QYSEA

FIFISH E-MASTER NAVI brochure

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Manufacturer: QYSEA

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Original manufacturer pages follow unchanged. Product configuration and technical limits are defined by the manufacturer document.

Current NAVI brochure; see the separate PLUS/NAVI comparison for configuration differences.

Official source

https://www.qysea.com/products/fifish-e-master/

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QYSEA

Industrial ROV

Inspection · Measurement · Survey

E-MASTER NAVI



Dual DVL · QY-Pilot

All-in-One Solution

BRINGING THE OCEAN WITHIN REACH

Designed for Masters

Enhanced Efficiency & Endurance

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

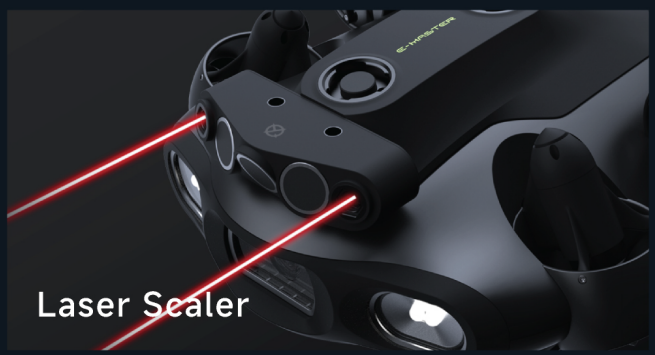
- **Station-Locking:** Handles strong currents up to 2.7 knots for stable operations in challenging environments.
- **Precise Navigation:** Accurate positioning, one-click return, and precise surveys over large ocean areas.
- **Measurement & Survey:** Delivers intuitive, professional-grade data collection and visual outputs.
- **Ultra-Lightweight Design:** Easy single-person transport and deployment.
- **Enhanced Imaging:** Wide 4K fisheye lens, 10,000-lumen lighting, and AI-enhanced imaging for comprehensive surveys and inspections.
- **Adaptable & Reliable:** Quick component maintenance, hot-swappable power for higher mission efficiency.



High-Precision Technologies









QY-Pilot · Assisted Piloting

Cruise Control & Station-Lock Hovering

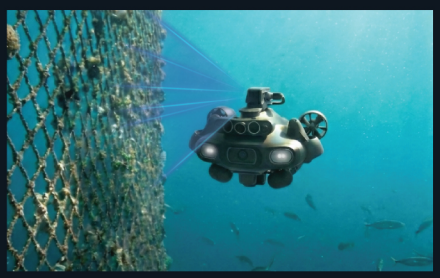


QY-Pilot enables intelligent navigation with adaptive wall tracking for consistent subsea distance control and repeatable operations on the QYSEA E-MASTER NAVI. Integrating dual Q-DVLs and internal sensors, it ensures stable inspections in currents up to 2.7 knots, while enhancing safety with station lock, collision avoidance, distance measurement, and precise control.

VCCM
Vertical Cruise Control Mode



PCCM
Parallel Cruise Control Mode



HCCM
Horizontal Cruise Control Mode



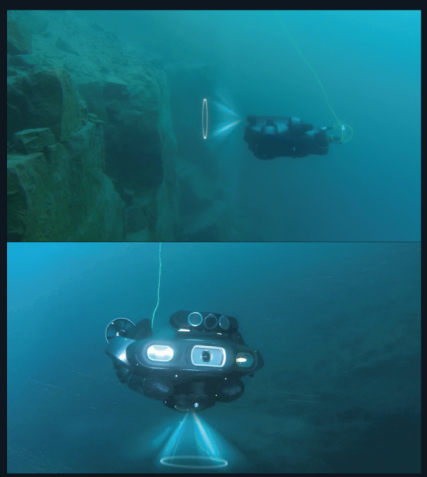
Note: QY-Pilot is deployed and accessed through the Q-iRC industrial remote controller. PCCM requires Side Q-DVL add-on

Precise Control in Challenging Waters

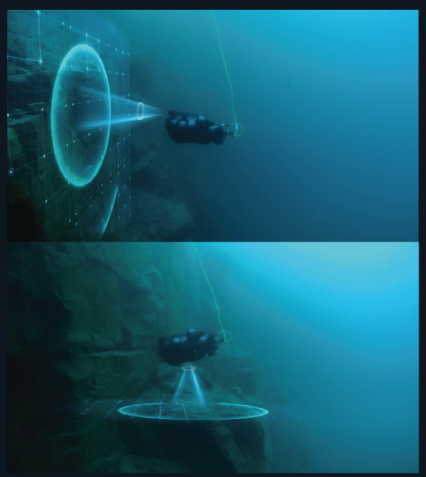


Leveraging QY-Pilot, E-MASTER NAVI utilizes dual forward and downward Q-DVLs for station-locking and stable operation in currents up to 2.7 knots. Smart collision avoidance, distance measurement, and altitude control enhance safety and ensure consistent, efficient inspections.

