

SeaBotix

Remotely Operated Vehicles

Little Benthic Vehicles



PROVEN
CAPABLE
RELIABLE
ADAPTABLE
PORTABLE
INTUITIVE
RUGGED



LEADING THE INDUSTRY

With the most comprehensive and capable MiniROVs.

Founded on years of research, development and underwater industry experience, SeaBotix (now a Teledyne Marine company) continues to pioneer in the manufacture of observation class ROVs with a significant selection of sensor options that support a diverse range of applications.

TELEDYNE MARINE

Beginning as a small collection of unique marine solution providers and expanding to a powerhouse of highly engineered, high performance solutions for a broad range of markets, Teledyne Marine now offers the largest breadth of marine technology in the industry.

With technologies divided into 5 core segments; Imaging, Instruments, Interconnect, Seismic and Vehicles, Teledyne Marine sales staff can address not only brand level solutions, but turn-key, customized systems that leverage our full range of technology. Our goal is to provide one-stop purchasing capability, world-wide customer support, and the technical expertise to solve your toughest challenges.

A Sea of Solutions.....One Supplier.

Capable - Intuitive - Rugged - Value

Little Benthic Vehicles

SeaBotix products include Little Benthic Vehicles (LBV & vectored vLBV) and Little Benthic Crawlers (LBC & vLBC). Equipped with a variety of standard features, SeaBotix MiniROVs are extremely maneuverable, 1 or 2 person portable, yet large enough to carry a complement of sensors such as sonar on a stable, controllable, and precise platform. All systems perform a multitude of tasks and are designed for harsh underwater environments. Products are offered with a 2-year limited manufacturer's warranty.

SeaBotix offers in-depth training and support at its 17,500 ft² state-of-the art design, production, testing, training and service facility which includes: dock, boat launch and separate waterfront classroom with direct access to the harbor and open water. The training curriculum is comprehensive and modular to ensure the trainee's expectations are met, given their individual needs.

All SeaBotix' staff are factory trained as well as globally experienced for in-field operations. Custom tailored training programs cover theory, maintenance, repairs, operations (including hull crawling) and sonar/tracking sensor utilization – all direct at the factory. Training is also available at client preferred sites around the world. 24-hour technical support and service is performed by factory staff and authorized service centers across the globe.

Product Goals

SeaBotix' goal is to create an outstanding observation class MiniROV that follows four basic guidelines:

Capability – The LBV®/vLBV® must be capable of actual work at the rated depth in real environments. To accomplish this it must have powerful thrusters, a small diameter tether, minimum 4-axis maneuverability, and be a stable and flexible platform for the required sensors to complete the mission.

Intuitive – The LBV/vLBV must be simple to operate for the most novice operator. To accomplish this, the controls must be intuitive, it must have basic auto-functions, and the sensor and video data should be displayed at the highest quality with a well-designed user interface.

Rugged – The LBV/vLBV must be rugged enough to withstand the harsh environments for which it is designed. To accomplish this it must be well-engineered, constructed of durable materials including topside equipment that can operate in severe weather and have easily field serviced components.

Value – By combining capability, intuitiveness, ruggedness and affordability, the LBV/vLBV is of exceptional value to the operator.



Production Facility in San Diego



Leading the industry with the most comprehensive and capable MiniROVs



SeaBotix Dock in San Diego Harbor

SeaBotix Markets & Applications

SeaBotix MiniROV Systems provide solutions for a multitude of underwater applications.

MILITARY / GOVERNMENT

- EOD/MCM Missions
- UUV Support & Recovery Operations
- Hull & Maritime Infrastructure Inspections
- Deployment & Retrieval of Tooling & Sensors
- Port & Maritime Security Operations
- Wreck Survey & Salvage
- Hazardous Environment Intervention
- Victim Search, Rescue & Recovery
- Oceanographic / Scientific Survey & Research
- Manned & Unmanned Submersible Fly-out
- Anti-Terrorism, Homeland Security

COMMERCIAL

- Search and Recovery
- Aquaculture & Fisheries
- Pipeline Survey – Internal / External
- Potable Water & Utility Inspection
- Inshore / Offshore Infrastructure Inspection & NDT
- Diver Support / Safety Supervision
- Platform, Subsea Control Systems & Riser Inspection
- FPSO and Vessel Bilge Tank Inspection
- WROV and Trencher Support or Fly-out
- Nuclear Inspection
- Hydro, Inland Waterways and Dredging Support
- Deep Water Inspection
- Recreation



