

# Defender

MISSION  
SPECIALIST ROV



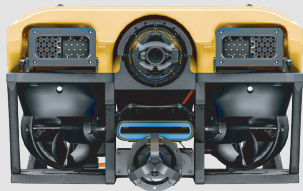
The Mission Specialist Defender configuration is designed for more precise control of the vehicle position and orientation, heavier payloads, and demanding intervention, such as rendering unexploded ordnance safe or cleaning nets for offshore fish farms. With seven thrusters, the Defender is able to move in any direction, and maintain active pitch to face the vehicle in an upward or downward orientation. The addition of third party control and navigation software makes the Defender a popular configuration for dangerous or heavy-duty missions.

# Mission Specialist ROV

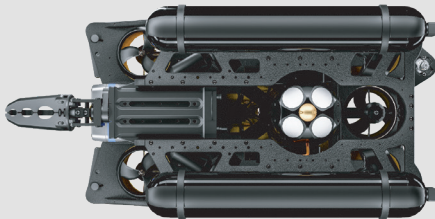
DEFENDER

## \_Modular Design, Unlimited Possibilities

The Defender utilizes interchangeable, modular components that comprise a single, intelligent network, providing an extremely flexible and customizable platform that can be easily adapted to target-specific missions. It is this flexibility that sets the Mission Specialist ROV series apart from current technology in the Remotely Operated Vehicle industry.



DEFENDER SHOWN WITH OPTIONAL MANIPULATOR AND SONAR



DEFENDER SHOWN WITH OPTIONAL SUBSEA BATTERIES, MANIPULATOR, DEEP-RATED SONAR, USBL, AND NAVIGATION PACKAGE



WORKHORSE CONTROL CONSOLE



WORKHORSE SPLASHPROOF CONTROLLER



ULTRA 4K SMART CAMERA

## \_Integrated Options

- Subsea Batteries—Li-ion, NiMH
- Camera—Auxiliary, 3d Modeling
- Navigation — DVL/GPS, USBL
- SONAR—Forward, Side, Scanning
- Manipulator—Single, Dual, Multi-Axis
- NDT/Sampling/Cavitation Cleaner
- MCM/UXO Neutralizers



## \_Specifications

<b>ELECTRICAL</b>	Power Requirements: 110/220VAC (1-2.4 kW) 400 VDC Power Module: 1,500 W @ 48 VDC Power Output: 12 V/120 W, 24V/300 W, 48 V/1,500 W (5) 100 Mbps Ethernet ports, (5) RS-485 ports Power Control and Monitoring
<b>ENVIRONMENTAL</b>	Dry Weight: 17.2 kg (38 lbs) Dimensions: 71.1 × 39.4 × 23.8 cm (28.8 × 15.5 × 10.4 in) Depth Rating: 300 m standard/1,000 m optional Case: Hard-sided watertight
<b>PROPULSION</b>	Brushless Thrusters with Integrated Controller 4 Vectored Horizontal, 3 Vertical <b>Thrust:</b> <b>Speed:</b> Forward 23.6 kg              Forward: 3.8 kts Reverse 15.0 kg              Vertical: 0.8 m/s Lateral 8.6 kg                Sway: 0.9 kt <b>Lifiting:</b> 9.5 kg
<b>LIGHTING</b>	2 independent LED light arrays (38 W max ea.) 60° spot beam 110° flood beam Each array individually controlled 3,000 K CCT, 80 CRI White 7,600 total lumens per LED light module
<b>IMU</b>	9 DOF IMU & Magnetic Compass Pressure-based depth sensor: 100 Bar, with 400 Bar optional 0.2° Static Roll/Pitch 0.5° Dynamic Roll/Pitch 18°/h Gyro Bias Stability 1.0° Yaw