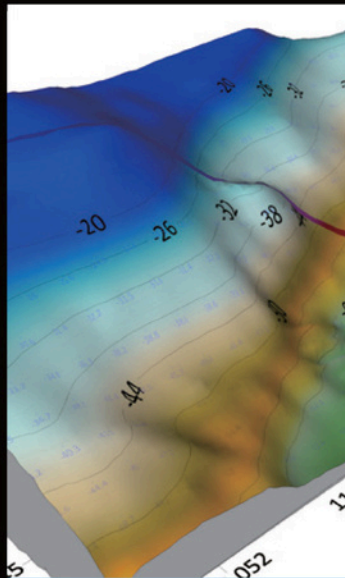
Featuring an innovative ultra-wide-angle camera lens, FIFISH E-MASTER provides a 176° super-wide surface view and a 146° underwater panoramic perspective, enabling operators to capture the entire underwater scene. The E-GO is equipped with a 1/1.8-inch CMOS sensor for 4K UHD filming and RAW format image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



# Industry Applications



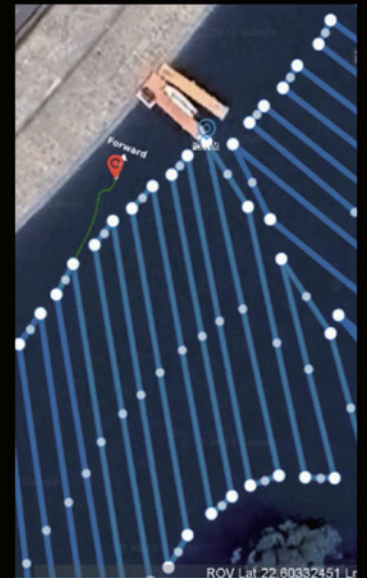
Subsea Measurements



Hydrographic Surveys







Shipping Inspections



Reservoir Inspections

# Package Ranges

Model / Specifications		 E-MASTER - NAVI	 E-MASTER - PLUS	 E-MASTER - Standard	 E-GO
Depth Rating		200m	200m	200m	100m (Standard) 200m (Optional Upgrade)
Downward Q-DVL	Inertial Navigation	✓	Optional	Optional	Optional
	Downward Station Lock Hovering	✓	Optional	Optional	Optional
	Downward Collision Avoidance	✓	Optional	Optional	Optional
Forward Q-DVL Inline	Forward Inertial Navigation	✓	✓	Optional	Optional
	Forward Station Lock Hovering	✓	✓	Optional	Optional
	Forward Collision Avoidance	✓	✓	Optional	Optional
Laser Scaler	Smart & Adaptive Measurements	✓	✓	Optional	Optional
Echosounder/ Alititude Meter	Bathymetric Survey	✓	✓	✓	Optional
	Altitude Track & Lock	✓	✓	✓	Optional

# E-MASTER SPECIFICATIONS



## ROV

Number of Propellers	6 (FIFISH Ring Wing Motors)
Maneuverability	6 DOF (Degree of Freedom)
	Moving: left & right, up & down, forward & backward Rotation: 360° yaw, 360° pitch, 360° roll
Posture Lock™	± 0.1° pitch angle or ± 0.1° roll angle and moving in any direction
Depth Holding	Suspending in ± 1 cm
Depth Rating	200M
Speed	>3 knots (>1.5 m/s) in still water
Operating Temp.	-10 °C - 60 °C (*Working environment temperature range)
Battery	Operating Time: 2.5 hours (*May vary depending on working conditions)
	69.12wh*2
	Swappable Battery: Supports quick replacement (Without shutting down machine)
	Smart battery management and detection Fast Charging: 90% in 1 hour (*Factory tested data; actual charging speed may differ)

## Sensors

Downward DVL	Detection range: 0.15m-50m	Station Lock & Collision Avoidance
Forward DVL (Inline)	Detection range: 0.1m-15m	Station Lock & Collision Avoidance
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
Altimeter / Echosounder	Working Range: 0.3m-50m	Bathymetric Survey & Altitude Track/Lock
Laser Scaler	Wavelength 660 nm(Red)	Smart Measurement
Temperature Sensor	±1°	

## Remote Controller

Wireless Network	5GHz WiFi,11a,n,ac
Battery Usage Time	Up to 4 hours
File Download Format	FAT32 & EXFAT (maximum storage support of 256GB)
HDMI Output	Requires QYSEA HDMI BOX for connection

## Charger

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

## Port Interface

Quantity	2 Ports,Expandable to 6 Ports (*Requires the use of the FIFISH extension dock)
Interface(Upper,Lower)	11V-24V@5A ETHERNET,UART
Adjustable power	Adaptive voltage range for external accessories
Secure plug	Self-diagnostic tests, leakage prevention

## Camera

Sensor	1/1.8"
Effective Pixels	Effective Pixels: 12M
Aperture	f/2.5
FOV (Underwater)	H: 120°
	V: 70°
	D: 146°
Focus Range	0.1m~+∞
ISO	Auto, 100, 150, 200, 300, 400, 600, 800, 1600, 3200, 6400
White Balance	2500K, 2700K, 3000K, 3500K, 4000K, 5000K, 5500K, 6000K, 7000K, 8000K
Exposure Compensation	Auto, +3,+2,+1,0,-1,-2,-3
Photo Resolution	4:3: 4000*3000; 16:9: 3840*2160
Photo Format	JPEG, DNG
Video Resolution	4K30fps (H.264) 4K25fps (H.264)
	1080p120/100fps 1080p60/50fps 1080p30/25fps 720p180/150fps 720p120/100fps 720p90/75fps 720p60/50fps
Video Encode	H.264
Stabilization	Electronic Stabilization
Video Format	MP4
Color System	NTSC & PAL
Internal Storage	External, expandable up to 512GB (standard 128GB)
Camera Function	AI Vision Station Lock, AI Dehazing Algorithm

## LED Beams

Brightness	5000 lumen*2
CCT	5500 K
Beam Angle	160°

## Robotic Arm

Size	120mm
Grip	10kgf
Power Supply Voltage	9-12V
Maximum Current	3A

## Motor

Number of Wings	6
Blade Material	Hard Anodized Aluminum Alloy

## Tether & Spool

Cable length	200M
Tensile strength	130kgf
Cable diameter	4.6mm
Underwater weight	Neutral buoyancy
Waterproof rating	IPX5

\* The data is obtained using FIFISH E-MASTER operating under standard intermittent detection in a static water environment until the remaining battery reaches 0%. Actual endurance may vary depending on the water environment and is provided for reference only.

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