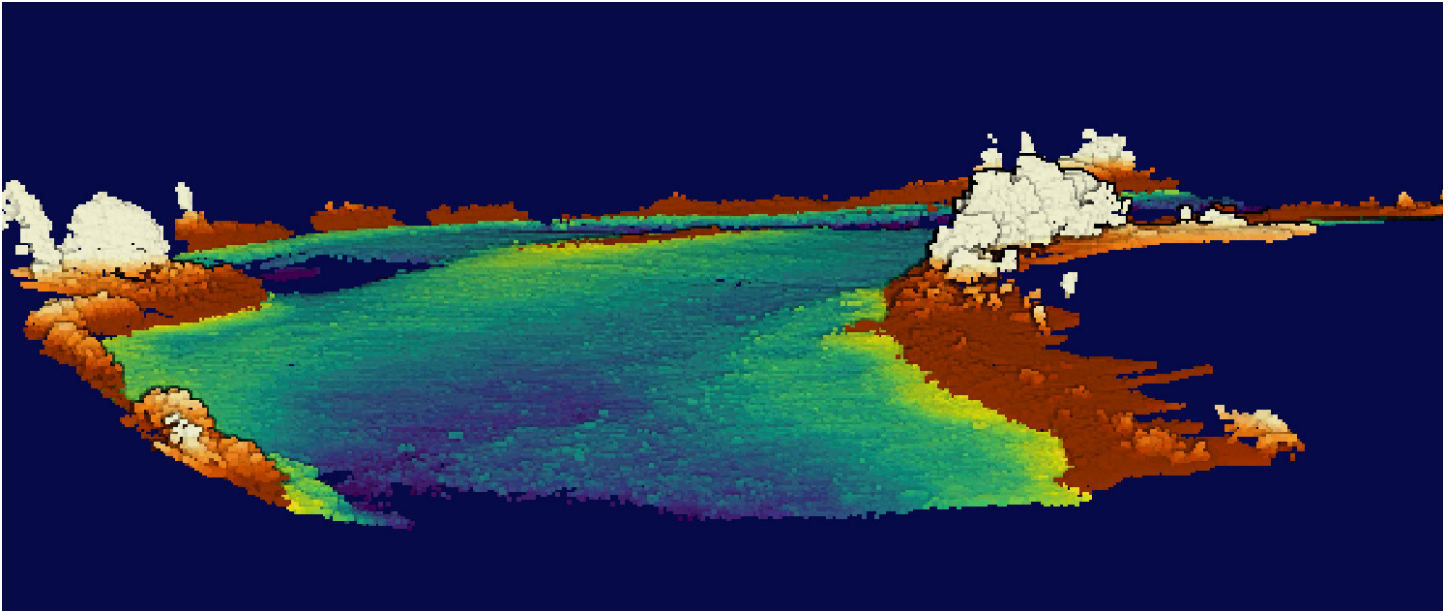


## Specifications & Performance of the EDGE

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### THE EDGE

The EDGE 2-in-1 bathymetric lidar system produces high resolution point clouds, producing a range of 100-200 points/m<sup>2</sup> on a single pass. "Above is a 3-D point of the Colorado River, near McCoy, captured in 2023.

**HIGH DEFINITION 2-IN-1 SYSTEM FOR TOPOGRAPHIC AND BATHYMETRIC MAPPING.**

### LITEWAVE TECHNOLOGIES

LiteWave Technologies, Inc. was created with the vision of providing unique LiDAR capabilities, sensors, and products for next-gen bathymetric surveying. We give our customers the tools to see beyond the surface using novel LiDAR and optical capabilities. From coastal mapping and surveying, to infrastructure inspection and military logistics, the applications of our LiDAR are numerous and widespread.

The LiteWave EDGE™'s performance in shallow waters is unmatched, providing simultaneous water- and bottom-surface detection with sub-centimeter accuracy and precision. The green (532 nm) wavelength penetrates through water and provides bottom surface returns greater than 1.5 Secchi depth.

The pulse repetition rate and beam footprint are customizable at time of order. A linear scan pattern

gives a nearconstant point density and the 30° scanangle range maps out a swath width that is ½ the flight altitude.

The scan rate is customizable to allow for different use cases at time of order. Accurate and lightweight IMU performance leads to high accuracy LiDAR point clouds.

Combined with the scanner and LiDAR performance, point clouds with typical densities of 100-300 pts/m<sup>2</sup> and centimeter-level resolution can be achieved. **LiteWave's expertise in bathymetric lidar spans more than a decade including support and customization of unique lidar applications and award winning products**

*2020 Lidar Leader Award Finalist - Outstanding Commercial Innovation*

*2022 Technical Achievement Award - JALBTCX*

## SYSTEM INFORMATION

The EDGE is a low size, low weight, and low power LiDAR system, which makes it the perfect sensor for small form-factor UAVs. The system is fully autonomous and has its own rechargeable lithium-ion battery that is easily removable, allowing for 90-minutes of flight time. Because of the autonomous nature, the EDGE is UAV platform agnostic.

The EDGE system includes:

- Internal IMU/GPS (SBG or Applanix)
- Internal downward-pointing camera
- Dual GPS antennas with mounting booms
- Mounting hardware for UAV integration
- Removable USB data storage
- 2 Li-Ion batteries with chargers
- Pelican case for safe storage and transport

EDGE Specifications	
Weight	5 kgs
Dimensions	27 cm x 23 cm x 19 cm
Power Supply	Internal Li-Ion Battery – 1.5-hour lifetime
Data Interface	USB
Data Volume	1 GB / 10 minutes
Laser Class	Class 3R Laser Product according to IEC 60825-1:2007
NOHD for 3R Model	3 m: (Eye safe at > 3 m ) distance from observer

EDGE Performance	
Accuracy	1 cm
Precision	0.5 cm
Laser Wavelength	532 nm
Altitude	Bathy: 30m; Topo: 50m
Depth Penetration	> 1.5 Secchi Depth
Pulse Repetition Rate	20 kHz
Laser Beam Footprint	12 cm at 10 m
Laser Class	3R or 3B - design option

Scanner Performance	
Scan Pattern	Linear Cross-Track
Scan Angle Range	$\pm 15^\circ = 30^\circ$
Scan Rate	70 Hz

IMU Performance	
Position Accuracy	2 cm
Roll/Pitch	0.05°
Heading	0.2°

