



**AUV Integration**

## Precision Underwater 3D Measurements

2G Robotics provides high precision 3D modeling and measurement solutions for detailed and efficient underwater inspections.

### Operational Time Savings

- Real-time 3D model generation and verification of results
- No in-field calibrations required

### Detailed Results

- Generates true-scale submillimetre resolution 3D models
- Collects high density point cloud data for identification of small features and defects

### ULS-500 System Performance

- Performs long-range scans (1.15m to 10m range)
- 50° coverage and 360° degree rotation
- PPS time synchronization provides superior modeling accuracy compared to standard NTP approach

### Deployment

- Configurable with AUVs and ROVs for dynamic scanning
- Deployable by ROVs and divers for stationary scanning
- Dedicated drivers in EIVA, QPS, and HYPACK software

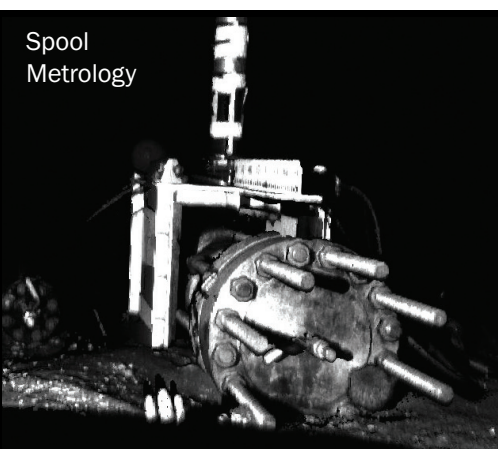
**View 3D point cloud animations at [2GRobotics.com](http://2GRobotics.com)**



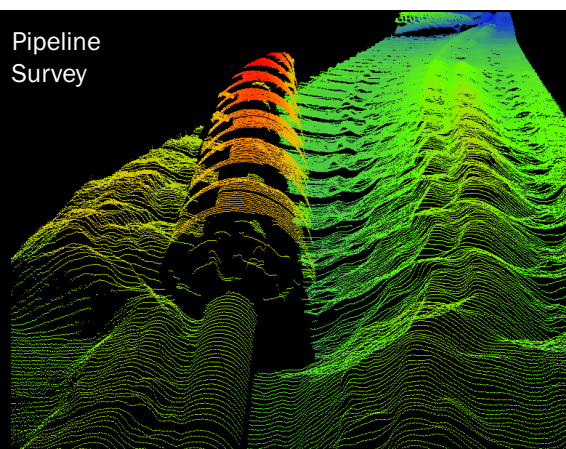
**ROV Integration**



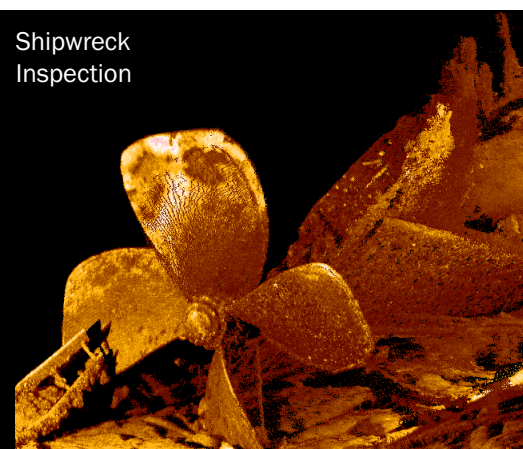
**Stationary Scanning**



**Spool Metrology**

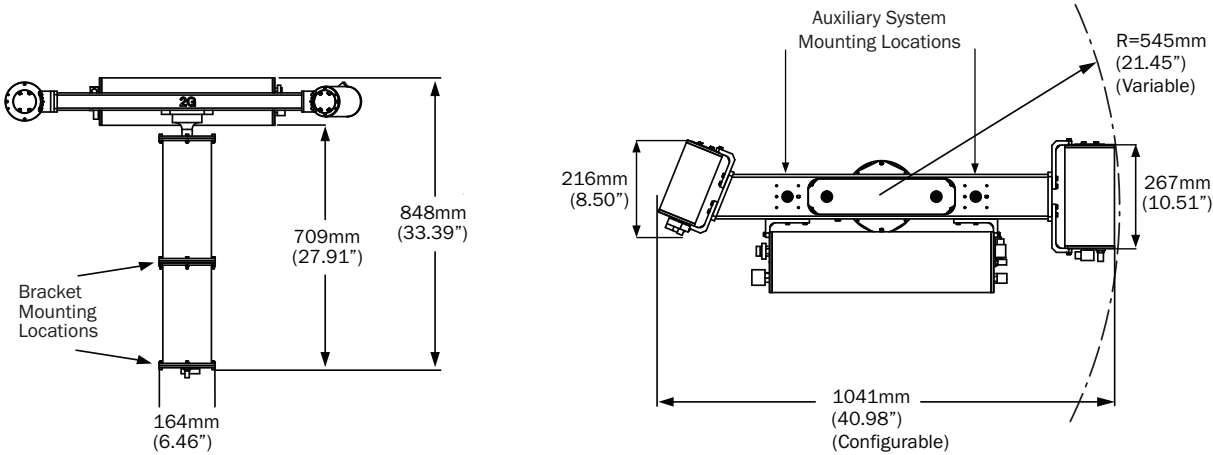


**Pipeline Survey**



**Shipwreck Inspection**

# ULS-500 Specifications



Performance	
<b>Scan Range</b>	Minimum: 1.15m (3.8')   Maximum: 10m (32.8')
<b>Points Per Line</b>	1400
<b>Laser Coverage</b>	50° (in water) 68° (in air)
<b>Rotational Coverage</b>	360° (rotary actuator)
<b>Laser Line Resolution</b>	0.0357° (in water) 0.0485° (in air)
<b>Rotational Resolution</b>	0.0036°
<b>Range Resolution</b>	0.021mm at 1.15m   0.382mm at 5.5m   1.22mm at 10m
<b>Sample Rate</b>	Up to 40600 points/sec   29 profiles/sec
<b>Time Synchronization Inputs</b>	PPS time synchronization, ZDA Timestamp
Electrical	
<b>Power Output / Laser Class</b>	750mW / Class 3B
<b>Wavelength</b>	440nm
<b>Power Consumption</b>	<b>Vehicle Integration or Direct Tether to 2G Robotics Junction Box</b> 60 Watts (Max), 12-76 VDC, ULS-500 70 Watts (Max), 12-76 VDC, ULS-500 with rotary actuator 77 Watts (Max), 120/240, ULS-500 powered through junction box
<b>Data Interface</b>	10/100 MBit Ethernet, TCP/IP communication
Mechanical	
<b>Weight in Water</b>	ULS-500: 5.0 kg (11.0 lbs)   Rotary Actuator with tripod: 11.8 kg (26.0 lbs)
<b>Weight in Air</b>	ULS-500: 20.0 kg (44.1 lbs)   Rotary Actuator with tripod: 22.7 kg (50.0 lbs)
<b>Depth Rating</b>	Standard: 350m   Deep-rated: 4000m
<b>Port</b>	Standard: Optical grade acrylic   Deep-rated: Sapphire
<b>Operating Temperature</b>	-10°C to 40°C
Software	
<b>Data Acquisition Software</b>	Included
<b>Export Data Formats</b>	.xyz (CSV), LAS publishing
<b>Custom Integration</b>	API Available