FEATURES

- 4-Axis maneuverability
- Ultra small diameter tether
- Flexible sensor platform
- High intensity LED tracking camera
- Extensive range of options
- Brushless DC thrusters
- Crystal clear video
- Integrated Control Console
- Daylight-readable monitor



The Little Benthic Vehicle (LBV)

The Little Benthic Vehicle (LBV) suite of ROVs is SeaBotix' most compact line. Offered in both four and five thruster formats, all LBVs include a high-resolution video camera, LED lighting that tracks the camera, depth, temperature and heading sensors, auto-depth, heading, and trim (speed), and intuitive controls within an Integrated Control Console (ICC) that includes a 38 cm (15 in) daylight-readable LCD monitor.

Highly Versatile Mini-ROV Systems

LBV150-4 Systems

Highly portable inshore solution with professional capability and affordable price.

- 150 m (500 ft) depth-rated
- Four powerful brushless thrusters
- 4-axis maneuverability
- Industry-leading low-drag tether
- Reel optional

LBV200-4 Systems

Very stable and maneuverable platform, the most capable and featured system in its class. In addition to the LBV150-4, the LBV200-4 offers:

- Deeper depth rating to 200 m (660 ft)
- Integrated tether reel with slip ring
- Ability to carry optional sensors such as sonar and tracking

LBV300-5 Systems

An incredibly stable platform with a wide range of application possibilities. The LBV300-5 can be fitted with an optional, revolutionary Crawler Skid Assembly with patented Vortex Generator to attach and drive on any hard, flat infrastructure such as ship hulls and sea walls in strong currents. In addition to the LBV200-4, the LBV300-5 offers:

- Five thrusters, for increased vertical lift and payload capacity
- Larger array of sensor packages
- Optional Wheeled Crawler Skid Assembly with Patented Vortex Generator for driving on ship hulls and infrastructure in currents over 5-knots.

LBV System Contents

- LBV Vehicle
- Integrated Control Console
- Tether (Reel optional with LBV150-4)
- Spares/Tools/Manuals
- Transit Cases
- 24 Month Warranty & 24/7 technical support





Photo Courtesy of Fisheries and Marine Institute of Newfoundland and Labrador



Operator Control Unit

LBV150-4

- 150 m (500 ft) depth rating
- 4 brushless DC direct drive thrusters
- 180 degree camera tilt



LBV200-4

- 200 m (660 ft) depth rating
- 4 brushless DC direct drive thrusters
- 180 degree camera tilt
- Flexible Sensor Platform



LBV300-5

- 300 m (1,000 ft) depth rating
- Dual-vertical thrusters
- Optional hull & infrastructure crawling system
- 150 - 350 m (500 - 1,150 ft) tether length
- Larger sensor selection



System Components



LBV150-4 (Reel Optional)



LBV 200-4

World Leading MiniROV Manufacturer

vLBV-The ultimate small ROV with big ROV performance

The SeaBotix vLBV is the world's first truly vectored MiniROV. Four powerful 100 mm (4 in) horizontal thrusters arranged in a vectored format offer nearly equal horizontal thrust in all 360-degrees of flight. The horizontal thrusters can be manually adjusted to bias thrust in the forward direction for extreme pulling power for applications such as long internal pipe penetrations and high forward currents. High-resolution cameras and sensors combined with SeaBotix' industry-leading low drag tether make the vLBV the standard in easily maintained offshore capability and portability. Also available with SmartFlight™ automated navigation.

Standard features include a high resolution color camera, powerful LED lighting, depth, heading and temperature sensors, auto-depth, heading, speed, low-drag neutrally buoyant tether, and fully Integrated Control Console (ICC) with daylight-readable monitor. An optional Integrated Navigation and Control Console (INC) includes a built-in PC for recording and sensor control, a 55 cm (21.5 in) direct sunlight-readable LCD, and integrated proprietary viewing and recording software.

