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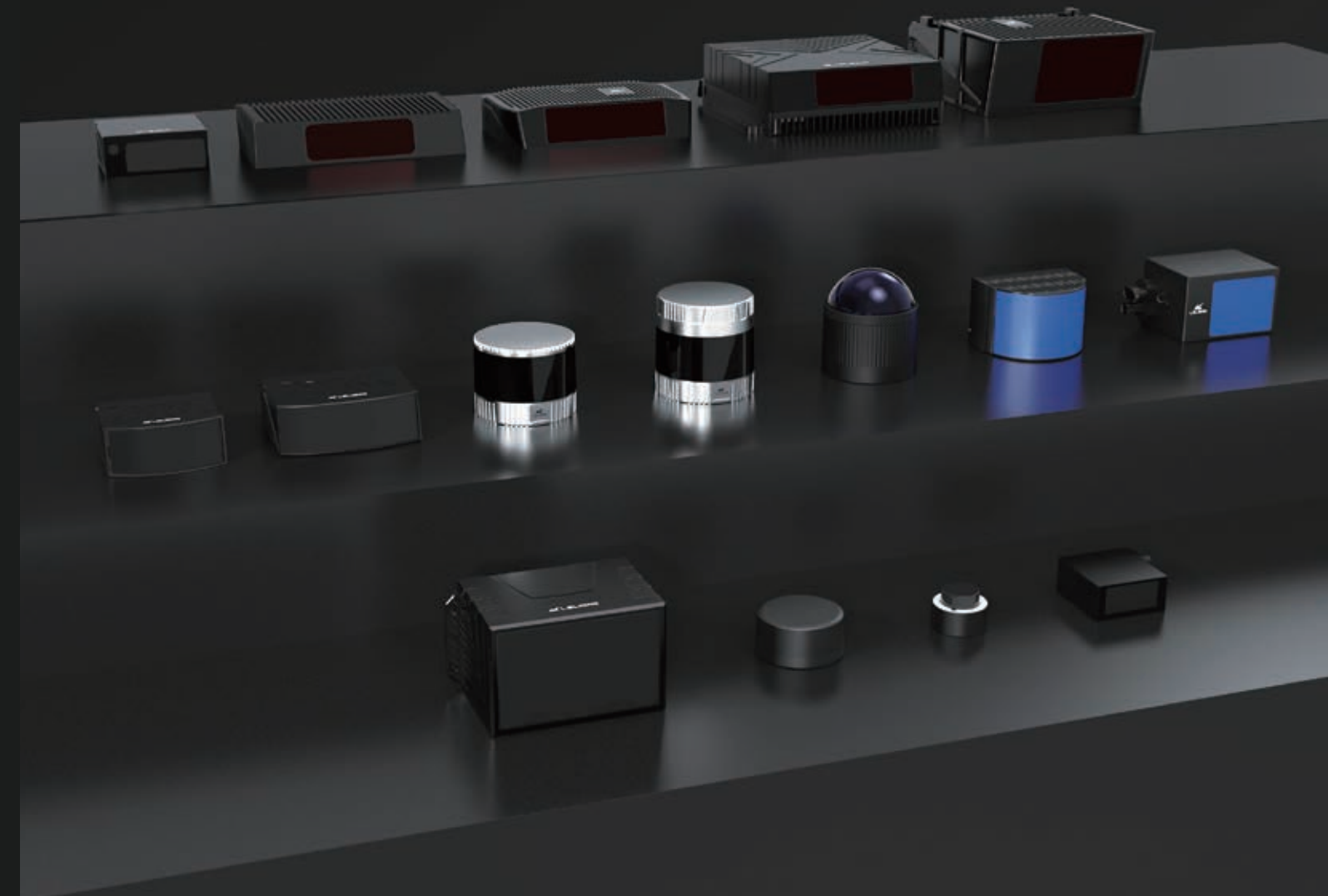
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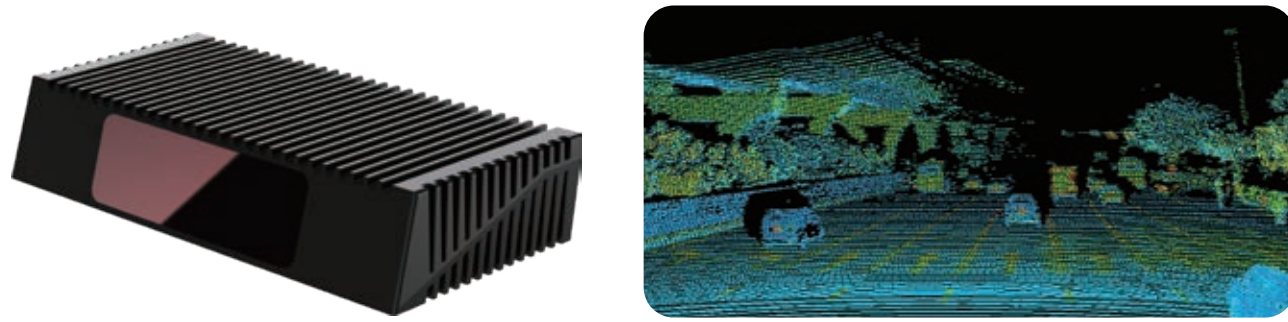
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# LS-S2 Series

## Image-grade 1550nm Auto-grade LiDAR

LS series is image-grade LiDAR meeting automotive standards, which adopts the in-house 1550nm fiber-laser and high-power core optical devices. LS series can detect small objects within super long range. The series is also built with anti-interference functionality.

LS-S2 series offers a variety of channels and scanning options, featuring an ultra-thin design for easy integration into vehicles. With its 1550nm fiber laser auto-grade LiDAR, it is designed for high reliability and mass production, empowering autonomous driving. It leads the industry in performance and is the preferred main LiDAR for Level 3 and higher advanced autonomous driving.



Model	LS128S2	LS180S2	LS320S2	LS400S2
Channels	128	180	320	400
Channels Scanned	1280/s	1800/s	3200/s	4000/s
Horizontal FOV	120°	120°	120°	120°
Vertical FOV	25°(±12.5°)	25°(±12.5°)	25° (±12.5°)	25° (±12.5°)
Horizontal Angular Resolution	B: 0.103°	B: 0.13°	B: 0.0518°	A: 0.0648°
Vertical Angular Resolution	B: 0.076° (ROI) 0.33° (Non ROI)	B: 0.1° (@ROI)	B: 0.09° (@ROI) 0.2° (Non-Global)	A: 0.05° (Non-Global)
Data Point Generating Rate	1,480,000 pts/sec	1,650,000 pts/sec	1,850,000 pts/sec	1,850,000 pts/sec

**Note:** LS-S2 series offers two scanning options: A: Uniform scanning and B: Fixed ROI scanning. For more information on additional channel configurations and scanning options, please contact our sales team.

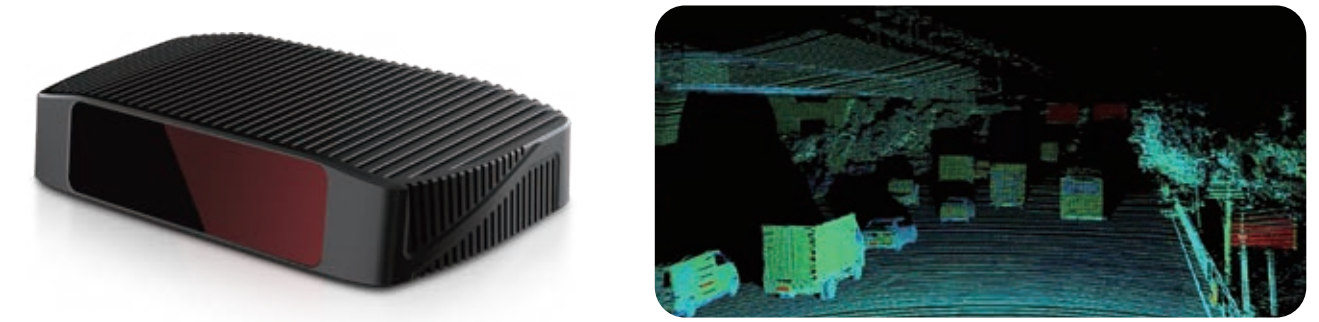
Wavelength	1550±25nm	IP Grade	IP6K9K
Laser Class	CLASS 1	Operating Temperature	-40°C ~ 75°C
Detection Method	TOF	Storage Temperature	-40°C ~ 105°C
Detection Range	1.5m~250m(@10%)	Vibration Test	5Hz~2000Hz, 3G rms
Range Accuracy	±2cm	Shock Test	500m/sec <sup>2</sup> , lasting for 11ms
FPS	10FPS	Weight	Basic: ≤1.8 kg Thin: ≤1.5 kg
Communication Interface	Automotive Ethernet	Dimensions (LxWxH)	Basic: 236x125x49 mm Thin: 228x125x45 mm
Input Voltage	12~36V DC		
Power Consumption	≤28 W		

# LS-S3 Series (Terminator 1)

## Image-grade 1550nm Auto-grade LiDAR

LS series is image-grade LiDAR meeting automotive standards, which adopts the in-house 1550nm fiber-laser and high-power core optical devices. LS series can detect small objects within super long range. The series is also built with anti-interference functionality.

LS-S3 series offers a variety of channels and scanning options, featuring an ultra-thin design for easy integration into vehicles. With its 1550nm fiber laser auto-grade LiDAR, it is designed for high reliability and mass production, empowering autonomous driving. It leads the industry in performance and is the preferred main LiDAR for Level 3 and higher advanced autonomous driving.



Model	LS144S3	LS180S3	LS320S3	LS400S3
Channels	144	180	320	400
Channels Scanned	1440	1800	3200	4000
Horizontal FOV	120°	120°	120°	120°
Vertical FOV	24°	25°(±12.5°)	25° (±12.5°)	25° (±12.5°)
Horizontal Angular Resolution	B: 0.103°	B: 0.13°	B: 0.0518°	A: 0.0648°
Vertical Angular Resolution	B: 0.2°, 0.0909°(@ROI, 4°)	B: 0.1°(@ROI)	B: 0.09°(@ROI) 0.2°(Non-Global)	A: 0.05°(Non-Global)
Data Point Generating Rate	1,650,000 pts/sec	1,650,000 pts/sec	1,850,000 pts/sec	1,850,000 pts/sec

**Note:** LS-S3 series offers four scanning options: A: Uniform scanning, B: Fixed ROI scanning, E: Bidirectional uniform scanning, and F: Bidirectional ROI scanning. In addition to the mentioned channel configurations, there are also four options available: 120/128/140/160. For more information on additional cable harness configurations and scanning options, please contact our sales team.

Wavelength	1550±25nm	Power Consumption	≤25 W
Laser Class	CLASS 1	IP Grade	IP6K9K
Detection Method	TOF	Operating Temperature	-40°C ~ 75°C
Detection Range	1.5m~250m(@10%)	Storage Temperature	-40°C ~ 105°C
Range Accuracy	±2cm	Vibration Test	5Hz~2000Hz, 3G rms
FPS	10FPS	Shock Test	500m/sec <sup>2</sup> , lasting for 11ms
Communication Interface	Automotive / Industrial Ethernet	Weight	≤1.6 kg
Input Voltage	9~36V DC	Dimensions (LxWxH)	229x132x46 mm

# LS25 Series

## Rail Transport Hybrid Solid-state LiDAR

LS25D is suitable for fixed-point detection at the track end, with an ultra-wide field angle of 120°x25°. At the detection distance of 200 meters, clear and accurate identification of foreign obstacles;

LS25E is suitable for train-mounted, detection range Max 500m, detection accuracy ±2cm, frame rate 10~20FPS, low false alarm rate, give train driver or traffic background more safety redundancy time.



- High resolution scanning and monitoring railway.
- Accurate identification of foreign obstacle.

		LS25D	LS25E
<b>LASER</b>	<b>Wavelength</b>	1550±25nm	1550±25nm
	<b>Detection Range</b>	1.5m~200m(@10%), Max 500m	1.5m~300m(250m@10%), Max 500m
<b>SPEC</b>	<b>Range Accuracy</b>	±2cm	±2cm
	<b>Horizontal FOV</b>	120°	120°
	<b>Vertical FOV</b>	25° (±12.5°)	25° (±12.5°)
	<b>Horizontal Resolution</b>	0.0311°	0.09°(10FPS)、0.18°(20FPS)
	<b>Vertical Resolution</b>	0.05° / 0.025° / 0.0125°(0.25Hz)	0.2°
	<b>FPS</b>	0.25 / 0.5 / 1 FPS	10 / 20 FPS
<b>EXPORT</b>	<b>Communication Interface</b>	Automotive Ethernet	Automotive Ethernet
<b>ELECTRIC</b>	<b>Input Voltage</b>	12~36V DC	12~36V DC
	<b>Power Consumption</b>	< 30W	≤30W
<b>ENVIRON-MENT</b>	<b>IP Grade</b>	IP6K9K	/
	<b>Operating Temperature</b>	-40°C ~ 75°C	-40°C ~ 60°C
<b>MACHINE</b>	<b>Weight</b>	≤2kg	≤2kg
	<b>Dimensions (LxWxH)</b>	247.5x230.03x79 mm	229x228x49 mm

# MS06

## Helicopters 1550nm Anti-Collision LiDAR

MS06 is a TOF-based LiDAR that utilizes Class I eye-safe laser technology. It has a maximum detection range of up to 2000m, can be used in helicopters, flying cars collision avoidance and mapping.