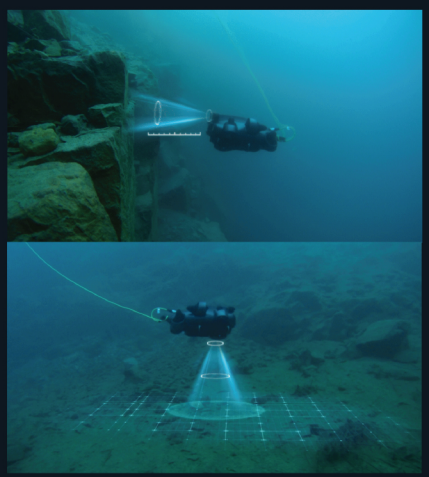
Station-Lock Hovering



Smart Collision Avoidance



Distance/Altitude Lock & Track

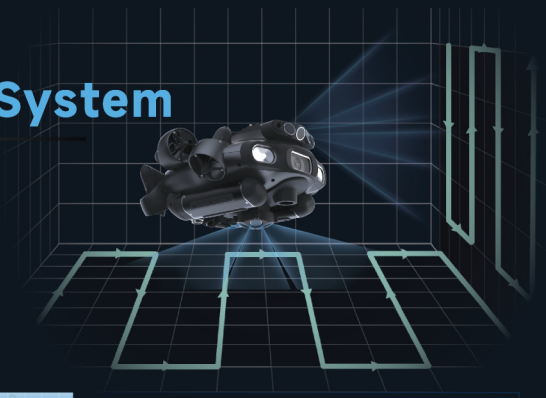


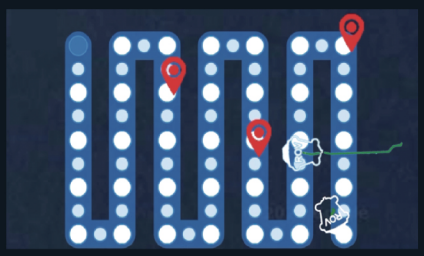
U-INS PLUS

Underwater Inertial Navigation System

Smart Mission Planning

U-INS Plus enables smart navigation and precise control, letting you plan missions, follow surfaces, and capture repeatable, high-accuracy data efficiently and safely.





Subsea Mission Planning & Point-of-Interest Recording



Real-time ROV Tracking & Custom Map Integration

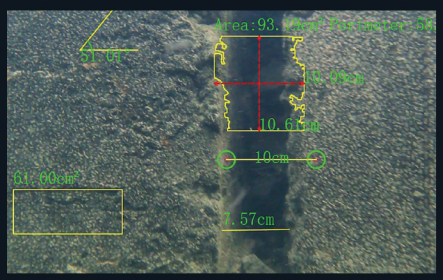
Surface-Adaptive Navigation & Defect Tagging

QY-MT 2D/3D | QYSEA Measurement Tool

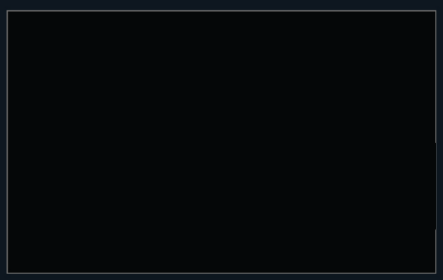
Real-time Online & Offline Measurements

QY-MT delivers precise underwater damage analysis, multiple measurement modes, and real-time visualization for non-destructive inspection.





