

VOYIS 

Insight Underwater Laser Scanners

INSIGHT SERIES

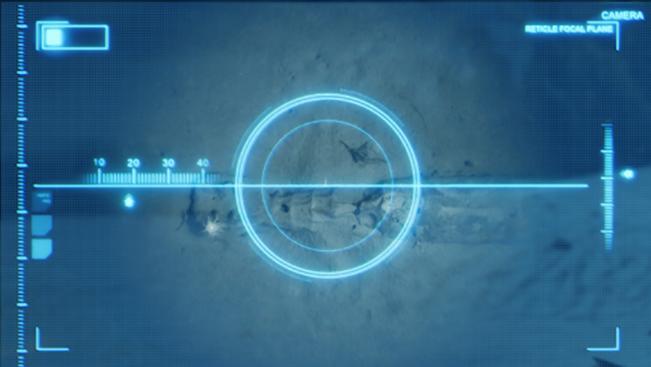


Datasheet & Product Information

INSIGHT UNDERWATER LASER SCANNERS

Capture Incredibly Detailed 3D Data

Voyis' Insight Underwater Laser Scanners capture 3D data with submillimeter accuracy to help you see the depths, just like we see the surface. Assets in remote subsea environments can be modelled from a dynamic subsea vehicle or static installation, with all data processed in real-time so that results are immediately available for review.



Benefits and Features

- ✓ **Vehicle Integration**
Proven and reliable integration options for subsea vehicles using an easy-to-use software API interface
- ✓ **Dynamic Scanning**
Proven integration with common navigational sensors enables scanning from moving subsea vehicles
- ✓ **Customer Support**
Our team partners with you to find the best solution for your project
- ✓ **Real-Time Data**
3D data is processed onboard the sensor to deliver real-time actionable data for machine learning
- ✓ **Simplified Integration**
Sensors that push the limits to deliver the highest resolution, accuracy and range at any vehicle speed



Find the Right Product For Your Project

Each Insight laser scanner produces high-resolution laser data but there are a few options to best suit your project/deployment.



Insight Nano

Compact size for 3D modelling small spaces & short to mid-range targets. Simplified static scanning with embedded actuator.

Depth Rating:	1000m
Scan Range:	0.13m - 1m & 0.4m - 2.5m (XR)
Points Per Line	2048



Insight Micro

A long-range laser scanner but in a smaller package making it suitable for small vehicles.

Depth Rating:	1000m & 4000m
Scan Range:	1.2m - 7m
Points Per Line	2432



Insight Pro

Our longest-range scanner providing the highest quality data possible from larger vehicles.

