



LSLIDAR
PRODUCT GUIDE



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Auto-Grade CH128X Hybrid-Solid State LiDAR



CH128X1



CH128X2

Abstract

CH128X is a new generation of Auto-Grade Multi-Lines Hybrid-Solid State LiDAR with cutting-edge technology in miniaturization, more adaptable to different vehicles. The parameters of this LiDAR, not only meets the perception in middle-long range, but also caters for the limited size of automotive. The height is only 50 or 75 mm(2 version) and embedded solution is more suitable to the aesthetic needs of passenger car.

Parameter

Model	CH128X1-200	CH128X2-200
Channel	128	
Measurement Technique	TOF	
Wavelength	905nm	
Classification	Class 1 (Eye-safe)	
Measurement Range	200m@10%	
Ranging Accuracy	±3cm	
Data Acquisition Rate	Max 850,000 pts/s	
Rotation Rate	10/20Hz	
Field of View	Horizontal	120°
	Vertical	-18°~ 7° (25°)
Angular Resolution	Horizontal	0.18°(10Hz) , 0.36°(20Hz)
	Vertical	Middle0.125°, Sides0.25°
Operating Voltage	9V~36VDC	
Operating Temperature	-40℃ ~85℃	
Communication Interface	Automotive Ethernet: 100Base-T1/1000Base-1	
Power Consumption	12W	
Vibration	5Hz~2000Hz, 3G rms	
IP	IP6K9K	
Dimension (L* W * H)	118 x 90 x75 mm	150 x100 x 50 mm

CH 64W Blind Spot Detection LiDAR



Abstract

CH64W is designed for blind area detection with large FOV. Its ultra wide horizontal field of view is 160° and the vertical angle is 60° and 40°. The measurement accuracy is ±3 cm which help cars, robots and AGV have excellent perception for blind areas.

Specifications

Model		CH64W	
Channel		64	
Measurement Technique		TOF	
Wavelength		905nm	
Laser Classification		Class 1 Eye-safe/ IEC 60825-1:2007 & 2014	
Measurement Range		100m	
Ranging Accuracy		±3cm	
Data Points Generated		MAX 568,000 pts/s	
Rotation Rate		5Hz, 10Hz, 20Hz(optional)	
Field of View (FOV)	Horizontal	160°	
	Vertical	-30°~ 30°	-20°~ 20°
Angular Resolution	Horizontal	5Hz:0.09°/ 10Hz:0.18°/ 20Hz:0.36°	
	Vertical	0.93°	0.63°
Operating Voltage		9V~36VDC	
Operating Temperature		-20°C ~ 65°C(industrial grade) ; -40°C ~ 85°C(auto-grade)	
Communication Interface		1000M Ethernet, PPS	
Shock Test		500m/sec ² , last 11ms	
Vibration		5Hz-2000Hz, 3G rms	
IP		IP67	
Weight		/	/
Dimension (L·W·H)		152*115.4*152.9mm	152*115.4*109.4mm

