

CL-360 Marine

Survey Grade Lidar for Marine Applications



KEY BENEFITS

The CL-360 Marine is the only survey grade lidar designed for marine applications. What does survey grade mean - here are a few of the specifications that matter.

- 500 kHz pulse rate
- 250 lines/s
- 2 mm range resolution
- 0.001 degree angular resolution
- 3.5kg and IP67 rated
- 490m range

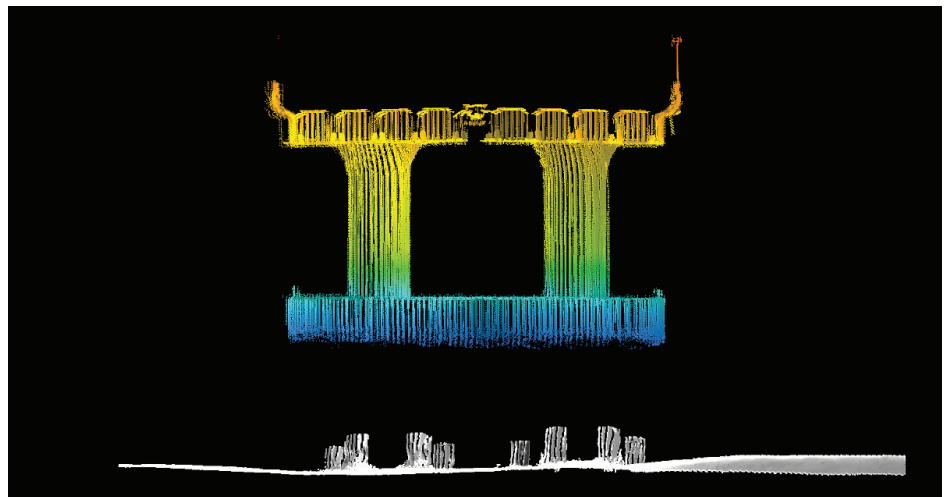
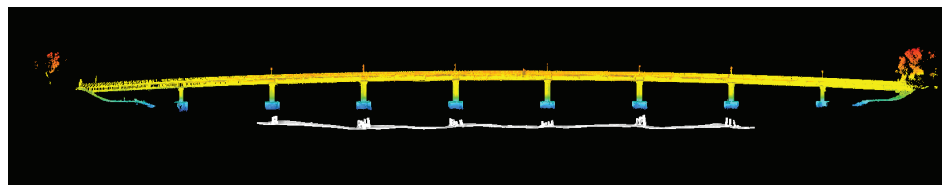
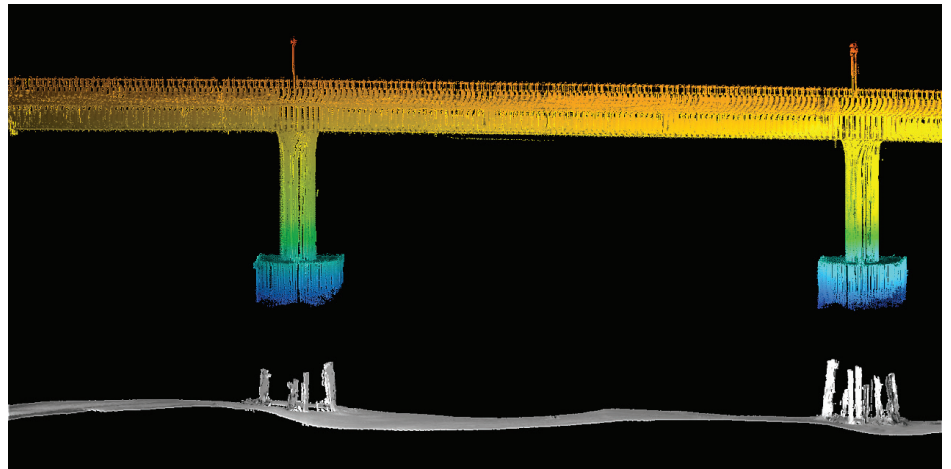
In practical terms for your survey that means

- Better definition of structural components
- Finer detail in the point cloud to better support analysis
- Detecting smaller objects such as power lines
- Can fit on most USV platforms capable of being equipped with a multibeam sonar.
- Better performance on wet surfaces

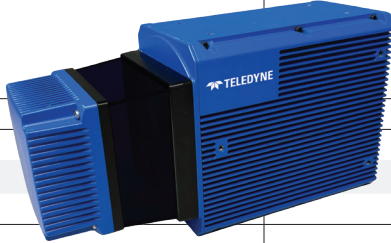
Capture the Full Picture

Expand survey capabilities to capture data both above and below water. Install the CL-360 Marine on a survey vessel and leverage standard sonar survey workflow tools, such as CARIS HIPS, for streamlined data collection and processing.

The range accuracy and resolution capabilities of the CL-360 Marine enable users to unlock more detail at greater distances compared to any other system designed for application on marine survey platforms.



PARAMETERS	CL-360 M	
LASER PULSE REPETITION FREQUENCY (PRF)	200 kHz	500 kHz
Maximum Range Capacity ¹		
@ 10% Target Reflectivity	205 m	130 m
@ 20% Target Reflectivity	290 m	185 m
@ 50% Target Reflectivity	490 m	250 m
Range Accuracy, 1 sigma ¹	5 mm	5 mm
Range Precision, 1 sigma ¹	4 mm	4 mm
LASER		
Wavelength	1550 nm	
Laser Safety Classification	1	
Beam Divergence (1/e ²)	0.3 mrad	
Beam Footprint at 1/e ²	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	12 bits raw measurement, >16 bits normalized for range	
Minimum 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	
GENERAL		
Input Voltage	11 – 36 VV	
Power (Typical)		
@ 100 Hz Scan Speed	35 W	
@ 200 Hz Scan Speed	38 W	
@ 250 Hz Scan Speed	40 W	
ENVIRONMENTAL		
Operating Temperature ⁴	-10°C to +40°C	
Storage Temperature	-20°C to +50°C	
Ingress Protection	IP67	
Vibration	DO-160H Section 8, Category S, Curve M	
Shock	DO-160H Section 7, Category A, Standard Shock	
Weight	3.5 kg	
Dimensions	310 mm L x 160 mm W x 116 mm H	
INTERFACES		
Connector 1	Power, PPS, NMEA (SGPZDA)	
Connector 2	1 GigE Ethernet for realtime data and control	
data Storage	240 GB	
API	Windows (Intel x86–64), Linux (Intel x86–64), Linux (Arm Cortex-A8)	



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

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