Depth Rating:	4500m & 6000m
Scan Range:	1.5m - 15m
Points Per Line	2048



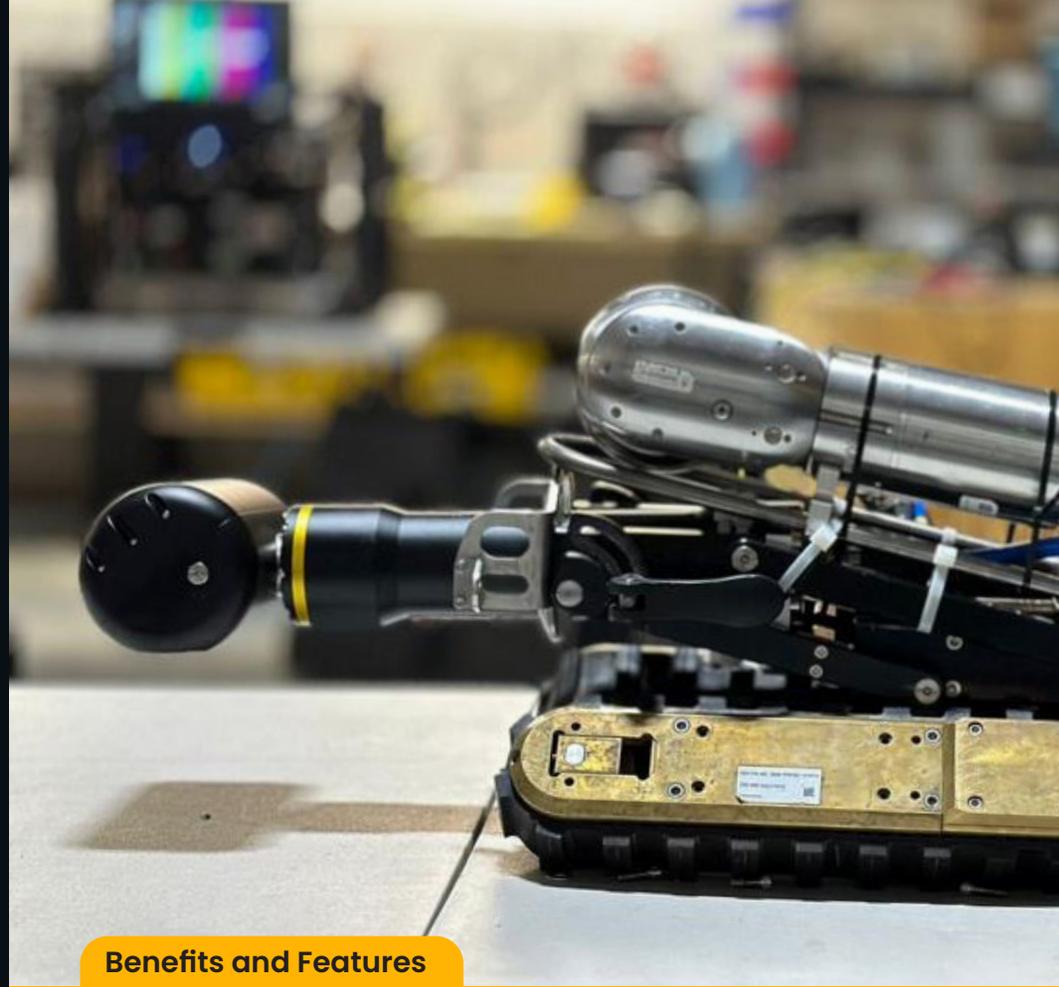
COMPACT LASER SCANNERS
INSIGHT NANO



The Insight Nano is a compact laser scanner designed for straightforward 3D modelling. The integrated actuator and simple user interface enable non-intrusive qualitative inspection without any external aiding sensors.

The system is capable of integration with a variety of deployment vehicles, including small ROVs and pipe crawlers, to deliver high resolution data in confined spaces like pipes, tunnels, and flume tanks.

This new generation Nano is available with time synchronization, dynamic scanning, and highspeed scanning options.



