

## Airborne Lidar Summary Specification Sheet

### Applications

- Powerline and pipeline surveying
- Transportation corridors
- Asset management



Now **CLASS 1**

High-performance, ultra-compact, airborne lidar sensor for low-altitude **corridor survey** applications

The Orion C 300-1 lidar survey system is purpose-built for 3D modeling of complex tower structures, transmission lines and densely vegetated areas. Popular for its exceptional small target detection, the Orion C300-1 provides high measurement precision and accuracy for the engineering-grade data quality required for tight-tolerance corridor applications.



Transmission Networks



Corridor Surveys\*



Asset Management

## The ALTM Orion Advantage

- Ultra-compact, full-system design ensures small-footprint installations where space is limited
- Class 1 product class rating eliminates any eye-safety concerns associated with low-flying rotorcraft installations
- Industry-leading data precision and accuracy ensures the highest quality map products possible
- Latest in tightly-coupled inertial and Virtual Reference System processing technology, enabling steep turns and extended baselines
- Optech FMS Flight Management Suite with integrated planning and simultaneous control and monitoring capability for up to 8 sensors
- In-air point cloud display for true coverage verification, and unique real-time LAS file generator for rapid response applications requiring immediate data deliverables
- Powerful Optech LMS lidar processing software maximizes project accuracies with automated lidar rectification capability tuned for high-density corridor applications
- Fully compatible with Optech's diverse line of digital mapping cameras for scalable sensor suites tailored to your application requirements

Parameter	Specification
Operational envelope (1,2,3,4)	50-1100 m AGL, nominal
Effective laser repetition rate	Programmable, 100-300 kHz
Laser wavelength	1541 nm
Elevation accuracy (2,3)	<3-7 cm; 1 $\sigma$
Horizontal accuracy (2,3)	1/7500 x altitude, 1 $\sigma$ ; or 1/5500 x altitude, 1 $\sigma$
Position and orientation system	POS AV™ AP50; or POS AV™ AP40
Sensor range precision (5)	<5 mm; 1 $\sigma$
Scan width (FOV)	Programmable, 10-50 degrees
Scan frequency	Programmable, 0-90 Hz
Sensor scan product	1000 maximum
Beam divergence	0.25 mrad (1/e)
Roll compensation	Programmable, $\pm 25^\circ$ (FOV dependent)
Vertical target separation distance	<0.7 m (discrete)
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  $50^\circ$  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  $\sigma$

Class 1 laser product as per  
US FDA 21 CFR 1040.10 and  
1040.11; IEC/EN 60825-1