

HELIX Neptune

Amphibious Vehicle

USV & UGV



RUGGED ALL-TERRAIN

HELIX was designed for heavy duty work in the mining industry. The robust propulsion mechanism, interchangeable payloads, ample power budget and low profile form factor make for an excellent and unique sensor platform. **HELIX** can carry out a variety of missions on challenging terrain, and gather data from beneath the surface. **HELIX** excels at water entry and exit in hazardous locations. **HELIX** can be equipped with a variety of data collection tools including sonar and other imaging devices, sampling tools, and in situ characterization sensors.

Go Where You Need To Be™

SAFE ACCESS TO HAZARDOUS ENVIRONMENTS

Efficiently access shallow waters, mixed terrain or swampy marshland. **HELIX** was designed to navigate on any surface and easily transitions between hard ground, open water, snow, ice or muddy terrain.

HYDROGRAPHY AND WATER CHARACTERIZATION

HELIX can operate in any water depth, carrying multi beam or side scan sonar for detailed waterbody surveys. **HELIX** does not require a boat launch ramp and easily handles unexpected debris and shallow areas.

REMOTE PAYLOAD DEPLOYMENT

HELIX can operate a variety of tools remotely, collecting data or samples in challenging conditions. **HELIX** can also be used to transport heavy gear and launch a remote operated submersible for underwater inspections.

PHYSICAL

- Length 93 in / 2.4 m
- Width 82 in / 2.1 m
- Height 55 in / 1.4 m
- Antenna Height 78 in / 2.0 m
- Base weight 875 lbs / 397 kg
- Payload Capacity 200 lbs / 91 kg

PERFORMANCE

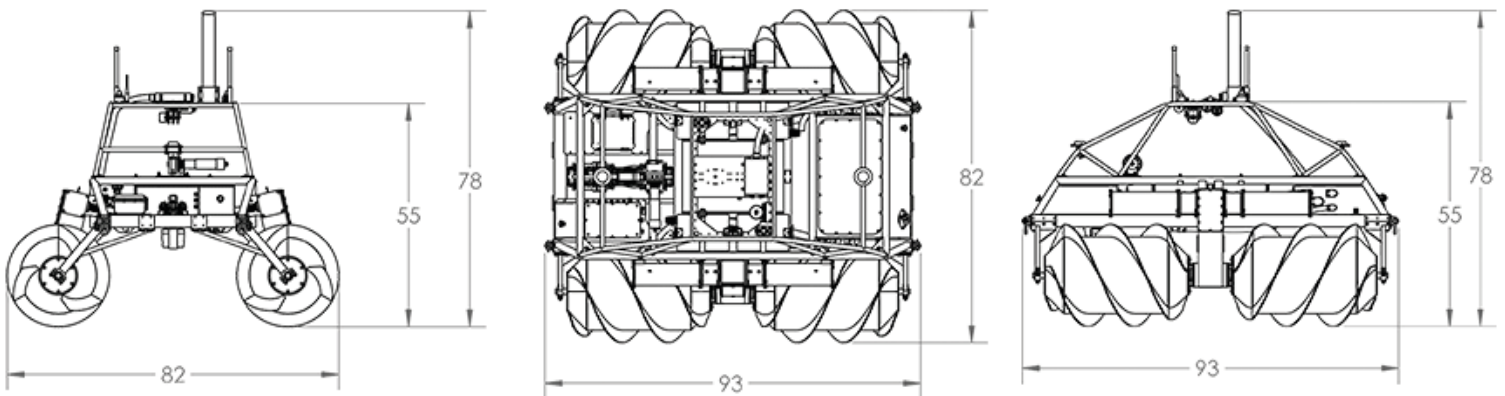
- 9.1 kWhr LiPo battery pack. Available with NiCd, NiMH or LiFePO₄ options
- Top speed on water 4 kts
- Top speed on ground 9 mph / 14.5 kmph
- Range 8 hours, 12.5 mi / 20 km
- Ellipse-D, Dual Antenna RTK Inertial Navigation System, ± 0.2° heading, 1 cm RTK GNSS Position
- Autonomous waypoint navigation & survey path planning

CONTROL

- Industrial handheld remote control with E-Stop
- Computer controlled ground station with live streaming video, data and mapping
- Remote control range LOS up to 1.3 mi / 2 km
- Remote control frequency, 900 MHz or 2.4 GHz
- Data Telemetry Range LOS up to 10 mi / 16 km
- Wifi and onboard video range LOS up to 0.7 mi / 1 km. Range may be increased with licensed radio hardware

INSTRUMENTATION

- Cameras output video footage at 1280 X 1080 px resolution at 30 frames per second with a 194° field of view. Can run up to 6 cameras at a time and is capable of storing raw video over 200 hours
- CEE-ECHO compact dual frequency hydrographic survey echo sounder
- Airmar 33/200 kHz transducer with retraction mechanism to protect while not in use and provide ground clearance
- Sensor deployment system (winch) for payload deployment (max 20 kg) up to a 200 m depth (water sampler, sediment sampler, in situ water chemistry sensors)
- Available payloads: ROV, ground penetrating radar, Van Dorn (water sampling), Eckman sampler (sediment), LIDAR, multi beam sonar, magnetometer, multi axis effector arm, CPTu, Vane Shear, Bekker meter, sludge sampler, towable sled



* All dimensions are in inches

ABOUT US

Copperstone Technologies is a leading Canadian robotics company serving multi national mining companies and governments.



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