



INNOVIZONE

Automotive-Grade Solid-State LiDAR

Samples available in 2020

Production units available in 2021



InnovizOne is a high-performance, automotive-grade, solid-state LiDAR sensor with unsurpassed 3D perception performance that is targeted at mass-production of Level 3 - Level 5 autonomous vehicles. The rugged, reliable, functionally safe, and cost-effective LiDAR is light-weight, low-power, and is resilient to sunlight and weather conditions. The sensor delivers a dense, high resolution, highly accurate 3D point cloud with unrivaled angular resolution at a high frame rate for distances up to 250 meters.

Innoviz's complementary perception software turns the LiDAR's raw point cloud data into high quality perception outputs for outstanding object detection, classification, and tracking; obstacle detection and tracking; localization; and LiDAR calibration.

KEY PERFORMANCE METRICS

0.1°x0.1°

Angular Resolution (HxV)

10cm to 250m

Detection Range

115°x25°

Field of View (HxV)

5 - 25 FPS

Configurable Frame Rate

-40°C to 85°C

Operating Temperature

IP6K9K

Ingress Protection

45x110x95mm

Dimensions (HxWxD)

ASIL B(D)

ISO 26262 Compliant

UNIQUE FEATURES



Configurable Regions of Interest



Multiple Reflections



No Gaps Between Pixels



Equally Distributed vFOV



Resilient to Sunlight & Weather Conditions

MARKET APPLICATIONS



Automotive



Mapping



UAVs



Security



Industrial

OPTICAL PERFORMANCE

		@50% reflectivity 0.1°x0.1° resolution	@10% reflectivity 0.2°x0.2° resolution within ROI ¹
Range	@ 5 FPS	200m	250m
	@ 25 FPS	110m	170m
Range accuracy		<3cm bias for normal target, <15cm bias for a highly reflective target	
Range resolution		1cm	
Field of view		115°x25° (HxV)	
Angular resolution		0.1°x0.1° native resolution (HxV)	
Frame rate		5 - 25 FPS (configurable)	
Returns		Up to 3 (configurable)	

¹Region of interest: dynamically adjustable defined zone within the field of view enabling longer range

LASER

Laser product class	Class 1, Eye-safe (IEC-60825-1)
Wavelength	905nm

OUTPUT

Points returned per second at 25 FPS	Single-return	Dual-return	Triple-return
	7.5M	15M	22.5M
Connection	MIPI CSI-2, aggregated over a two-wire GMSL high-speed LVDS interface		
Outputs (UDP)	Distance, angle, reflectivity, confidence, ambient IR; window blockage; weather type and intensity		
Time stamp	1usec accuracy per pixel (with GPS input)		

CONTROL INTERFACE

Command and control	SPI slave interface and GPIO signals.
Time synchronization	PPS and \$GPRMC message inputs over SPI interface and GPIO signals
Features	Configurable regions of interest
	Web server for cross-platform control; InnovizPlayer point cloud viewer, recording, and playback tool
	Windows, Ubuntu, Python and ROS drivers; Upgradeable device software

MECHANICAL / ELECTRICAL

Power consumption	15-23W (depending on operating mode)
Operating voltage	6.5-32V (regulated)
Dimensions (HxWxD)	45x110x95mm
Weight	515g
Maintenance	Self-defrosting window heater
Data connector	Rosenberger male H-MTD (two-pin)
Power connector	Rosenberger female MQS (four-pin)
Temperature	Operating: -40°-85°C (-40°-185°F)
	Storage: -40°-105°C (-40°-221°F)
Ingress protection	IP6K9K (ISO 20653)

PERCEPTION CAPABILITIES

Object detection, classification & tracking	Obstacle detection & tracking	Pixel collision classification	Landmark & lane marking detection, classification & tracking	End-of-line & continuous online extrinsic calibrations
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REGULATORY COMPLIANCE:

Safety	ISO 26262 ASIL B(D); EN 60950-1 + US National Differences; IEC 60825-1
EMC	EN 55024; EN 55032; FCC 47 CFR Part 15, Subpart B; EU Directive 2004/104/EC
Shock and vibration	IEC 60068-2
Environmental	RoHS; REACH; ISO 16750; EN 20567-1; ISO 20653

Specifications subject to change without notice