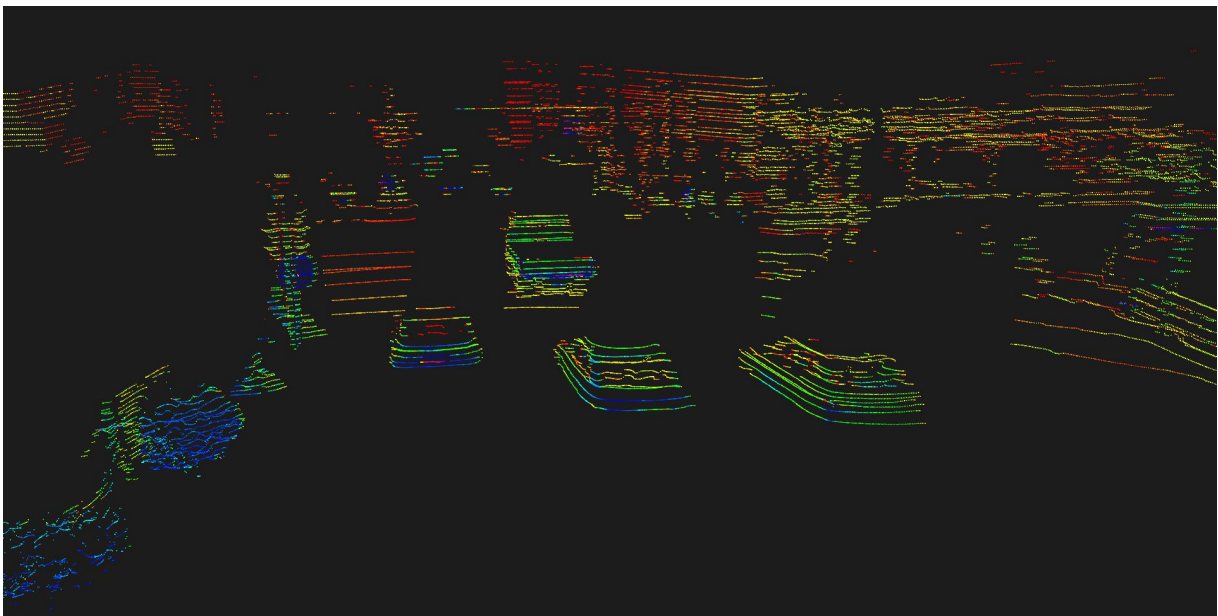
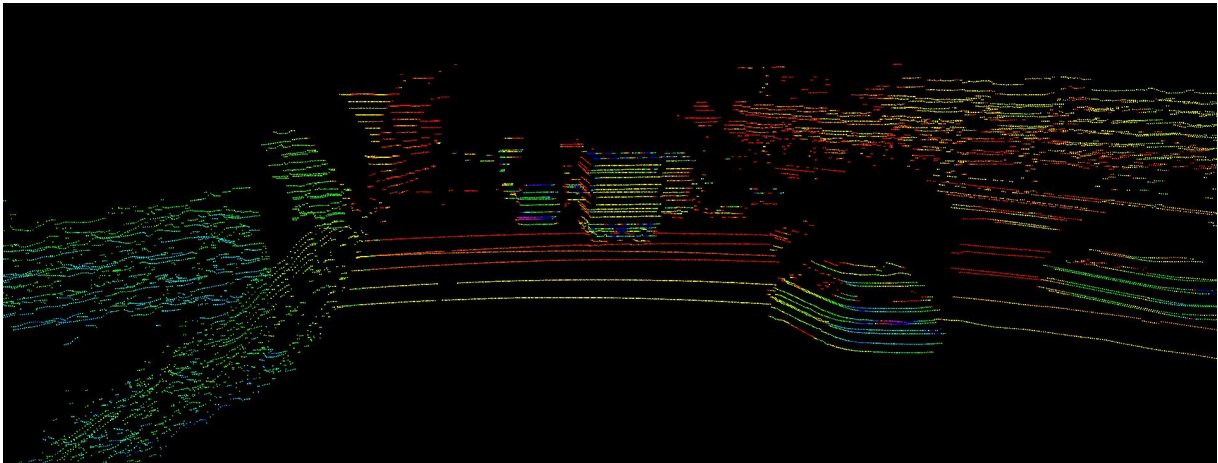
CH Series 32-Channel LiDAR



Abstract

CH Series 32-channel LiDAR is designed for Automotive Grade Standards to meet demands of L3- L5 autonomous cars, which can work with low-speed cars, V2X and long operation scenarios. It's the 1st one that officially passed auto-grade test in China.