<b>Wavelength</b>	1550±25nm	<b>Communication Interface</b>	*
<b>Detection Method</b>	TOF	<b>GNSS Port</b>	*
<b>Detection Range</b>	600/800/1000/1200m (Max 2000m)	<b>Power Consumption</b>	*
<b>Range Accuracy</b>	*	<b>Input Voltage</b>	*
<b>Angle Accuracy</b>	*	<b>IP Grade</b>	*
<b>FPS</b>	*	<b>Storage Temperature</b>	*
<b>Horizontal FOV</b>	*	<b>Operating Temperature</b>	*
<b>Vertical FOV</b>	*	<b>Weight</b>	*
<b>Vertical</b>	*	<b>Dimensions (LxWxH)</b>	243x220x96mm

Ps: Please contact sales for detailed parameters



# LS30MVA

## LONG RANGE BRIDGE COLLISION AVOIDANCE 1550nm LiDAR SYSTEM

LS30MVA long-range visually adjustable laser ranging system is composed of a long-distance fixed-point rangefinder independently developed by LSLiDAR, an angular displacement platform, and a camera. When the rangefinder is displaced in the pitch direction due to various reasons, the system will automatically sense it and adjust the emitted laser of the rangefinder to the horizontal angle. The optical axis of the camera is parallel to the laser direction. Therefore, when the rangefinder detects a target ahead, the target situation can be directly confirmed.



<b>Wavelength</b>	1550±25nm	<b>Input Voltage</b>	AC/170~264V DC
<b>Max Range</b>	10~2000m@10%	<b>Power Consumption</b>	50W (Max)
<b>Min Range</b>	10m	<b>IP Grade</b>	IP66 (Customizable)
<b>Range Accuracy</b>	±15cm	<b>Operating Temperature</b>	-10°C ~ 60°C
<b>Data Point Generating Rate</b>	500 pts/sec	<b>Vibration Test</b>	Able to withstand vibration shock with acceleration of 0.73 G
<b>Accuracy of Laser Pitch Angle</b>	0.01°	<b>Weight</b>	≤15 kg
<b>Communication Interface</b>	Industrial Ethernet	<b>Dimensions (LxWxH)</b>	350x272.5x487 mm

# CX Series

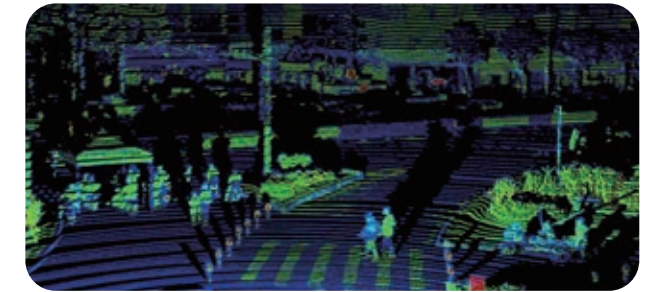
## Auto-grade Hybrid Solid-state LiDAR

Thanks to the breakthroughs have been made by LSLiDAR, CX series is built on the miniaturization technology on automotive grade hybrid-solid state LiDARs and achieves a long detection range of 200 meters at 10% reflectivity and offers high angular resolution, it not only meets the performance requirements of remote detection and perception in autonomous driving but also has a mini size, suitable for embedding in the position of roof or front bumper, which is more in line with the aesthetic requirements of passenger car appearance design.

CX126S3



CX128S2



	CX126S3	CX128S2	CX128S2-R
<b>Wavelength</b>	905nm	905nm	905nm
<b>Laser Class</b>	Class I	Class I	Class I
<b>Channels</b>	126	128	128
<b>Detection Method</b>	TOF	TOF	TOF
<b>Detection Range</b>	180m@10%	200m@10%	200m@10%
<b>Range Accuracy</b>	±3cm	±3cm	±3cm
<b>Horizontal FOV</b>	120°	120°	120°
<b>Vertical FOV</b>	25°(-12.5°~12.5°)	25°(-12.5°~12.5°)	25°(-12.5°~12.5°)
<b>Horizontal Resolution</b>	0.09° / 0.18° / 0.36°	0.05° / 0.1° / 0.2°	0.05° / 0.1° / 0.2°
<b>Vertical Resolution</b>	0.2°	0.125° @ROI, 0.25°@Non ROI	0.125° @ROI, 0.25°@Non ROI
<b>FPS</b>	5Hz / 10 Hz / 20 Hz	5Hz / 10 Hz / 20 Hz	5Hz / 10 Hz / 20 Hz
<b>Data Point Generating Rate</b>	840,000 pts/sec	1,530,000 pts/sec	1,530,000 pts/sec
<b>Communication Interface</b>	Automotive Ethernet	Automotive Ethernet	Industrial Ethernet
<b>Input Voltage</b>	9V~16V DC	9V~16V DC	9V~32V DC
<b>Power Consumption</b>	13.5W	-	-
<b>AUTOSAR</b>	ASIL B	ASIL B	-
<b>IP Grade</b>	IP6K9K	IP6K9K	IP6K9K
<b>Operating Temperature</b>	-40°C ~ 85°C	-40°C ~ 85°C	-40°C ~ 85°C
<b>Vibration Test</b>	5Hz-2000Hz, 3G rms	5Hz-2000Hz, 3G rms	5Hz-2000Hz, 3G rms
<b>Shock Test</b>	500m/sec <sup>2</sup> , lasting for 11ms	500m/sec <sup>2</sup> , lasting for 11ms	500m/sec <sup>2</sup> , lasting for 11ms
<b>Weight</b>	635g	≤935g	<1000g
<b>Dimensions (LxWxH)</b>	110x100.4x45 mm	139x112.78x47mm	139x115.7x47mm (Arc window; Rear outlet) 139x100.3x47mm (Flat window; Rear outlet) 139x114.2x47mm (Arc window; Side outlet)

# CX-S3 Series

## Auto-grade Hybrid Solid-state LiDAR

CX series is a modification of CX126S3 hybrid solid-state LiDAR, featuring two types of channels: single-line and six-line. It is designed to meet the requirements of industrial scenarios, offering precise distance and reflectivity information for 2D/3D mapping, detection, and obstacle avoidance. With a maximum scanning frequency of 150Hz and a detection range of 150 meters (@10%), it is suitable for large-scale operations. CX series LiDAR boasts fast scanning speed, high resolution, and high reliability as its key advantages.

CX1S3



CX6S3



CX1S3

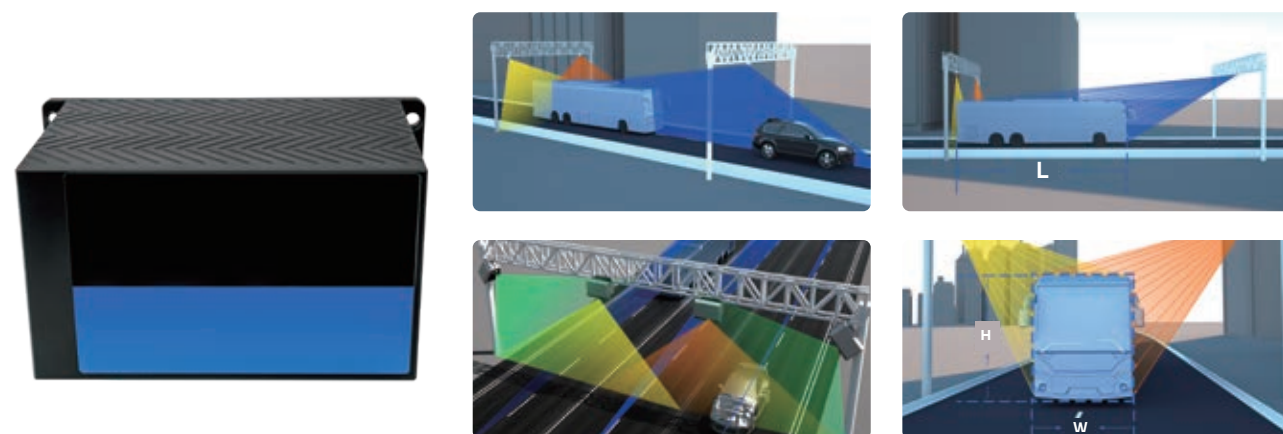
CX6S3

		CX1S3	CX6S3
<b>LASER</b>	Wavelength	905nm	905nm
	Laser Class	Class I	Class I
<b>SPEC</b>	Channels	1	6
	Detection Method	TOF	TOF
	Detection Range	150m@10%	20m@10%
	Range Accuracy	±3cm	±3cm
	Horizontal FOV	120°	120°
	Vertical FOV	/	1°
	Horizontal Resolution	0.024° / 0.048° / 0.072° / 0.096° / 0.12°	0.075° / 0.15° / 0.3°
	Vertical Resolution	/	0.2°
<b>EXPORT</b>	FPS	30 / 60 / 90 / 120 / 150 Hz	5 / 10 / 20 Hz
	Data Point Generating Rate	150,000	48,000
<b>ELECTRIC</b>	Communication Interface	Industrial Ethernet	Industrial Ethernet
	Input Voltage	9V~32V DC	9V~32V DC
<b>ENVIRON-MENT</b>	IP Grade	IP6K9K	IP6K9K
	Operating Temperature	-40°C ~ 85°C	-40°C ~ 85°C
	Storage Temperature	-40°C ~ 105°C	-40°C ~ 105°C
	Vibration Test	5Hz-2000Hz, 3G rms	5Hz-2000Hz, 3G rms
	Shock Test	500m/sec <sup>2</sup> , lasting for 11ms	500m/sec <sup>2</sup> , lasting for 11ms
<b>MACHINE</b>	Weight	635g	635g
	Dimensions (LxWxH)	110x101.4x45 mm	110x92.5x45mm

# HS Series

## Fast Scanning LiDAR

HS series fast scanning LiDAR has excellent detection accuracy and anti-interference performance, with 100m detection range, measurement accuracy ±2cm, and up to 200Hz scanning frequency can be real-time sensing high-speed moving objects, accurately grasp vehicle contour information, It is widely used in vehicle and cargo contour detection, vehicle type detection, height limit detection, overshooting detection, high-speed ETC capture detection, entry and exit vehicle type classification, traffic flow statistics, ETC.



HS1

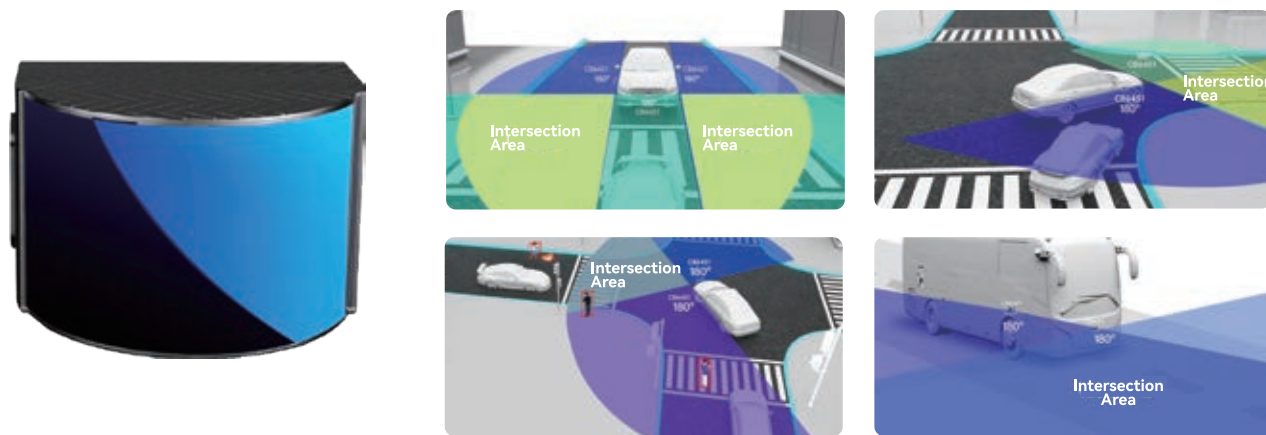
HS4

		HS1	HS4
<b>LASER</b>	Wavelength	905nm	905nm
	Laser Class	CLASS 1	CLASS 1
<b>SPEC</b>	Channels	1	4
	Detection Method	TOF	TOF
	Detection Range	30 / 50 / 70 / 100m @10%	100m
	Range Accuracy	±3cm	±3cm
	Horizontal FOV	120°	120°
	Horizontal Resolution	0.09° / 0.18° / 0.225° / 0.27° / 0.36°	0.09° / 0.18° / 0.36°
	FPS	40Hz / 80Hz / 120Hz / 160Hz	40Hz / 80Hz / 120Hz
	Data Point Generating Rate	53,000 pts/sec	53,300 pts/sec
<b>EXPORT</b>	Communication Interface	Industrial Ethernet	Ethernet, PPS
	Input Voltage	9V~36V DC	9V~36V DC
<b>ENVIRON-MENT</b>	IP Grade	IP67	IP67
	Operating Temperature	-20°C~65°C	-40°C~+85°C
	Vibration Test	5Hz-2000Hz, 3G rms	5Hz-2000Hz, 3G rms
	Shock Test	500m/sec <sup>2</sup> , lasting for 11ms	500m/sec <sup>2</sup> , lasting for 11ms
	Weight	≈1600g	1500g
<b>MACHINE</b>	Dimensions (LxWxH)	155x107.5x90 mm	155x90x107.5 mm

# CB64

## Wide field of view (FOV) LiDAR

CB64 wide field of view (FOV) LiDAR is specially designed for cleaning up blind areas. It has an ultra-wide field FOV of 180°x40°, and the measurement accuracy is accurate to ±3cm. It can efficiently identify obstacles within a short range and bring accurate environmental perception to the driving blind areas of automobiles, robots and AGV.

