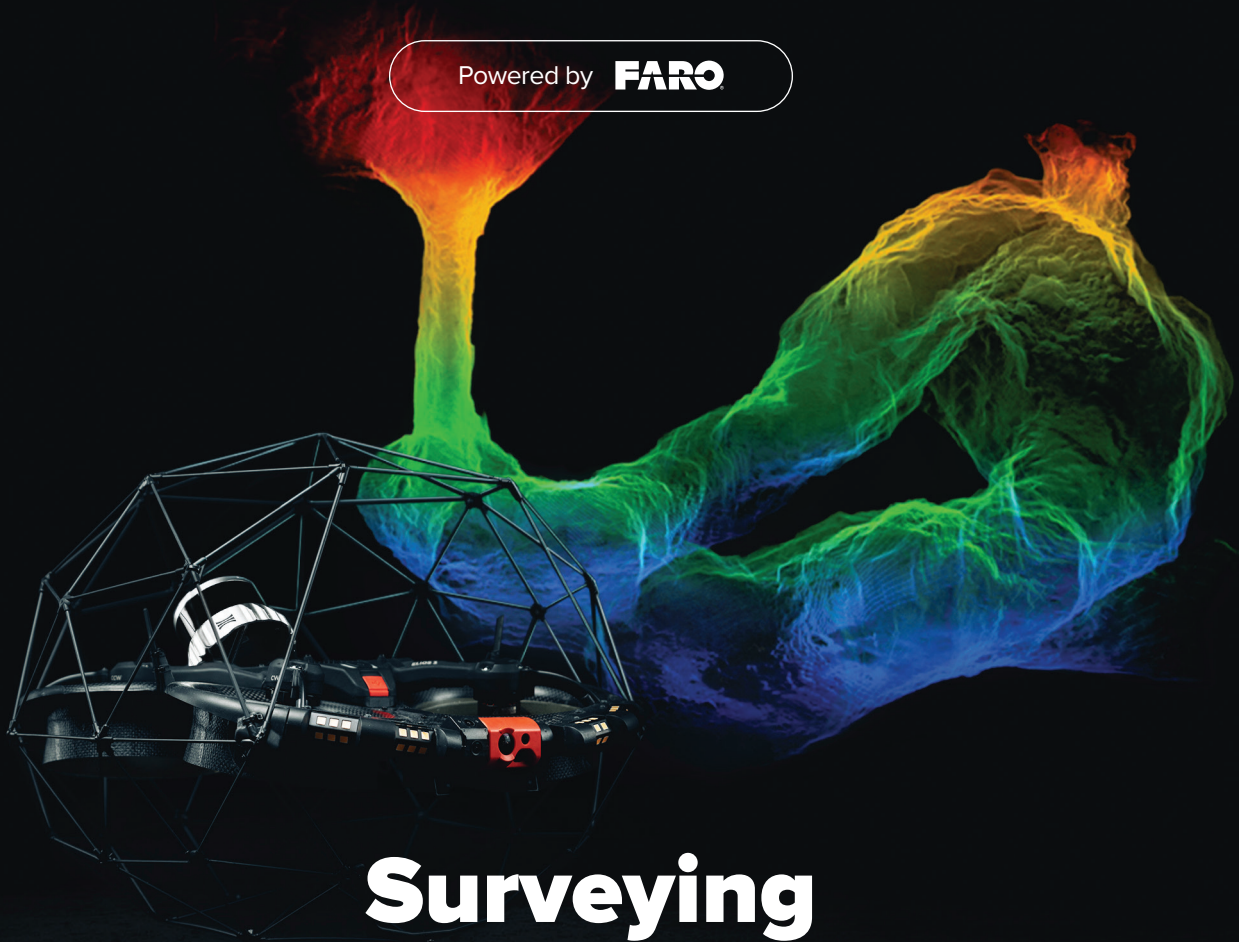


HIGH PRECISION LiDAR DATA

# 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

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

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

<b>Weight</b>	2465 g +/-15 g, 5.45 lbs +/- 0.53 oz
<b>Flight time<sup>1</sup></b>	9 minutes
<b>Operating Temperature<sup>2</sup></b>	0 °C to 48 °C, 32 °F to 118 °F
<b>Operating Altitude<sup>3</sup></b>	Min: -3000 m, Max: +2700 m AMSL Min: -9850 ft, Max: +8850 ft AMSL
<b>Data Transfer Time</b>	6 minutes <sup>4</sup> 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 <b>Elios 3 &amp; FlyAware</b>	Configuration <b>Elios 3 Surveying Payload and FARO Connect</b>
<b>Structured environments</b>	<ul style="list-style-type: none"> <li>Buildings, stockpiles, containment areas</li> <li>Little to no symmetry</li> <li>Geometric features</li> <li>Diameter/distance between walls &gt;2 m (6.5 feet)</li> </ul>	1x 0.5-1% drift	5-10x improvement ~0.1-0.2%
<b>Nominal symmetrical environments</b>	<ul style="list-style-type: none"> <li>Tunnels, stacks, shafts</li> <li>Diameter &gt;2 m (6.5 feet)</li> <li>Regular geometric features</li> </ul>	1x ~2% drift	5-10x ~0.25-0.5%
<b>Challenging symmetrical environments</b>	<ul style="list-style-type: none"> <li>Tunnels, stacks, shafts</li> <li>Diameter &gt;2 m (6.5 feet)</li> <li>Light geometric features</li> </ul>	1x 2-5% drift	2-5x 0.5-2% (50-80% success rate)
<b>Very challenging symmetrical environments</b>	<ul style="list-style-type: none"> <li>Tunnels, pipes, stacks, shafts</li> <li>Diameter &lt;2 m (6.5 feet)</li> <li>Light geometric features</li> </ul>	1x 5+% drift	1-2x 2-5% (50-80% success rate)

### SURVEYING PACKAGE

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

<b>Minimum</b>	Windows 10
	i7 7th Generation (or equivalent)
	AMD Ryzen 7 (1700X) (or equivalent)
	Integrated Graphics
	64GB RAM
	512GB disk (100 GB free space)
<b>Recommended</b>	SSD memory
	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

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