



EL-MAP Airborne LiDAR
Specifications

Performance	EL-MAP30	EL-MAP15	Conditions/Remarks
Measurement range	4300 m	2500 m	single target, flat surface, 20% diffuse reflectance, 90° incidence angle, 30km visibility, 100kHz PRF, 100% output power, ambient temperature ≤ 30°C, 95% detection probability
Ranging precision	0.007 m (1σ)		flat surface, 90% reflectance, 90° incidence angle, 150 m
Range accuracy	≤ 0.03 m (RMS)		flat surface, 20% reflectance, 90° incidence angle, 1200 m
Laser pulse repetition frequency	100-1125 kHz		adjustable (program-controlled, increasing pulse repetition frequency reduces maximum range)
Effective measurement rate	90 - 1000 k meas/s		80° scan angle
Beam divergence	0.3 mrad		
Laser wavelength	1030 nm		
Laser eye-safety class	Class 3B		while scanning
NOHD	300 m	170 m	100 % laser power, 100kHz PRF, 30Hz scan speed, ≥42kts flying speed
ENOHD	2090 m	1200 m	
Ranging method	pulse time-of-flight, waveform digitization		range, intensity, and pulse spreading (pulse width) are derived from stored waveform data in post-processing
Waveform sampling interval	1.25 nsec		
Radiometric resolution	14 bits per sample		
Number of returns per pulse	virtually unlimited		
Return separation	0.7 m		return pulse width identifies multiple targets with less separation
Data storage capacity	1TB 4TB		SSD, internal SSD, removable in flight
Beam deflection	rotating pyramidal polygon mirror, 4 facets		Linear scan pattern, equidistant point spacing in the direction of flight
Scanning range (FOV)	±5° - ±40°		adjustable (program-controlled, reducing the scanning range clips measurements reduces effective measurement rate) reduced sensitivity/max. range for scan angles ≥ ±35°
Scan rate	20 - 250 scans/s		adjustable (program-controlled)
Angular accuracy	0.0025°		
Max. operational AGL	3600 m	2100 m	flat surface, 20% reflectance, 30km visibility, 100kHz PRF, 100% output power, 60° scan angle
Swath width	5150 m	3000 m	flat surface, 85% of max. AGL, ±40° scan angle

Specifications, subject to change without notice, Rev. 2023/02



Mechanical/Electrical	EL-MAP15/30	
Dimensions	405 x 216 x 243mm (LxWxH)	
Weight	20 kg	
Instrument mounting points	6 threads M6 on bottom, 5 threads M6 on top	
External IMU/Camera mounting points	3 threads M6 each on top, front, and sides	
Power requirements	18 - 32 VDC, 100/110 W (avg.), 125W (max. During startup)	
Operating conditions	0°C - 40°C	
External connectors (rear panel)	RJ45 HDMI USB3.0 USB2.0* (LEMO) 2xSubD-9* (LEMO) LEMO LEMO SATA Amphenol	1Gbit Ethernet for control / data download Monitor output Data download Touchscreen control or keyboard Serial GPS Timetag (RS232) and 1PPS (opto-coupler, min 6.3mA) inputs Remote control box Record control input (opto-coupler, min. 0.5 mA) Removable SSD (in SSD slot) Power supply input
Included items	Remote control box with safety key switch and emergency off button Removable SSD (4 TB capacity) + SATA docking station Set of cables and spare fuses Detachable carrying handles Transportation case <i>Geocode-L</i> point cloud geocoding software	
Options	Integrated tactical grade MEMS IMU (for backup) 10" high-brightness touchscreen monitor + keyboard Sensor navigation system (GNSS/IMU) Vibration-isolating mount	

*) via adapter cable