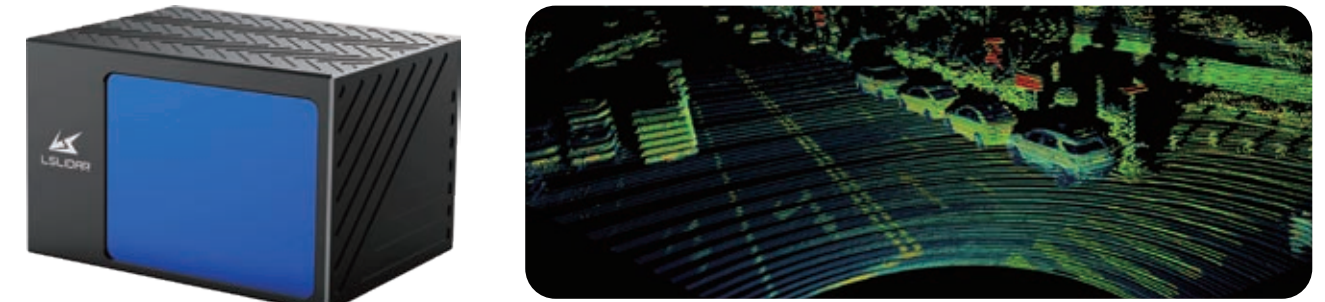


<b>Wavelength</b>	905nm	<b>Communication Interface</b>	Automotive / Industrial Ethernet
<b>Laser Class</b>	Class I	<b>Input Voltage</b>	9V~36V DC
<b>Channels</b>	64	<b>Power Consumption</b>	12W
<b>Detection Method</b>	TOF	<b>AUTOSAR</b>	ASIL B
<b>Detection Range</b>	100m(45m@10%)	<b>IP Grade</b>	IP6K9K
<b>Range Accuracy</b>	±3cm	<b>Operating Temperature</b>	-40°C~85°C
<b>Horizontal FOV</b>	180°	<b>Storage Temperature</b>	-40°C~105°C
<b>Vertical FOV</b>	40°(-25°~15°)	<b>Vibration Test</b>	5Hz-2000Hz, 3G rms
<b>Horizontal Resolution</b>	0.12°	<b>Shock Test</b>	500m/sec <sup>2</sup> , lasting for 11ms
<b>Vertical Resolution</b>	0.63°	<b>Weight</b>	≈1kg
<b>FPS</b>	10Hz	<b>Dimensions (LxWxH)</b>	116x90x76 mm
<b>Data Point Generating Rate</b>	1,010,000 pts/sec		

# CH128 Series

## Auto-grade Hybrid Solid-state LiDAR

LSLiDAR keeps upgrading CH128 series LiDAR with the requirements of factory-installed self-driving systems set by automotive OEMs. The stable and reliable performance of the original CH series Hybrid Solid-state LiDAR is fully integrated with the size, power consumption, function, safety, cost and other requirements of automobile manufacturers, and has passed a series of rigorous tests. CH128 series has achieved an unprecedented technological breakthrough in Hybrid Solid-state LiDAR on a global scale.



### CH128X1

### CH128S1

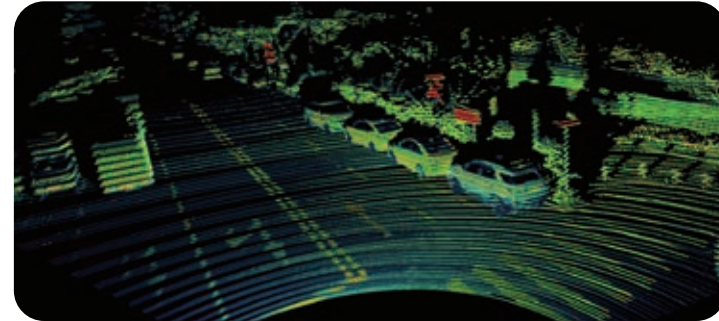
		CH128X1	CH128S1
<b>LASER</b>	<b>Wavelength</b>	905nm	905nm
	<b>Laser Class</b>	Class I	Class I
<b>SPEC</b>	<b>Channels</b>	128	128
	<b>Detection Method</b>	TOF	TOF
	<b>Detection Range</b>	200m (160m@10%)	200m (160m@10%)
	<b>Range Accuracy</b>	±3cm	±3cm
	<b>Horizontal FOV</b>	120°	120°
	<b>Vertical FOV</b>	25°(-18°~7°)	25°(-12.5°~12.5°)
	<b>Horizontal Resolution</b>	0.1° / 0.2° / 0.4°	0.1° / 0.2° / 0.4
	<b>Vertical Resolution</b>	0.125°@ROI, 0.25°@Non ROI	0.125°@ROI, 0.25°@Non ROI
<b>EXPORT</b>	<b>FPS</b>	5 / 10 / 20 Hz	5 / 10 / 20 Hz
	<b>Data Point Generating Rate</b>	760,000 pts/sec	760,000 pts/sec
<b>ELECTRIC</b>	<b>Communication Interface</b>	Automotive / Industrial Ethernet	Automotive Ethernet
	<b>Input Voltage</b>	9V~36V DC	9V~36V DC
<b>ENVIRON -MENT</b>	<b>Power Consumption</b>	15W	12W
	<b>AUTOSAR</b>	ASIL B	ASIL B
	<b>IP Grade</b>	IP6K9K	IP6K9K
	<b>Operating Temperature</b>	-40°C ~ 85°C	-40°C ~ 85°C
	<b>Vibration Test</b>	5Hz-2000Hz, 3G rms	5Hz-2000Hz, 3G rms
	<b>Shock Test</b>	500m/sec <sup>2</sup> , lasting for 11ms	500m/sec <sup>2</sup> , lasting for 11ms
<b>MACHINE</b>	<b>Weight</b>	≈1kg	≈1kg
	<b>Dimensions (LxWxH)</b>	118x90x75 mm	118x90x75 mm



# CH16X1

## Auto-grade Hybrid Solid-state LiDAR

CH16X1 hybrid solid-state LiDAR is a modified version based on the CH128X1, inheriting its outstanding long-range measurement and high angular resolution characteristics. With its exceptional performance and stability, it can easily cope with a variety of complex environments, to ensure stable and accurate operation, widely used in grain bin testing, volume measurement and other fields.



<b>Wavelength</b>	905nm	<b>Data Point Generating Rate</b>	95,000
<b>Laser Class</b>	CLASS 1	<b>Communication Interface</b>	Automotive / Industrial Ethernet
<b>Channels</b>	16	<b>Input Voltage</b>	9V~36V DC
<b>Detection Method</b>	TOF	<b>Power Consumption</b>	12W
<b>Detection Range</b>	200 m (160 m @10%)	<b>IP Grade</b>	IP 6K9K
<b>Range Accuracy</b>	±3cm	<b>Operating Temperature</b>	-40°C ~ 85°C
<b>Horizontal FOV</b>	120°	<b>Storage Temperature</b>	-40°C ~ 105°C
<b>Vertical FOV</b>	-2°~2°	<b>Vibration Test</b>	5Hz~2000Hz, 3G rms
<b>Horizontal Resolution</b>	0.06° / 0.12° / 0.24° (Industrial Ethernet) 0.1° / 0.2° / 0.4° (Automotive Ethernet)	<b>Shock Test</b>	500m/sec <sup>2</sup> , lasting for 11ms
<b>Vertical Resolution</b>	0.25°	<b>Weight</b>	≈1kg
<b>FPS</b>	5Hz / 10Hz / 20Hz	<b>Dimensions (LxWxH)</b>	118x90x75 mm

# CH256X1

## Hybrid Solid-state LiDAR

CH256X1 hybrid solid-state LiDAR has made great improvements in vibration resistance, shock resistance and point cloud harness, which can adapt to continuous operation in high vibration and high impact scenes, and the measurement rate of 2.56 million points/second, forming high-density point cloud imaging and providing more accurate environmental perception.



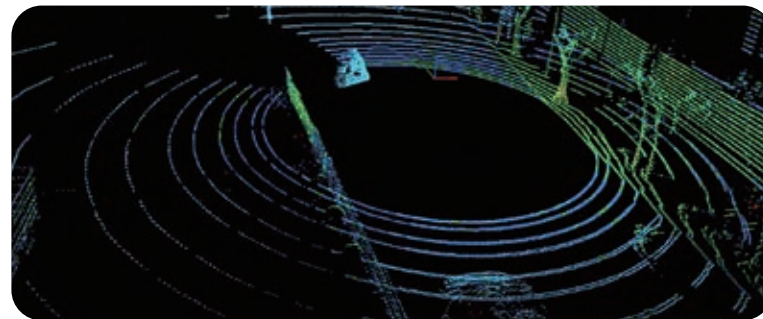
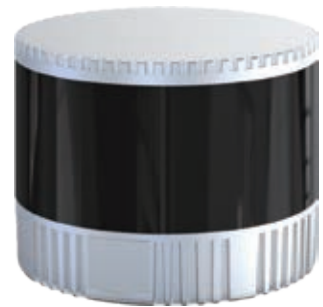
<b>Wavelength</b>	905nm	<b>Data Point Generating Rate</b>	2,560,000 pts/sec
<b>Laser Class</b>	CLASS 1	<b>Communication Interface</b>	Industrial Ethernet
<b>Channels</b>	256	<b>Input Voltage</b>	12~36V
<b>Detection Method</b>	TOF	<b>IP Grade</b>	IP67
<b>Detection Range</b>	220m@10%	<b>Operating Temperature</b>	-40°C ~ 55°C
<b>Range Accuracy</b>	±3cm	<b>Storage Temperature</b>	-40°C ~ 65°C
<b>Horizontal FOV</b>	120°	<b>Vibration Test</b>	5~2000Hz, 3G rms
<b>Vertical FOV</b>	40° (-20°~20°)	<b>Shock Test</b>	500m/sec <sup>2</sup> , lasting for 11ms
<b>Horizontal Resolution</b>	0.12° / 0.24°	<b>Weight</b>	≤2kg
<b>Vertical Resolution</b>	0.156°	<b>Dimensions (LxWxH)</b>	154x108x100mm
<b>FPS</b>	10 / 20Hz		177x108x100mm (Including Mounting Hole)



# C32/16

## Multi-line Mechanical LiDAR

C32/C16 LiDAR can realize 360° three-dimensional high-speed scanning with a dense 16/32 scanning channels. The PoE version uses a single Ethernet cable to solve power and data transmission, simplifying wiring, reducing costs, supporting 100 meter power supply, and improving system flexibility and installation convenience. Widely used in driverless, automotive ADAS, intelligent transportation, service robots, logistics, surveying and mapping, security, port, industry and other fields.