Demo



Specifications

Model		CH32
Channel		32
Measurement Technique		Time of Flight (TOF)
Wavelength		905nm
Laser Classification		Class 1 Eye-safe / IEC 60825-1:2007 & 2014
Measurement Range		100m / 150m / 200m
Accuracy		±2cm
Data Points Generated		426,000 pts/s
Rotation Rate		5Hz, 10Hz, 20Hz(optional)
Field of View (FOV)	Horizontal	120°
	Vertical	-6.67°~ 4.58°
Angular Resolution	Horizontal	5Hz: 0.045° / 10Hz: 0.09°/ 20Hz: 0.18°
	Vertical	Vertical angle resolution between 0 ~ 0.81 °, minimum 0.09 ° in the middle and a maximum of 0.47 °
Operating Voltage		9V~36V DC
Operating Temperature		-20°C ~ 65°C (industrial grade) ; -40°C ~ 85°C (auto-grade)
Communication Interface		100M Ethernet, PPS
Power Consumption		10 W
Shock Test		500m/sec ² , last 11ms
Vibration		5Hz-2000Hz, 3G rms
IP		IP67
Weight		1.5Kg
Dimension (L·W·H)		155 * 107.5 * 90mm

CX Series 32-Channel LiDAR



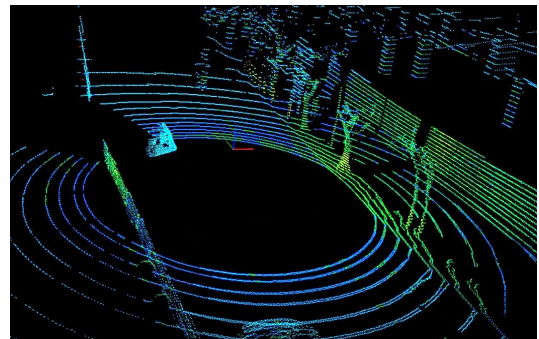
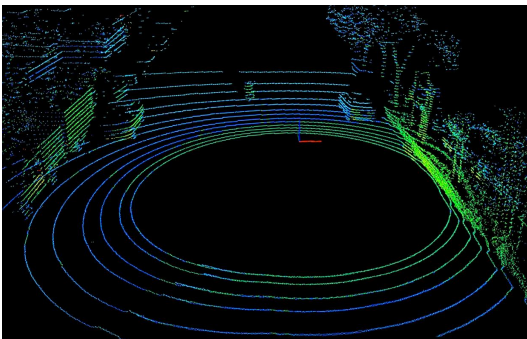
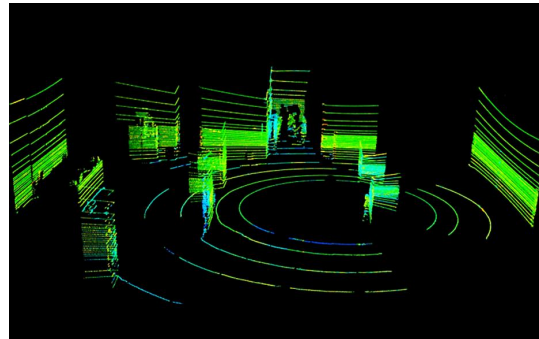
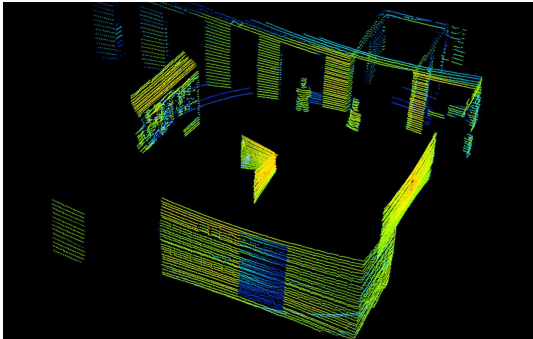
Abstract

CX Series 32-channel LiDAR achieves 360° 3D high-speed scanning, measurement range up to 200 m, $\pm 3\text{cm}$ accuracy, minimum vertical angle resolution up to 0.33° (C32), C32 widely used in autonomous vehicle, ADAS, smart transportation, service robots, logistics, surveying and mapping, security and so on.

