Overview

Avia 2, Livox's new ultra-long range LiDAR. Powered by a 1535nm laser [1], it reaches a maximum cutoff range of 1000 m* and supports switching between large and small FOVs. With a micro laser spot, as well as the built-in rain and fog noise removal algorithm, Avia 2 can stably capture high-resolution 3D point clouds in complex conditions, revealing rich details.

Features

Ultra-Long Kilometer-Range Detection

- Normal mode: 400m@5% [2]
- Focus mode: ⩾ 800m@10%*
- Maximum cutoff range: 1000 m*

Small Beam Divergence for Extended Reach

- Beam divergence: 0.25mrad × 0.25mrad*
- Spot diameter: 2.5 cm at 100m away*
- Detects tiny targets like power lines and branches
- Penetrates dust and raindrop gaps to minimize noise

Rain and Fog Noise Removal Algorithm

- One-tap activation
- Reduces rain/fog noise for more usable point clouds
- Cuts post-processing load for all-weather monitoring

Dual FOVs Adapted for Diverse Scenarios

- Flexible switching between two FOVs
- For broader coverage, or for longer detection range
- Fits a range of scenarios

Durable Design and Low Maintenance Costs

- Up to 62,500 hours of estimated MTTF*
- Operates from -20°C to 65°C*
- Reliable design for demanding environments
- Long-term use and low O&M costs

Non-Repetitive Scan for Dense Coverage

- Fewer unscanned areas and denser coverage
- Fine scene modeling with high coverage and accuracy

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AVIA 2

Further Reach, Finer Details

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Diverse Application Scenarios



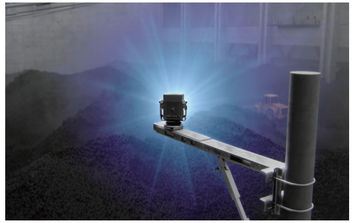
Power Line Security

In powerline inspection scenarios, a single Avia 2 unit can cover a span of up to one kilometer, greatly reducing deployment costs. Its micro spot helps accurately detect thin objects like wires, branches, crane arms, and cables. Combined with non-repetitive scanning, it provides rich point cloud details to accurately restore site conditions and reduce false alarms.



Wayside Condition Maintenance

Allows long-distance wayside monitoring and helps accurately detect small obstacles like rocks and branches even in complex weather. The 80° × 80° large FOV in Normal mode covers slopes on both sides of tunnel entrances and overhead catenary systems. Combined with non-repetitive scanning, it offers wide spatial coverage.



Bulk Material Volume Measurement

In high-dust and low-light environments like coal yards and granaries, the LiDAR effectively penetrates dust to capture high SNR signals, steadily outputting quality point clouds in harsh conditions. A single Avia 2 can cover ultra-large material piles, which facilitates automated inventory management with a cost-effective solution.



Smart Waterways

With its long range, one Avia 2 unit can cover massive waterways. Combining non-repetitive scanning with centimeter-level ranging accuracy, it captures highly consistent point clouds throughout a ship's transit. The rain and fog noise removal algorithm ensures stable output in complex weather, supporting safe all-weather operation of the waterways.

* All data was measured in a controlled laboratory environment. Actual experience may vary. For more details, refer to the product page on the official Livox website.
1. The 1535nm laser belongs to the broader 1550nm (1.5μm) eye-safe spectrum. It delivers equivalent physical properties, Class 1 eye safety, and long-range sensing capabilities to those of a 1550nm laser.
2. 400m@5% is equivalent to approx. 600m@10%.

Spec

Model	Avia 2
Laser Wavelength	1535 nm
Laser Safety	Class 1 (IEC60825-1:2014) (Eye Safety)
Detection Range (@ 100 klx)	Normal mode: 400m@5% [1] Focus mode: ⩾ 800m@10%
Max Detection Range	Normal mode: 400 m Focus mode: 1000 m
FOV	Normal mode: 80° × 80° Focus mode: 15° × 15°
Range Precision (1σ)	5–400 m: ⩽ 4cm@1σ 400–700 m: ⩽ 6cm@1σ
Angular Precision (1σ)	⩽ 0.02°@1σ
Point Rate	Normal mode: 350,000 points/s Focus mode: 100,000 points/s
Data Port	100 Mbps Ethernet port

Data Synchronization	GPS (PPS + GPRMC), PTP (IEEE 1588), NTP
False Alarm Rate (@ 100 klx)	⩽ 0.01%
Operating Temperature	-4° to 149° F (-20° to 65° C)
IP Rating	IP66
Power	Regular temperature: Starting power: 55 W Steady-state power: 50 W Low temperature (fan not running): Starting power: 55 W Steady-state power: 45 W
Power Supply Voltage Range	9 to 27 V DC
Dimensions	With fan: 146 × 113 × 139 mm (± 0.5 mm) Without fan: 146 × 113 × 103 mm (± 0.5 mm)
Weight	With fan: ⩽ 1.8 kg Without fan: ⩽ 1.5 kg

* All data was measured in a controlled laboratory environment. Actual experience may vary. For more details, refer to the product page on the official Livox website.
** Some accessories are sold separately. For usage conditions and precautions regarding certain features, refer to the product page on the official Livox website.
1. 400m@5% is equivalent to approx. 600m@10%.

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