**C32 / C32 PoE**

**C16 / C16 PoE**

<b>LASER</b>	<b>Wavelength</b>	905nm	905nm
	<b>Laser Class</b>	Class I	Class I
<b>SPEC</b>	<b>Channels</b>	32	16
	<b>Detection Method</b>	TOF	TOF
	<b>Detection Range</b>	100m@10%, 150m@70%	100m@10%, 150m@70%
	<b>Precision</b>	±3cm	±3cm
	<b>Range Accuracy</b>	±1cm	±1cm
	<b>Horizontal FOV</b>	360°	360°
	<b>Vertical FOV</b>	-16°~15°	-16°~14°
	<b>Horizontal Resolution</b>	0.09°/0.18°/0.36°	0.09°/0.18°/0.36°
	<b>Vertical Resolution</b>	Uniform 1°	Uniform 2°
	<b>FPS</b>	5Hz / 10Hz / 20Hz	5Hz / 10Hz / 20Hz
<b>EXPORT</b>	<b>Data Point Generating Rate</b>	Single Echo 640,000 pts/sec Dual Echo 1,280,000 pts/sec	Single Echo 320,000 pts/sec Dual Echo 640,000 pts/sec
	<b>Communication Interface</b>	Ethernet, PPS /100M Industrial Ethernet	Ethernet, PPS /100M Industrial Ethernet
<b>ELECTRIC</b>	<b>Input Voltage</b>	12V~32V DC / 36~57V DC	12V~32V DC / 36~57V DC
	<b>Power Consumption</b>	12W (10Hz)	10W (10Hz)
<b>ENVIRON-MENT</b>	<b>IP Grade</b>	IP67	IP67
	<b>Working Temperature</b>	-20°C~60°C	-20°C~60°C
	<b>Vibration Test</b>	5Hz~2000Hz, 3G rms	5Hz~2000Hz, 3G rms
	<b>Shock Test</b>	500m/sec <sup>2</sup> , lasting for 11ms	500m/sec <sup>2</sup> , lasting for 11ms
<b>MACHINE</b>	<b>Weight</b>	1040g / 1100g	1040g / 1100g
	<b>Dimensions (DxH)</b>	Φ102x77.9 mm / Φ102x91.9mm	Φ102x77.9 mm / Φ102x91.9mm

# C1

## Single-line Mechanical LiDAR

C1 single-line mechanical LiDAR uses the time-of-flight measurement mechanism to achieve a high-speed 360° scan of the surrounding environment, with a detection distance of up to 150m and an accuracy of ±3cm. It is mainly used in indoor service robots, AGVs and UAVs that require precise positioning and obstacle avoidance.



<b>Wavelength</b>	905nm	<b>FPS</b>	5Hz / 10Hz / 20Hz
<b>Laser Class</b>	Class I	<b>Data Point Generating Rate</b>	Single Echo 20,000 pts/sec Dual Echo 40,000 pts/sec
<b>Channels</b>	1	<b>Communication Interface</b>	Ethernet, PPS
<b>Detection Method</b>	TOF	<b>Input Voltage</b>	9V~32V DC
<b>Detection Range</b>	150m@70%, 110m@10%	<b>Power Consumption</b>	7W (10Hz)
<b>Precision</b>	±3cm	<b>IP Grade</b>	IP67
<b>Range Accuracy</b>	±1cm	<b>Working Temperature</b>	-20°C~60°C
<b>Horizontal FOV</b>	360°	<b>Vibration Test</b>	5Hz~2000Hz, 3G rms
<b>Vertical FOV</b>	N/A	<b>Shock Test</b>	500m/sec <sup>2</sup> , lasting for 11ms
<b>Horizontal Resolution</b>	0.09°/0.18°/0.36°	<b>Weight</b>	1050g
<b>Vertical Resolution</b>	N/A	<b>Dimensions (DxH)</b>	Φ102x77.9 mm

# C4/C8

## Multi-line Mechanical LiDAR

C4/C8 multi-line mechanical LiDAR realizes 360° three-dimensional high-speed scanning with 4/8 laser beams. It reaches a detection distance of up to 150 m, and a measurement accuracy of ±3 cm. This lidar sensor is widely used in autonomous driving, automotive ADAS, intelligent transportation, service robot, logistics, surveying and mapping, security, industry, ports and other fields.



C4

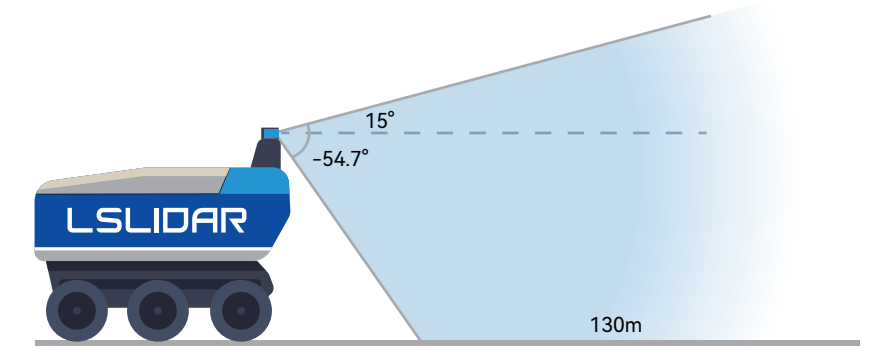
C8

LASER	Wavelength	905nm	905nm
	Laser Class	Class I	Class I
SPEC	Channels	4	8
	Detection Method	TOF	TOF
	Detection Range	150m@70%	120m@70%, 110m@10%
	Precision	±3cm	±3cm
	Range Accuracy	±1cm	±1cm
	Horizontal FOV	360°	360°
	Vertical FOV	-12°~12°	-12°~12°
	Horizontal Resolution	0.09°/ 0.18°/ 0.36°	0.09°/ 0.18°/ 0.36°
EXPORT	Vertical Resolution	Min 4°	2°/4°
	FPS	5Hz / 10Hz / 20Hz	5Hz / 10Hz / 20Hz
ELECTRIC	Data Point Generating Rate	Single Echo 80,000 pts/sec Dual Echo 160,000 pts/sec	Single Echo 160,000 pts/sec Dual Echo 320,000 pts/sec
	Communication Interface	Ethernet, PPS	Ethernet, PPS
ENVIRON-MENT	Input Voltage	9V~36V DC	9V~36V DC
	Power Consumption	≈12W	≈12W
MACHINE	IP Grade	IP67	IP67
	Working Temperature	-20°C~60°C	-20°C~60°C
	Vibration Test	5Hz-2000Hz, 3G rms	5Hz-2000Hz, 3G rms
MACHINE	Shock Test	500m/sec <sup>2</sup> , lasting for 11ms	500m/sec <sup>2</sup> , lasting for 11ms
	Weight	1050g	1050g
MACHINE	Dimensions (DxH)	Φ102x77.9 mm	Φ102x77.9 mm

# C32W

## Wide FOV Mechanical LiDAR

C32W has a wide field of view of 360°x70°, but also centrally scans the space below the LiDAR, which can effectively identify low obstacles in the short range and greatly reduce the detection blind area space. The PoE version uses a single Ethernet cable to solve power and data transmission, simplifying wiring, reducing costs, supporting 100 meter power supply, and improving system flexibility and installation convenience.



C32W

C32W PoE

LASER	Wavelength	905nm	905nm
	Laser Class	Class I	Class I
SPEC	Channels	32	32
	Detection Method	TOF	TOF
	Detection Range	130m@70% 60m@10%	130m@70% 60m@10%
	Precision	±3cm	±3cm
	Range Accuracy	±1cm	±1cm
	Horizontal FOV	360°	360°
	Vertical FOV	-54.7°~15°	-54.7°~15°
	Horizontal Resolution	0.09°/ 0.18°/ 0.36°	0.09°/ 0.18°/ 0.36°
EXPORT	Vertical Resolution	Nonuniform, Min 1.5°	Nonuniform, Min 1.5°
	FPS	5Hz / 10Hz / 20Hz	5Hz / 10Hz / 20Hz
ELECTRIC	Data Point Generating Rate	600,000 pts/sec	600,000 pts/sec
	Communication Interface	Ethernet, PPS	100M Industrial Ethernet
ENVIRON-MENT	Input Voltage	9V~32V DC	9V~32V DC
	Power Consumption	12W	12W
MACHINE	IP Grade	IP67	IP67
	Working Temperature	-20°C~60°C	-20°C~60°C
	Vibration Test	5Hz-2000Hz, 3G rms	5Hz-2000Hz, 3G rms
MACHINE	Shock Test	500m/sec <sup>2</sup> , lasting for 11ms	500m/sec <sup>2</sup> , lasting for 11ms
	Weight	≈1115g	≈1150g
MACHINE	Dimensions (DxH)	Φ102x102 mm	Φ102x116 mm

# CH32R/CH16R

## Ultra-Wide Angle Blind Spot LiDAR

CH16R/CH32R LiDAR can realize 360° three-dimensional high-speed scanning with a dense 16/32 scanning channels. The PoE version uses a single Ethernet cable to solve power and data transmission, simplifying wiring, reducing costs, supporting 100 meter power supply, and improving system flexibility and installation convenience. Widely used in driverless, automotive ADAS, intelligent transportation, service robots, logistics, surveying and mapping, security, port, industry and other fields.



**CH32R / CH32R PoE**      **CH16R**

		CH32R / CH32R PoE	CH16R
<b>LASER</b>	<b>Wavelength</b>	905nm	905nm
	<b>Laser Class</b>	Class I	Class I
<b>SPEC</b>	<b>Channels</b>	32	16
	<b>Detection Method</b>	TOF	TOF
	<b>Detection Range</b>	120m@70% 30m@10%	120m@70% 30m@10%
	<b>Precision</b>	±3cm	±3cm
	<b>Range Accuracy</b>	±1cm	±1cm
	<b>Horizontal FOV</b>	360°	360°
	<b>Vertical FOV</b>	2.487° ~89.105°	2.487° ~52.798°
	<b>Horizontal Resolution</b>	0.09° / 0.18° / 0.36°	0.09° / 0.18° / 0.36°
	<b>Vertical Resolution</b>	Min 2.61°	Min 2.618°
	<b>FPS</b>	5Hz、10Hz、20Hz	5Hz、10Hz、20Hz
<b>EXPORT</b>	<b>Data Point Generating Rate</b>	Single Echo 640,000 pts/sec Dual Echo 1,280,000 pts/sec	Single Echo 320,000 pts/sec Dual Echo 640,000 pts/sec
	<b>Communication Interface</b>	100M Ethernet、PPS、PTP / 100M Industrial Ethernet	100M Ethernet、PPS
<b>ELECTRIC</b>	<b>Input Voltage</b>	12V~32V DC / 36~57V DC	12V~32V DC
	<b>Power Consumption</b>	12W (10Hz)	10W (10Hz)
<b>ENVIRON-MENT</b>	<b>IP Grade</b>	IP67	IP67
	<b>Working Temperature</b>	-20°C~60°C	-20°C~60°C
	<b>Vibration Test</b>	5Hz-2000Hz, 3G rms	5Hz-2000Hz, 3G rms
	<b>Shock Test</b>	500m/sec <sup>2</sup> , lasting for 11ms	500m/sec <sup>2</sup> , lasting for 11ms
<b>MACHINE</b>	<b>Weight</b>	1000g / 1050g	1000g
	<b>Dimensions (DxH)</b>	Φ100x110mm / Φ100x124mm	Φ100x110mm

# M10 PHY

## Navigation & Obstacle Avoidance LiDAR



- Wide recognition range, long range, fast response.
- Algorithm is optimized and upgraded, mapping faster and more accurate.
- Strong anti-light interference ability, both indoor and outdoor.
- Advanced optics and lower SNR and dynamic balance control, excellent detection for strong light, high reflectivity objects and low reflectivity objects.
- Light and compact, more suitable for embedding machine.

<b>Wavelength</b>	905nm	<b>Angular Resolution</b>	0.36°
<b>Laser Class</b>	Class I	<b>Input Voltage</b>	9~32V
<b>Output Data</b>	Distance、Angle、High reflectivity recognition	<b>IP Grade</b>	IP65
<b>Detection Distance</b>	10m@10%、25m@70%	<b>Operating Temperature</b>	-10°C~50°C
<b>Accuracy</b>	±3cm	<b>Communication Interface</b>	Network interface
<b>Pulse Repetition Frequency</b>	10KHz	<b>Vibration Test</b>	500m/sec <sup>2</sup> , lasting for 11ms
<b>Scanning Frequency</b>	10Hz	<b>Shock Test</b>	5 Hz-2000 Hz, 3G rms
<b>Data Point Generating Rate</b>	10,000 pts/sec	<b>Weight</b>	200g
<b>Date Output Resolution</b>	1mm	<b>Dimensions (DxH)</b>	Φ79.6x39mm



# N Series

## Navigation & Obstacle Avoidance LiDAR



- Algorithm is optimized and upgraded, making the drawing faster and more accurate
- Strong anti-light interference ability, suitable for robot mapping, navigation and obstacle avoidance
- Advanced optical and algorithmic systems, black and white objects, high reflectivity objects have excellent detection performance
- Thin and compact design, suitable for embedded in all kinds of service robot body

	N10	N10Plus	N20
<b>Wavelength</b>	905nm	905nm	905nm
<b>Laser Class</b>	Class I	Class I	Class I
<b>Output Data</b>	Distance, Angle, Intensity	Distance, Angle, Intensity	Distance, Angle, Intensity
<b>Detection Distance</b>	0.02~12m@70%	0.02m~15m@70%	0.1m~12m@70%
<b>Accuracy</b>	±3cm(0~6m); ±4.5cm(≥6m)@70%	±3cm@70%	±1.5cm(0~8m);±3cm(8~12m)@70%
<b>Scanning Angle</b>	360°	360°	360°
<b>Scanning Frequency</b>	6~12Hz	6~12Hz	6~12Hz
<b>Data Point Generating Rate</b>	4,500 pts/sec	5,400 pts/sec Dual Echo 10,800 pts/sec	4,500 pts/sec
<b>Angular Resolution</b>	0.48°~0.96°	0.4°~0.8°	0.8°
<b>Input Voltage</b>	5V DC (4.75V~5.25V DC)	5V DC (4.75V~5.25V DC)	5V DC (4.75V~5.25V DC)
<b>Power Consumption</b>	1W	1.5W	1.2W
<b>Operating Temperature</b>	-10°C~40°C	-10°C~40°C	-10°C~40°C
<b>Communication Interface</b>	Standard Asynchronous Serial Port(Baud rate 230,400 bps)	Standard Asynchronous Serial Port(Baud rate 460,800 bps)	Standard Asynchronous Serial Port(Baud rate 230,400 bps)
<b>IP Grade</b>	IPX-4	IPX-4	IPX-4
<b>Anti-light</b>	4K lux	> 80K Lux	60K Lux
<b>Weight</b>	60g	≈60g	≈60g
<b>Dimensions (DxH)</b>	Φ52x36.1 mm	Φ52x36.1 mm	Φ52x36.1 mm

# N301 Series

## Explosion-Proof / Flameproof LiDAR

After rigorous testing and verification, LSLiDAR has launched the N301 series of explosion-proof and flameproof LiDARs specifically designed for complex, flammable and explosive environments. This series of LiDARs is capable of conducting a comprehensive 360° scan of the surrounding environment, achieving precise 2D detection. With a detection range of up to 50m and a measurement rate of up to 20,000 points per second, the LiDARs also boast an IP67 dust and water resistance rating, ensuring stable operation in various harsh environments. Widely applicable in scenarios such as gas stations, chemical plants, liquefied gas stations, oil exploration, ground patrols, and inspection.



