

New

Introducing
the new Optech

ALTM 3100EA

GET THE ACCURACY YOU'VE ALWAYS WANTED

The new ALTM 3100EA (Enhanced Accuracy) is the latest in a series of Optech Airborne Laser Terrain Mappers that now allows you to zero in on the fine details you may have been missing. Under optimal conditions get results as accurate as ± 3 cm, 2-sigma, (500 m, 33 kHz, scan angle at $\pm 10^\circ$).

With the enhanced ability to reduce elevation noise, the 3100EA lets you detect fine target details that are required for your large scale mapping needs.

When you really need to get those critical details, the choice is clear –

**choose the Optech
ALTM 3100EA.**



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Optech

ALTM 3100EA Specifications

Airborne Module

Operating altitude 80-3,500 m nominal
 Horizontal accuracy 1/5,500 x altitude; 1-sigma

Elevation accuracy ± 1 -sigma

Laser Rep Rate (kHz)	500 m altitude	1000 m altitude	2000 m altitude	3000 m altitude
33	<5 cm	<10 cm	<15 cm	<20 cm
50	<5 cm	<10 cm	<15 cm	N/A
70	<10 cm	<10 cm	<15 cm	N/A
100	<10 cm	<10 cm	N/A	N/A

Note: Quoted accuracies do not include GPS errors.

Range capture Up to 4 range measurements for each pulse including last

Intensity capture 12 bit dynamic range for each measurement

Scan frequency Variable; maximum 70 Hz

Scan angle Variable from 0 to $\pm 25^\circ$, in increments of $\pm 1^\circ$

Scanner product Scan angle x scan frequency $\leq 1,000$

Roll compensation 5 Hz update rate
 (Scan angle + Roll comp. angle = 25° , e.g., $\pm 20^\circ$ scan allows $\pm 5^\circ$ compensation)

Swath width Variable from 0 to 0.93 x altitude (m)

Position orientation system Applanix - POS/AV including internal 12 channel dual frequency 2 Hz GPS receiver

Spot distribution Sawtooth, uniform across 96% of scan

Laser repetition rate 33 kHz (max. altitude (AGL) 3.5 km)
 50 kHz (max. altitude (AGL) 2.5 km)
 70 kHz (max. altitude (AGL) 1.7 km)
 100 kHz (max. altitude (AGL) 1.1 km)

Data storage hard drives Ruggedized removable hard drive
 Minimum 7 hr. continuous log time @ 100 kHz

Beam divergence Dual divergence 0.3 mrad (1/e) or 0.8 mrad (1/e)

Laser classification Class IV (FDA 21 CFR)

Power requirements 28 VDC, 35 A (maximum)

Operating temperature Control rack: $+10^\circ\text{C}$ to $+35^\circ\text{C}$

(air temperature) Sensor head: -10°C to $+35^\circ\text{C}$
 (assuming the use of sensor insulating jacket)

Storage temperature -10°C to $+50^\circ\text{C}$

Humidity 0 - 95% non-condensing

Control Rack

Vibration-isolated case:
 Dimensions/weight (in-flight) 65 cm x 59 cm x 49 cm/53.2 kg covers removed, with removable hard drive installed

Cables/laptop 7.6 kg/3 kg

Sensor Head

Fits standard camera mounts or mounts directly to floor

Overall dimensions/weight (in-flight) 26 cm x 19 cm x 57 cm/23.4 kg (incl. sensor insulating jacket)

Minimum opening 19.2 cm x 25.5 cm (flight direction)

Processing Software

REALM Survey Suite Differential kinematic GPS solution
 Trajectory optimization from multiple base stations
 XYZ point calculations module
 Vegetation classification/extraction feature
 Windows NT/2000/XP compatible

GPS Ground Support

Multiple base stations Any dual frequency receiver with Rinex output

Note: to meet its stated accuracy, the ALTM must receive GPS data of sufficient quality. GPS data quality shall be viable only when all of the following conditions are met:

- At least four satellites are in lock (tracked by the receiver) throughout the survey
 - Elevation of the satellites is good (i.e., PDOP < 4)
 - Aircraft stays within 30 km of the GPS base station
- If one or more of these conditions is not met, or if any source of electromagnetic interference causes the GPS receivers to repeatedly lose lock, the specified accuracy of the ALTM will be compromised.

Specifications subject to change without notice.



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