FEATURES

- 4 horizontal vectored & 2 vertical, powerful thrusters in vectored configuration
- Engineered stability and control
- Flexible sensor comms; Ethernet, RS-232, RS-485
- LED lighting tracks high-resolution camera
- Low drag tether - 8.9 mm (0.35 in)
- Intuitive control system
- Single-person portability
- Heavy duty reel with slip ring
- Up to 2,250 m (7,381 ft) tether length
- Many options available



Easy Access Electronics Bottle



Optional Sonar & Tracking Sensors

LED Lighting Tracks with Camera

180° Camera Tilt

Optional Imaging Sonar

Optional Grabbers

SmartFlight™

Automated Navigation for Increased Capability and Performance

SmartFlight Functions:

- Return to Target
- Waypoint Navigation
- Holding Station
- Orbit Target
- Single Intuitive GUI with Nav, Sonar, Video
- Target Tracking with Tritech Gemini Imaging Sonar

SmartFlight adds automated functions to the SeaBotix vLBV MiniROV. The system employs sensor fusion technology that minimizes hardware dependency while providing a full suite of automated features.

Sonar tracking enables precise object-based holding station and target orbiting. The system also offers waypoint navigation, programmable search, and auto-height. SmartFlight is available as an integrated option on new systems and an upgrade for existing vLBV systems.

Utilizing clever sensor fusion minimizes hardware dependency.



Capable at depth

vLBV System Contents

- vLBV Vehicle
- Integrated Control Console
- Tether and Tether Reel with Slip Ring
- Surface Power Supply
- Spares/Tools/Manuals
- Transit Cases
- 24 Month Warranty, 24/7 Technical Support



Extreme weather tested

vLBV300

- 300 m (1,000 ft) Depth Rating
- 3,000 Watt Surface Power Supply
- Multi-Port Sensor Manifold



vLBV950

- 950 m (3,100 ft) Depth Rating
- 4,250 Watt Surface Power Supply
- Multi-port Sensor Manifold



vLBV-10 - SeaLift

- 300 m (1,000 ft) or 950 m (3,100 ft) Depth Rating
- 3,000 Watt Surface Power Supply
- Multi-Port Sensor Manifold
- Dropdown Grabber with additional tooling camera



FEATURES

- Patented Vortex Generator attraction device
- Simple hull/infrastructure attach mode
- When attached, stable in strong currents
- Unmatched sensor data quality
- Unprecedented power and stability
- ROV and Crawler in one system
- Easily and quickly converts



Little Benthic Crawlers

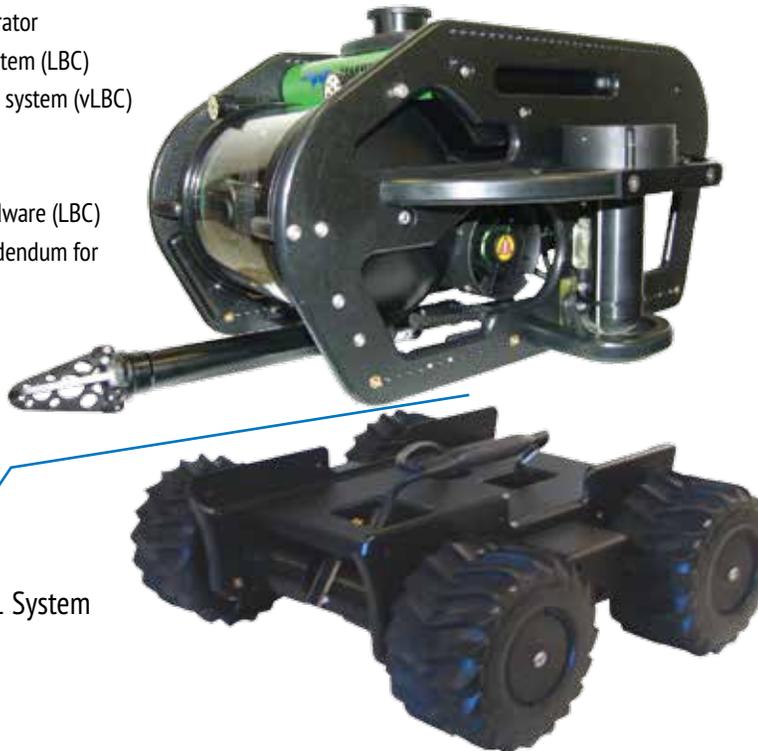
Unmatched in versatility, the SeaBotix LBC and vLBC are a revolutionary approach to ship hull and infrastructure inspections for a wide range of military and commercial applications. With no magnets or thrusters (churning the water, impeding visibility), SeaBotix Crawlers employ the patented Vortex Generator to attach to any relatively flat, hard surface with up to 22+ kgf (48 lbf) of attraction force. With no relative motion between the inspection surface and the sensors, output data is the highest quality possible and operator fatigue is greatly reduced.