Explosion-Proof LiDAR N301 (Ex ib I Mb)



Flameproof LiDAR N301 (Ex d IIC T6 Gb)

<b>Wavelength</b>	905nm	<b>Communication Interface</b>	100M Ethernet
<b>Laser Class</b>	CLASS 1	<b>Output Data</b>	Distance, Angle
<b>Channels</b>	1	<b>Input Voltage</b>	9~32VDC (Typical Value 12/24VDC)
<b>Detection Method</b>	TOF	<b>Drivers</b>	Brushless Motor
<b>Detection Range</b>	10 / 20 / 30 / 40 / 50m	<b>Power Consumption</b>	4W
<b>Distance Resolution</b>	2 mm / 4 mm	<b>Operating Temperature</b>	-20°C ~ 60°C
<b>Accuracy</b>	±3cm	<b>Anti-light</b>	80 K Lux
<b>Horizontal FOV</b>	360°	<b>Vibration Test</b>	5Hz~2000Hz, 3G rms
<b>Horizontal Resolution</b>	0.09° / 0.18° / 0.36°	<b>Shock Test</b>	500m/sec <sup>2</sup> , lasting for 11ms
<b>FPS</b>	5Hz/10Hz/20Hz	<b>Weight</b>	≈406g(Explosion-Proof)
<b>Data Point Generating Rate</b>	20,000 pts/sec	<b>Dimensions (DxH)</b>	Φ80x79.1mm(Explosion-Proof)

# MD01

## Dual-Channel Underwater Mapping LiDAR

MD-01 is a dual-channel underwater mapping LiDAR system for airborne and shipborne use. It provides two different wavelengths (green light and infrared (IR)) LiDAR channels that can acquire complementary scanning data, thereby providing two independent point cloud distribution maps with reflectivity. With the specific green laser wavelength channel, underwater targets can be measured, achieving partial hydrographic measurement capabilities.



<b>LASER</b>	<b>Land Wavelength</b>	1064nm Infrared Laser	<b>Shallowest Sounding</b>	≥0.35m
	<b>Sea Wavelength</b>	532nm Green Laser	<b>Sounding Accuracy</b>	0.25m
	<b>Measurement Data Frequency</b>	10kHz	<b>Sounding Ability</b>	1.5SD (50 m Flight Height)
	<b>FPS</b>	20Hz	<b>Planimetric Accuracy</b>	0.5m
	<b>Scanning Width</b>	40°	<b>Weight</b>	<10kg
	<b>Scanning Mode</b>	Elliptical / Single Line	<b>Dimensions (L*W*H)</b>	380x23x250(mm)
	<b>Laser Spot</b>	5cm (50 m Flight Height)	<b>Input Voltage</b>	DC 20 V ~32 V
	<b>Laser Beam Direction Angle</b>	0.01°	<b>Power Consumption</b>	<120W
	<b>Suitable Flight Altitude</b>	5 m-200 m	<b>Display</b>	Waveform display, three-dimensional point cloud, seabed topography
	<b>IMU</b>	<b>Positional Accuracy</b>	Better than 5cm	<b>Pitch, Roll</b>
<b>Positioning Mode</b>		Multi-constellation support, RTK, PPK	<b>GNSS Orientation</b>	0.1°
<b>1 PPS Accuracy</b>		20ns	<b>Speed</b>	0.05m/s
<b>Positioning FPS</b>		≥10Hz	<b>Attitude Data Update Rate</b>	200Hz
<b>DOMAIN CONTROL</b>	<b>External Interface</b>	1*USB3.X interface (copy hard disk data for post-processing), 1* power interface (communicate with drone), 1* 100M Ethernet port (shared by two radar point clouds), 1* 1000M Ethernet port (shared by two LiDARs original waveform data), 1 x Ethernet port, 1 x communication port		

# LS72A

## Three-Point Laser Distance Sensor

LS72A three-point laser distance sensor utilizes the TOF (Time of Flight) technology to conduct distance detection at a fixed angle. With a detection accuracy of ±5cm and a maximum range of 100m, it is primarily used in indoor service robots, AGVs, cleaning and disinfection robots, drones, commercial vehicles, and other applications that require precise ranging and obstacle avoidance.

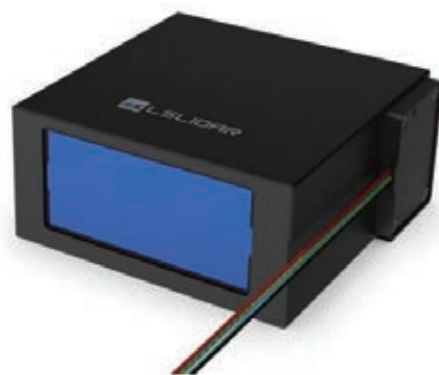


<b>Detection Method</b>	TOF	<b>Interface</b>	CAN
<b>Detection Range</b>	50m@10%	<b>Operating Temperature</b>	-40°C~85°C
<b>Range Accuracy</b>	±5cm (1σ)	<b>Storage Temperature</b>	-50°C~105°C
<b>FPS</b>	10~200Hz (Adjustable)	<b>IP Grade</b>	IP67
<b>Horizontal Angle</b>	0°~±0.9°	<b>Power Consumption</b>	2W
<b>Wavelength</b>	905nm	<b>Input Voltage</b>	6~18VDC
<b>Laser Class</b>	Class I	<b>Dimensions (LxWxH)</b>	76x74x35mm
<b>Data Point Generating Rate</b>	30~600 pts/sec		

# LS72B

## Laser Distance Sensor

LS72B series laser distance sensor adopts the TOF(Time of Flight) scheme, which can detect the distance at a fixed Angle. The design detection accuracy reaches  $\pm 3\text{cm}$  and the maximum measuring range is 100m. It is mainly used in indoor service robots, AGVs, cleaning robots, drones and other applications requiring accurate ranging and obstacle avoidance.



<b>Wavelength</b>	905nm	<b>Power Consumption</b>	3W
<b>Laser Class</b>	Class I	<b>Input Voltage</b>	6~18 V
<b>Detection Range</b>	0.05~100 m (@10%)	<b>Operating Temperature</b>	-40°C~85°C
<b>Range Accuracy</b>	$\pm 3\text{ cm}$ (1 $\sigma$ )	<b>Storage Temperature</b>	-40°C ~ 105°C
<b>FPS</b>	10 Hz~200 Hz (Adjustable)	<b>Dimensions (LxWxH)</b>	76*74*35mm (Interface Excluded)
<b>Echo Frequency</b>	Single / Dual Echo (Factory Settings)	<b>Weight</b>	260g
<b>Interface</b>	CAN		





# INTELLIGENT TRANSPORTATION SYSTEM(ITS) SOLUTION

LiDAR INDUSTRY APPLICATION SOLUTIONS

## APPLICATION CASES

The different landing projects were deployed in cities such as Beijing, Shanghai, Guangzhou, Shenzhen, Zhengzhou, Chongqing, Xian, Tianjin, Wuhan, Suzhou, Xuchang, Changzhou etc., which were covered on the traffic lights, accident blackspot, blind zones, the intersection of roads, the bridges and tunnels, the zones nearby the school etc.

## V2X Roadside Perception System

LSLiDAR V2X Roadside Perception System is based on the data fusion of LiDAR and Camera, via leading neural networks algorithms to realize the precise localization and identification of the vehicles, non-motor vehicles, as well as pedestrians on the road, then by live transmission to traffic control authority and the permitted vehicles, which can realize early warning of road conditions and dangers, improve the safety and redundancy of autonomous driving, and bring a safe, efficient, and environmentally friendly road traffic system.



LS Series



C32/C16



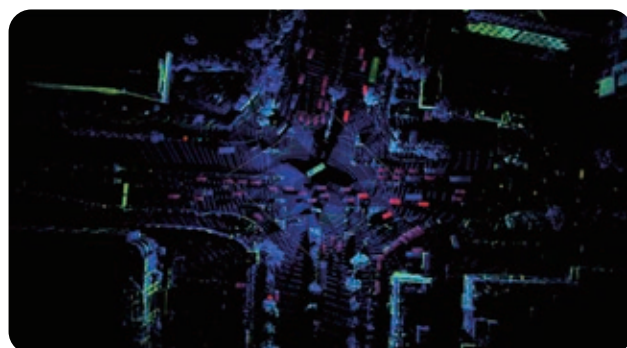
CH128X1

Accurate detection

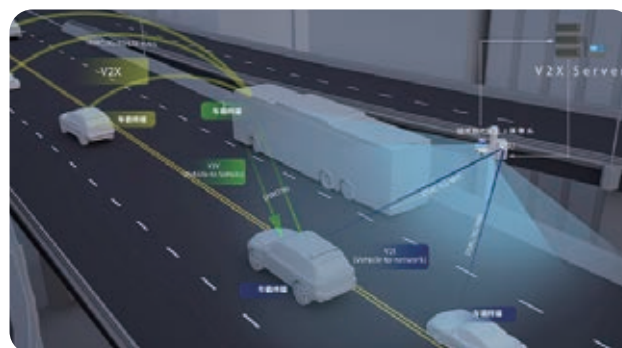
Full road coverage

Accurate identification of target attributes

Event judgment



All-Round detection coverage without any blind zone



Effect of visual identification and classification



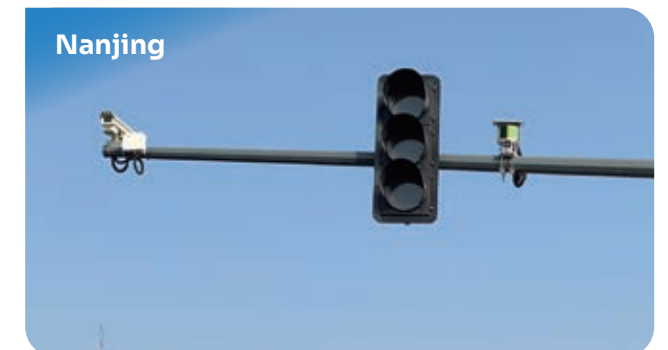
Tianjin



Guangzhou



Xian



Nanjing



Beijing



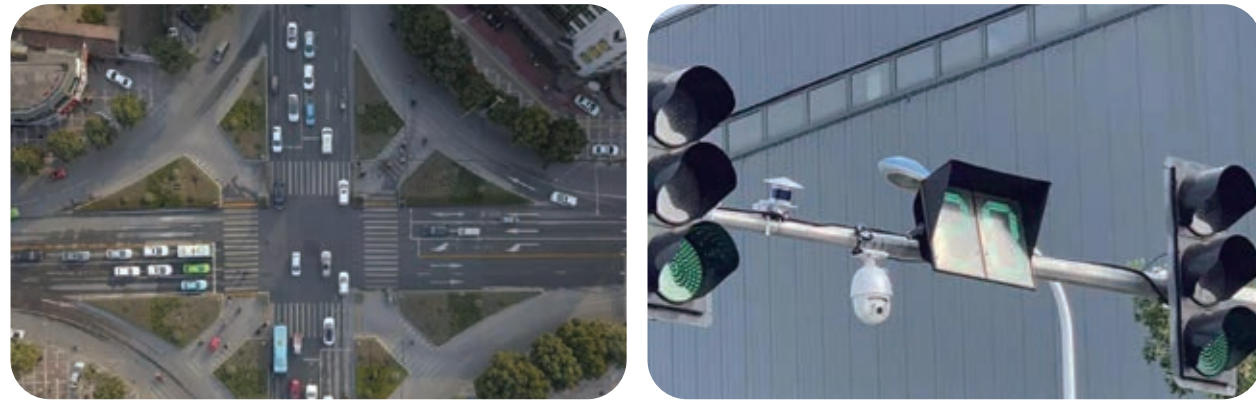
Shenzhen



## Multi-functional 5G intelligent traffic lights

### FIXED INTELLIGENT TRAFFIC LIGHTS ON ROADSIDES

Based on the V2X system, connecting the intelligent detection system to the traffic lights enables self-adaptive smart control of the lights flashing time and passing direction in accordance with the traffic flow at the junctions, improving traffic efficiency.