Dynamic, Adaptive & Precise
Multi-Angle Measurement, 99.7% Accuracy



3D Modeling & Measurement
Multi-Dimensional Evaluation

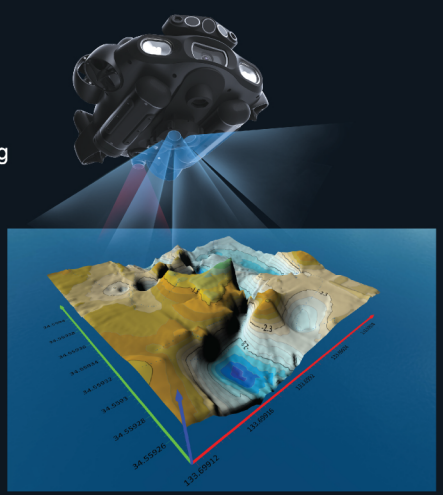


Augmented Reality Enabled
Real-Time & Customizable AR Ruler

QY-BT | QYSEA Bathymetric Tool

Smart 2D & 3D Seafloor Mapping

QY-BT streamlines bathymetric surveys, mapping seabeds and reservoirs, creating 2D/3D maps, estimating capacity, and exporting reports efficiently.





Automated Data Collection
Capture Depth Data Along Survey Routes

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

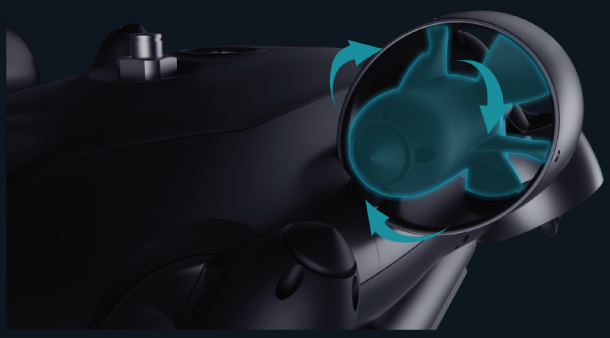
Streamlined Mapping Process
Export & Upload Data with Ease

Customizable 2D/3D Maps
Control Appearance of Map Outputs

Reach Greater Speeds

Powerful Ring-Wing Propulsion

E-MASTER NAVI's advanced ring-wing motor system reaches over 3 knots with six metal propellers and a 30% power boost, delivering strong, reliable performance across challenging waters.



Modular Design

Quick & Effortless Maintenance

E-MASTER NAVI's modular design allows quick assembly and maintenance. Batteries and accessories detach in seconds, and key components can be replaced in under five minutes to maximize uptime.



Efficient Multi-tasking

Four-Port Add-on Expansion Dock

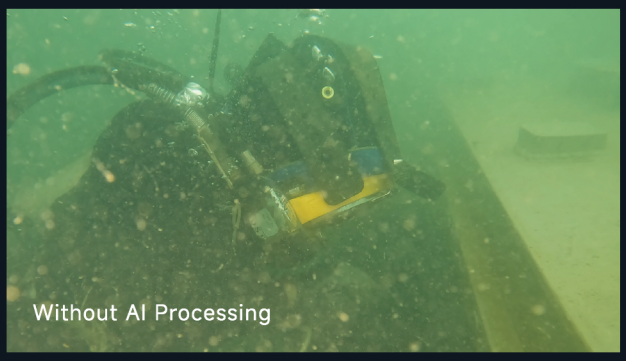
With a refined internal design, E-MASTER NAVI offers dual top and bottom load interfaces and optional expansion docks, supporting up to four tools for greater operational versatility.

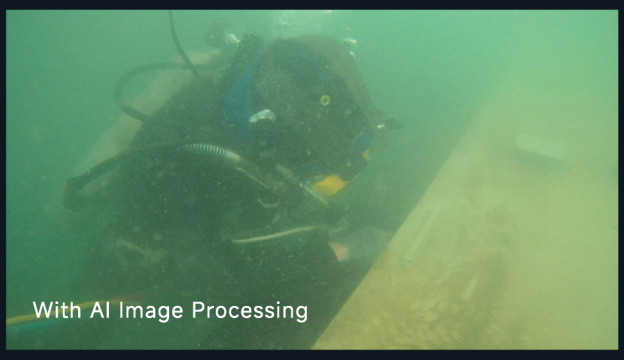


Crystal-Clear Imaging

AI Dehazing Algorithm, Particle Filtering

Automatically enhance image clarity and streamline decision-making in underwater operations by detecting and removing snowflake-like effects caused by suspended particles.

