

## Lidaretto CL-360XR and CL-360HD

## 360-Degree Long-Range Survey Grade Lidar Scanner

Lidaretto CL-360 delivers optimal survey-grade lidar sensor performance for use in the highest accuracy airborne, uav or mobile applications. Lidaretto CL-360 features long-range detection of low-reflectance targets, survey-grade accuracy and precision, industry leading scanner speed for appealing point distribution, tight laser beam divergence for vegetation penetration and high definition point registration in a reliable and compact form-factor.

Lidaretto CL-360XR is designed for airborne applications where long-range detection and vegetation penetration performance is demanded. Lidaretto CL-360HD is designed for UAV and mobile applications where point density, precision and value are key requirements. Both the CL-360XR and CL-360HD share common hardware and software interfaces.









## Lidaretto CL-360XR and CL-360HD Technical Specifications

Parameters	CL-360XR			CL-360HD	
LASER PULSE REPETITION FREQUENCY (PRF)	50 kHz	200 kHz	500 kHz	200 kHz	500 kHz
Max Range Capacity <sup>1</sup>					
@ 10% target reflectivity	610 m	310 m	195 m	205 m	130 m
@ 20% target reflectivity	750 m	435 m	250 m	290 m	185 m
@ 50% target reflectivity	750 m	740 m	250 m	490 m	250 m
Typical Operating Altitude <sup>2</sup>					
@ 10% target reflectivity	390 m	195 m	125 m	130 m	85 m
@ 20% target reflectivity	480 m	275 m	160 m	185 m	120 m
@ 50% target reflectivity	480 m	470 m	160 m	315 m	160 m
Range Accuracy, 1sigma <sup>1</sup>	5 mm	5 mm	5 mm	5 mm	5 mm
Range Precision, 1sigma <sup>1</sup>	4 mm	4 mm	4 mm	4 mm	4 mm
LASER					
Wavelength	1550 nm				
Laser Safety Classification	1				
Beam Divergence (1/e <sup>2</sup> )	0.3 mrad				
Beam Footprint at 1/e <sup>2</sup>	8.1 mm @ 5 m, 8.5 mm @ 10 m, 11 mm @ 25 m, 17 mm @ 50 m, 31 mm @ 100 m				
RETURNS					
Range Measurement Principle	Time of Flight				
Sample Collection Rate	Up to 2 Mhz				
Intensity Measurement	12bits raw measurement, >16 bits normalized for				
Minimum Range	range 1.5 m				
Number of Returns	Up to 4 (first 2 and last 2)				
Range Resolution	2 mm				
Minimum Target Separation	0.7 m (discrete)				
SCANNER					
Field of View	360 deg				
Scan Speed	50-250 lines/second				
Angular Step Width	0.036 – 1.8 deg				
Angular Measurement Resolution	0.001 deg				
POSITIONING SYSTEM					
GNSS board	Novatel, OEM7720, 555 channels, L1/L2, GPS+GLONASS+GALIELO+BEIDOU				
IMU	OEM-IMU-EG370N (default)				
	PPK Accuracy Heading: 0.011deg				
	PPK Accuracy Roll: 0.007deg				
	PPK Accuracy Pitch: 0.00/deg				
ENVIRONMEN IAL (valid for Lidar module CL360 only)					
Operating Temperature <sup>4</sup>	-10° C to +40° C				
Storage Temperature	-20°C to +50° C				
Ingress Protection	IPx4				
Vibration	DO-160H Section 8, Category S, Curve M				
Shock	DO-160H Section 7, Category A, Standard				
Weight	4.2 kg				
Dimensions	360 mm L x 160 mm W x 116 mm H				

1. Teledyne Optech Test Conditions, contact for details.

2. Nadir +/- 45 deg field of view, +/- 5 deg roll.

3. Target size >= laser footprint, perpendicular angle of incidence, 23 km clear visibility.

4. Maximum +50° C case temperature. Airflow necessary over heatsink fins to ensure case temperature not exceeded.



**Class 1 Laser Product**