LSLIDAR

LEISHEN INTELLIGENT SYSTEM CO., LTD.

CORPORATE HQ & MANUFACTURER

CORPORATE HQ
4-5F, Yunhua Building, Shajing Street, Bao'an District, Shenzhen, China
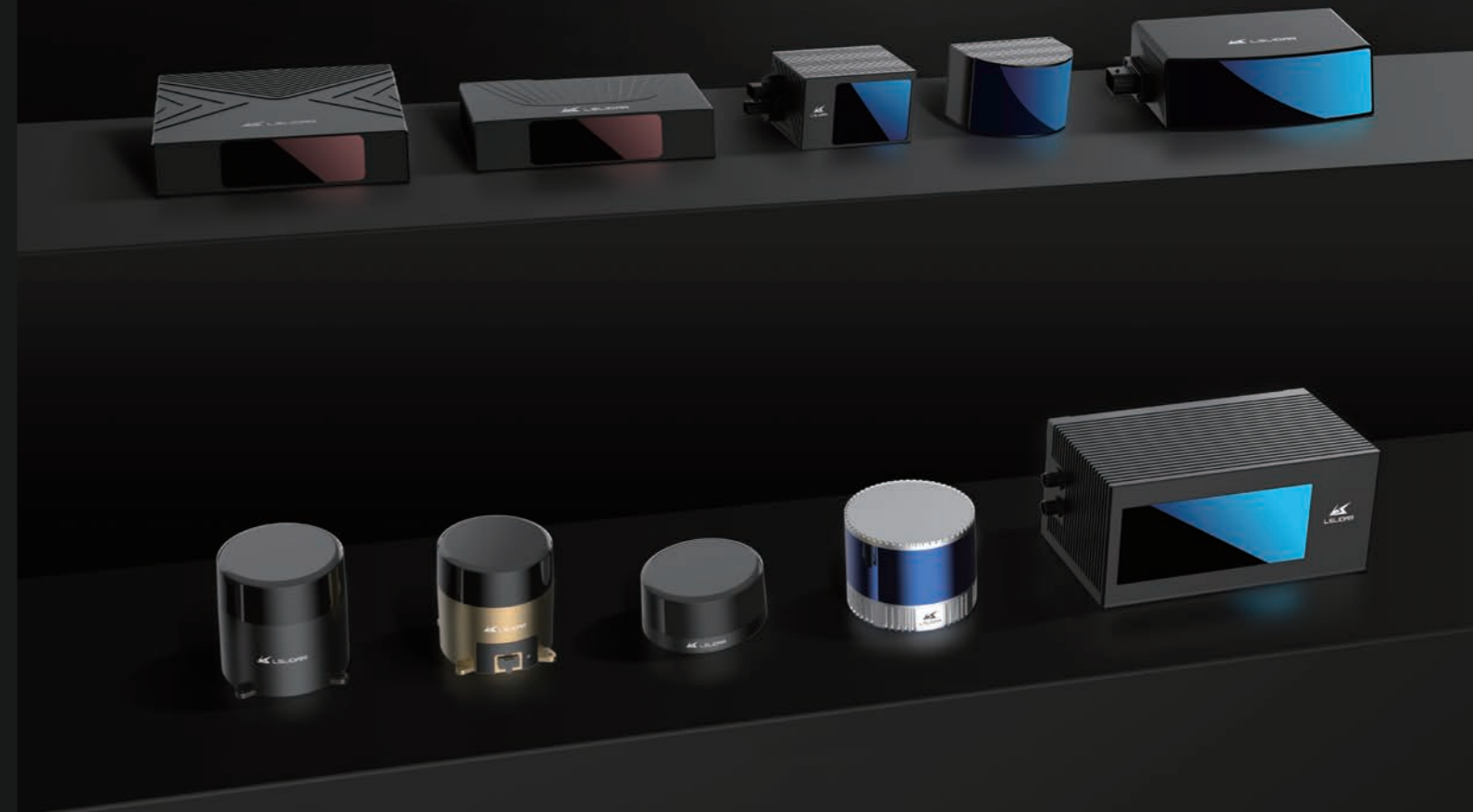
SHANGHAI OFFICE
4F, No.5 Building, No.199 Fenghong Road, Minhang District, Shanghai, China

MANUFACTURER
Building R, Shasi Dongbao Industrial Zone, Shajing Street, Baoan District, Shenzhen

MANUFACTURER
S05 workshop, East of Anlan Avenue, North of Linkong Avenue,
Xuzhou Airport Economic Development Zone, Juning County, Xuzhou City