The patented Crawler Skids are attached to a standard LBV300-5 or vLBV300 MiniROV in minutes, converting them from 4-axis ROVs to 5-axis hull and infrastructure crawlers. No other system provides such a complete solution for quality underwater inspection and light work.

Crawler Skid Attachment (CSA) Contains:

- Crawler Skid Assembly
- SeaBotix Vortex Generator
- 4-wheel, dual axle system (LBC)
- Dual track, single axle system (vLBC)
- Connection cables
- Transit Cases
- Spare impeller & hardware (LBC)
- Operator's Manual Addendum for LBC or vLBC

ROV & Crawler in 1 System



LBC



Speed: LBC - Up to 30 m/min (99 ft/min)

vLBC



Speed: vLBC - Up to 35 m/min (115 ft/min)

Applications



Military



Ship Hulls



Critical Infrastructure

How It Works

The Vortex Generator's patented design generates a low pressure zone which creates 22+ kgf (48+ lbf) of attraction force. The Vortex Generator has 25 mm (1 in) of clearance allowing the system to work on rough surfaces with debris and marine growth while still maintaining a solid attachment, providing an inherently stable video and sonar imagery.

Once attached, the operator can release the controls with the LBV or vLBV firmly in position and not worry about fighting currents or having to keep constant control of the system, which remains strongly attached even without operator input.



vLBC on side of ship hull



LBC

ROV Mode

The intuitive Operator Control Unit provides all controls and functions much the same as the traditional LBV and vLBV.

Attach Mode

The operator pilots in ROV mode positioning either port or starboard side close to the surface it is desired to attach to, or directly underneath as needed. They then switch function to Attach Mode which causes the two vertical thrusters to operate asynchronously and, using the lateral control on the joystick, initiate the LBC or vLBC into a roll. Once the system matches the angle of the intended surface, the operator activates the Vortex Generator, which strongly attaches the system to the surface.

Crawler Mode

Once attached, the LBC or vLBC can be driven rather than flown. The operator simply switches controls from Attach Mode to Crawler Mode which disables the horizontal thrusters and enables the powerful drive mechanism. The operator can then calmly drive along the surface, unconcerned with surrounding currents and sea states, even putting the controls down to adjust sensor settings, review incoming data, or simply take a break.

Wheeled Crawler (LBC)

- Up to 30 m/min (99 ft/min)
- 4-Wheel, dual axle
- Used with LBV300-5



Vortex Generator

- Attraction: 22+ kgf (48+ lbf)
- Clearance: 25 mm (1 in)
- Any hard, somewhat smooth surface
- Pulling force: up to 12 kgf (26 lbf)



Tracked Crawler (vLBC)

- Up to 35 m/min (115 ft/min)
- Dual "tank" track, single axle
- Used with vLBV





SeaBotix Fly-Out System

Topside Controls

- 2 - 4 U rack mount space
- Operator Control Unit with switch or foot pedal for tether control



Modular Fly-out Components

Electronic Interface

- 4,000 m (13,000 ft) pressure bottle
- Ethernet, RS-232, or RS-485 controls
- 120 VAC or 28 VDC power

Tether Spooling System

- Winch - 150 m (492 ft) capacity or
- Basket feed - 25 m (82 ft) capacity
- Motorized 0.5 m/s (1.6 ft/s)
- Speed & paid-out length feedback

Garage

- Non-corrosive polyethylene frame
- ROV guiding features
- ROV locking mechanism
- Optional emergency tether cutter
- Optional versions available

FEATURES

- 4,000 m (13,000 ft) depth capability
- 1,000 m & 2,000 m (3,280 ft & 6,560 ft) also available
- Tether Management System (TMS) with 150 m (492 ft) excursion tether
- Easy to integrate power and comms
- Underwater winch with level wind
- Vertical and horizontal launch
- Modular configurable hardware
- Simple to deploy, operate & service



