

HIGH PRECISION LiDAR DATA

Elios 3 Surveying Payload

Powered by **FARO**



Surveying the inaccessible

Beyond safe-access scans

Enter through openings as big as 50x50cm to capture detailed point cloud and visual data beyond the reach of existing data capture solutions.

Uplifted mapping efficiency

Quickly deploy a drone and scan a 300-meter tunnel (close loop) in a single flight, turning days of mapping into a 10-minute job.

Survey-grade accuracy

The Ouster OS0-128 Rev 7 LiDAR sensor and the world's leading FARO Connect SLAM algorithm create detailed 3D maps with centimeter accuracy.

Stunning point clouds

Effortlessly capture rich point clouds of the most complex indoors, operating from a safe location, allowing for precise mapping and analysis.

Elios 3 Surveying Payload

Technical specifications



LIDAR PAYLOAD

Accuracy	From 0.1% drift
Precision	1σ +/- 6 mm, 2σ +/- 12 mm
Range	Up to 100 m
Scanning rate	1,310,720 pts/sec
Photon sensitivity	10x
Configuration	Ouster OS0 128 beams REV 7 sensor ¹
Handheld functionality	✓

1. Specifications for the OS0 128 beams REV 7 sensor are provided by Ouster. Complete specifications of the sensor are available on Ouster's website.

AIRCRAFT WITH SURVEYING PAYLOAD MOUNTED

Modification from nominal specifications

Weight	2465 g +/-15 g, 5.45 lbs +/- 0.53 oz
Flight time¹	9 minutes
Operating Temperature²	0 °C to 48 °C, 32 °F to 118 °F
Operating Altitude³	Min: -3000 m, Max: +2700 m AMSL Min: -9850 ft, Max: +8850 ft AMSL
Data Transfer Time	6 minutes ⁴ for a full time flight including LiDAR data

- In ideal flight conditions, with a new battery
- Valid for batteries pre-conditioned between 10 °C and 40 °C (50 °F to 104 °F)
- Additional payloads will further degrade this performance
- When using USB 3.0 cable and USB 3.0 port on the computer running Inspector

ACCURACY DEEP DIVE

LiDAR's accuracy may vary depending on the geometry of the mapping environment.

		Configuration Elios 3 & FlyAware	Configuration Elios 3 Surveying Payload and FARO Connect
Structured environments	<ul style="list-style-type: none"> Buildings, stockpiles, containment areas Little to no symmetry Geometric features Diameter/distance between walls >2 m (6.5 feet) 	1x 0.5-1% drift	5-10x improvement ~0.1-0.2%
Nominal symmetrical environments	<ul style="list-style-type: none"> Tunnels, stacks, shafts Diameter >2 m (6.5 feet) Regular geometric features 	1x ~2% drift	5-10x ~0.25-0.5%
Challenging symmetrical environments	<ul style="list-style-type: none"> Tunnels, stacks, shafts Diameter >2 m (6.5 feet) Light geometric features 	1x 2-5% drift	2-5x 0.5-2% (50-80% success rate)
Very challenging symmetrical environments	<ul style="list-style-type: none"> Tunnels, pipes, stacks, shafts Diameter <2 m (6.5 feet) Light geometric features 	1x 5+% drift	1-2x 2-5% (50-80% success rate)

SURVEYING PACKAGE

Hardware The surveying payload comes as a package with the Elios 3 drone or as a standalone payload for existing Elios 3 users.	FARO Connect software This software is meant to ease the processing and management of Elios 3's LiDAR data.	Reflective targets Perfectly sized for FARO Connect to automatically detect in the SLAM registration workflow.	Training course Covering everything from best flight practices to processing and registration.
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SOFTWARE REQUIREMENTS

Minimum	Windows 10
	i7 7th Generation (or equivalent)
	AMD Ryzen 7 (1700X) (or equivalent)
	Integrated Graphics
	64GB RAM
	512GB disk (100 GB free space)
Recommended	Window 10
	i9 12th Generation (or equivalent)
	AMD Ryzen 9 (3900X) (or equivalent)
	NVIDIA GTX 3060
	128GB RAM
	1TB disk (100GB free space)
	M.2 PCIe memory

POST PROCESSING

Software options	Inspector, FARO Connect
Data output format	LAZ, LAS, PLY, TXT, and E57
Georeferencing	Automated GCP target detection