+86 755-2324-2821   SALES@LSLIDAR.COM

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LS-S1 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 can detect up to 500m, and 250m for 10% reflectivity objects. The other parameters are also impressive: ranging accuracy ±2cm, FOV 120°(H)x25°(V), min vertical resolution 0.034°. The series is also built with anti-interference functionality.
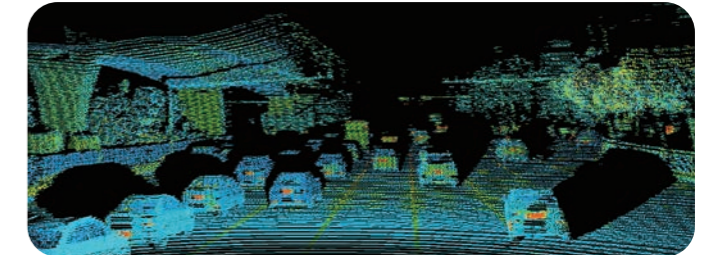
LS-S1 series offers 2 channel alternatives: 128 and 180. The series has 4 ROI patterns: no ROI(A), fixed ROI(B), non-uniform ROI(C) and dynamic ROI(D). The ultra-thin design makes it easier to integrate into the vehicle roof, and customers can choose different size(height): 45mm and 49mm. The image-grade LiDAR will mainly serve the autonomous driving application, with high reliability design for mass production vehicles. The series owns world-leading comprehensive performance and it will become the preferred primary sensor for L3 and higher level driving automation.

LS128S1

LASER	Wavelength	1550nm
	Laser Class	CLASS 1
SPEC	Channels	128
	Channels Scanned	1280/S
	Detection Method	TOF
	Detection Range	1.5m~250m(@10%)
	Range Accuracy	±2cm
	Horizontal (FOV)	120°
	Vertical (FOV)	25° （±12.5°）
	Angular Resolution (HxV)	LS128S1-A: 0.09°*0.2°
		LS128S1-B: 0.09*0.1°@±2° ROI
		LS128S1-D: 0.09*0.1°@±2° ROI
	FPS	10Hz
EXPORT	Communication Interface	Automotive Ethernet
ELECTRIC	Input Voltage	12~36V DC
	Power Consumption	LS128S1-A: 32W
		LS128S1-B: 28W
		LS128S1-D: 28W
ENVIRONMENT	IP Grade	IP6K9K
	Operating Temperature	-40℃~85℃
	Storage Temperature	-40℃ ~ +105℃
	Vibration Test	5Hz-2000Hz，3G rms
	Shock Test	500m/sec²，lasting for 11ms
MACHINE	Weight	Basic: 3.48kg
		Thin: 3kg
	Dimensions (LxWxH)	Basic: 229*235*49mm
		Thin: 220*220*45mm

LS180S1

LASER	Wavelength	1550nm
	Laser Class	CLASS 1
SPEC	Channels	180
	Channels Scanned	1800/S
	Detection Method	TOF
	Detection Range	1.5m~250m(@10%)
	Range Accuracy	±2cm
	Horizontal (FOV)	120°
	Vertical (FOV)	25° （±12.5°）
	Angular Resolution (HxV)	LS180S1-B: 0.12°*0.1°@ROI
		LS180S1-C: 0.12°*0.034°@ROI
		LS180S1-D: 0.12°*0.1°@ROI
	FPS	10Hz
EXPORT	Communication Interface	Automotive Ethernet
ELECTRIC	Input Voltage	12V~36V DC
	Power Consumption	≤30W
ENVIRONMENT	IP Grade	IP6K9K
	Operating Temperature	-40℃~85℃
	Storage Temperature	-40℃ ~ +105℃
	Vibration Test	5Hz-2000Hz，3G rms
	Shock Test	500m/sec²，lasting for 11ms
MACHINE	Weight	Basic: 3.48kg
		Thin: 3kg
	Dimensions (LxWxH)	Basic: 229*235*49mm
		Thin: 220*220*45mm

LS-S2 Series

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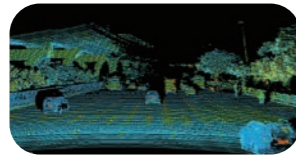
LS series is image-grade LiDAR meeting automotive standards, which adopts the in-house 1550nm fiber-laser and high-power core optical devices. LS series can detect small objects within super long range. The series is also built with anti-interference functionality.

LS-S2 series offers 3 channel alternatives: 128, 180 and 400. The series has 2 ROI patterns: fixed ROI(B) and non-uniform ROI(C). The ultra-thin design makes it easier to integrate into the vehicle roof, and customers can choose different size (height): 45mm and 49mm, it is smaller and thinner than the S1, S3 and S4. The image-grade LiDAR will mainly serve the autonomous driving application, with high reliability design for mass production vehicles. The series owns world-leading comprehensive performance and it will become the preferred primary sensor for L3 and higher level driving automation.