Fly-outs for special applications

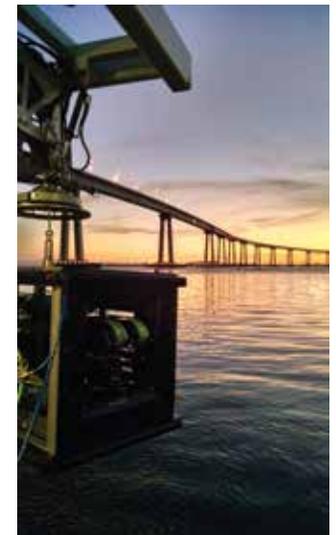
Photo courtesy of SEAmagine Hydrospace Corp.



One atmosphere sub fly-out



WROV fly-out



Containerized Delivery System (CDS)

The SeaBotix Containerized Delivery System (CDS) is a rapid response, fully self-contained, 4,000 m (13,000 ft) depth rated ROV System.

- Rapid mobilization/demobilization
- Single 20 ft container, single point lifting
- 4,000 m (13,000 ft) depth capability
- Twin boom Launch & Recovery System
- Tether Management System (TMS)
- vLBV MiniROV
- Integrated control room



The CDS can be installed on any vessel of opportunity via a single point lifting system and can be operated by two persons from vessels as small as 40 m (131 ft). It is simple to deploy, operate and service. The CDS can handle deep water missions with a variety of sensors such as sonar, NDT, tracking, high resolution cameras and grabbers.



Launch & Recovery System

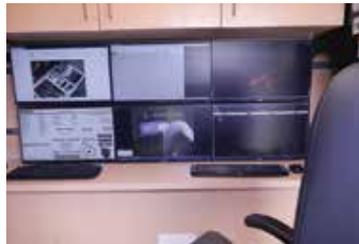
- Winch capacity - 4,250 m (13,940 ft)
- Active heave compensated winch
- Winch GUI in control room
- Overboard reach - 3 m (10 ft)
- Umbilical diameter -16.9 mm (0.67 in)



Winch

Control Room

- Up to six monitors
- Designed for 2 operators
- Two customizable chairs
- ROV, winch & TMS controls
- 19" rack space for electronics
- Storage cabinets



6 x Monitors

TMS

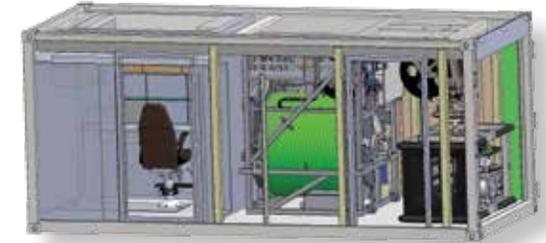
- 150 m (492 ft) excursion tether
- Underwater winch with level wind
- Power conditioning
- Garage for safe vLBV stowage
- 4,000 m (13,000 ft) depth rating
- Depth, altitude, sonar, video



Tether Management System

Container

- Single point lifting, A60
- DNV 2.7-1 certification
- Storage & work area, climate-controlled
- Launch & recovery twin boom with 3 m (10 ft) extension



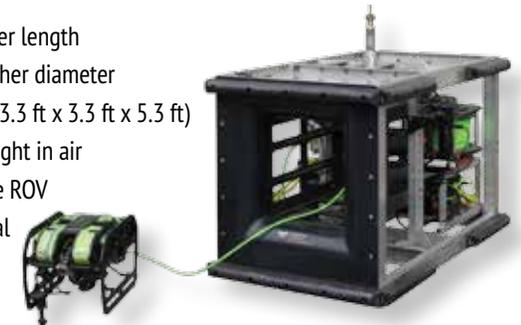
vLBV4000

- 4,000 m (13,000 ft) depth
- 22 kg (48.5 lb) in air
- 625 mm x 390 mm x 390 mm (24.6 in x 15.4 in x 15.4 in)
- Extensive sensor and tooling options



TMS - Fly-Out

- 150 m (492 ft) tether length
- 10 mm (0.39 in) tether diameter
- 1 m x 1 m x 1.6 m (3.3 ft x 3.3 ft x 5.3 ft)
- 450 kg (990 lb) weight in air
- Bell mouth to guide ROV
- Epoxy-less umbilical termination



LBV and vLBV Options

SeaBotix offers the widest-variety of sensor and tooling options of any MiniROV manufacturer for the LBV and vLBV. The following examples are an indication of the depth and breadth of available solutions. Options may be vehicle-specific.

