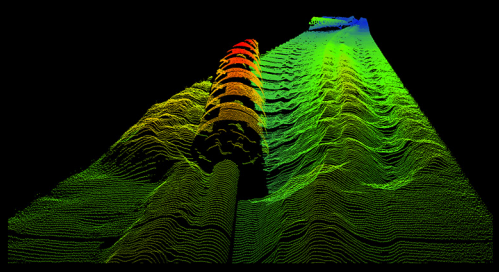
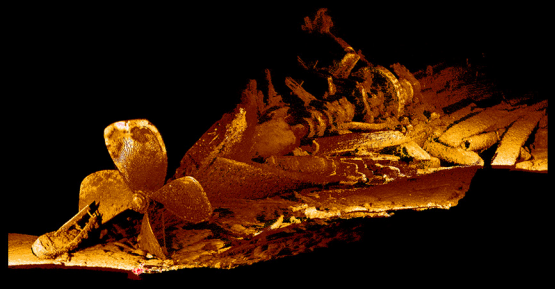
2G ROBOTICS
underwater laser scanners

# ULS 500

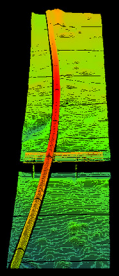
Long-range laser scanner



Pipeline Survey



Shipwreck



Pipeline Survey

## Capture Precise Underwater Measurements


### Benefits

- High speed data acquisition
- High resolution 3D point cloud models
- Adaptable for specific interfacing needs
- Measurement accuracy to better than 1mm
  *Influenced by environmental and deployment factors
- Configurable for integration with subsea vehicles
- Precise measurements for detailed inspections

The ULS 500 is optimal for long-range scans (1.15m to 10m range).

The ULS 500 is highly configurable. Profile mode enables smooth integration with subsea vehicles for accurate, continuous data collection. For scanning target objects from greater distances, the ULS 500 is the ideal system for obtaining accurate results.

**Contact us to discuss the specific needs of your application.**

### 2G Robotics

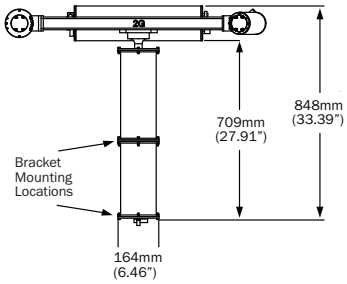
2G Robotics is the world leader for high precision underwater dimensional metrology.

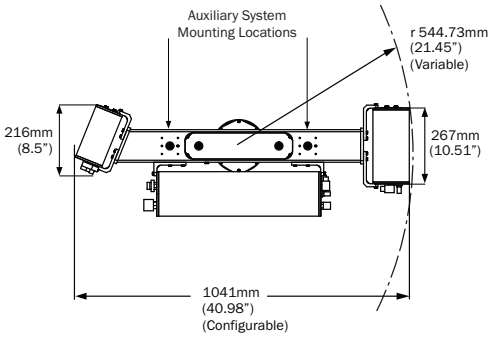
### Why Laser?

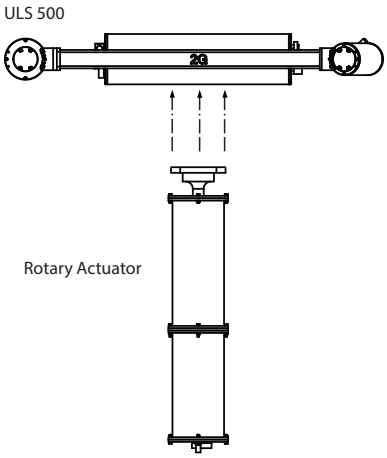
Capture the most precise measurements and obtain highly detailed 3D point cloud model representations that far exceed the resolution of sonar, resulting in superior accuracy and greater knowledge of an asset's condition.

2GRobotics.com | 680-B Davenport Road, Waterloo, Ontario, N2V 2C3 | +1.519.489.0005

# Product Specifications




The ULS 500 operates independently or with any combination of auxiliary components.

The modularity of the system enables independent integration of each of the components for optimal interfacing with AUVs.

| ULS 500 | | | |
|---|---|---|---|
| **Scan Performance** | | **Electrical** | |
| **Scan Range** | Min: 1.15m (3.77')<br>Max: Can exceed 10m (32.8') | **Power** | 60 Watts for ULS 500<br>70 Watts for ULS 500 with Rotary Actuator<br>(12-76 VDC) |
| **Vertical Laser Angle** | 50 deg | **Data Interface** | 10/100 MBit Ethernet |
| **Vertical Resolution** | 0.0357 deg<br>Continuous | **Mechanical** | |
| **Rotational Range** | 360 deg | **Depth Rating** | 350m (1148ft)<br>Deep Rated 3000m (9843ft) |
| **Rotational Resolution** | 0.0072 deg | **Weight in Water** | 20.50kg (45.10lbs) |
| **Range Resolution** | 1.15m at 0.021mm<br>5.5m at 0.382mm<br>10m at 1.22mm | **Size** | Height: 848mm (33.39")<br>Head Length: 1041mm (40.98") |
| **Sunlight Filtering** | ALF Technology<br>Adjustable by User | **Software** | |
| **Silt Filtering** | Adjustable by User | ULScanSoft | Included |
| **Max Sample Rate** | 40600 points/sec.<br>29 profiles/sec. | Export Data Formats | .xyz, LAS, CSV |
| **Points Per Line** | 1400 | Integration | API Available |

# Operation

The ULS 500 projects a line of laser light onto the target object. Based on the light reflected from this line, the scanner calculates a high resolution 2D profile of points in 3D space. In scanning mode, the ULS 500 moves the line of laser light to an adjacent position where an adjacent profile is calculated in 3D space. In profile mode, the laser line is moved by vehicles such as AUVs, ROVs, and ships. By accumulating a series of profiles, the scanner is able to obtain a 3D point cloud representation of the surface of the target object.

The effective operating range of the ULS 500 is 1.15m to 10m. The coverage area of the ULS 500 is defined by the 50 degree fan beam emitted from the scanner. In scanning mode, the coverage area is also defined by the rotation of the scanning head, which allows for a full 360 degree scanning circumference.

The software provided with the system enables the settings of the ULS 500 to be adjusted in real time and also enables the point cloud generated by the ULS 500 to be displayed in real time. The precision measurements obtained from the captured point cloud provide more detailed and more definitive knowledge of the target object, enabling decisions to be made with greater accuracy.

# System

- ULS 500
- Rotary Actuator (option)
- Topside Junction Box
- 10m Underwater Cable
- User Manual
- Command and Control Software
- API (option)
- Extended Support Program (option)