		LS128S2	**LS180S2**	**LS400S2**
LASER	Wavelength	1550nm	1550nm	1550nm
	Laser Class	CLASS 1	CLASS 1	CLASS 1
SPEC	Channels	128	180	400
	Channels Scanned	1280/S	1800/S	4000/S
	Detection Method	TOF	TOF	TOF
	Detection Range	1.5m~180m(@10%)	1.5m~250m(@10%)	1.5m~200m(@10%)
	Range Accuracy	±2cm	±2cm	±2cm
	Horizontal (FOV)	120°	120°	120°
	Vertical (FOV)	25° (±12.5°)	25° (±12.5°)	25° (±12.5°)
	Angular Resolution (HxV)	LS128S2-B: 0.09°*0.1° (@ROI)	LS180S2-B: 0.12°*0.1° (@ROI) LS180S2-C: 0.12°*0.034°(@ROI)	LS400S2-B: 0.06°*0.05° (@ROI)
	FPS	10Hz	10Hz	10Hz
EXPORT	Communication Interface	Automotive Ethernet	Automotive Ethernet	Automotive Ethernet
ELECTRIC	Input Voltage	12V~36V DC	12V~36V DC	12V~36V DC
	Power Consumption	≤22W	≤28W	≤28W
ENVIRONMENT	IP Grade	IP6K9K	IP6K9K	IP6K9K
	Operating Temperature	-40℃~85℃	-40℃~85℃	-40℃~85℃
	Storage Temperature	-40℃ ~ +105℃	-40℃ ~ +105℃	-40℃ ~ +105℃
	Vibration Test	5Hz~2000Hz, 3G rms	5Hz~2000Hz, 3G rms	5Hz~2000Hz, 3G rms
	Shock Test	500m/sec², lasting for 11ms	500m/sec², lasting for 11ms	500m/sec², lasting for 11ms
MACHINE	Weight	Basic: 1.8kg Thin: 1.5kg	Basic: 1.8kg Thin: 1.5kg	Basic: 1.8kg Thin: 1.5kg
	Dimensions (LxWxH)	Basic: 236*129*49mm Thin: 225*125*45mm	Basic: 236*129*49mm Thin: 225*125*45mm	Basic: 236*129*49mm Thin: 225*125*45mm

LS-S3 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-S3 series offers 180 channel alternative. The series has 2 ROI patterns: fixed ROI(B) and non-uniform ROI(C). The series owns world-leading comprehensive performance and it will become the preferred primary sensor for L3 and higher level driving automation.

		LS180S3
LASER	Wavelength	1550nm
	Laser Class	CLASS 1
SPEC	Channels	180
	Channels Scanned	1800/s
	Detection Method	TOF
	Detection Range	1.5m~250m(@10%)
	Range Accuracy	±2cm
	Horizontal (FOV)	120°
	Vertical (FOV)	25° (±12.5°)
	Angular Resolution (HxV)	LS180S3-B: 0.12°*0.1° (@ROI) LS180S3-C: 0.12°*0.034° (@ROI)
	FPS	10Hz
EXPORT	Communication Interface	Automotive Ethernet
ELECTRIC	Input Voltage	12V~36V DC
	Power Consumption	≤28W
ENVIRONMENT	IP Grade	IP6K9K
	Operating Temperature	-40℃~85℃
	Storage Temperature	-40℃ ~ +105℃
	Vibration Test	5Hz~2000Hz, 3G rms
	Shock Test	500m/sec², lasting for 11ms
MACHINE	Weight	2kg
	Dimensions (LxWxH)	230*128*45mm

LS-S4 Series

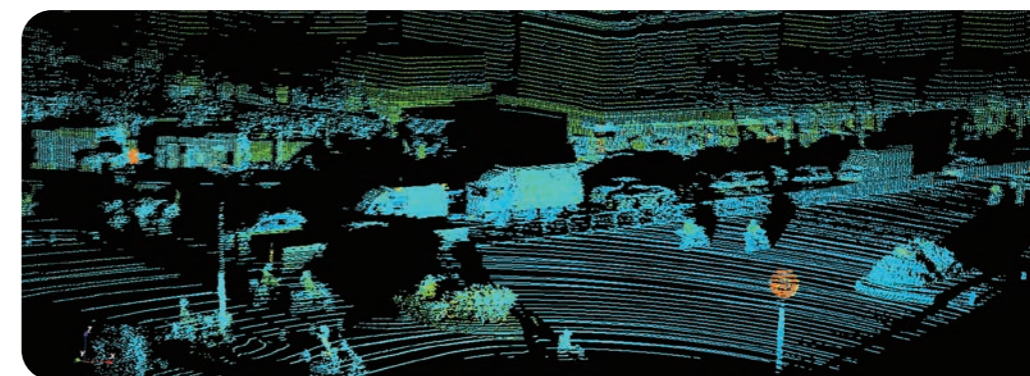## Image-grade 1550nm Auto-grade LiDAR

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 can detect up to 500m, and 250m for 10% reflectivity objects. The other parameters are also impressive: ranging accuracy ±2cm, FOV 120°(H)x25°(V), min vertical resolution 0.015°. The series is also built with anti-interference functionality.