### MOBILE INTELLIGENT TRAFFIC LIGHTS



LSLiDAR's multi-functional 5G intelligent traffic lights integrate LiDAR, camera, millimetre wave radar, intelligent traffic light, intelligent signal machine, intelligent roadside unit (5G RSU), combined inertial navigation equipment, mobile power, etc. Equipped with AI algorithms, it can detect the location coordinates, category, ID, speed, and size of the target, and further determine whether there are traffic events such as "reverse driving", "traffic congestion", "road spillage", "slow moving vehicles", "abnormal lane change", "red light running", etc. to achieve early warning of dangerous road conditions and improve the efficiency of urban traffic operation.

LSLiDAR's multi-functional 5G intelligent traffic lights are available in both hand-pushed and autonomous mobile versions. The autonomous mobile version saves manpower by moving independently to the destination as entered by the staff.

## OUTSTANDING ADVANTAGES

Self-adaptive intelligent control of the traffic lights	Easy to deploy and quick to put into use	Mobile and flexible, supporting multiple scenarios	Integrated design, multiple data sources	Flexible and convenient power and network supply
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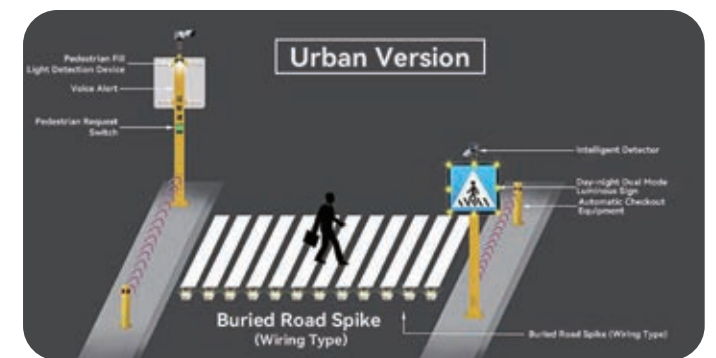
## APPLICATION

- It can be installed at intersections of public roads to help build a safe, efficient and environmentally friendly road traffic system and improve the traffic operation efficiency of cities.
- It is suitable for use in intelligent network test zones, demonstration zones, higher education institutions and research institutes, etc., to create realistic IoV (Internet of Vehicles) application scenarios for talent training, meet research needs and enhance students' IoV theoretical and practical abilities.



## Intelligent pedestrian crossing

Based on the V2X system, the intelligent detection system is connected to the stud lights on the zebra crossing. Pedestrians passing by will trigger the stud lights to quickly flash and the safety voice broadcast. At night, the stud lights will change colors with the traffic lights. Red-light running will also trigger camera capture, stud lights flashing and voice alarming. The intelligent pedestrian crossing provides better protection for pedestrians crossing junctions and also alerts vehicles at junctions to avoid pedestrians.



Intelligent pedestrian crossing

## High-way ETC activation system

The non-contact fixed ETC trigger system independently developed by LSLiDAR adopts the most advanced laser scanning technology to accurately detect the arrival of vehicles. With excellent performance in detection accuracy, anti-interference and accuracy rate, as well as stable working ability under all-weather conditions, this safe and reliable system is suitable for ETC-triggered camera capture on highways.

**LiDAR products required for high-speed ETC triggering**



### ADVANTAGE

1

The system uses state-of-the-art laser scanning technology to accurately identify the arrival of vehicles. The vehicle capture rate of the camera is as high as 99%, and the license plate recognition rate is over 98%. (When the camera is properly focused and the license plate is not defaced or blocked.)

2

With stable performance under all-weather conditions and high measurement accuracy, the system is able to output the distance, orientation, size and other information of the vehicle

3

The same vehicle can be captured multiple times (3-4 times recommended) to ensure the accuracy of the image information.

4

It can be used for the detection of complex road conditions, such as large traffic flow, multi-vehicle parallelism, and cross-track driving.

### APPLICATION



When a moving vehicle enters the set capture point, the LiDAR trigger system can send a trigger signal to instruct the corresponding camera to capture. According to the set number of snapshots, a corresponding number of snapshot images of the vehicle will be obtained. At the same time, one device in the system can detect multiple lanes, and the detection of each lane is independent and does not interfere with each other.

## Vehicle Classification System

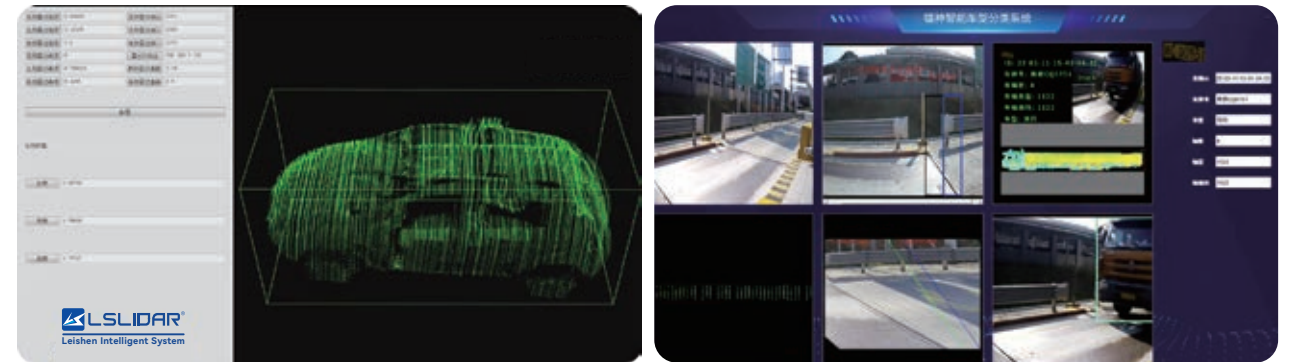
The Vehicle Type Classification System, according to the Highway Freight Vehicle Overload Recognition Standard, is capable of fully automatically identify the axle type of 2-6 axle freight vehicles, including the number of vehicle axles, the number of drive axles, axle arrangement and standard limits, and the ability to identify the axle type of trucks with more than 6 axles is reserved.

High Identification Rate

Precise Identification

Accurate Match

All-day Detection



## Vehicle Contour Detection Solution

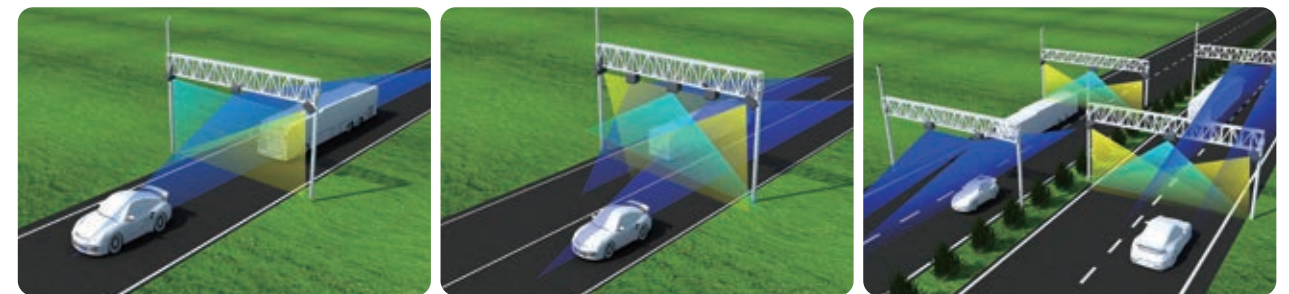
Vehicle Contour Detection System is a set of fully automatic non-contact equipment for vehicle length, width and height detection, using the most advanced high-speed Lidar as a sensor, the detection accuracy is significantly higher than other current non-contact detection technologies, such as microwave, video, etc., and has a strong anti-interference ability to work stably around the clock.

Real-time Modeling

Accurate Detection

Status Monitoring

Self-monitoring





# LIDAR 3D SLAM AGV/AMR SYSTEM KIT

LiDAR INDUSTRY APPLICATION SOLUTIONS



## 3D SLAM Unmanned Forklift / AMR Controller

3D SLAM unmanned forklift controller is a universal controller designed for industrial robots, which integrates 3D SLAM laser navigation algorithms, motion control algorithms, pallet recognition algorithms and 3D protection algorithms, and is suitable for a variety of forklift chassis, which can realize 3D mapping, positioning and navigation, path planning, safety and obstacle avoidance, 3D three-dimensional protection, pallet recognition, and automatic charging, and other functions, and quickly and easily complete the forklift unmanned transformation.

High-Precision Real 3D SLAM

All-Around 3D Protection

Abundant Interfaces

High Adaptability

Quick Deployment & Easy Assembly



The World's First

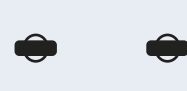
### Support Multiple Chassis Models



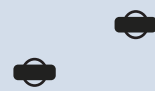
Dual-drive Differential



Four-drive Differential



Twin-rudder Wheel (1)



Twin-rudder Wheel (2)



Four-rudder Wheel

## 3D SLAM MAPPING AND POSITING KIT

LX-3D SLAM Mapping and Positioning Kit is a core software and hardware product developed by LSLiDAR. With the 3D LiDAR as the main sensor, through the data fusion of LiDAR, IMU, odometer, GPS and other types of sensors, and together with high-performance processors, it achieves the mapping and position matching of the operating environment. The product is also equipped with an Ethernet communication interface to meet the user's precise positioning needs in various operating scenarios.



Accurate and stable real-time 3D point cloud mapping



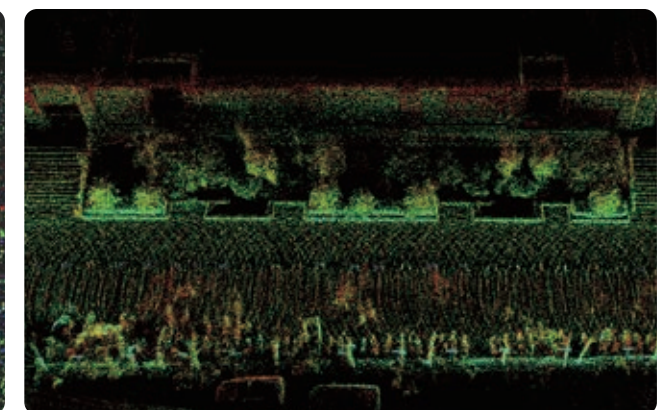
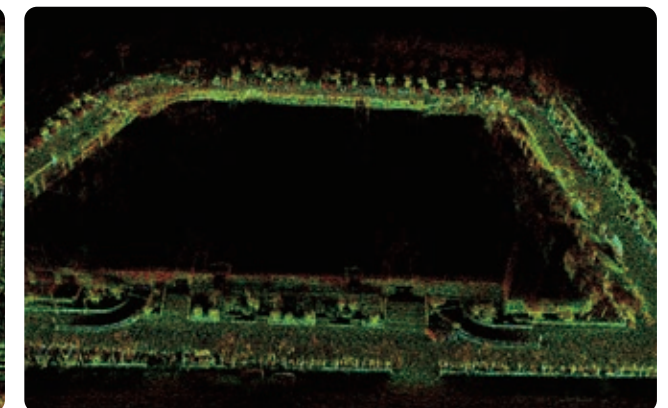
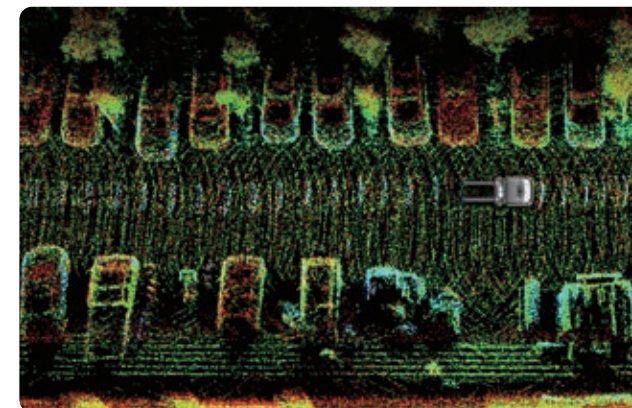
Strong adaptability to various environments



Convenient deployment and quick commissioning



Low investment cost





# HIGH-END SECURITY SYSTEM

## LiDAR INDUSTRY APPLICATION SOLUTIONS

LSLiDAR High-end Security System (hereinafter referred to as System) uses multi-sensor fusion equipment such as LiDARs, HD cameras, thermal imaging cameras and microwave radars, and integrates with advanced neural network algorithm to achieve active detection of illegal intrusion in the perimeter. Once any illegal intrusion, the System will link the HD dome cameras to monitor the intruded area, collect HD videos and images, locate and track the target in the key surveillance area, record the movement trajectories of the target, trigger the surveillance center to send alarms to enable a pre-warning.