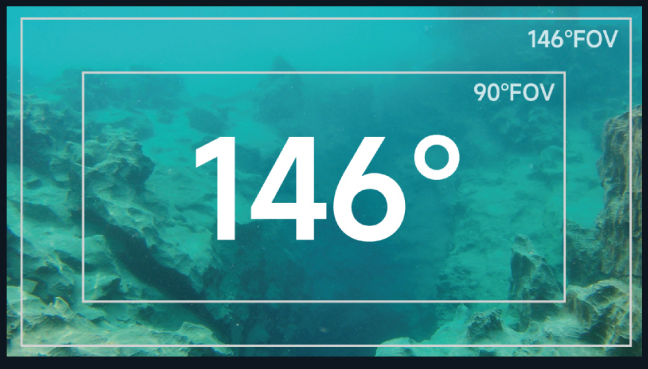




Achieve Immersive Clarity

Expansive Distortion-free Vision

E-MASTER NAVI's ultra-wide-angle lens offers a 176° surface and 146° underwater view, capturing the full scene. Its 1/1.8-inch CMOS sensor supports 4K UHD video and RAW image capture.



Attain Brilliant Illumination

Vivid Four-Lamp Lighting System

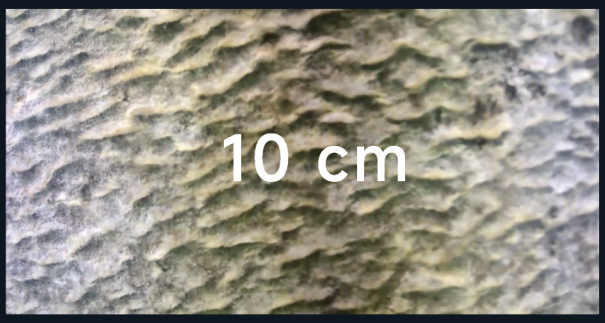
E-MASTER NAVI's multi-lamp LED system delivers up to 10,000 lumens with a wide 160° beam. Three adjustable intensity levels provide optimal illumination for precise underwater inspections.



Macro Focus Precision

10 cm Extreme Close-Up Focus

E-MASTER NAVI supports 10 cm close-up focus underwater, ensuring precise imaging even in murky conditions. Its auto-focus captures accurate, detailed close-range images.

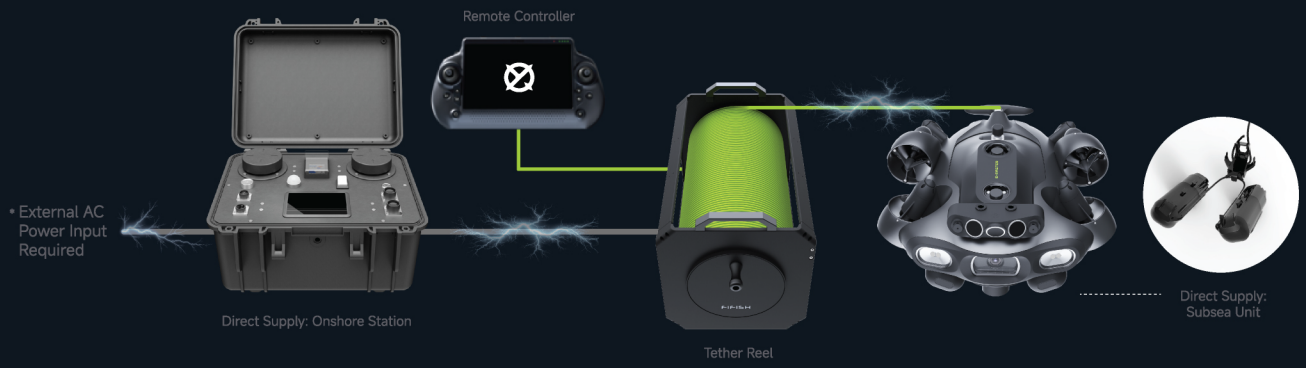


(Optional)

Direct Power Supply System

Continuous Operational Endurance

E-MASTER NAVI is built for maximum endurance, with direct surface power and adaptive safety protection for stable, reliable operation. Designed for long, high-demand missions, it eliminates battery limits and minimizes downtime.



Enhanced Efficiency

Hot-Swappable Power

E-MASTER NAVI's upgraded dual-battery system with hot-swappable technology allows battery replacement without shutdown, ensuring instant power for critical missions.

