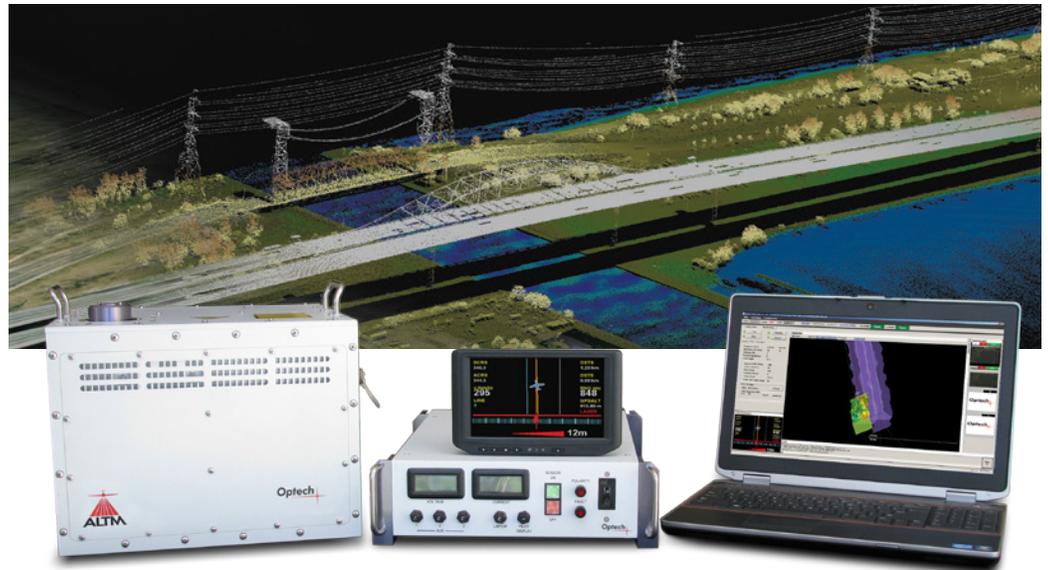


## Airborne Lidar Summary Specification Sheet

### Applications

- Engineering-grade surveys
- Urban mapping
- Infrastructure modeling
- Asset management



High Precision at  
**2500 m!**

### High-performance, ultra-compact, airborne lidar sensor for low to mid-altitude **engineering survey** applications

The Orion M300 lidar survey system was designed for those surveyors that focus on high-precision engineering, infrastructure, and/or asset management mapping initiatives. Whether it is a low-altitude powerline collect or a higher-altitude department of transportation survey, the Orion M300 has the performance and productivity to deliver without compromise. Laden with standard performance features, the M300 offers exceptional collection efficiency and productivity, while also boasting industry-leading measurement precision to provide the highest possible quality data sets.

Capable of supporting up to six passive imaging sensors, the Orion M300 offers surveyors extensive off-the-shelf configuration options, including gyro-stabilized and fixed multi-sensor mounts, all managed through a single state-of-the-art Flight Management Suite.

The Orion M300 is the perfect blend of performance, size and flexibility for those looking for a scalable lidar survey system suitable for all engineering and tight-tolerance project efforts.



Urban Mapping



Engineering-grade Surveys



Infrastructure Modeling

## 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)	100 - 2500 m AGL, nominal
Effective laser repetition rate	Programmable, 50-300 kHz
Laser wavelength	1064 nm
Elevation accuracy (2,3)	<3-10 cm; 1 $\sigma$
Horizontal accuracy (2,3)	1/7500 x altitude; 1 $\sigma$
Position and orientation system	POS AV™ AP50 (OEM)
Sensor range precision (5)	<8 mm, 1 $\sigma$
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  $50^\circ$  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.