Sonar Options

- Scanning Sonar
- Tritech Micron
- Tritech SeaPrince
- Kongsberg OC-ROV
- Imagenex 881 Top Mount
- and more

Multi-Beam Sonar

- Tritech Gemini
- Sound Metrics Aris
- Teledyne-BlueView
- Kongsberg M3
- and more

Profiling Sonar

- Tritech - Pipe Tracker
- Kongsberg-1171
- Imagenex-831 Series
- and more



Integrated Navigation and Control Console

- 55 cm (21.5 in) direct sunlight-readable monitor
- Splash-proof construction for severe weather use
- Integrated PC for recording and sensor control
- Integrated sensor software
- Integrated ROV Operator Control Unit
- Built-in extending handle and wheels
- Serves as control unit for 3rd party systems, such as sidescan sonar and AUVs



SmartFlight Automated Navigation

- For vLBV
- Holding Station
- Return-to-target
- Programmable search
- Orbit target
- Auto-altitude
- Clean, efficient, featured GUI
- Sensor fusion technology requires fewer sensors

Lighting

- Ultra bright LED technology
- Wide angle coverage
- Adjustable brightness
- Adjustable position

Cameras

- Wide selection of SD and HD cameras available
- Custom-machined, optically-corrected viewport for zoom cameras (LBV)
- Standard SD cameras

Gaming Style Controller Compatibility

- Intuitive interface and control
- Reduce pilot fatigue and easy to learn
- Increased maneuverability
- Works alongside existing control unit



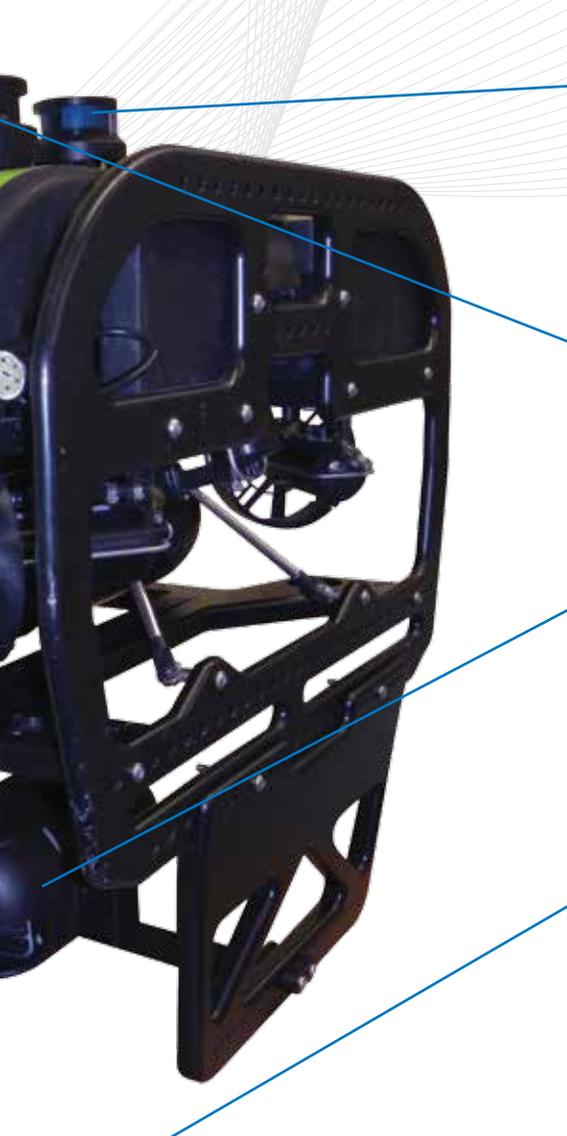
Standard Grabber

- Rugged construction
- Powerful gripping/cutting force
- Three-Jaw attachment standard (Also available in Stainless Steel)
- Multiple optional attachments
- Combined with standard tether - rated to lift up to 100 kg (220 lb)
- Intuitive controls
- Easily fitted attachments
- Flexible positioning options