Features

- High point density, capability of generating approximately 640,000 pts/s
- Wide field of view, with 360° horizontal FOV and 32° vertical FOV.
- Vertical angular resolution up to 0.33° , focused on front area data acquisition.

Demo



Specifications

Model	C32	
Channel	32	
Measurement Technique	Time of Flight(TOF)	
Wavelength	905nm	
Laser Product Classification	Class 1 Eye-safe/ IEC 60825-1:2007 & 2014	
Measurement Range	150m	
Ranging Accuracy	±3cm	
Data Points Generated	600,000 pts/s	
Rotation Rate	5Hz, 10Hz, 20Hz(optional)	
Field of View (FOV)	Horizontal	360°
	Vertical	-16°~ 15° -18°~ 14°
Angular Resolution	Horizontal	5Hz: 0.09° / 10Hz: 0.18° / 20Hz: 0.36°
	Vertical	0.33° / 1°
Operating Voltage	9V~ 36V DC	
Operating Temperature	-20℃ ~60℃ (Customized up to -40℃)	
Communication Interface	Ethernet, PPS	
Shock Test	500m/sec ² , last11ms	
Vibration	5Hz-2000Hz, 3G rms	
IP	IP67	
Dimension (D·H)	Φ120*110mm	
Weight	1600g	

CX Series 16-Channel LiDAR



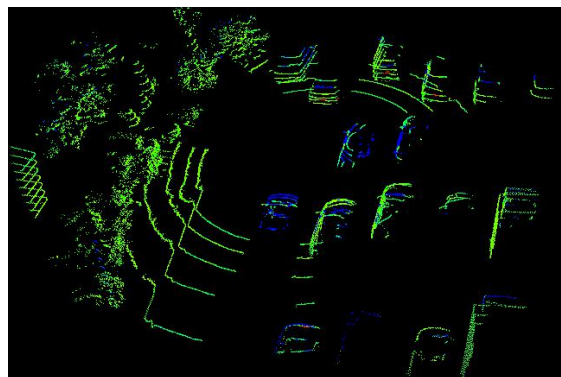
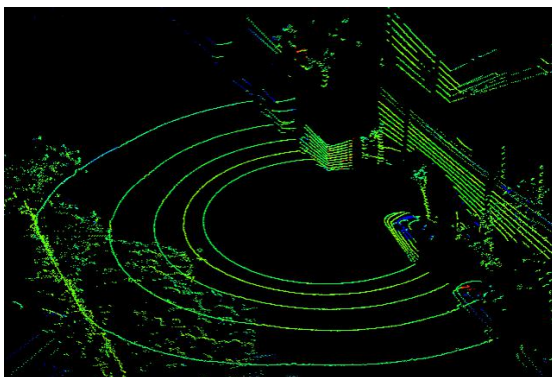
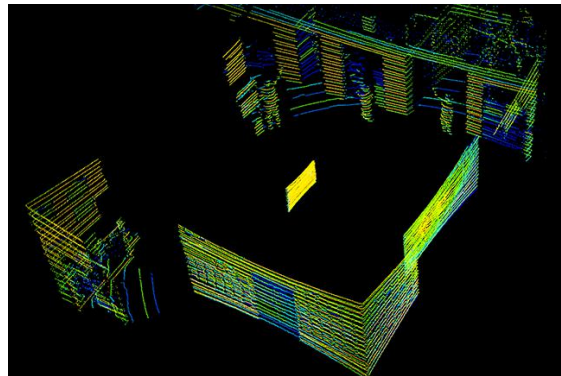
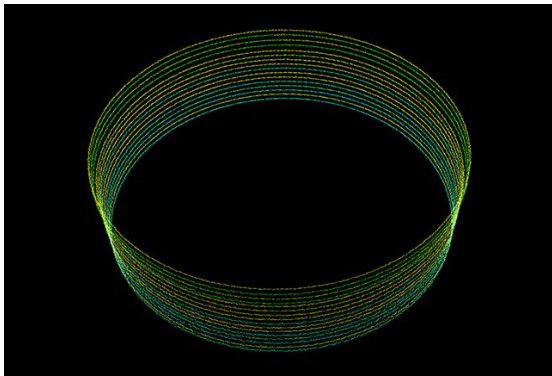
Abstract

