



ULS-500 Micro

Dynamic Underwater Laser & Stills

The **ULS-500 micro** enables small vehicle platforms to perform high accuracy inspection tasks with laser scanning and stills data



High Performance Sensors for Small Vehicles

- Real-time 3D laser point cloud generation with millimetric accuracy synchronized with seamless stills images
- High stills camera sensitivity and 250,000 lumen LED output combine with intelligent light levelling and undistortion to enable crisp images on high speed AUVs

Compact Size and Lightweight

- Small form factor and light weight enables use on small vehicles

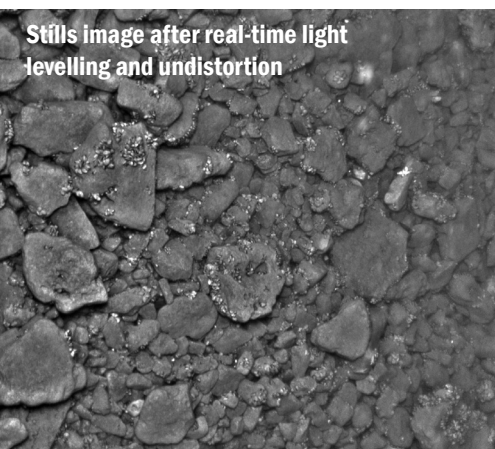
Straight Forward Integration

- Single Interface and PPS time synchronization for simple integration with inspection-class ROV skids and man-portable AUV modules
- Local SSD for onboard storage of data capture to reduce integration complexity

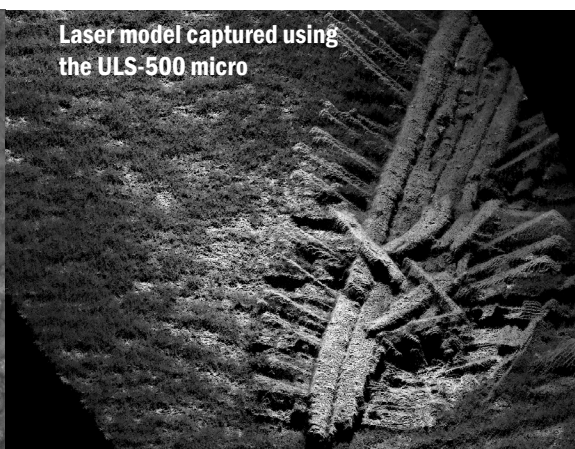
Low Power Draw

- Under 50W power draw for deployment on man-portable AUV platforms without significantly impacting mission duration

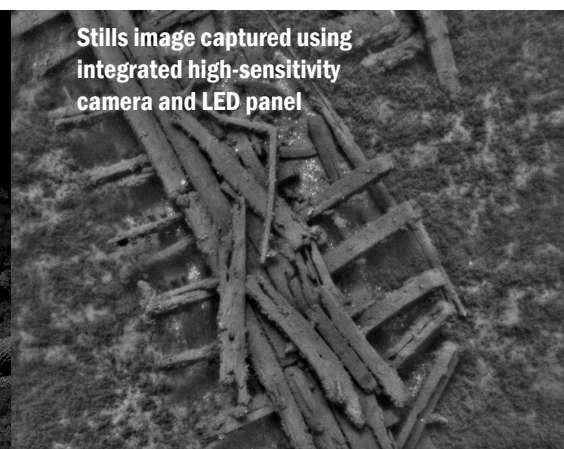
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Stills image after real-time light levelling and undistortion