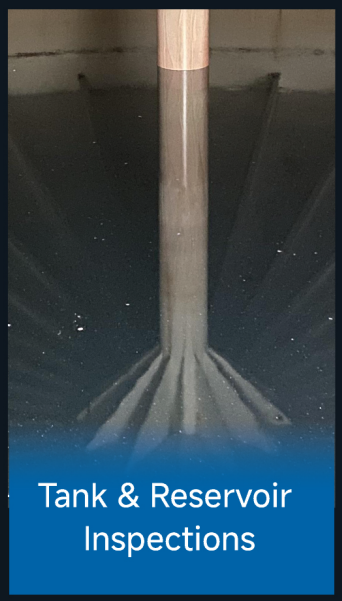


Smart & Portable Charging Station (Optional)

E-MASTER NAVI's portable Q-Energy Station supports two batteries, providing 1–4 hours of operation and reaching 90% charge in 60 minutes for extended missions.



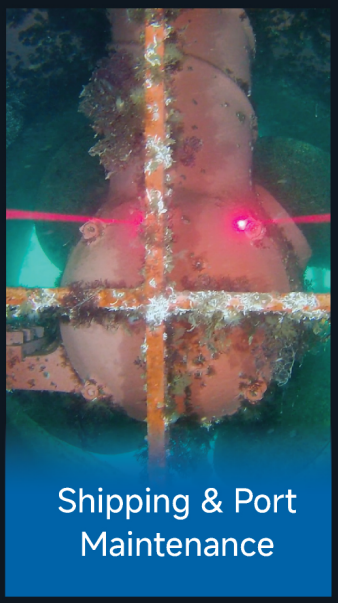
Industry Applications



Tank & Reservoir Inspections



Structural Evaluations



Shipping & Port Maintenance



Environmental Monitoring & Surveying

E Series Comparison

QYSEA ROV				
Model		**E-MASTER NAVI**	**E-MASTER PLUS**	**E-GO**
Depth Rating		200 m	200 m	100 m
Forward Inline Q-DVL	Forward Station-Lock Hovering	✓	✓	Optional Integrations
	Forward Distance Lock & Collision Avoidance	✓	✓	
	Vertical Cruise Control Mode (VCCM)	✓	✓	
	Forward Inertial Navigation	✓	✓	
Laser Scaler	Smart & Adaptive Measurements	✓	✓	
Altitude Meter	Altitude Track & Lock	✓	✓	
Downward Q-DVL	Downward Station-Lock Hovering	✓	Optional Integrations	
	Downward Distance Lock & Collision Avoidance	✓		
	Horizontal Cruise Control Mode (HCCM)	✓		
	Bathymetric Survey	✓		
GNSS Locator	Surface Positioning & Inertial Navigation	Optional Integrations		
Side Q-DVL	Side Station-Lock Hovering			
	Side Distance Lock & Collision Avoidance			
	Parallel Cruise Control Mode (PCCM)			

E-MASTER NAVI Specifications



ROV

Dimensions	430 mm (L) × 345 mm (W) × 185 mm (H)
Weight	E-MASTER NAVI = 6.7 kg / E-MASTER PLUS: 6.5 kg
Depth Rating	200 m
Payload	5 kg
Speed	>3 knots (>1.5 m/s)
Current Hold	Up to 2.7 knots (≈1.4 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 1 h (Actual Charging Speed May Differ)
Navigation	Underwater Inertial Navigation System (U-INS Plus)

Sensors

Downward DVL	Detection range: 0.15-60 m	Station-Lock & Collision Avoidance
Forward DVL	Detection range: 0.15-10 m	
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	Detection range: 0.3-10 m	Altitude Track/Lock
Temp. Sensor	±1°	Smart Measurement
Laser Scaler	Wavelength: 660 nm (Red)	
	Type: Dual Spot Laser	
	Spacing: 10 cm	

Port Interface

Quantity	2 Ports, Expandable to 4 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 s
Burst Shooting	1/3/5/10 Frames
ISO	100–3200 (Auto/Manual)
White Balance	2500–7500 K (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
External Storage	External MicroSD Storage (128GB Standard, Supports up to 512GB)
AI Functions	Vision Lock, Diver Tracking, Imaging Dehazing

Lighting

Brightness	5,000 Lumen LED * 2
CCT	5500K
Beam Angle	160°
Brightness Levels	3

Controller

Wireless Network	5 GHz Wi-Fi: 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	130 kgf
Cable Diameter	4.6mm
Tether Weight	Neutral Buoyancy (Underwater)
Waterproof Rating	IP65

Robotic Arm (Optional)

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

※ Specifications & features may change without prior notice. For detailed parameters, please contact QYSEA.

Connect with QYSEA

QYSEA Website

QYSEA Media

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