Benefits and Features



3D modelling in confined spaces, in air or water



Sub-millimeter resolution



Accurate measurements without external sensors



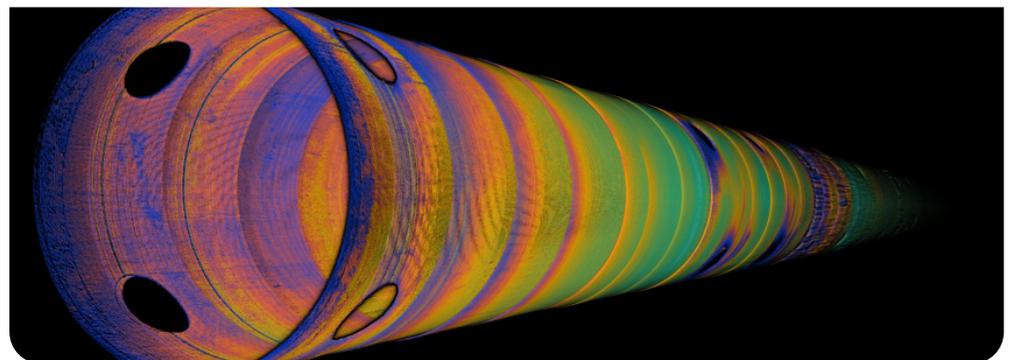
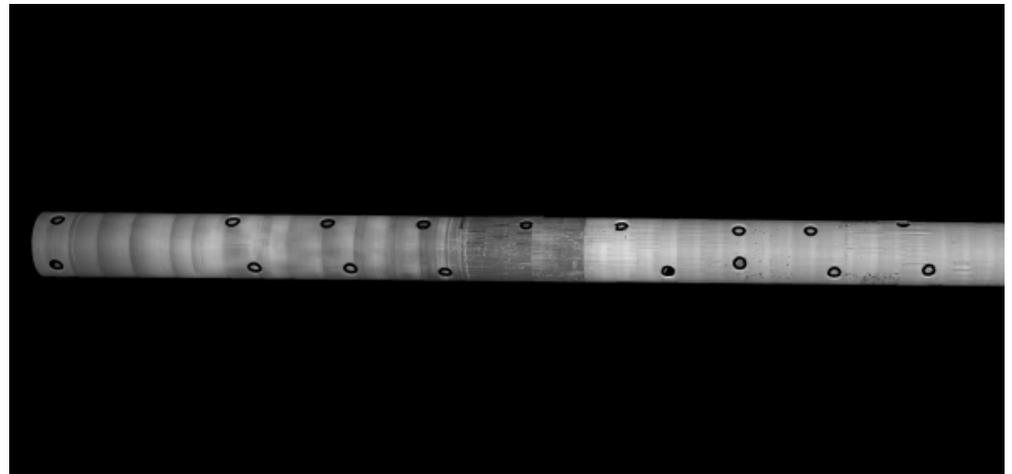
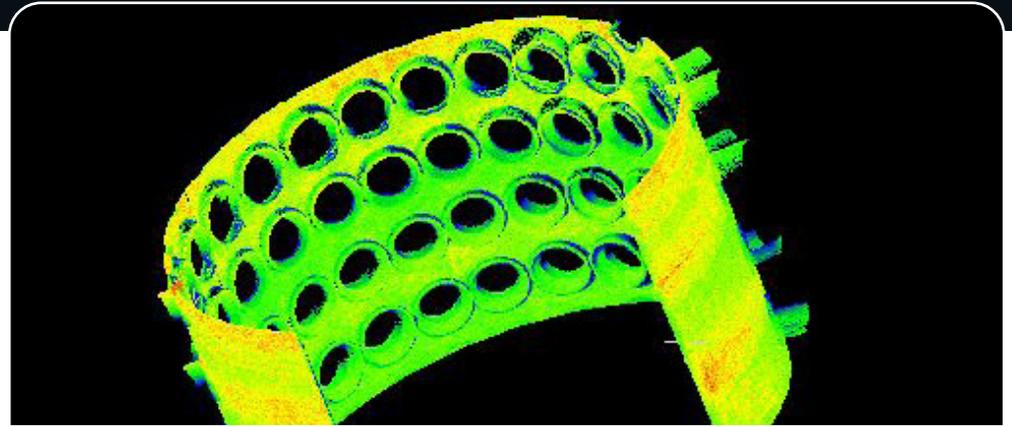
High-speed rotational or dynamic scanning



SPECIFICATIONS

INSIGHT NANO

FEATURE	NANO – SHORT RANGE	NANO XR – MEDIUM RANGE
Scan Range*	0.13m - 1.0m	0.4m - 2.5m
Points Per Line**	2048 data points 50° (water) 70° (air) Angle of View	
X Resolution (Along laser line)	0.1mm @ 0.13m 0.3mm @ 0.5m 0.5mm @ 1.0m	0.2mm @ 0.4m 0.7mm @ 1.5m 1.0mm @ 2.5m
Y Resolution (Profile to Profile)	0.05mm @ 0.13m 0.1mm @ 0.5m 0.2mm @ 1.0m	0.1mm @ 0.4m 0.3mm @ 1.5m 0.5mm @ 2.5m
Z Resolution (Depth Resolution)	0.05mm @ 0.13m 0.1mm @ 0.5m 0.4mm @ 1.0m	0.05mm @ 0.4m 0.5mm @ 1.5m 1.2mm @ 2.5m
Profile Rate	35 Hz Range limiting option for higher captured rates	
Laser 	Max output: <5mW Pulse duration: 1mSec to CW Wavelength: 450nm or 520nm WARNING - LASER RADIATION AVOID DIRECT EYE EXPOSURE Class 3R Laser Product	
Power Consumption	25W, 24V	
Data Interface	Ethernet, TCP/IP Communication	
Depth Rating	1000m	
Data Storage	Topside or Network Storage	
Data Acquisition	ViewLS Software C++ API Factory Calibrated Acquisition Modes: Precision Scanning, High-speed Scanning & Dynamic Scanning	
Export Data Formats	.XYZ (CSV), LAS Publishing	
3rd Party Integrations	EIVA NaviSuite, QPS QINSy, HYPACK HYSWEEP, 4D NAV	
Weight (camera)	P3000: Air: 5.4 kg Water: 2.7 kg	