CX Series 16 channel LIDAR achieves 360°3D high-speed scanning with 16-beam laser, measurement range up to 200 m, $\pm 3\text{cm}$ accuracy, up to 1.33° vertical angle resolution, widely used in autonomous vehicle, ADAS, smart transportation, service robots, logistics, surveying and mapping, security and so on.

Features

- High point density, capable of generating approximately 320,000 pts/s of 3D point cloud
- Wide field of view, with 360° horizontal FOV and 32° vertical FOV
- Compact size and light weight

Demo



Specifications

Model		C16
Channel		16
Measurement Technique		Time of Flight (TOF)
Wavelength		905nm
Laser Product Classification		Class 1 Eye-safe/ IEC 60825-1:2007 & 2014
Measurement Range		150m
Ranging Accuracy		±3cm
Data Points Generated		320,000 pts/s
Rotation Rate		5Hz, 10Hz, 20Hz(optional)
Field of View (FOV)	Horizontal	360°
	Vertical	-15°~ 15°
Angular Resolution	Horizontal	5Hz: 0.09°/ 10Hz: 0.18°/ 20Hz: 0.36°
	Vertical	2°
Operating Voltage		9V~ 36V DC
Communication Interface		Ethernet, PPS
Operating Temperature		-20°C ~60°C (Customized up to -40°C)
Shock Test		500m/sec ² , last 11ms
Vibration		5Hz-2000Hz, 3G rms
IP		IP67
Dimension (D·H)		102*81mm
Weight		1000g

CH Series 120 /114-Channel LiDAR (Rail)



Abstract

CH120/114 is designed for railway applications with the advantage of stable and long term operation.

Specifications

Model	CH120	CH114	
Channel	120	114	
Measurement Technique	TOF		
Wave Length	*		
Laser Classification	Class 1 Eye-safe/ IEC 60825-1:2007 & 2014		
Measurement Range	*Please contact the staff for specific parameters		
Ranging Accuracy			
Data PointsGenerated			
Rotation Rate			
Field of View (FOV)			Horizontal
			Vertical
Angular Resolution			Horizontal
	Vertical		
Operating Voltage	9V~36V DC		
Operating Temperature	-20°C ~ 65°C		
Communication Interface	100M Ethernet, PPS		
Shock Test	500m/sec ² , last 11ms		
Vibration	5Hz-2000Hz, 3G rms		
IP	IP67		
Weight	2.1kg		
Dimension (L·W·H)	152.5 * 98*133.2mm		

HS Series High-speed Scanning LiDAR



Abstract

HS series high-speed scanning LiDAR has excellent detection accuracy and anti-interference performance. Its measurement range is up to 100 m, and distance accuracy is $\pm 2\text{cm}$. 200Hz high scan frequency can easily sense high-speed movement objects in time, and accurately capture vehicle contour information. Widely used in vehicle detection, V2X vehicle-road collaboration, etc.

Demo

The demo images illustrate the LiDAR's capabilities in detecting vehicle dimensions and positions. The top-left image shows a bus with its length labeled '车长'. The top-right image shows a bus with its height labeled '车高 (H)' and width labeled '车宽 (W)'. The bottom-left image shows a bus and a car. The bottom-right image shows a car with multiple colored LiDAR beams hitting it.

The screenshot of the 'Leshen Intelligent Highway Over-speed Detection System' (锚神智能公路治超检测系统) interface shows the following data for a detected vehicle:

长	宽	高	轴距	
原车数据 (mm)	4849	1936	1681	2849
测量数据 (mm)	4842	1940	1686	2852
绝对误差 (mm)	7	4	5	3
相对误差 (mm)	0.144	0.207	0.297	0.105
单项判定	合格	合格	合格	合格
检测结果	合格			

The interface also includes fields for vehicle identification: 粤BDB2618, 1129DQENFWDX, 粤BDB2618, 80, and 粤BDB2618.

