MODULAR LIDAR INSPECTION & MAPPING DRONE

# Flyability Elios 3 inspection and mapping drone

The Flyability Elios 3 is a collision-tolerant drone built around a modular payload bay — combining LiDAR-based 3D mapping, 4K visual and thermal inspection, ultrasonic thickness gauging, radiation surveying and gas detection on a single airframe. One drone, multiple inspection missions, all delivered from a safe stand-off inside confined and GPS-denied spaces.

LIDAR INSPECTION & MAPPING DRONE



## Flyability Elios 3

**Modular collision-tolerant inspection and mapping drone**

AVAILABLE NOW FROM D2 RENTALS — FUNCTION-CHECKED, COMPLETE, FIELD-READY.

CAPABILITIES & KEY FEATURES

# Built for the places drones can't usually fly

The Elios 3 combines LiDAR-based SLAM stabilisation, a 4K and thermal inspection head, and a high-output lighting array inside a collision-tolerant carbon-fibre cage. Three platform capabilities define what the drone does in the field — before any optional payload is fitted.

## LiDAR Mapping & SLAM Navigation

An Ouster OS0-32 LiDAR sensor builds a high-density 3D point cloud of the asset in real time, streamed live to the Cockpit app. The SLAM-based stabilisation algorithm holds the aircraft motionless without GPS, even in turbulent confined airflow, and the cumulative map shows inspection coverage as you fly — so you know what you've captured before you leave the asset.

## Collision-Tolerant Flight with Recovery

A carbon-fibre protective cage with thermoplastic suspensions allows the drone to contact structure at up to 2 m/s in any direction and continue the mission. Fast-reversing brushless motors allow the Elios 3 to recover from inverted attitudes mid-flight — a feature unique to this platform — and a Return-to-Signal autopilot brings the aircraft back along its original path if the video link is lost.

## Vision in the Dark

A 16,000-lumen peak lighting array delivers near-daylight illumination inside unlit assets. Dustproof lighting cuts through rotor-disturbed particulates; oblique lighting casts controlled shadow to surface fine cracks, weld toe defects and surface corrosion that flat lighting hides. The 180° tiltable pod inspects floor-to-ceiling from a single hover position.

- 4K visual camera · 12.3 MP stills · 0.18 mm/px at 30 cm
- IP44 base airframe · IP68 LiDAR payload
- FLIR Lepton 3.5 thermal sensor · 160 × 120 · <50 mK NEdT
- Cockpit and Inspector software included — 2D measurement, 3D point cloud and Pix4D-ready output

MODULAR PAYLOAD OPTIONS

# One drone. Every inspection mission.

The Elios 3 modular payload bay accepts a range of mission-specific modules in addition to the standard 4K and thermal inspection head. Hire the airframe with the payload that fits the inspection — ultrasonic thickness gauging for asset integrity work, survey-grade LiDAR for centimetre-accurate 3D capture, or radiation detection for nuclear surveying.

## UT Payload — Ultrasonic Thickness Gauging

Developed with Cygnus Instruments. Ultrasonic probe mounted on a smart arm with laser-pointer aiming and remotely operated couplant dispenser. Choice of twin-crystal piezo-electric composite transducers, including through-coating echo-echo measurement. ISO 16809 compliant. Each thickness reading is location-tagged onto a 3D digital twin of the asset for direct integration into integrity reporting. Live A-scan and gain/gate adjustment from the Cockpit app.

## Surveying Payload — Centimetre-Accurate 3D

Ouster OS0-128 Rev 7 LiDAR (128-beam) bundled with FARO Connect SLAM processing software. Up to 100 m range, 1.31 million points per second, volumetric measurements within 1% of terrestrial laser scan accuracy. Captures 300 m closed-loop tunnels in a single flight; fits through 50 × 50 cm openings. Replaces the standard LiDAR payload — chosen per hire based on whether mapping is for navigation or for survey deliverables.

## RAD Payload — Radiation Surveying

Developed with Mirion Technologies. RDS-32 WR sensor covering µSv/h to Sv/h with instant and cumulative dose readings, max value capture, and hot-spot localisation on a 3D map of the asset. Sensors are swappable to align with calibration intervals without grounding the drone. For nuclear decommissioning, radiological characterisation, and post-incident surveying where personnel exposure must be eliminated.

- **Flammable Gas Sensor** — methane and combustible gas detection in confined spaces
- **Tether Power Unit** — continuous-power umbilical for unlimited flight duration in fixed-position survey
- **High-Capacity Battery** — extended flight time over the standard 99.2 Wh pack
- **Range Extender** — extends the 500 m baseline transmission range for deeper assets

Payload availability is confirmed per hire. Auxiliary payloads (UT, RAD, Surveying, Gas) require evidence of operator competency in the relevant discipline — for UT this is PCN or SNT-TC-1A Level 2 in ultrasonic thickness gauging; for RAD this is appropriate radiological protection training; for Surveying this is GIS or CAD competency for FARO Connect post-processing. Contact D2 Rentals to confirm payload availability and competency requirements before booking.

SPECIFICATIONS & HIRE

# Survey-grade indoor mapping, field-ready hire.

| KEY SPECIFICATIONS | |
|---|---|
| Dimensions | 48 cm wide × 38 cm high |
| Mass | 1,900 g base · 2,350 g with LiDAR |
| Flight time | >12 min 30 s base · >9 min with LiDAR |
| Visual camera | 4K · 12.3 MP · 0.18 mm/px at 30 cm |
| Thermal camera | FLIR Lepton 3.5 · 160 × 120 · 9 fps |
| Standard LiDAR | Ouster OS0-32 (32-beam) |
| Lighting | 16,000 lm peak · dustproof & oblique |
| Stabilisation | SLAM-based, GPS-free |
| Ingress protection | IP44 base · IP68 LiDAR payload |
| Battery | 99.2 Wh LiPo 6S HV |
| Operating temp. | 0 °C to 50 °C |
| Max transmission | 500 m direct line of sight |

*Specifications quoted from Flyability manufacturer data. Operational performance is environment-dependent.*

**IMPORTANT — NOT ATEX-RATED**

The Elios 3 is suitable for visual, thermal, LiDAR, UT, RAD and gas-detection inspection inside non-classified confined spaces. Deployment in ATEX-classified zones requires separate hot-work permitting and site-specific risk assessment.

## WHAT DO I NEED TO BOOK A RENTAL?

Provide us with some key documents — then enjoy your hire.

01

### Insurance

Insure your rental under a Hired-in (non-owned) equipment cover policy — to the full cost value of the equipment and for the duration of your hire period.

02

### Proof of ID

Submit a copy of your passport or driving licence, plus a utility, bank, or council tax statement that matches your name and delivery address.

03

### Flyer ID & Competency

You need a valid Flyer ID and Operator ID for the operating organisation. RPC-L1 Part A or equivalent CAA-recognised competency is the minimum standard for commercial Open Category use. Auxiliary payloads require additional discipline-specific competency.

READY WHEN YOU ARE

## Available now from D2 Rentals — function-checked, complete, and field-ready.

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