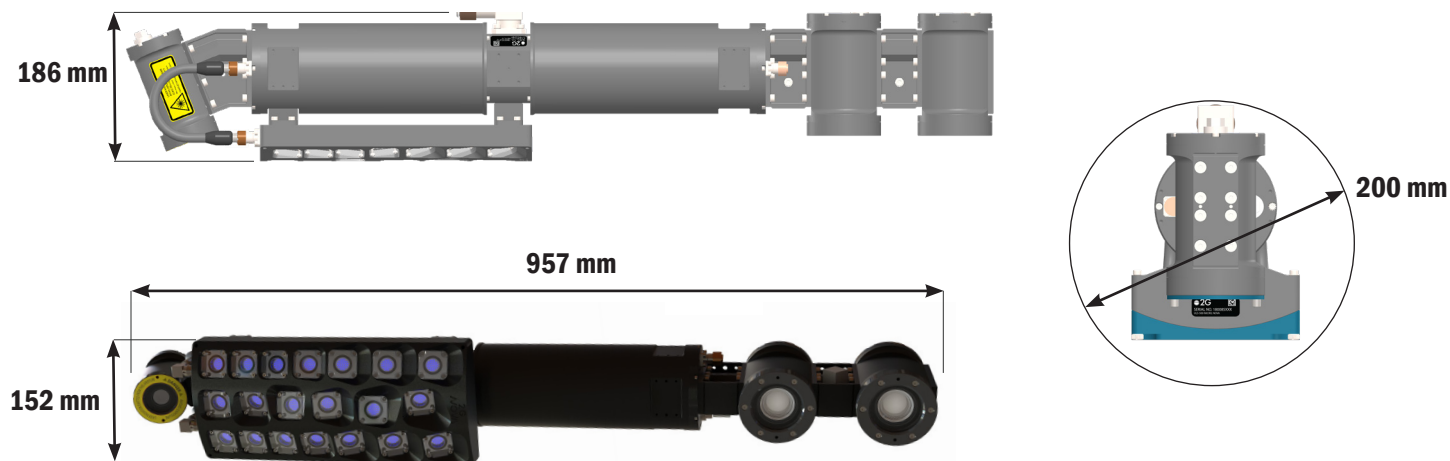


Laser model captured using the ULS-500 micro



Stills image captured using integrated high-sensitivity camera and LED panel

ULS-500 Micro Specifications



PERFORMANCE	
Scan Range	Laser Scanner: Min: 1.2 m (3.9') Max: 10 m (32.8') Stills Camera: Min: 1.2 m (3.9') Max: 10 m
Frame Rates	Laser Scanner: 89 Hz Laser + Stills: 58 Hz Laser + 2 Hz Stills
Points Per Laser Line	2464
Angle of View / System Coverage	Laser: 50° Stills Camera: 50° x 44°
Y Resolution (Profile to Profile, Along	3.5 mm @ 0.5 Knot (0.25 m/s) 14.2 mm @ 2 Knot (1 m/s) 28.5 mm @ 4 Knot (2.0 m/s)
X Resolution (Laser Line, Cross Track)	1.1 mm @ 3m 1.9 mm @ 5m 2.6 mm @ 7m 3.8 mm @ 10m
Z Resolution (Range Resolution)	0.2 mm @ 3m 0.5 mm @ 5m 1.2 mm @ 7m 1.9 mm @ 10m
Calibration	Factory calibrated, no in-field calibration
Time Synchronization Inputs	PPS time synchronization, ZDA Timestamp
Stills Camera Sensor	CMOS 2/3", Global Shutter, 12-bit
Stills Camera Options	Colour or Monochrome
Stills Camera Resolution	2464 x 2056
Still Image Processing	Real-time light levelling and image undistortion
LED Control	Automatically synchronized strobe to match stills camera exposure
LED Light Output	250,000 lumens customizable Blue or White LEDs
Data Storage	Onboard 2 TB solid state drive
ELECTRICAL	
Laser Type	700 mW, Class 3B, 450 nm
Power Consumption	Laser Scanner: 37 W Stills Camera: 2 Hz, 1 ms, 50% LED: 12 W 2 Hz, 2 ms, 50% LED: 24 W 4 Hz, 2.5 ms, 100% LED: 86 W
Voltage Range	24-72 VDC
Communication	Gb Ethernet, TCP/IP communication; RS-485; RS-232
MECHANICAL	
Dimensions	Length: 957 mm Width: 151 mm Height: 186 mm Overall Outer Diameter: 200 mm
Weight	Water: 5.8 kg Air: 13.6 kg
Materials	Aluminum housings, Sapphire Viewports
Depth Rating	1000m Upgradeable to 4000m
Connector	28 Pin CRE Size B
SOFTWARE	
Data Acquisition Software	ViewLS C++ API Included ViewLS Data Module (optional)
Export Data Formats	Laser Scanner: .xyz (CSV), LAS publishing Stills Camera: 8-bit .TIFF
Third Party Software Integration	QPS QINSy, EIVA NaviSuite, HYPACK HYSWEEP, 4D Nav