Specifications

Model	HS1	HS4
Channel	1	4
Measurement Technique	Time of Flight (TOF)	
Wavelength	905nm	
Laser Product Classification	Class 1 Eye-safe/ IEC 60825-1:2007 & 2014	
Measurement Range	100m (Reflectivity10%)	
Ranging Accuracy	±2cm	
Data Points Generated	53,000 pts/s	
Rotation Rate	40 Hz , 80Hz, 120 Hz , 160 Hz , 200 Hz (Optional)	10~50 Hz (Optional)
Field of View (FOV)	120°	
Horizontal Angular Resolution	40Hz: 0.09° 80Hz: 0.18° 120Hz: 0.27° 160Hz: 0.36° 200Hz: 0.45°	10Hz: 0.09° 20Hz: 0.18° 30Hz : 0.27° 40Hz: 0.36° 50Hz: 0.45°
Vertical Angular Resolution	-	0.33°
Operating Voltage	9V~ 36V DC	
Communication Interface	1000M Ethernet, PPS	
Operating Temperature	-20°C ~ 65°C	
Shock Test	500m/sec ² , last 11ms	
Vibration	5Hz-2000Hz, 3G rms	
IP	IP67	
Weight	1600g	
Dimension (L·W·H)	155 * 107.5 * 90mm	

N301 Series TOF Navigation & Obstacle Avoidance LiDAR



Abstract

The N301 series of LiDAR adopt the TOF principle, with a 360° scanning and measurement range is up to 100m. The ranging accuracy is $\pm 3\text{cm}$, which can identify the position, size and moving direction of the detected object in real time.

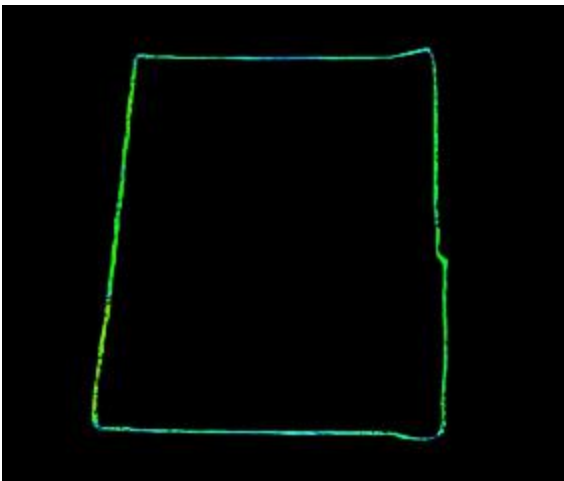
Features

- 360° FOV with long measurement range
- Configuring an Ethernet interface for high-speed data transmission
- Strong shock and vibration resistance

Applications

- ADAS
- High-precision Autonomous positioning and navigation of service robots
- AGV navigation and obstacle avoidance, regional security

Demo



Specifications

Model	N301	N301HB
Wavelength	905nm	
Laser Product Classification	Class 1Eye-safe /IEC 60825-1:2007&2014	
Data content	Distance, Angle	
Measurement Range	10m/30m/50m	
Ranging Accuracy	±3cm	
Scanning angle	360°	
Rotation Rate	10Hz / 20Hz	
Pulse Repetition Rate	20,000 pts/s	300,000 pts/s
Angular Resolution	20Hz:0.36° 10Hz:0.18°	20Hz:0.024° 10Hz:0.012
Operating Voltage	9V ~ 36V DC	
Operating Temperature	-20℃ ~ 65℃	
Motor	Built-in Brushless Motor	
Communication Interface	Ethernet	
Shock Test	500m/sec ² , last 11ms	
Vibration	5Hz-2000Hz, 3G rms	
IP	IP67	
Weight	420g(±20g)	
Dimension (D·H)	Φ80*79.1mm	

Remarks: N301 series also have GPS synchronization time service version, please contact the staff for details.

