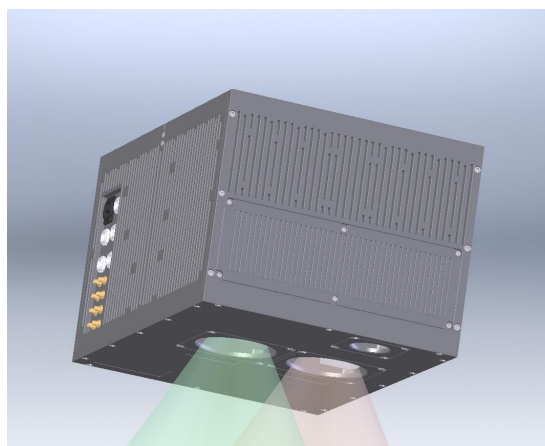


Chiroptera™ description

Chiroptera™ is a single unit, airborne system including one topographic and one bathymetric LiDAR channel. The unique and newly designed 18 kHz bathymetric channel optimized for extremely high accuracy and high data density surveys in shallow water. The Chiroptera™ meets the high demands for near-shore and coastline surveys mapping. The depth penetration, down to maximum 15 m, is unrivaled in the industry for a system of this kind.



The 400 kHz topographic channel provides the detail and resolution in the data that even your most demanding application requires. Both channels have full waveform capability.

The Chiroptera™ system utilizes the Lidar Survey Studio™ processing software including proprietary algorithms for waveform processing. Included are the seabed reflectance-, the dark-sea-bed-, the shallow water-algorithm and more.

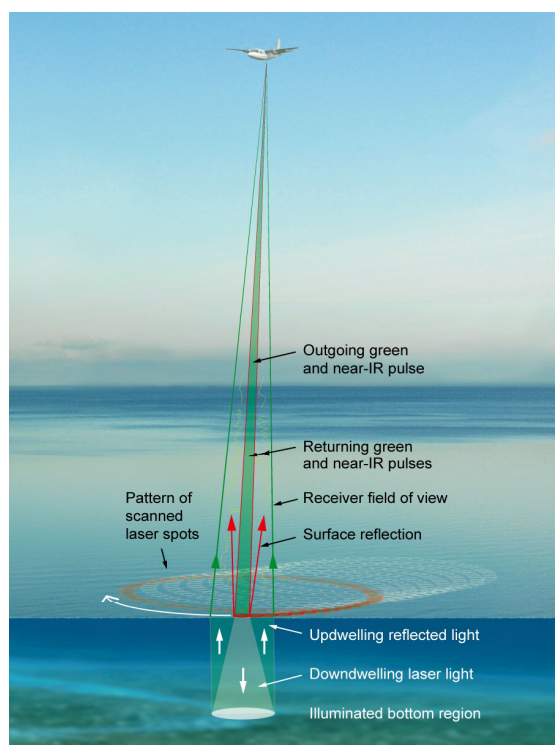
The Chiroptera™ is easily integrated in most fixed and rotary wing aircrafts, also including POD installations. The system can be offered as a turn key solution, including the position

navigation system, camera and flight management system. The Chiroptera™ is also available as a stand alone unit for integration into your present environment.

Chiroptera™ uses a rotating scanner principle, the Palmer, and illuminates objects from multiple angles minimizing the shadowed areas in the dataset and improving the 3D imaging possibilities. In addition, the Palmer scan is superior in high sea-states compared to other technologies.

Typical applications range from bathymetric near-shore surveys to high precision surveys of infrastructure and objects.

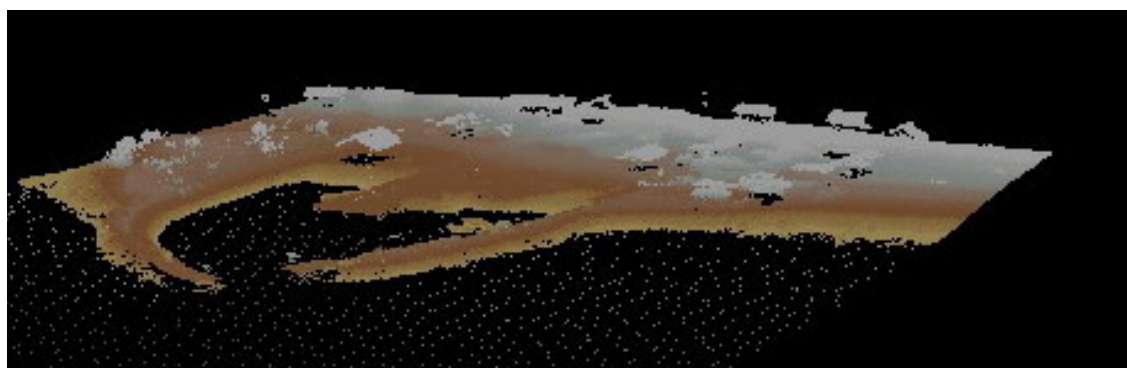
- Shallow-water coastlines
- Wetlands and habitat mapping
- Inland waters (rivers, channels)
- Pipelines and cables



AHAB – Stretching the limits!

Chiroptera™ – the “Golden Standard” in LiDAR

Airborne Hydrography AB - more than 25 years of experience in manufacturing of LiDAR systems, serving the worlds most demanding needs for accurate and timely data on land and in the water.



Function/Capability	
Operating altitude	Bathymetry: 250 to 400 m nominal Topography: up to 1500 m AGL
Pulse repetition frequency	Bathymetry: 18 kHz. Topography: up to 400 kHz 12 bit full waveform capability in both channels Both channels operate simultaneously
Horizontal accuracy	Bathymetry: 75 cm rms spot center. Topography: 20 cm rms @ 400 m AGL
Depth accuracy	15 cm rms sea bed
Range accuracy	2 cm rms flat target
Scanner principle	Palmer scanner, Ellipsoidal scan, degrees of incident 14° to 20°
Scan frequency	Programmable up to 70 rps = 140 scans per second
Scan angle	± 20° sideways
POS	AeroControl from IGI GmbH
Data storage	Ruggedized removable solid state disks
Beam divergence	Bathymetry: 3 mrad. Topography 0.5 mrad.
Laser classification	Class IV (FDA CFR 21)
Depth penetration	$k \cdot D < 1.5$ @ 10% reflectance sea-bed, $0.10 < k < 0.25$ $k=0.10 : D=15$ m $k=0.15 : D=10$ m $k=0.20 : D=7.5$ m $k=0.25 : D=6.0$ m
Camera options	5 MPix CCD RGB digital camera 50 MPix RGB or CIR DigiCam from IGI GmbH
Pilot Monitor & Guidance	CCNS 5 from IGI GmbH

The specification is subject to change without notice.

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