### APPLICATION



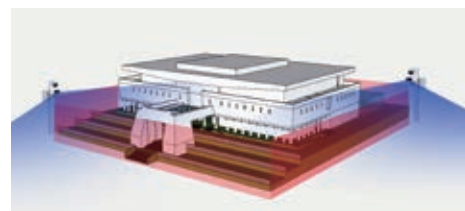
Airports Perimeter Security



Nuclear Power Stations Security



Prisons and Detention Houses Security



Museums and Other Important Places Security



Port Terminals Security



Subway and Railway Platforms Security



LSLiDAR High-end Security Solution is applied in a wide range of fields such as airports, port terminals, mine areas, museums, high-speed railway stations, ship security, oil depots, hazardous goods storage areas, chemical plants, prisons and detention houses, coastline security, plant and animal protection, forest safety prevention zones, water protection zones, hydro-electric power, nuclear power stations, special camps, special warehouses, special parks and other places.

### OUTSTANDING ADVANTAGES

Compared with the passive defense of surveillance technology and sensor alarm technology and shortages of intelligent image analysis technology in environmental applications, the System based on the deployment of 3D LiDAR has outstanding advantages.

1

#### Wild Detection Range

The detection range reaches up to 2 kilometers, effectively making up for the limitation of human eyes' visual distance.

2

#### Proactive Defense

The 3D LiDAR links the camera to achieve detection, proactively locating the real-time 3D coordinates, GPS coordinates and movement trajectories of the intruders.

3

#### All-Day Operation

The System is not affected by sunlight or bad weathers and applicable to most outdoor scenarios. It works well even in bright light or at night, which enables a 24/7 stable operation.

4

#### Intelligent Algorithm Identification

The intelligent algorithm accurately identifies the target attributes based on the detected data, and reserves the detected data to provide the data basis for predicting the target's behaviors.

5

#### Multi-Targets and Multi-Areas Track

The System can set multiple independent detection areas at one time, and can also set non-detection areas, without personnel on tracking.

6

#### Linkage Alarm Devices

Once any intrusion target is detected, the System will trigger the surveillance center, send alarms and upload the videos. The System also supports setting alarms for intrusion in the detection range at different areas and different time periods.

7

#### Solar Powered

The System supports solar power, transmits signals through 5G/4G network, and able to work in remote areas where there are difficulties for power supply.



# RAILWAY INTRUSION DETECTION SYSTEM

LiDAR INDUSTRY APPLICATION SOLUTIONS

LSLiDAR has been empowering industrial upgrading with high-end, stable and reliable LiDAR environment perception technology. In response to the intelligent and automated development needs of rail transit, LSLiDAR has independently developed a number of LiDAR rail transit application solutions.



LS25 Series



CH128X1

### Train-end Intelligent Monitoring System for Obstacle Intrusion

- Active Monitoring
- Anti-Glare
- All-Time
- Real-Time Warning
- High Resolution High Precision High Density
- Vision Fusion

### Obstacle Detection System of Subway Screen Door

- Real-Time Warning
- Anti-Glare & Anti-Shock
- Flexible Setting of Scanning Area
- All-Time Operation
- High Resolution High Precision High Density

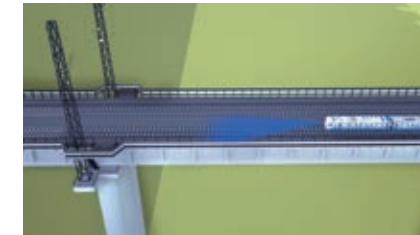
### Intelligent Roadside Monitoring System of Railway for Obstacle Intrusion

- Active Monitoring
- Anti-Glare
- All-Time
- Real-Time Warning
- High Resolution High Precision High Density
- Vision Fusion

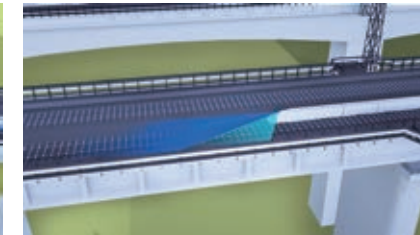
### Train Contour Detection System

- Non-stop Measurement
- Easy Installation and Maintenance
- Efficient Work All Day
- Self-monitoring

## ● INSTALL EFFECT



Intelligent Monitoring Solution for Foreign Body Intrusion to Medium and Low Speed Train Tracks



Intelligent Monitoring Solution for Foreign Body Intrusion to High Speed Train Tracks



Fixed-point Intelligent Monitoring Solution for Track Foreign Body Intrusion



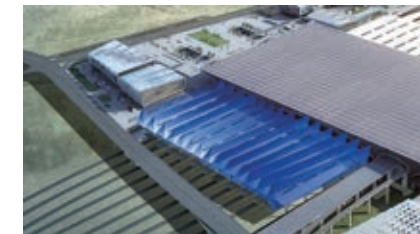
Subway Screen Door Foreign Body Detection Solution (Door End)



Subway Screen Door Foreign Body Detection Solution (Car End)



Platform Anti-drop Monitoring Solution



Intelligent Monitoring Solution for Shelters in High-speed Railway Stations



Tunnel Contour Detection Solution



Railway Turnout Deformation Detection Solution



# TAILORED LIDAR & SOLUTION FOR INTELLIGENT DRIVING

LIDAR INDUSTRY APPLICATION SOLUTIONS

## Blind Spot Detection System For Large Vehicles

The system is designed to eliminate blind spot areas for trucks, trailers, dump trucks and various large engineering vehicles. Full coverage detection of the blind areas can be achieved, which can accurately detect whether there are vehicles or pedestrians in the blind areas, and give drivers immediate warning of danger.

Active Detection

Accurate Detection

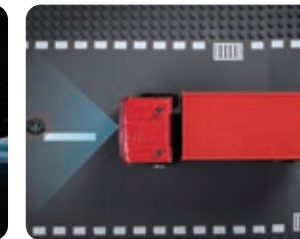
Fast Reaction

24-hour Monitoring

## APPLICATION



Pedestrian collision warning



Emergency intrusion warning



Safe distance warning



Lane deviation warning

## Multi-sensor Fusion Environment Perception System

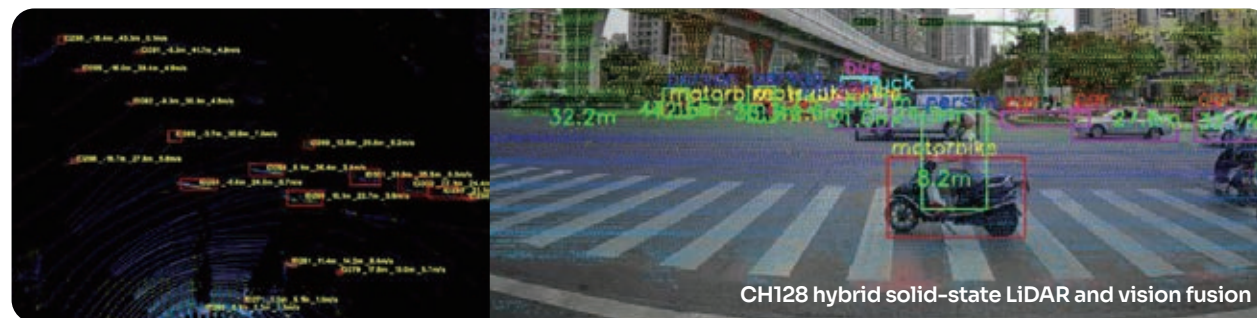
LSLiDAR's multi-sensor fusion environment perception system combines sensors including LiDAR, camera, millimeter wave radar, taking advantage of function complementarity and leading neural network algorithm to ensure the safety redundancy of autonomous driving, can accurately identify vehicles, lanes, traffic lights, road signs, pedestrians and obstacles.

High safety redundancy

Accurate positioning and navigation

Deep Learning

Multiple LiDAR Alternatives



CH128 hybrid solid-state LiDAR and vision fusion

## Autonomous Emergency Braking (AEB)

Autonomous emergency braking system (AEB) could measure the distance and relative speed of the vehicle in front through LiDAR and camera. When the front vehicle brakes suddenly, or with inadequate braking force/no braking measures, the system will apply emergency braking, so as to avoid collision or reduce the degree of collision damage.

Active Detection

Accurate Detection

Fast Reaction

24-hour Monitoring

AEB is mainly composed of camera, LiDAR, perception processor, ECU, acousto-optic alarm and braking system.

## Low-speed Autonomous Vehicle System

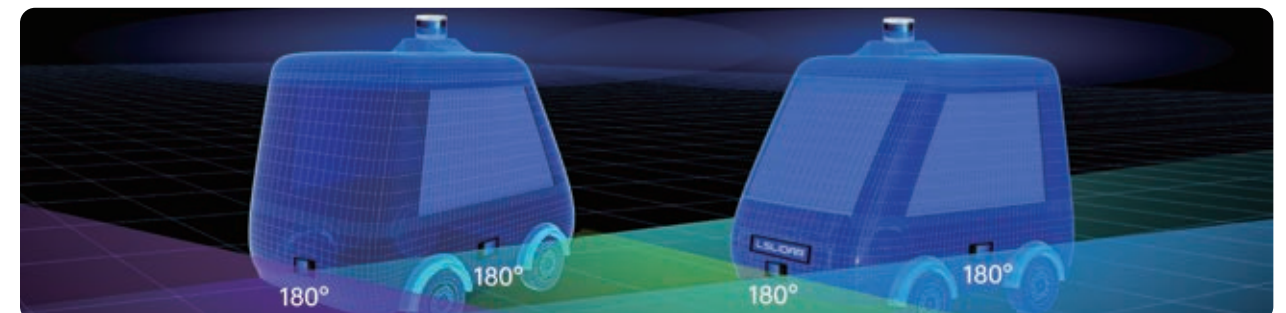
The perception system of Low-speed Autonomous Vehicles utilizes sensors installed around the vehicle to build environmental maps and detect, identify, and process environmental information. It mainly comprises sensor modules, mapping modules, and real-time multi-sensor data fusion processing modules. The multi-line LiDAR mounted on the roof serves as the primary sensor for scanning and detecting the area environment where the vehicle operates. By employing laser 3D SLAM technology, incremental real-time mapping of large-scale scenes is achieved, thereby providing accurate three-dimensional high-precision laser maps for path planning and backend matching and positioning.

Powerful percept on capabilities

Autonomous navigation

Universal application for both indoor and outdoor environments

A wide range of LiDAR options to choose from





# BRIDGE ANTI-COLLISION INTELLIGENT ALERT SYSTEM

LiDAR INDUSTRY APPLICATION SOLUTIONS

During the flood season, ship drivers can only roughly judge whether they can pass the bridge based on their experience, which leads to many accidents of ships hitting the bridge due to superelevation. This solution uses lasers to scan and monitor ultra-high targets in navigable waters. The ultra-high vessel that threatens the safety of the bridge can be found within 2 km at the farthest, the position and distance of the vessel can be known, and the alarm information can be issued in time to effectively avoid the collision between the ultra-high vessel and the bridge.



LS-S3



MS06



LS30MVA



Active Monitoring



Ultra-far Detection



Multi-Level Pre-warning



Linkage Cameras



Stable and Reliable

## ● ADVANTAGE

- 1 Self-developed high-end long-distance LiDAR.
- 2 Scan and monitor all ships in navigable waters, and flexibly set navigable areas and non-navigable areas.
- 3 Real-time positioning of the ship's position, multi-level pre-warning of the ship's yaw.
- 4 Linkage cameras to conduct video forensics of yaw vessels.

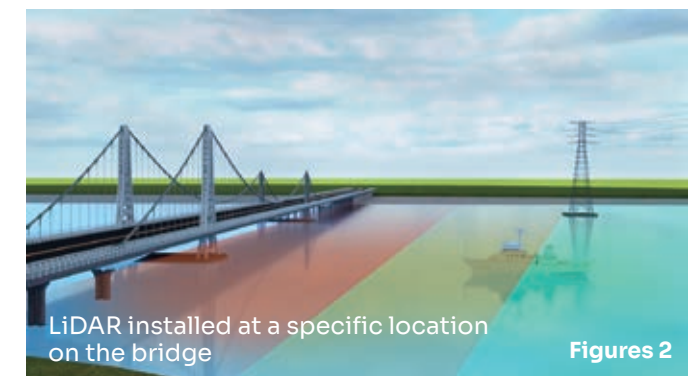
## ● INSTALLATION SCHEME

By installing the LiDAR at a specific position of the bridge (see Figures 1 and 2) or on the shore at a certain distance from the bridge (see Figure 3), the laser is used to identify whether the passing ship height exceeds a pre-set superelevation threshold. When the vessel is higher than the limit height of the bridge, the system outputs an alarm signal and releases the warning information in time - it can issue a warning to the ultra-high vessel through the tweeter and the large LED screen, and at the same time display the warning information in the monitoring hall. After receiving the warning, the maritime law enforcement department and bridge maintenance personnel will deal with the dangerous situation in a timely manner to effectively avoid the collision between the ultra-high ship and the bridge.



