



# L3CAM

**Outdoor LIDAR camera for real-time 3D imaging**

**Product datasheet**



## L3CAM – High resolution real-time 3D imaging LIDAR for outdoor applications

### ■ At a glance

- Patented design with no moving elements.
- Maintenance free.
- High point measuring rate up to 280K points/s
- Real time frame rate to enable moving objects detection
- High resolution 3D images
- Sun-light tolerance thanks to the patented background suppression system
- Camera shaped for easy integration
- Tolerance to harsh environment through a proprietary multi-hit TDC that digitalizes up to 10 hits in a single shot approach.

### ■ Product description

The L3CAM is an innovative LIDAR camera based on a patented scanning system that enables the measurement in outdoor under strong background light conditions. It integrates a novel approach for background suppression that boosts the system performance towards long distance and high resolution imaging. Highly demanding applications in markets like maritime, security, defense, oil and gas and off-road robotic vehicles are made possible.

The system provides an unprecedented balance of performance combining high resolution 3D imaging with real-time frame rate. This is of special interest for applications that require fine detail measurement in presence of moving objects such as obstacle detection and tracking, vehicle navigation or surveillance.

Finally, the performance figure can be tailored according to the end-user application requirements and budget. Feel free to contact us to discuss your needs!





## L3CAM – High resolution real-time 3D imaging lidar for outdoor applications

### ■ Markets

- Maritime
- Robotics
- Mining
- Security and Defense
- Off-road vehicles navigation

### ■ Applications

- Vehicle navigation
- Collision avoidance
- Advanced surveillance
- Obstacle detection and tracking
- UAV detection
- Landing aid
- Situational awareness
- ... and any other in line with your demands!

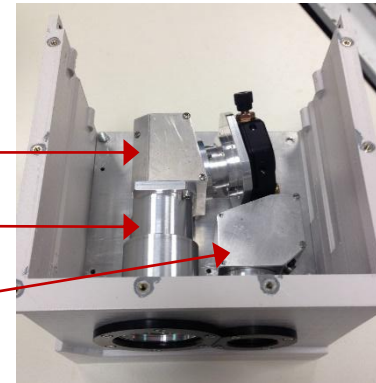
### ■ Modularity

- The L3CAM have been designed in a modular way, so that depending on the combination of elements, different performance figures can be achieved. This approach enables a large number of configurations that can be adapted to the end-user application demands. Parameters like image resolution, frame rate, range, field-of-view or power consumption can be easily adjusted in order to obtain the best-value for money in a highly optimized design.

Patented background suppression system

Receiving optics

Illumination optics



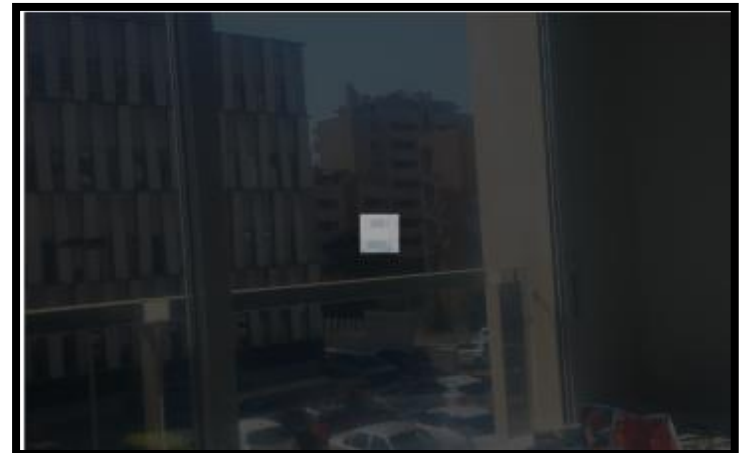


## L3CAM – Patented scanning technology

- The performance of a LIDAR system is heavily influenced by the background light coming from the environment. When an outdoor and long range application is posed, the implemented scanning solution is a key element in order to achieve a good performance figure. Traditional systems are based on rotating or spinning mirrors to direct a laser beam towards the object of interest. The narrow FOV of the moving mirror reduces the background energy, however, the system embody a moving element which is sensitive to suffer mechanical wear and failures, and therefore low reliability in some applications.
- The L3CAM incorporates a solid state scanning system that do not contain moving elements but keep the capability to eliminate most of the background light. This approach enables outdoor and long range measurement capability while increasing significantly the robustness and reliability. Properties which are essential for high-end applications in markets like maritime, security, defense and robotics.



**98%**  
of background  
light is actively  
suppressed





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## Specifications\*

	MID RANGE	LONG RANGE
<b>Electroptical unit</b>		
Laser class – Wavelength	Class 1 – NIR	
Range (10% reflectivity)	80m	300m
Point rate	280 KHz	280 KHz
Image resolution	400x225 px	250x150 px
Field-of-view	80x45°	50x30°
Angular resolution	0,2°	
Frame rate	10 frames/s	
Range accuracy (at maximum range)	±2cm	
Inertial sensors	Optional: an IMU unit can be integrated with coordinate auto correction algorithm for moving applications.	
<b>Mechanical</b>		
Size (WxHxD)	150x150x140 mm	
Weight	1.5Kg	2.5Kg
Enclosure – Temperature range	IP67, -40° to +65°	
<b>Electrical</b>		
Power consumption	30W	80W
Supply voltage	24 VDC	
Interfaces	100 Mbit UDP Ethernet packets	
<b>Software</b>		
Integration SDK	L3CAM C++ SDK for Windows and Linux	
Test application	L3CAM demonstration software for Windows and Linux	

\* The specified parameters are tentative. The performance can be tailored during the design stage according to end-user needs.



## ■ About us

Beamagine is a spin-off company from Technical University of Catalonia, more specifically from the Center for Sensors, Instruments and Systems Development (CD6). The company agglutinates the knowledge accumulated over the last 20 years in LIDAR technology that have been generated at the research level at the University. Our organization was born with the clear objective to put in the market specific technologies that have been conceived, developed and tested in various research programs to the real world applications.

We develop LIDAR, time-of-flight, electro-optical and single photon imaging systems, from our experience in combining optomechanics, electronics and software.

## ■ Contact information

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