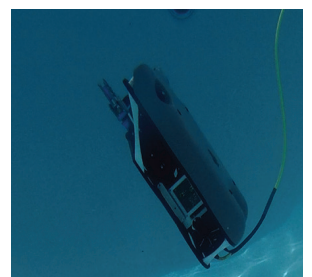
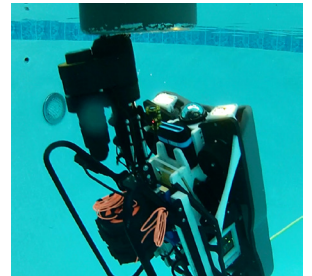


Product Data Sheet

Mission Specialist DEFENDER

The VideoRay **Mission Specialist Defender** ROV is a system which utilizes interchangeable, modular components residing on a single, intelligent network. This topology provides an extremely flexible and customizable platform which can be easily adapted to target specific missions. It is this flexibility which sets the Mission Specialist ROV series apart from current technology in the Remotely Operated Vehicle industry.



SYSTEM INFORMATION

Power Requirements	110/220V (2kW or more)
Total System Weight (sub and panel)	29.4 kg (65 lbs)
Cases	2 Watertight Rugged Hard Cases
Owner's Manual	Hard Copy & Online Digital
System Tool Kit	Basic Tool Kit
Communications Protocol	RS-485 and Ethernet
Warranty	2 Year Limited

SUBMERSIBLE

Depth Rating	300, 400, 1,000m (984ft, 1,312ft, 3,281ft)
Size (l x w x h)	less than 75.16 x 39.37 x 26.67 cm (29.59" x 15.5" x 10.5")
Weight	Less than 18.14 kg (40 lbs)
Ballast	Modular
Case	82.8x46.7x28 cm (32.6"x8.4"x11.0") 6.4 kg (14.1lbs) less than 22.7 kg (50lbs) with submersible and payload

CAMERA

HD with Ethernet interface (IP)	
Video	1920 x 1080, 25 FPS 1280 x 720, 25 FPS 640 x 480, 25 FPS
Mechanical	Standard VideoRay 9 pin connection Ethernet, 12VDC, RS-485 Auto Focus or Manual Focus Optical Glass Dome
Features	White Balance Control 10 x Digital Zoom 16x Digital Zoom (64 steps) 13 Megapixel Still Image Capture
Sensitivity	Less than 1 lux (standard)
View Angle	160 degrees Tilt (180-degree Field of view)
Horizontal	128 degrees /112 degrees (submerged)
Vertical	91 degrees
Interface	Ethernet interface
Compression	MJPEG

PROPULSION

Brushless thruster with integrated controller	
4 Vectored Horizontal Thrusters	
Forward	26.7 kg (59 lb.)
Reverse	15 kg (33 lb.)
Lateral	8.6 kg (19 lb.)
3 Vertical Thrusters	
Up	23.1 kg (50.9 lb.)
Down	12.9 kg (28.4 lb.)

POWER

420 VDC power module 1500W @ 48VDC
Full monitoring of input voltage, output current, temperature

FLOAT

300, 400, 1,000m (984ft, 1,312ft, 3,281ft)

COMMUNICATIONS

5 x 100Mbps Ethernet ports
5 x RS-485 ports
Power Available: 12V, 300 W, 24V, 300 W
Power control and monitoring

LIGHTING

LED
2 independent light arrays each at 38 Watts max
60-degree spot beam
110-degree flood beam
Each array can be individually controlled
3,000 K CCT, 80 CRI White
5,760 total lumens per LED light module

IMU

9 DOF IMU and magnetic compass
Pressure based depth sensor: 100 Bar, with 400 Bar optional
0.2 degree Static Roll/Pitch / 0.5 degree Dynamic Roll/Pitch
1.0 degree Yaw
18 degree/h Gyro Bias stability

PAYLOAD (OPTIONAL)

Blueprint Oculus 750d forward looking dual frequency multibeam sonar
Nortek 1000 DVL
Rotating Manipulator with 5 interchangeable heads

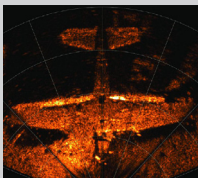
CONTROL BOX

Power Input	100-250 VAC
Power Output	420V, 2600W
Display	HD High Brite Monitor
Weight	14 kg (30 lb)
Case	Water tight - 0.62" x 16.87" x 8.12" (52.37 x 42.85 x 20.62cm)
Processing	Integrated i7 system processor
Controller	Industrial Programmable Hand Controller
Safety	Integral Line Isolation Monitor Emergency Kill Switch
Ports	3 external USB ports 1 external Ethernet port

TETHER

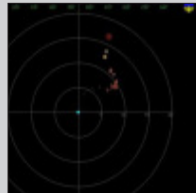
Length	400, 1,000 m (1,312 ft, 3,281ft) Neutral Buoyancy Tether Modular
Diameter	9.6 mm diameter
Breaking Strength	680 kg (1,500 lb.)
Management	Tether Deployment and Storage Reel

Accessories For more details, visit www.videoray.com



Sonar

Blueprint
Blueview (pictured)
Tritech



Navigation & Positioning Systems

USBL
DVL



Manipulators

Rotating (pictured)



Auxillary Cameras

Second POV (pictured)
Low Light
GoPro



Shiphull Stabilizer