LiDAR installed at a specific location on the bridge

Figures 1



LiDAR installed at a specific location on the bridge

Figures 2



LiDAR installed on the shore at a certain distance from the bridge

Figures 3



# LIDAR 3D PROTECTION SYSTEM

## LiDAR INDUSTRY APPLICATION SOLUTIONS

This system is a new generation of non-contact 3D protection equipment independently developed by LSLiDAR. It utilizes the most advanced 3D LiDAR scanning technology to accurately detect the surrounding environment and precisely identify intruders based on the user-configured protection zones. The system boasts reliable all-weather operational stability, high measurement accuracy, and a compact size. It also features dust and rain/fog recognition and filtering capabilities. This system is suitable for industrial safety protection, perimeter protection, vehicle perimeter protection, robot obstacle avoidance, and various other applications.

### ● ADVANTAGE

#### Safety Protection

High-resolution, high-precision, and high-density three-dimensional information collection for intruding objects, with centimeter-level ranging accuracy. Active detection and timely warnings ensure enhanced safety.

#### Ease of Operation

Designated protection zones through algorithm software, with the ability to store multiple settings simultaneously. Users can easily switch between different protection settings based on their specific scenarios.

#### Comprehensive Coverage

Achieves multi-sensor fusion for environmental perception, monitoring multiple blind spots of vehicles in all directions, and real-time synchronization of information.

#### Flexible Configuration

The number of LiDAR sensors can be flexibly configured based on actual scene requirements.

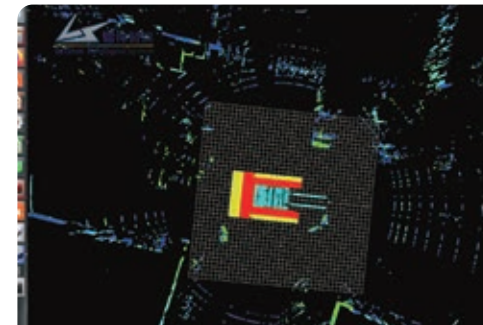
#### System Stability

The system is highly stable and reliable, able to accurately detect the surrounding environment both day and night, providing round-the-clock protection for drivers.

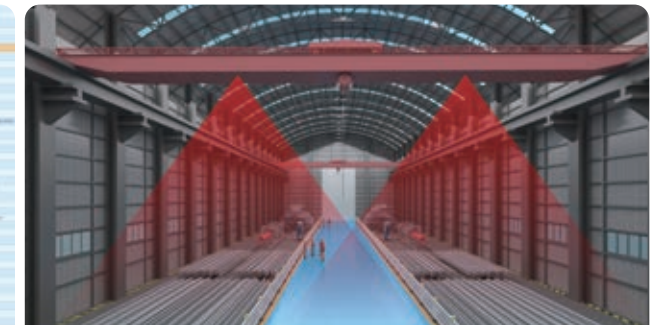
#### Outdoor Applicability

The LiDAR has strong resistance to light interference and excellent rain, fog, and dust filtering capabilities, ensuring uninterrupted operation regardless of adverse weather conditions.

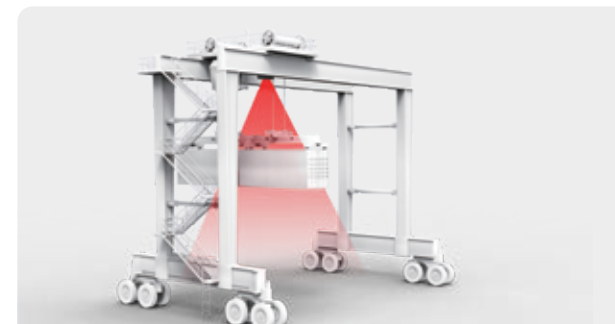
### ● APPLICATION



Forklift collision avoidance



Port crane collision avoidance



Crane collision avoidance



Construction machinery protection



Large vehicle blind spot protection



Commercial vehicle protection



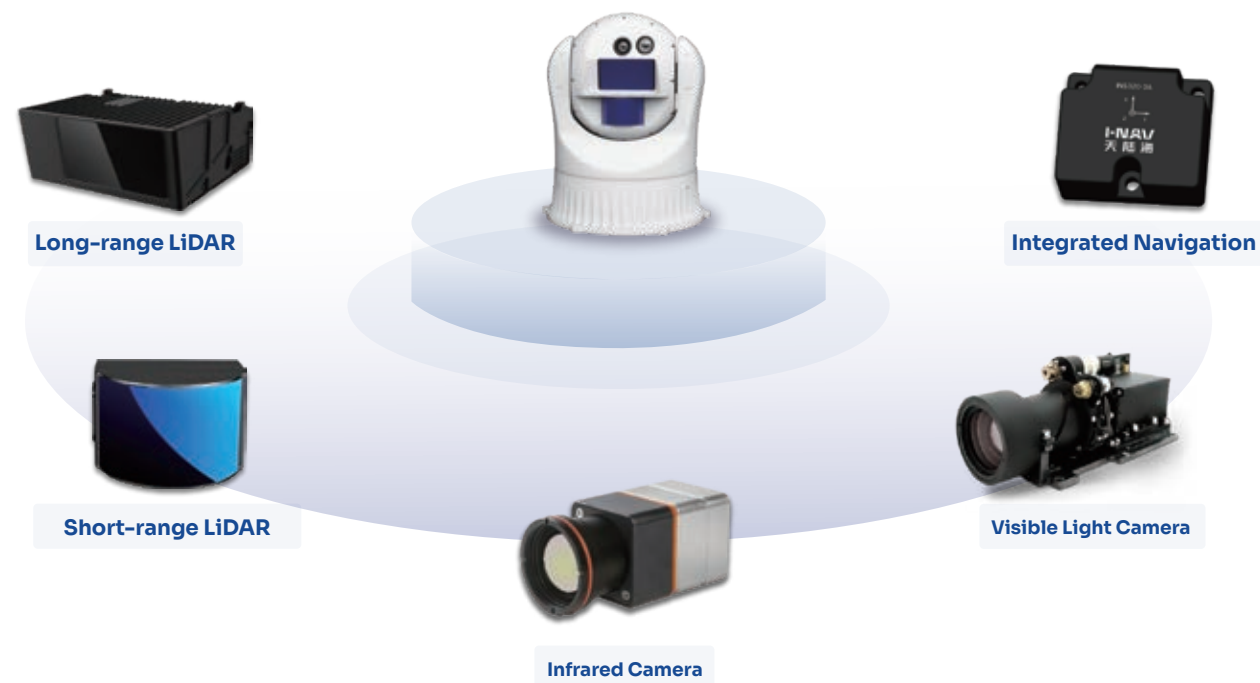
# LSLIDAR VEHICLE/VESSEL OPTOELECTRONIC SYSTEM

## LiDAR INDUSTRY APPLICATION SOLUTIONS

LSLiDAR vehicle/vessel optoelectronic system integrates multi-sensor devices including LiDAR, visible light camera, infrared camera, and integrated navigation. It adopts an attitude and heading reference system (AHRS) framework with two-axis stabilization to stably acquire precise 3D environmental information. Through multi-source information fusion processing combined with advanced neural network algorithms, it can intelligently identify and acquire target object information, and achieve efficient observation, search, monitoring, target tracking and other functions for target objects. It is mainly applicable to maritime, land or low-altitude scenarios.

### ● ADVANTAGES

<b>PRECISE 3D ENVIRONMENTAL PERCEPTION</b>	<b>LONG RANGE DISTANCE AND WIDE RANGE</b>	<b>INTELLIGENT TARGET IDENTIFICATION AND DEFENSE</b>
<b>EXCELLENT ANTI-VIBRATION CAPABILITY</b>	<b>ALL-WEATHER 24/7 APPLICABILITY</b>	<b>WIDE ADAPTABILITY</b>



### ● FUNCTIONAL DESCRIPTION

	Integrates capabilities of LiDAR, integrated navigation, visible light camera, and infrared camera data fusion function.		Able to achieve real-time ranging and detection of targets including vessels, vehicles, drones, etc.
	Rapidly reconstructs 3D environmental models, builds global maps, and provides reliable terrain data including flat ground, hills, ponds and other landforms.		Provides visible light and thermal imaging, with image enhancement to ensure 24/7 safe surveillance.
	Supports external GPS/BDS for global positioning capabilities.		Features dual-axis gyro stabilization to effectively isolate disturbances from vessel/vehicle motion and keep multi-sensors stable.
	Provides intelligent target tracking modes including manual, geo, auto and search tracking.		

### ● APPLICATION

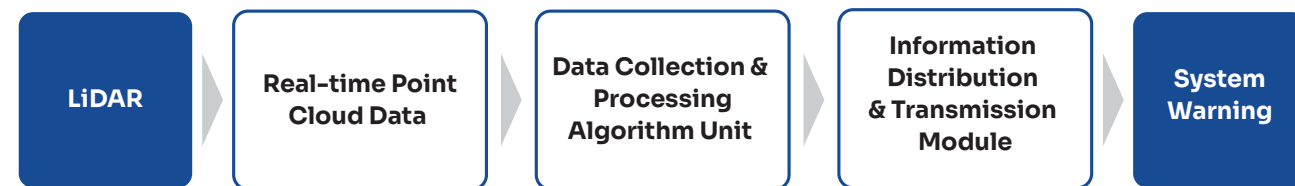
<b>MARINE EXPLORATION</b>	<b>MARITIME RESCUE</b>	<b>MAP SURVEYING</b>
<b>INTELLIGENT SECURITY</b>	<b>TRAFFIC MANAGEMENT</b>	<b>LAW ENFORCEMENT</b>



# FLYING CAR OBSTACLE AVOIDANCE

## LiDAR INDUSTRY APPLICATION SOLUTIONS

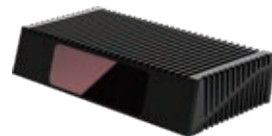
As the core sensor of this solution, LiDAR can quickly, accurately and massively obtain the position point cloud data of obstacles that appear in a certain protective area around the flying car. The size/volume and location information of obstacles are known by pre-processing the point cloud data, and the potential danger will be reported to the driver or ADAS in time through a warning system for effective obstacle avoidance.



### Application Solution to Flying Cars (Maximum Design Speed:120km/h~200km/h)



**MS06**  
(Long-distance Obstacle Detection)



**LS Series**  
(Close-range Obstacle Avoidance & Blind Spot Detection)

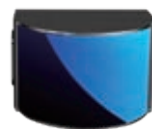


**LS72A**  
(Monitor Terrain Clearance)

### Application Solution to Flying Cars (Maximum Design Speed:below 120km/h)



**CH128X1**  
(Long-distance Obstacle Detection)



**CB64**  
(Close-range Obstacle Avoidance & Blind Spot Detection)



**LS72A**  
(Monitor Terrain Clearance)

## ADVANTAGES

### 1.Long-range forward obstacle detection

In the obstacle avoidance scheme of flying car with the design of highest speed 120km/h~200km/h, MS06 LiDAR is installed in the head of the car, and the detection range is between 1000m-2000m.

The obstacle avoidance side of flying cars with the design of highest speed below 120km/h is equipped with CH128X1 LiDAR, with a detection range of 200m.

It can effectively detect other flying cars or UAVs on the heading and other high-speed intrusion obstacles at a long distance, and provide accurate prediction information and sufficient reaction time for the calculation processing of the control platform and the control operation of flying cars.

### 2.High-precision peripheral sensing detection

LiDAR can obtain huge amounts of data under the cm-level accuracy, after overlapped collecting high-density on repeated Angle, then forming the dense point cloud. High-precision detection of the obstacles close to flying car and blind detection can be realized. High-resolution scan can possibly recognize the invasion of objects or obstacles to achieve flexible obstacle avoidance, such as detection of high voltage cable, small UAV and the small high-suspended solids from the other directions.

### 3.Accurate flight altitude detection

The bottom of the flying car is installed with LSLiDAR LS72A laser distance meter, the measurement accuracy reaches cm-level, the farthest distance ranging in the outdoor strong light can reach 150m, supporting high-refresh frequency and providing real-time and accurate off-ground detection data for the flying car with high protection IP67.

### 4.Non-contact, real-time, active

The scan of the two systems is measured by non-contact scanning, which is collected and processed in the real-time dynamic environment, and the scenario is scanned actively, so as to attain the situation of airspace ahead in advance and get enough time for obstacle avoidance.

### 5.High light resistance, environmental interference

Lidar launches pulsed laser with high light resistance intensity, which is not affected by natural light and high brightness light on the light emission of flying car, and the protection level reaches IP67.

### 6.System is easy to install

The five kinds of LSLiDAR LiDARs are small and easy to be embedded and fit the appearance of the flying car perfectly.

