

/Echoscope AIR[®] LiDAR



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 XYZ points per second
- Combined with Echoscope[®] for complete above & below waterline 3D Scene Inspection and Mapping
- Fully Integrated with Coda Octopus software USE, 4G USE[®] and CMS (Construction Management System)
- Compatible with CMS Block Tracking and 3D MATT
- Available in Short Range (AIR 60) and Medium Range (AIR 30)

Same real-time 3D Echoscope data... *above the 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. Affording 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 have complete and seamless coverage above and below the waterline. Providing the extra level of scene awareness to inspection and monitoring tasks, it ensures these are completed safely and efficiently with the same real-time 3D data and multi-aspect imaging as enjoyed uniquely by our Echoscope[®] sonar users.

Fully compatible with our powerful real-time and post-processing software applications – 4G USE[®], Underwater Survey Explorer (USE) and Construction Monitoring System (CMS), which have been invaluable in the construction industry for well over a decade.

Features

- High-Definition 3D image generated in real-time
- Full integration with Navigation sensors for mapping capability
- Displays complex structures and scenes accurately
- Fully geo-referenced data XYZ data
- Very simple and easy to use controls
- Echoscope[®] AIR can be rotated to provide wide opening angle in either the Horizontal or Vertical, depending on the application

Echoscope[®] AIR LiDAR Options

The Echoscope AIR LiDAR is available in two options depending on the application and imaging range required.

The AIR LiDAR 60 is a short-range LiDAR camera and provides a wider field of view (80° x 60°) up to 25m range. Typically used for short range monitoring and positioning applications like breakwater construction.

The AIR LiDAR 30 is a mid-range LiDAR camera and provides a reduced vertical field of view (80° x 30°) but at longer ranges up to 65m. This sensor is preferred for infrastructure mapping applications with focused object targeting.

Applications

Breakwater Construction or Block Placement:

The Echoscope[®] AIR LiDAR, like the Echoscope[®] sonar underwater, can visualize and track blocks with precision and real-time display to the crane operator. The Echoscope[®] AIR LiDAR is fully integrated within the CodaOctopus[®] Construction Monitoring System (CMS) and is directly interchangeable for the Echoscope[®].

Port, Harbor and Bridge Inspection:

The Echoscope[®] AIR LiDAR is fully supported in our 4G USE[®] software allowing above the waterline inspection tasks to be executed with the same ease as performed underwater. Full mapping and deliverables are available during and post data collection.

Performance

	AIR LiDAR 60	AIR LiDAR 30
Max Opening Angle	80° x 60°	80° x 30°
Max Range (2 fps)	25m	65m
Typical Range (10 fps)	10m	25m
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)	
Resolution	0.27° x 0.27°	
Range Resolution	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 Temp.	-10° C to +50° C	
Storage Temp.	-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	60068-2-27	
Voltage & Power	12V to 24V DC (17W Nominal)	