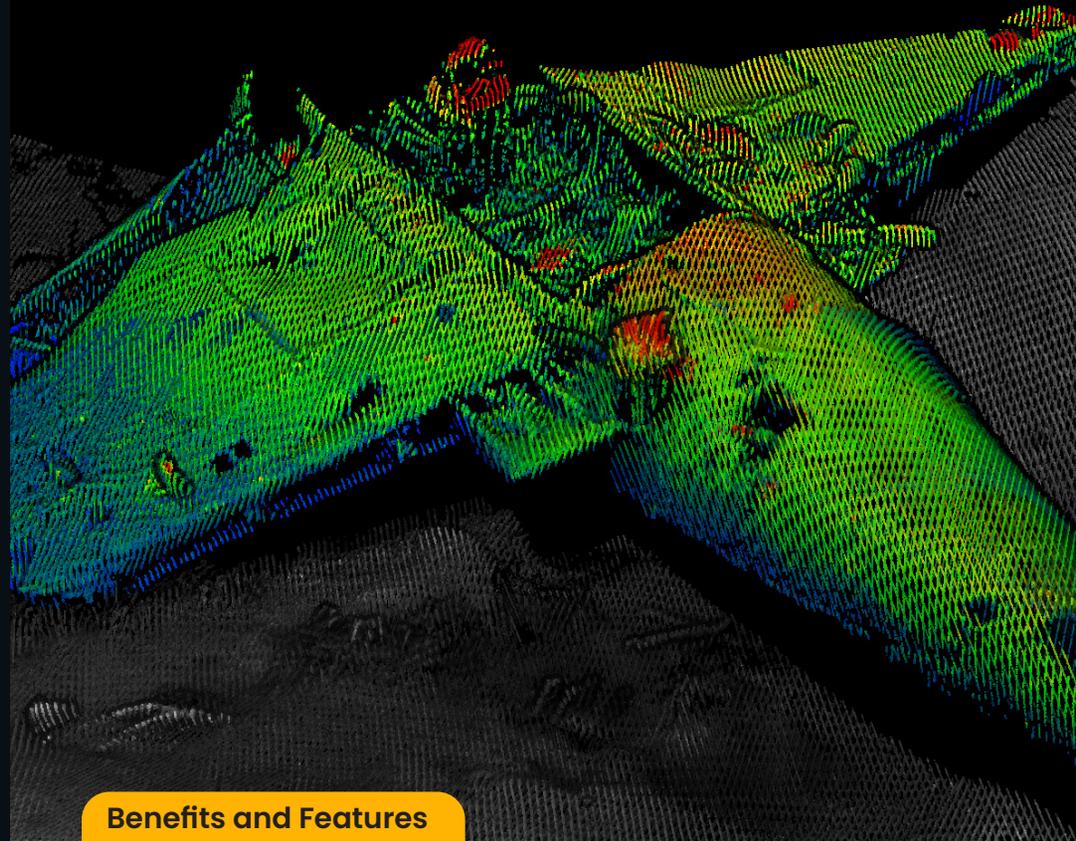
* Range measured from Scanner Origin, defined as the center of rotation

** Angle of view is measured at center of Scan Range



STATIC & DYNAMIC LASER SCANNERS

INSIGHT MICRO



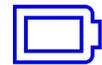
The Insight Micro enables small vehicle platforms to perform high accuracy inspection tasks with tightly integrated laser and stills data. The package provides long range data collection (7m) in a compact and low power draw package.