Motorized Dropdown Positioning Grabber (For vLBV only)

- 0-90° downward rotation
- Includes all standard grabber features





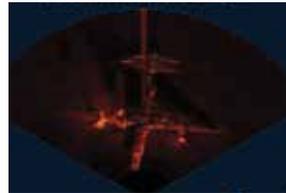
USBL Positioning

- Long range
- Hemispherical coverage
- Chart and sidescan image overlay
- World positioning
- Multiple target tracking



Scanning Sonar

- Low visibility image capture
- Long range image capture
- Range to object and object avoidance
- Aids in navigation
- 360° situational awareness



Multi-Beam Sonar

- Crisp clear sonar imagery
- Wide angle field of view
- Integrated sensor software
- Long range image capability
- Aids in navigation
- HD sonar - 3D perception



Grabber Attachments

- Cutter
- Parallel
- Interlocking jaws (small and large)
- Three jaw



Other Options

Video Image Enhancer

Provides real time color correction required under very poor water conditions.

Altimeter/Echo Sounder

Provides a constant display of height above the seafloor. Useful when conducting transect surveys that require consistent altitude.

Laser Scaling System

Provides underwater size estimates with ease - tilts with primary camera.

Ultrasonic Thickness (UT) Gauge

Multiple echo ultrasonic digital thickness gauge for measuring metal/coating thickness and performing a variety of safety checks on different underwater structures.

Multi-Parameter Water Quality Probe

Provides environmental water quality monitoring and testing.

Cathodic Protection (CP) Probe

Provides a means of carrying out underwater cathodic protection potential measurements.

Other

Dozens more options available. Authorized SeaBotix Representatives can assist in selecting the right sensors and tooling for the mission.

Options available on most models.

Contact a Sales Representative for details.

GRI Simulator

- Fully interactive realism, challenging environments, and realistic tasks
- Wide range of training content with competency assurance
- Full array of sensing and ancillary intervention equipment, including cleaning and cutting tools, as well as tracked vehicles
- Embedded into new ROV system deliveries or as an after-market addition to existing systems
- Base system easily upgraded with a range of sonar (FLS or multi-beam) and manipulator options



SPECIFICATIONS

	LBV150-4	LBV200-4	LBV300-5
GENERAL			
Depth Rating	150 m (500 ft)	200 m (660 ft)	300 m (1,000 ft)
Length	530 mm (21 in)	530 mm (21 in)	520 mm (20.5 in)
Width	245 mm (9.65 in)	245 mm (9.65 in)	445 mm (17.5 in)
Height	254 mm (10 in)	254 mm (10 in)	260 mm (10.2 in)
Weight in Air	11 kg (24.3 lbs)	11 kg (24.3 lbs)	13 kg (28.7 lbs)
Camera	Hi-res color with 180° tilt	Hi-res color with 180° tilt	Hi-res color with 180° tilt
Lighting	Ultra bright LED (tracking camera)	Ultra bright LED (tracking camera)	Ultra bright LED (tracking camera)
THRUSTERS			
Configuration	2 forward, 1 vertical, 1 lateral	2 forward, 1 vertical, 1 lateral	2 forward, 1 vertical, 1 lateral
Motor Type	Brushless DC direct drive	Brushless DC direct drive	Brushless DC direct drive
Bollard Thrust-Fwd	7 kgf (15.4 lbf)	7 kgf (15.4 lbf)	7 kgf (15.4 lbf)
Bollard Thrust-Lat	3 kgf (6.6 lbf)	3 kgf (6.6 lbf)	3 kgf (6.6 lbf)
Bollard Thrust-Vert	3 kgf (6.6 lbf)	3 kgf (6.6 lbf)	7.5 kgf (16.5 lbf)
Speed at Surface	3 knots (1.54 m/sec)	3 knots (1.44 m/sec)	2.8 knots (1.44 m/sec)
CONTROL/POWER SYSTEM			
Configuration	Single rugged case, w/monitor, OCU & power supply	Single rugged case, w/monitor, OCU & power supply	Single rugged case, w/monitor, OCU & power supply
Power Requirement	1,200 W, 100-130/200-260 VAC	1,200 W, 100-130/200-260 VAC	1,200 W, 100-130/200-260 VAC
Auto Functions	Depth, heading, trim	Depth, heading, trim	Depth, heading, trim
TETHER			
Tether Diameter	8.9 mm (0.35 in) nominal	8.9 mm (0.35 in) nominal	8.9 mm (0.35 in) nominal
Max. Tether	250 m (820 ft)	350 m (1148 ft)	350 m (1148 ft)
Working Load	100 kgf (220 lbf)	100 kgf (220 lbf)	100 kgf (220 lbf)
Breaking Strength	700 kgf (1543 lbf)	700 kgf (1543 lbf)	700 kgf (1543 lbf)