W Series TOF Anti-collision LiDAR



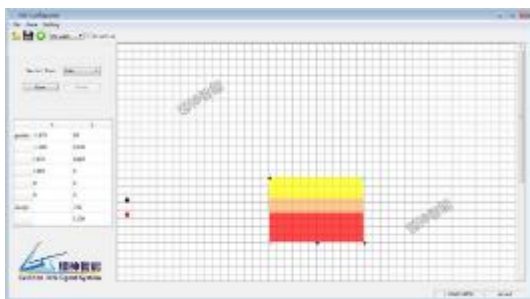
Abstract

W series Anti-collision Laser Scanner is mainly applied to performs collision avoidance and area detection for AGV, RGV, Robot, etc. There are 15 field sets to be chosen and finally output with signals of switching values and point cloud data.

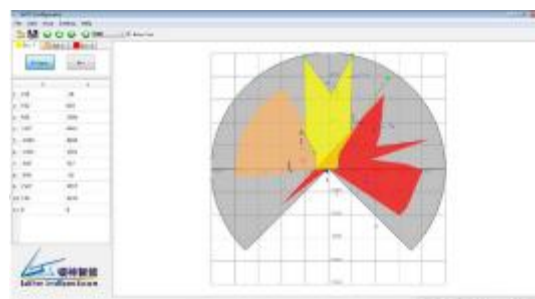
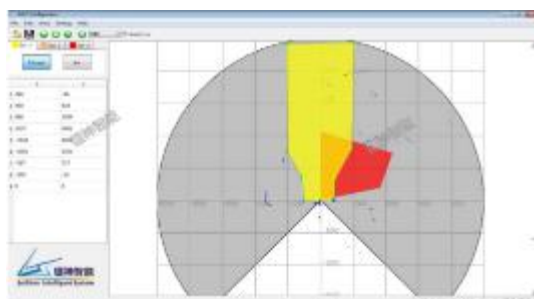
Features

- Simultaneous output of switch and point cloud data
- Flexible configuration to detection areas.
- With 15 detection areas selectable and two detecting mode: independent type and correlation type

Regional Association



Regional Independent



Specifications

Model	W	
Output	Switching Value and Point Cloud Data	Switching Value
Scanning angle	270°	
Rotation Rate	10 Hz	
Measurement Range	5m/10m/20m/30m/50m	
Angular Resolution	1° /0.36°	
Monitoring area	Correlation/ Independent	
Operating Voltage	9V~28V DC	
Operating Temperature	-20°C ~ 60°C	
Shock Test	500m/sec ² , last11ms	
Vibration	5Hz-2000Hz, 3G rms	
IP	IP67	
Weight	397g	
Interface	NPN, PNP	
Dimension (D·H)	Φ80*77.3mm	