The system has been integrated with AUVs like the REMUS 600, and ROVs like the Saab Falcon, utilizing its software API and time synchronization to enable rapid adoption onto existing vehicle assets. Laser and Image data is processed and enhanced in real-time onboard the system to deliver actionable data for machine learning applications.

Benefits and Features



High-accuracy models
from small vehicles



Compact &
Low power draw



Seamless stills imaging
integrations



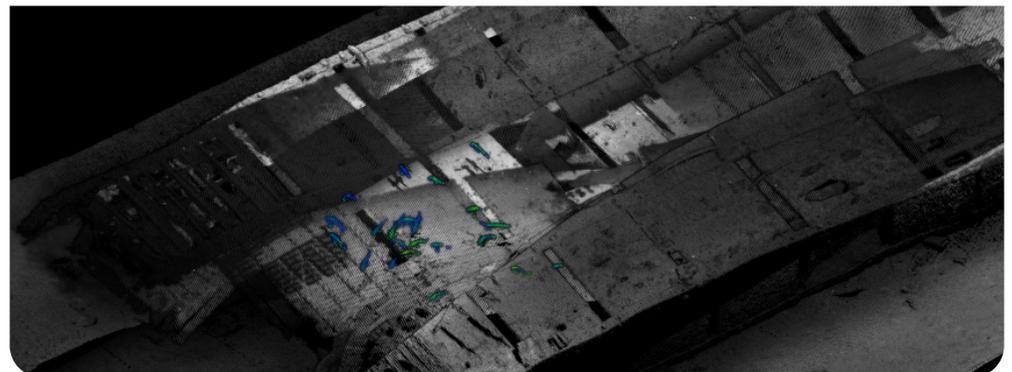
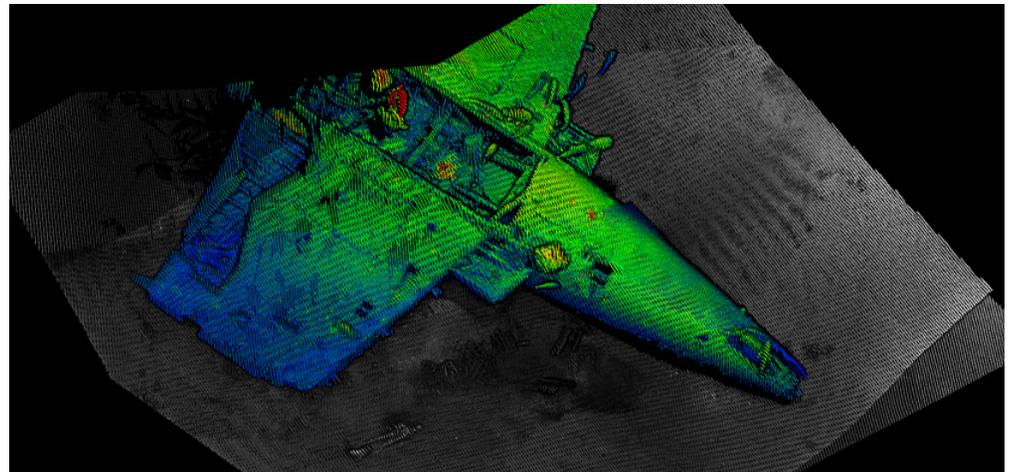
Onboard storage & data
enhancement



