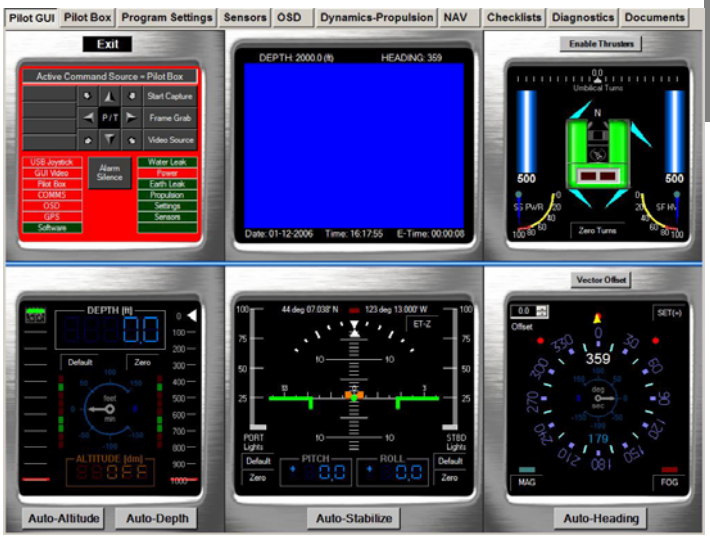
DEEP OCEAN ENGINEERING

VECTOR™ M5

High Performance
Portable
Easy to Operate
Rugged & Reliable



High Performance Brushless Thrusters

VECTOR™ M5 is a portable high performance ROV system, combining superior power, telemetry and payload with ease of use, ruggedness and reliability—providing a powerful overall performance envelope and versatility compared to other vehicles of its class. It has five high performance thrusters — four vectored and one vertical.

- The power and control system is network architectured for simplicity and ease of use, with multiple micro-processors providing redundancy and expanded capabilities. The design incorporates intuitive, computer-aided, always active diagnostics facilitating maintenance of the system in the harshest environments by technicians with a minimum of training.
- Specially designed high performance brushless thrusters provide the highest power to weight ratio and reliability vs. other vehicles in this class.
- The graphical user interface (GUI), with multiple menu screens, provides intuitive feedback and active user control for ease of vehicle handling, navigation, collection and display of sensor data, as well as setting and storing custom system configurations.
- Fabricated using modern marine grade aluminum and composite materials, the chassis is totally modular with quick access to all the parts for ease of servicing and replacement as required. Constructed from polypropylene, the chassis is resilient, non-corroding and maintenance free. Ancillary equipment is easy to mount and integrate.

VECTOR™ M5

Specifications

Standard working depth:	500 m	1,650 ft
Optional working depth:	1,000 m	3,300 ft
Vehicle Dry Weight (1,000 m):	114 kg	250 lb
Vehicle Dry Weight (500 m):	105 kg	235 lb
Vehicle Length:	1,067 mm	42 in
Vehicle Width:	800 mm	32 in
Vehicle Height:	762 mm	30 in
Thrust Forward:	68 kg	150 lb
Thrust Lateral:	50 kg	110 lb
Thrust Vertical:	23 kg	50 lb
Standard Payload:	23 kg	50 lb
With Optional Payload:	32 kg	70 lb

Chassis: A modular chassis manufactured from poly-propylene. This extremely rugged material is maintenance free, self-supporting in water and non-corroding — providing the vehicle with an energy absorbing protective framework. Ancillary equipment are easily mounted on the frames and bottom panel.

Propulsion: Fully pressure compensated, high performance DC brushless thrusters. The high torque, gearless thruster design is highly robust and quiet. A hydrodynamic nozzle provides symmetric thrust with a compact form factor. Careful attention to component design and materials for reliability and ruggedness, such as the use of high quality industrial mechanical seals, provide a long, dependable and near maintenance-free operational life.

Vehicle Electronics/Telemetry: Continuous full control and diagnostics of onboard vehicle functions through a digital communications link. Standard configuration includes up to three continuous video channels over TSP (Twisted Shielded Pair), and expandable digital telemetry over copper including RS232, RS485, Ethernet and options for fiber-optic.

Camera unit: DOE 18:1 color zoom camera unit.
Depth rating: 1,000m (3,300 ft)
Resolution: 470 lines of TV
Sensitivity: 1 Lux @ f1.4
Viewing angle: 7°-58°
Length: 241 mm (9.5 in)
Diameter: 89 mm (3.5 in)
Weight in water: Neutral
Air-weight: 1.4 kg (3 lb)

Camera tilt platform: DOE electrically driven tilt actuator providing a smooth tilt speed. Operational arc: ± 90° from horizontal, with adjustable stops.

User Interfaces: The Graphical User Interface (GUI) provides intuitive feedback and active graphics for easily controlling vehicle handling, navigation and sensor data collection. The GUI includes several menu screens with readily accessible information to guide connectivity, setup, pre-dive checklist, navigation, inspection, post-dive checklist, diagnostics and an on-line searchable technical manual. The ergonomic hand controller can override the GUI/OSD (On Screen Display) computer, providing redundancy and back-up.

On Screen Display: This is a continuously updated video display, which provides the operator with intuitive compass rose heading, depth, turns count, elapsed time, water leak alarm and much more information, allowing the vehicle to be operated safely. It may also be used to display sensor data such as temperature, altitude or GPS position on the screen. Additional digital and analog I/O channels and vehicle data may be exported to the navigational or survey computer.

Navigation: Rate gyro stabilized, solid-state magnetic compass unit: resolution ± 0.1°, accuracy ± 0.5°, update rate 50 mS. Electronic depth sensor: accuracy 0.25% of fsd.

Auto-pilot: Selectable automatic pilot for auto-heading, auto-depth and optional auto-altitude.

Lighting: 2 x 250 watt Quartz-halogen lamp units.
The control is On/Low/Medium/Full.

Power requirements: Input 230VAC, 50/60 Hz, 10 kVA, single or 3-phase. On-board user power available — instrumentation 24 VDC, auxiliary power at up to 400 VDC.

Umbilical cable: A supple, rugged cable, designed for harsh ocean environment with a 1,000 lbs. working load: neutrally buoyant in fresh water, diam. 0.6 in (16 mm); or optional smaller diameter without floatation jacket (heavy) at 0.5 in. (12.5 mm).

Options:

- Fiber-optic telemetry
- Sonar systems
- Tracking systems
- Specialized cameras
- Cable reels (manual or powered)
- Various manipulators, additional tools and sensors
- Spares kits
- Technical training

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