



RS-LiDAR-M1

The 2nd Gen Smart Solid-State LiDAR



RS-LiDAR-M1 (M1) is an automotive-grade solid-state LiDAR that RoboSense has specially designed for mass-production vehicles. It delivers highly reliable 3D environment perception performance to ensure the safety of ADAS and AD systems.

As a second-generation LiDAR, M1 has been designed with 2D MEMS chip scanning architecture, which is achieved with a simplified product structure that requires much less components. It boasts advantages including small size, high reliability, high performance, and dynamically adjustable scanning patterns.

M1 boasts an exclusive intelligent functionality named “GAZE” which dynamically enhances resolution or frame rate based on the environment.

Product Advantages



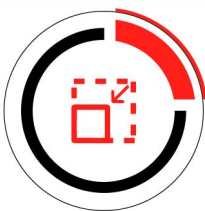
Automotive Grade



Dynamically Adjustable Vertical Resolution



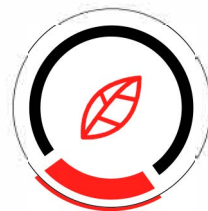
200 m Measurement Range



Compact Size



Dynamically Adjustable Frame Rate



Low Power Consumption

RoboSense / Suteng Innovation Technology Co., Ltd.

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RoboSense LiDAR

www.robosense.ai

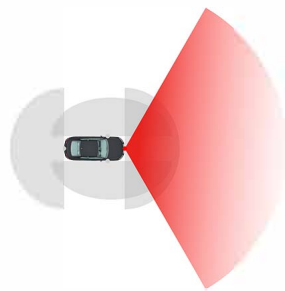
Sensor			
Version	RS-LiDAR-M1	Horizontal FoV	120° (-60.0° ~ +60.0°)
Laser Wavelength	905 nm	Vertical FoV	25° (-12.5° ~ +12.5°)
Laser Safety	Class 1 eye safe	Horizontal Resolution	0.2° (Average)
Range ⁵	200 m (150 m@10% NIST)	Vertical Resolution	0.2° (Average)
Blind Spot	≤0.5 m	Frame Rate	10 Hz ~20 Hz (adjustable)
Range Accuracy (Typical) ²	±5 cm (1sigma)		

Output	
Points Per Second	750,000 pts/s (Single Return Mode) ~ 1,500,000 pts/s (Dual Return mode)
Automotive Ethernet	1000M Base T1
Output	UDP packets over Ethernet
UDP Packet include	Spatial Coordinates, Intensity, Timestamp, etc.

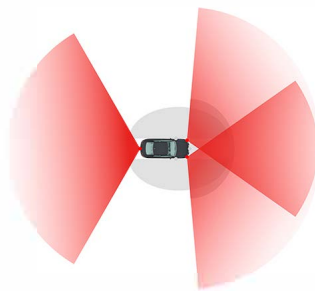
Mechanical / Electrical / Operational			
Operating Voltage	9 V – 32 V	Dimension (Without connector)	108 mm (D)x110 mm (W)x45 mm (H)
Power Consumption ³	15 W	Operating Temperature ⁴	-40 °C ~ +85 °C
Weight (without cabling)	~730 g (without cable)	Storage Temperature	-40 °C ~ +105 °C
Time Synchronization	gPTP	Ingress Protection	IP67、IP6K9K

Deployment Recommendations

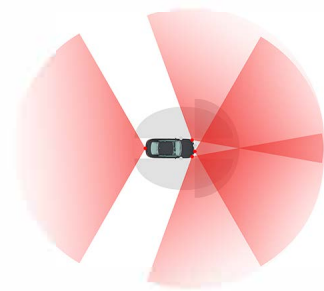
■ RS-LiDAR-M1 ■ Blind Spot LiDAR



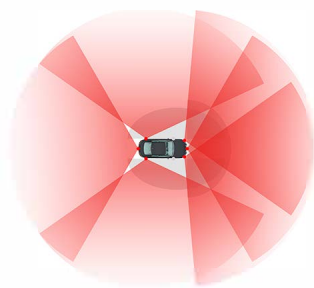
For L2+/L3 Car



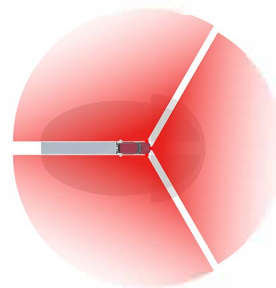
For L3/L4 Car



For L4 Robo-Taxi A



For L4 Robo-Taxi B



For L4 Robo-Truck

1 The following data is only for mass-produced products. Any samples, testing machines and other non-mass-produced versions may not be referred to this specification. If you have any questions, please contact RoboSense sales.

2 The measurement target of accuracy is a 50% NIST diffuse reflectance target, the test performance is depending on circumstance factors, not only temperature, range and target reflectivity but also including other uncontrollable factors.

3 The power consumption is tested under 10Hz frame rate and within 100m. The result is depending on circumstance factors, not only temperature, range and target reflectivity but also including other uncontrollable factors.

4 The operation temperature is depending on circumstance factors, not only sun load and air flow but also including other uncontrollable factors.

5 The range performance is depending on circumstance factors, not only temperature, range and target reflectivity but also including other uncontrollable factors.