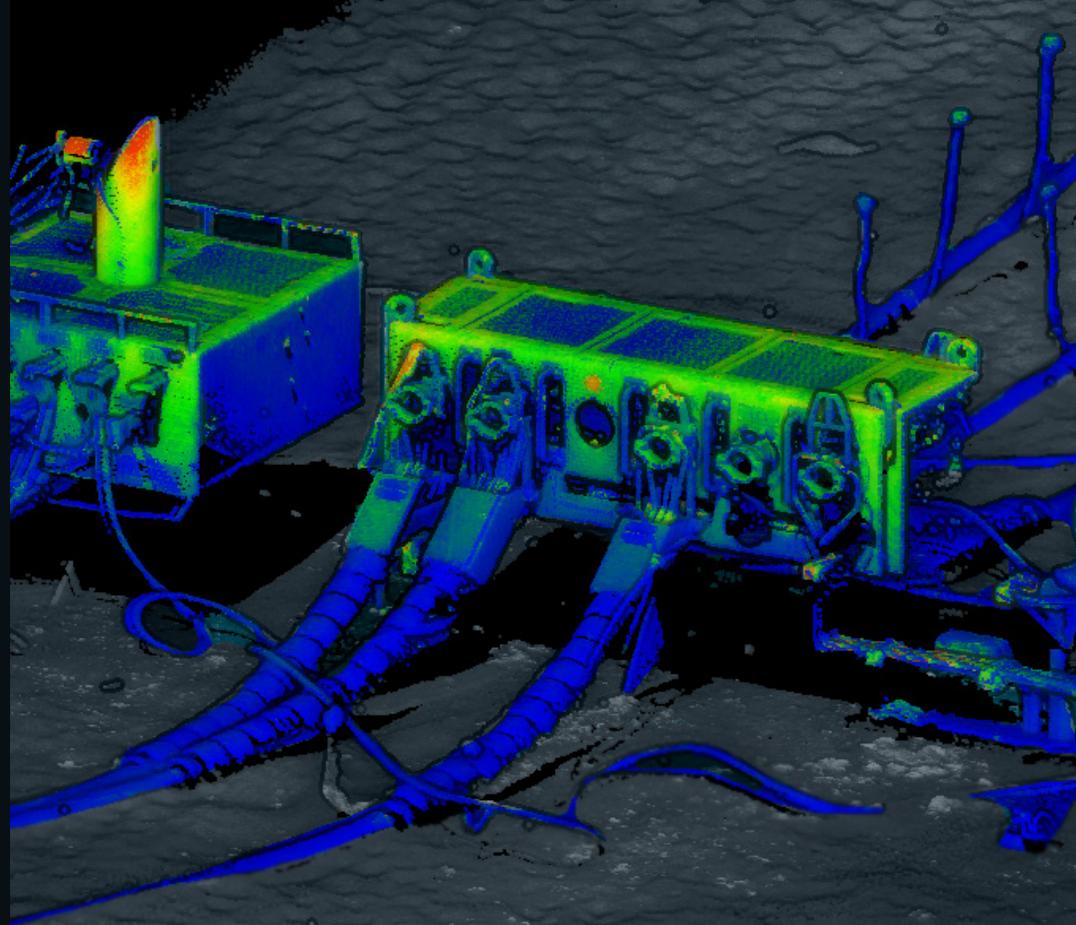
SPECIFICATIONS

INSIGHT MICRO

FEATURE	DESCRIPTION	
Scan Range	1.0m - 5.0m (SR) 1.0m - 7.0m (XR)	
Points Per Line	2432 data points 50° (water)	
X Resolution (Along laser line)	0.4mm @ 1m 1.1mm @ 3m	1.9mm @ 5m 2.6mm @ 7m
Y Resolution (Profile to Profile)	1.5mm @ 0.25 knot 12.5mm @ 2 knot	3.1mm @ 0.5 knot 25mm @ 4 knot
Z Resolution (Depth Resolution)	0.1mm @ 1m 1.0mm @ 3m	2.2mm @ 5m 4.0mm @ 7m
Profile Rate	50 Hz Laser with 3Hz Stills Imaging 100 Hz (Laser Only) with Range Limiting	
Laser 	Max output: <75mW Pulse duration: 1mSec to CW Wavelength: 450nm +/- 10nm WARNING: LASER RADIATION AVOID DIRECT EYE EXPOSURE Class 3R Laser Product	
Power Consumption	21-60 VDC Input Laser & Stills: 30W LED Strobe: 30W @ 1Hz, 2ms	
Data Interface	Ethernet, TCP/IP Communication	
Depth Rating	1000m or 4000m	
Data Storage	Onboard (2TB), Topside, Network	
Data Acquisition	ViewLS Software C++ API Factory Calibrated Acquisition modes: Dynamic Laser Scanning & Imaging	
Export Data Formats	Laser: .XYZ (CSV), LAS Publishing Stills: .JPG, .TIFF	
3rd Party Integrations	EIVA NaviSuite, QPS QINSy, HYPACK HYSWEEP, Pix4D	
Stills Camera	4112 x 3008 (12.4 MP)- Colour Imaging, onboard enhancement Horizontal: 56° Vertical: 42° - 4 FPS (max)	
Lighting (Stills)	White Light, 500,000 lumens, 32 LEDs	



