

Airborne Lidar Summary Specification Sheet

Applications

- Mountain & glacier surveying
- Floodplain mapping
- Forestry management
- Asset management



High Density at
4000 m!

High-performance, ultra-compact, airborne lidar sensor for high-altitude, **wide-area survey** applications

The Orion H300 lidar survey system is the most versatile system on the market today. Whether gyro-stabilized or fixed-mounted, the Orion H300 has an incredibly wide operating envelope ideal for those surveyors that desire a universal sensor with the flexibility to deliver on low-altitude corridors, as well as high-altitude, wide-area collects. Laden with performance features, the H300 offers exceptional collection efficiency and productivity, while also boasting industry-leading measurement precision to provide the highest possible quality data sets. The Orion H300 is the perfect blend of performance and size for those looking for a lidar survey system suitable for all application spaces.



➔ Forestry Management



➔ Wide-Area Surveys



➔ Floodplain Mapping

The ALTM Orion Advantage

- High-performance laser provides exceptional range performance for maximum application flexibility
- Industry-leading data precision and accuracy ensures the highest quality map products possible
- Tightly-coupled inertial and Virtual Reference System processing technology enables steep turns and extended baselines for cost effectiveness
- Optech FMS Flight Management Suite provides integrated planning with simultaneous control and monitoring capability for up to 8 sensors
- Gyro-stabilized and multi-sensor mounts maximize collection efficiency and enable custom sensor suites tailored to your application requirements
- Unique real-time LAS file generator for in-air point cloud display enables precise coverage verification and immediate rapid response deliverables
- Ultra-compact, full-system design enables small-footprint installations with limited space
- Powerful Optech LMS lidar processing software automates lidar rectification and is tuned to maximize project-wide accuracies
- Fully compatible with Optech's line of scalable RGB, IR, multispectral and thermal cameras, configurable to your application requirements

Parameter	Specification
Operational envelope (1,2,3,4)	150-4000 m AGL, nominal
Effective laser repetition rate	Programmable, 35-300 kHz
Laser wavelength	1064 nm
Elevation accuracy (2,3)	<3-15 cm; 1 σ
Horizontal accuracy (2,3)	1/7500 x altitude; 1 σ
Position and orientation system	POS AV™ AP50 (OEM)
Sensor range precision (5)	<8 mm, 1 σ
Scan width (FOV)	Programmable, 0-50 degrees
Scan frequency	Programmable, 0-90 Hz
Sensor scan product	1000 maximum
Beam divergence	0.25 mrad (1/e)
Roll compensation	Programmable, $\pm 30^\circ$ (FOV dependent)
Vertical target separation distance	<0.7 m
Multipulse	Yes
Range capture	Up to 4 range measurements, including 1st, 2nd, 3rd, and last returns
Intensity capture	Up to 4 intensity returns for each pulse, including last (12 bit)
Data storage	Internal solid state drive SSD (SATA II); Removable SSD (optional)
Image capture	Compatible with Optech CS-Series digital metric cameras
Full waveform capture	12-bit Optech IWD-2 Intelligent Waveform Recorder (optional)
Gyro-stabilization	SOMAG GSM 3000 integration kit (optional)
Power requirements	28 V; 300 W; 12 A
Dimensions and weight	Sensor: 340 x 340 x 250 mm, 25 kg; PDU: 415 x 328 x 100 mm, 6.5 kg
Operating temperature	0 to +35°C
Relative humidity	0-95% non-condensing

1. Target reflectivity $\geq 20\%$.

2. Dependent on selected operational parameters using nominal FOV of up to 50° and Optech LMS Professional software suite in standard atmospheric conditions (i.e., 23 km visibility).

3. Angle of incidence $\leq 25^\circ$.

4. Target size \geq laser footprint.

5. Under Optech test conditions, 1 sigma.



US FDA 21 CFR 1040.10 and 1040.11; IEC/EN 60825-1