

Benefits

- Above water (in-air) real-time 3D volumetric LiDAR
- 3D imaging of static and moving objects
- High refresh up to 10Hz
- Up to 1 million exportable XYZ points per second
- Combined with Echoscope® for complete above and below waterline 3D scene inspection and mapping
- Fully integrated with Coda Octopus software: 4G USE®, CodaOctopus® Underwater Survey Explorer (USE), and CodaOctopus® Construction Monitoring Solution (CMS)
- Compatible with CMS Block Tracking and 3D MATT
- Available in short range and medium range models



Real-time 3D Echoscope Data Above Waterline

Capable of providing the same real-time 3D volumetric data as the Echoscope® series but above the waterline, the Echoscope® AIR LiDAR is designed for close-range mapping and inspection applications. It affords the same benefits to surface construction applications, where monitoring and placing objects above the waterline can be as critical as underwater.

Used as a stand-alone sensor or combined with the Echoscope® on the same or independent platforms, the user can achieve complete and seamless coverage above and below the waterline. Providing an extra level of scene awareness to inspection and monitoring tasks, it ensures these tasks are completed safely and efficiently with the same real-time 3D data and multi-aspect imaging that Echoscope® sonar users uniquely enjoy.

Fully compatible with Coda Octopus's powerful real-time post-processing software applications—4G USE®, CodaOctopus® Underwater Survey Explorer (USE), and CodaOctopus® Construction Monitoring Solution (CMS)—it has been invaluable in the construction industry for well over a decade.

Features

- High-definition 3D images generated in real-time
- Full integration with navigation sensors for mapping capability
- Accurate display of complex structures and scenes
- Fully geo-referenced XYZ data
- Option to broadcast XYZ data over Ethernet
- Simple and easy-to-use controls
- Echoscope® AIR LiDAR can be rotated to provide a wide opening angle in either the horizontal or vertical orientation, depending on the application

Echoscope® AIR LiDAR Options

The Echoscope® AIR LiDAR is available in 2 models to meet specific requirements:

- AIR LiDAR 60:** Perfect for short-range applications like breakwater construction, it provides a wide field of view (80° x 60°) with a range up to 25 m.
- AIR LiDAR 30:** Ideal for mid-range tasks, it offers a narrower vertical field of view (80° x 30°) and extends the reach up to 65 m.

Choose the model that suits your project for accurate, real-time 3D imaging above the waterline.

XYZ Data Output Ability

Users can set up 4G USE® to broadcast live XYZ data over Ethernet, allowing LiDAR data to be easily integrated into third-party applications.

Applications

- Breakwater Construction or Block Placement:** The Echoscope® AIR LiDAR, like the Echoscope® sonar underwater, can visualize and track blocks with precision, providing a real-time display to the crane operator. It is fully integrated within the CodaOctopus® Construction Monitoring Solution (CMS) and is directly interchangeable with the Echoscope®.
- Port, Harbor, and Bridge Inspection:** The Echoscope® AIR LiDAR is fully supported in Coda Octopus's 4G USE® software, allowing above-waterline inspection tasks to be executed with the same ease as underwater. Full mapping and deliverables are available during and after data collection.

Technical Specifications

Performance (by Model)	Echoscope® AIR LiDAR 60	Echoscope® AIR LiDAR 30
Max Opening Angle	80° x 60°	80° x 30°
Max Range (2 fps)	25 m	65 m
Typical Range (10 fps)	10 m	25 m
Laser Safety	Class 1 Eye-safe per IEC 60825-1	
Wavelength	Sense Illuminator - 940 nm VCSEL Array	
Number of Beams	352 (W) x 287 (H)	
Max Frame Rate	10 fps (Hz)	
Angular Resolution	0.27° x 0.27°	
Range Accuracy	Up to 35 mm	
Data Points (XYZ)	Up to 1 million per second	
Interface	Gigabit Ethernet (TCP/IP)	
Dimensions	140 mm (H) x 184 mm (W) x 187 mm (D)	
Operating Temperature	-10° C to +50° C	
Storage Temperature	-40° C to +80° C	
Weight	3.4 kg	
Ingress Protection	IP67	
Vibration	2.77 g (rms), 10 - 1000 Hz, 3 Axes with 8-hour duration ea. (IEC 60068-2-64, Random)	
Shock	500 m/s ² Amplitude, 6ms Duration, 60068-2-27	
Voltage & Power	12V to 24V DC (17W Nominal Consumption*)	

* Note: Operating power may be influenced by factors including desired range and mode of operation.



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