STATIC & DYNAMIC LASER SCANNERS
INSIGHT PRO



The Insight Pro is a long range laser scanner designed for wide area 3D modelling from dynamic and static platforms. The proven design has been deployed since 2013, scanning over 10,000km of subsea pipeline, seabed, and subsea structures.

The Insight Pro has been integrated with countless AUVs and ROVs, simplifying integration with software API that enables autonomous control, and off-the-shelf support of standard vehicle navigation systems. The data is processed in real-time onboard the system to enable machine learning applications like defect detection and pipeline following.

Benefits and Features



High-speed and long-range data



Simple Integration



Real-time actionable data

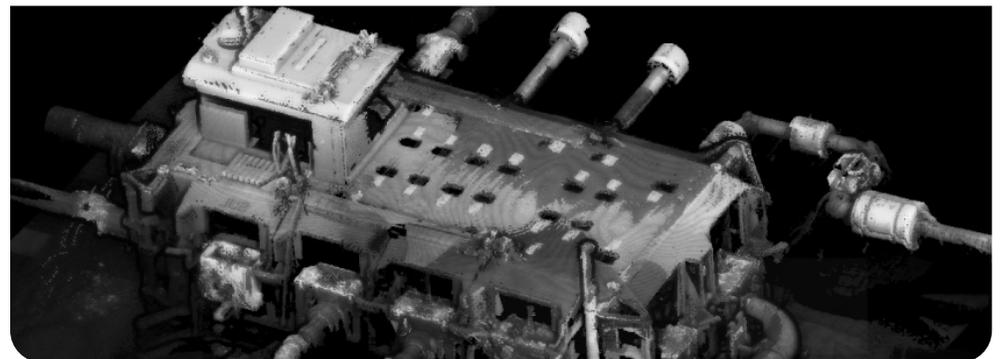
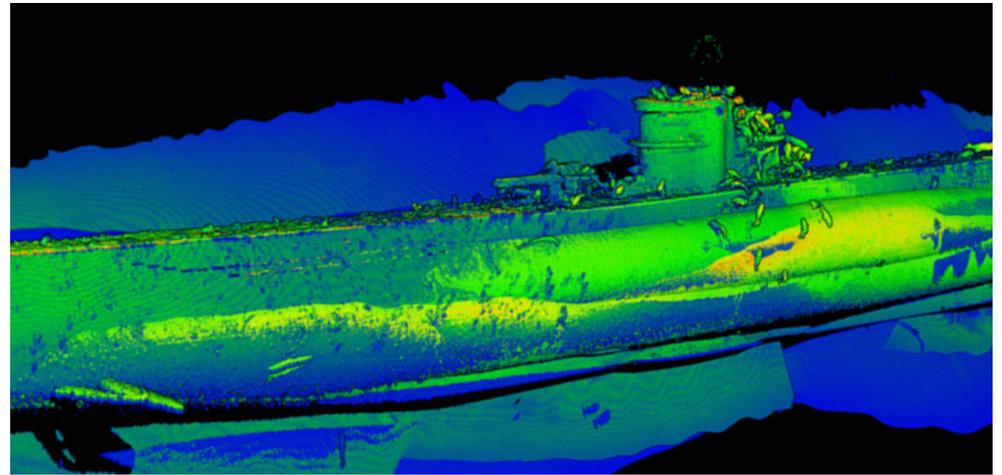
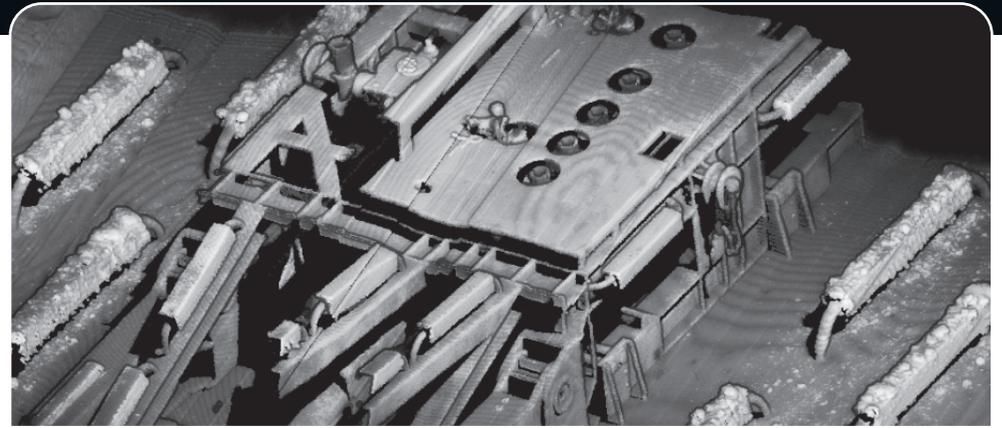


