

The FUSION is a fresh approach to providing a highly capable, multipurpose underwater vehicle with an intuitive user interface and control system. A unique system for a diverse range of demanding tasks.



### ELEGANT DESIGN

Innovative technical solutions are integrated into the FUSION to maximize operational capability while minimizing maintenance. Through the use of advanced composite materials, streamlined mechanical integration, and bespoke sensors, the FUSION sets a new standard for underwater vehicles: Sophisticated, yet simple.

### OPERATOR IN MIND

The FUSION embodies thousands of hours of field-tested wisdom. By focusing on the small details that matter most to operators, we've created a system that is remarkably intuitive to operate and practical to maintain, minimizing the learning curve and maximizing uptime.

### AUTOMATED CONTROL & NAVIGATION

By capitalizing on a high-end sensor suite, our advanced automation and control system ushers in a new era of stability and ease of operation. The synergy of deep sensor integration, efficient mechanical design, and proprietary algorithms makes the FUSION a remarkably simple-to-operate yet robust underwater solution.

### TETHER OPTIONAL

The FUSION is a high-performance, battery-powered ROV system designed for maximum versatility. With optional modules, it seamlessly transitions into a fully autonomous AUV or a Diver Control Mode platform. By integrating the AUV module with side-scan sonar, the FUSION executes autonomous missions to capture high-resolution subsea data. For manned operations, Diver Control Mode provides localized navigation and data recording support. This modular architecture delivers elite capability in a truly flexible, expeditionary package.



#### AUV

**Autonomous Excellence:** Fully programmable for complex maneuvering and high-fidelity data collection.



#### ROV

**Precision Control:** High-performance vectored thrusters with real-time sensor feedback and a fully automated control system.



#### DCM

**Diver Control Mode:** Enhances safety by providing precision navigation and powered propulsion, ensuring divers stay strictly on course.

# FUSION

## NAVIGATION

Fully integrated navigation suite featuring DVL, GNSS, IMU, and USBL for high-precision positioning and autonomous control.

## PROPULSION

Powerful, high-efficiency brushless DC thrusters featuring quick-release outrunner motors for maximum operational reliability.

## POWER

High-density Li-Ion power modules: Engineered for rapid charging and extended mission endurance without compromising safety.

## IMAGING

Comprehensive imaging suite: Ultra-HD 4K video, forward-looking multibeam sonar, and optional sidescan sonar for unmatched subsea visualization.

## CONSTRUCTION

Advanced marine-rated materials engineered for maximum structural integrity, total corrosion resistance, and reduced maintenance cycles.

## PAYLOAD BAY

Highly versatile modular payload bay: Featuring standardized mechanical and electrical interfaces for rapid, seamless sensor integration.

## The FUSION integrates a comprehensive suite of mission-critical sensors to deliver maximum operational capability.

High-resolution imaging provides real-time visual feedback across all dive modes, while precision navigation sensors drive sophisticated automation and control within a compact, tightly integrated form factor.

### FUSION SPECIFICATIONS

|                        |                                                                                                            |
|------------------------|------------------------------------------------------------------------------------------------------------|
| Depth rating:          | 300 m (1,000 ft)                                                                                           |
| Length:                | 686 mm (27 in)                                                                                             |
| Height:                | 275 mm (10.8 in)                                                                                           |
| Width:                 | 477 mm (18.8 in)                                                                                           |
| Minimum pipe diameter: | 508 mm (20 in)                                                                                             |
| Weight in air:         | 27.5 kg (60 lbs)                                                                                           |
| Thrusters:             | 4 vectored, 2 vertical, 1 pitch                                                                            |
| Vector angles:         | Horizontal - 35°, vertical - 10°                                                                           |
| Motor type:            | Brushless DC                                                                                               |
| Battery chemistry:     | Lithium Ion                                                                                                |
| Available power:       | 914whr                                                                                                     |
| Voltage:               | 23.5-29.05VDC                                                                                              |
| Endurance:             | 3-4+ hours (typical)                                                                                       |
| Charging time:         | 0-90% - 2 hours (pair)                                                                                     |
| Certification:         | UN38.3                                                                                                     |
| Tether diameter:       | Fiber 2.4 mm (0.09 in) / Copper 3mm (0.12in)                                                               |
| Length:                | 500/1,000 m/2,000 m (1,640/3,280 ft/6,561 ft)                                                              |
| Strength:              | 113.4 kgf (250 lbf)                                                                                        |
| Type:                  | Single mode fiber, Gigabit, kink free, ruggedized Copper, ruggedized, strain relief bonded                 |
| Buoyancy:              | Neutral in fresh water                                                                                     |
| HMI Configuration:     | Rugged controller with touchscreen tablet                                                                  |
| Operating system:      | Windows 11                                                                                                 |
| Control modes:         | Normal, Control, Mission & Direct                                                                          |
| Automation:            | Auto depth, auto heading, auto altitude, waypoint navigation, path following, station hold, return to home |
| Aux Ports:             | 2 x Serial RS232/485, 1 x Ethernet 10/100                                                                  |

|                   |                                                                                                                                                                                                                                                                                                              |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Camera:           | UHD 4K, 135° tilt, 110° FOV in water                                                                                                                                                                                                                                                                         |
| Lighting:         | 2 x LED, 1500 Lumen each                                                                                                                                                                                                                                                                                     |
| Forward Sonar:    | Dual Frequency 750 kHz/1.2 MHz/3.0 MHz (optional)<br>130°/80° horizontal beam width<br>20°/12.5° vertical beam width<br>100 m/40 m (328 ft/115 ft) max range<br>0.1 m (4 in) min range<br>4 mm/2.5 mm (0.16/0.1in) range resolution<br>1°/0.6° acoustic angular resolution<br>15 Hz update rate<br>256 beams |
| USBL:             | 1 km (3,280 ft) hemispherical range<br>1° angular resolution<br>±50 mm (2 in) range resolution<br>24-32 kHz frequency                                                                                                                                                                                        |
| DVL:              | 1 MHz<br>50 m (164 ft) max range<br>0.2 m (0.65 ft) min range<br>±0.2% long range accuracy<br>0.01 mm/s velocity resolution<br>±16 m/s velocity range                                                                                                                                                        |
| GNSS (vehicle):   | GPS/GLONASS<br>2.5 m (8.2 ft) accuracy                                                                                                                                                                                                                                                                       |
| IMU:              | 0.1° pitch/roll accuracy<br>0.8° yaw accuracy                                                                                                                                                                                                                                                                |
| Package Includes: | FUSION MK1.5 Vehicle with Oculus 750d, Battery Charger, FUSION Battery, HMI G2, Reel, 500m FIBER or COPPER Tether with Connector on Spool with Strain Relief, Spares Kit, Vehicle Case, Reel & HMI Case                                                                                                      |