M Series TOF LiDAR



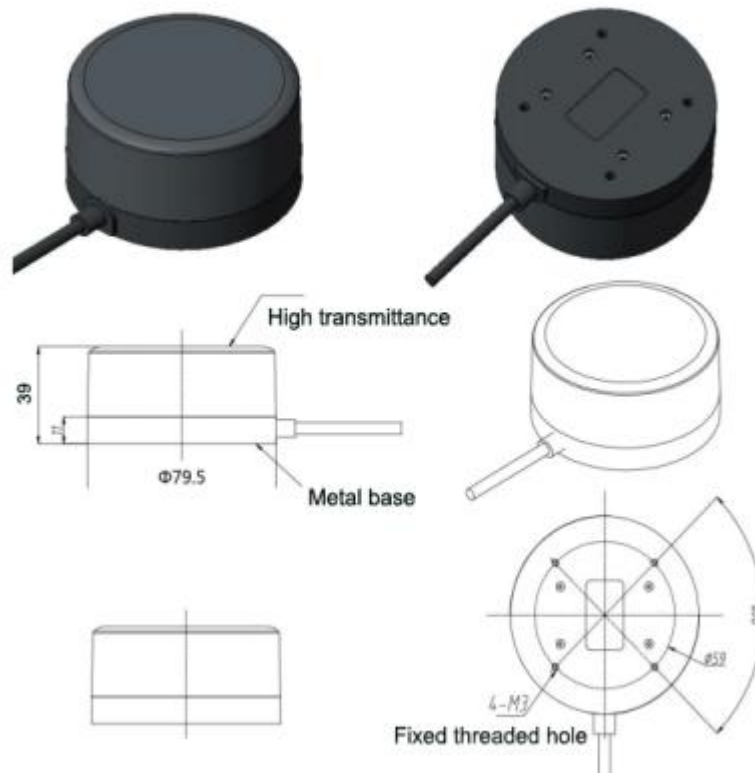
Abstract

M series LiDAR is a Industrial-grade 2D LiDAR having 360° high precision perception.

Applications

- Navigation and positioning of robots
- Navigation and obstacle avoidance of UAV
- Simultaneous Localization and Mapping (SLAM) platform
- AGV
- Low speed driverless delivery vehicle
- Area protection and intrusion detection

Mounting Dimensions



Specifications

Model	M10
Wavelength	905nm
Laser Product Classification	Class 1Eye-safe /IEC 60825-1:2007&2014
Data content	Distance, Angle
Measurement Range	10m
Ranging Accuracy	±3cm
Scanning angle	360°
Rotation Rate	10Hz
Pulse Repetition Rate	10,000 pts/s
Angular Resolution	0.36°
Operating Voltage	5V
Operating Temperature	-20°C ~ 60°C
Motor	Built-in Brushless Motor
Communication Interface	UART
Shock Test	500m/sec ² , last 11ms
Vibration	5Hz-2000Hz, 3G rms
Weight	200g
Dimension (D·H)	Φ80*40mm

LS01 Series 360°Triangular LiDAR



Abstract

LS01 is a 2D LiDAR developed by LeiShen. It can do 360° 2D scanning to generate spatial point cloud map .

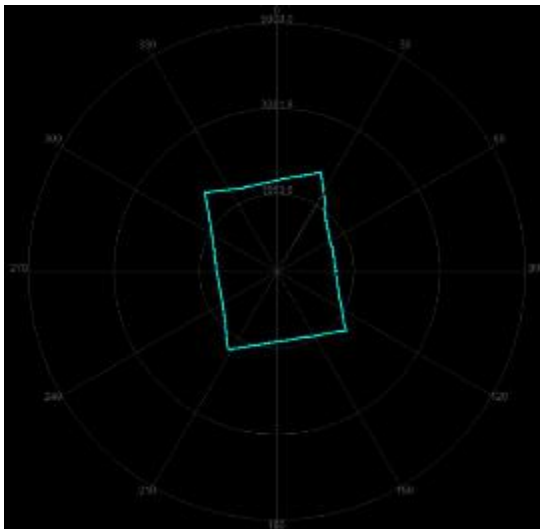
Features

- Triangulation principle, Cost-effective
- Max light intensity up to 20,000lux
- Compact, low power consumption, durable

Applications

- Robotic self-navigation and positioning
- AGV self-navigation and positioning

Demo



Specifications

Model	LS01B
Rotation Rate	10Hz
Measurement Range	8m/16m/28m
Ranging Accuracy	Distance \leq 1m: accuracy $<$ 10mm; Distance $>$ 1m : accuracy $<$ 1% of distance
Data Points Generated	14,400 pts/s
Scanning angle	360°
Angular Resolution	0.25°
Illumination intensity	20000 lux
Operating Voltage	5V
Communication Interface	UART
Weight	180g
Dimension (D·H)	Φ 75.54*40.37mm



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Make Safer Driving, Smarter Machine, and Better Life!

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