Proven reliability on AUV's & ROV's since 2013



SPECIFICATIONS Insight Pro

FEATURE	DESCRIPTION	
Scan Range*	1.5m - 15m	
Points Per Line**	2048 data points 50° angle of view	
X Resolution (Along laser line)	1.3mm @ 3m 2.3mm @ 5m	4.5mm @ 10m 6.7mm @ 15m
Y Resolution (Profile to Profile)	2.8mm @ 0.5 knot 11.1mm @ 2 knot	22.2mm @ 4 knot
Z Resolution (Depth Resolution)	0.2mm @ 3m 0.5mm @ 5m	1.9mm @ 7m 4.1mm @ 10m
Profile Rate	90Hz Laser with range lighting	
Laser 	Max output: <75mW Pulse duration: 1mSec to CW Wavelength: 450nm +/- 10nm Temperature Controlled	WARNING: LASER RADIATION AVOID DIRECT EYE EXPOSURE Class 3R Laser Product
Power Consumption	60W, 24-60 VDC	
Data Interface	Ethernet, TCP/IP Communication	
Depth Rating	4500m or 6000m	
Data Storage	Network Storage	
Data Acquisition	ViewLS Software C++ API Factory Calibrated	
Export Data Formats	Laser: .XYZ (CSV), LAS Publishing	
3rd Party Integrations	EIVA NaviSuite, QPS QINSy, HYPACK HYSWEEP	



Accessories and Support



Voyis Protect

Keep your Laser Scanners performing like new with precision diagnostics, certified recalibration, and trusted care.

Your Voyis Laser Scanner is engineered for reliable underwater performance, but harsh environments and frequent use demand regular upkeep. Voyis Protect provides proactive servicing, including updated accuracy verification, a new certificate of conformance, image quality checks, and the latest software updates, ensuring your laser continues to deliver high-performance measurements.



Voyis Support

Our team provides targeted expertise to ensure reliable results, efficient mobilization, and high-quality data

The Voyis Support Program is designed to help users execute successful underwater visual surveys and photogrammetry projects, from planning to final 3D deliverables. Whether you're an asset owner looking to outsource full survey services, or a survey company deploying Voyis hardware independently, and seeking our expertise to ensure success.

Contact sales@voyis.com to illuminate more about any of our additional services, accessories or product offerings.





VOYIS 

Illuminate The Unknown

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