vLBV300

vLBV950

SeaLift vLBV-10

LBC and vLBC Crawlers

300 m (1,000 ft)	950 m (3,100 ft)	300 m (1,000 ft)	
625 mm (24.6 in)	625 mm (24.6 in)	625 mm (24.6 in)	LBC 530 mm (21.6 in), vLBC 625 mm (24.6 in)
390 mm (15.4 in)	390 mm (15.4 in)	638 mm (25.1 in)	LBC 500 mm (19.7 in), vLBC 390 mm (15.4 in)
390 mm (15.4 in)	390 mm (15.4 in)	455 mm (17.9 in)	LBC 400 mm (15.7 in), vLBC 500 mm (19.7 in)
18 kg (39.9 lbs)	18 kg (39.9 lbs)	30 kg (66 lbs)	LBC 28 kg (61.7 lbs), vLBC 35 kg (70 lbs)
Hi-res color with 180° tilt	Hi-res color with 180° tilt	Hi-res color with 180° tilt	(See LBV300-5) (See vLBV300)
Ultra bright LED (tracking camera)	Ultra bright LED (tracking camera)	Ultra bright LED (tracking camera)	(See LBV300-5) (See vLBV300)
4 vectored, 2 vertical	4 vectored, 2 vertical	4 vectored, 6 vertical	Thrusters - see LBV300-5 & vLBV300
Brushless DC direct drive	Brushless DC direct drive	Brushless DC direct drive	LBC 4 wheel drive, vLBC tracked
18.1-22.5 kgf (40-50 lbf) variable	18.1-22.5 kgf (40-50 lbf) variable	18.1-22.5 kgf (40-50 lbf) variable	1 Vortex Generator - 22+ kgf (48+ lbf)
7.3-15.2 kgf (16.2-33.5 lbf) variable	7.3-15.2 kgf (16.2-33.5 lbf) variable	7.3-15.2 kgf (16.2-33.5 lbf) variable	(See LBV300-5) (See vLBV300)
9 kgf (19.8 lbf)	9 kgf (19.8 lbf)	15-20 kgf (33-44 lbf)	(See LBV300-5) (See vLBV300)
3 knots (1.54 m/sec)	3 knots (1.54 m/sec)	Varies with payload	LBC 30 m/min (99 ft/min), vLBC 35 m/min (115 ft/min)
Dual rugged cases, w/monitor, OCU & power supply	Dual rugged cases, w/monitor, OCU & power supply	Dual rugged cases, w/monitor, OCU & power supply	(See LBV300-5) (See vLBV300)
3,300 W, 85-265 VAC	4,500 W, 85-265 VAC	3,000 W, 85-265 VAC	LBC 1,200 W, 100-130/200-260 VAC - vLBC 4,500 W, 85-265 VAC
Depth, heading, trim	Depth, heading, trim	Depth, heading, trim	(See LBV300-5) (See vLBV300)
8.9 mm (0.35 in) nominal	8.9 mm (0.35 in) nominal	8-11.2 mm (0.3-0.44 in) nominal	(See LBV300-5) (See vLBV300)
2,250 m (7,381 ft)	2,250 m (7,381 ft)	350 m (1,148 ft)	(See LBV300-5) (See vLBV300)
100 kgf (220 lbf)	100 kgf (220 lbf)	100 kgf (220 lbf)	(See LBV300-5) (See vLBV300)
700 kgf (1543 lbf)	700 kgf (1543 lbf)	700 kgf (1543 lbf)	(See LBV300-5) (See vLBV300)



TELEDYNE
SEABOTIX
Everywhereyoulook™

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