LS-S4 series offers 5 channel alternatives: 256, 300, 400, 512 and 800. The ultra-thin design makes it easier to integrate into the vehicle roof. The image-grade LiDAR will mainly serve the autonomous driving application, with high reliability design for mass production vehicles. The series owns world-leading comprehensive performance and it will become the preferred primary sensor for L3 and higher level driving automation.

		LS256S4	LS300S4
LASER	Wavelength	1550nm	1550nm
	Laser Class	CLASS 1	CLASS 1
SPEC	Channels	256	300
	Channels Scanned	2560/S	3000/S
	Detection Method	TOF	TOF
	Detection Range	1.5m~250m(@10%)	1.5m~250m(@10%)
	Range Accuracy	±2cm	±2cm
	Horizontal (FOV)	120°	120°
	Vertical (FOV)	25° (±12.5°)	25° (±12.5°)
	Horizontal (Angular Resolution)	0.08° (@ROI)	0.09° (@ROI)
	Vertical (Angular Resolution)	0.06° (@ROI)	0.06° (@ROI)
	FPS	10Hz	10Hz
EXPORT	Data Point Generating Rate	2,520,000	2,530,000
	Communication Interface	Automotive Ethernet	Automotive Ethernet
ELECTRIC	Input Voltage	12V~36V DC	12V~36V DC
	Power Consumption	≤40W	≤40W
ENVIRONMENT	IP Grade	IP6K9K	IP6K9K
	Storage Temperature	-40℃ ~ +105℃	-40℃ ~ +105℃
	Operating Temperature	-40℃~85℃	-40℃~85℃
	Vibration Test	5Hz-2000Hz, 3G rms	5Hz-2000Hz, 3G rms
	Shock Test	500m/sec², lasting for 11ms	500m/sec², lasting for 11ms
MACHINE	Weight	2.2kg	2.2kg
	Dimensions (LxWxH)	220x180x49 mm	220x180x49 mm

LS-S4 Series

Image-grade 1550nm Auto-grade LiDAR

		LS400S4	LS512S4	LS800S4
LASER	Wavelength	1550nm	1550nm	1550nm
	Laser Class	CLASS 1	CLASS 1	CLASS 1
SPEC	Channels	400	512	800
	Channels Scanned	4000/S	5120/S	8000/S
	Detection Method	TOF	TOF	TOF
	Detection Range	1.5m~250m(@10%)	1.5m~250m(@10%)	1.5m~250m(@10%)
	Range Accuracy	±2cm	±2cm	±2cm
	Horizontal (FOV)	120°	120°	120°
	Vertical (FOV)	25° (±12.5°)	25° (±12.5°)	25° (±12.5°)
	Horizontal (Angular Resolution)	0.1° (@ROI)	0.1° (@ROI)	0.05° (@ROI)
	Vertical (Angular Resolution)	0.03° (@ROI)	0.02° (@ROI)	0.015° (@ROI)
	FPS	10Hz	10Hz	10Hz
EXPORT	Data Point Generating Rate	4,800,000 pts/sec	6,140,000 pts/sec	/
	Communication Interface	Automotive Ethernet	Automotive Ethernet	Automotive Ethernet
ELECTRIC	Input Voltage	12V~36V DC	12V~36V DC	12V~36V DC
	Power Consumption	≤40W	≤42W	≤42W
ENVIRONMENT	IP Grade	IP6K9K	IP6K9K	IP6K9K
	Storage Temperature	-40℃ ~ +105℃	-40℃ ~ +105℃	-40℃ ~ +105℃
	Operating Temperature	-40℃~85℃	-40℃~85℃	-40℃~85℃
	Vibration Test	5Hz-2000Hz, 3G rms	5Hz-2000Hz, 3G rms	5Hz-2000Hz, 3G rms
	Shock Test	500m/sec², lasting for 11ms	500m/sec², lasting for 11ms	500m/sec², lasting for 11ms
MACHINE	Weight	2.2kg	2.2kg	2.2kg
	Dimensions (LxWxH)	220x180x49 mm	220x180x49 mm	220x180x49 mm

LS25 Series

Rail Transport 1550nm Hybrid Solid-state LiDAR

LS25D is suitable for fixed-point detection at the track end, with an ultra-wide field angle of 120°×25°. The resolution can be up to 0.03°×0.05° for small objects of 20×20cm, at the detection distance of 200 meters, showing 5~6 point cloud pixels, clear and accurate identification of foreign obstacles;
LS25E is suitable for train-mounted, detection range 1.5m~300m (250m@10%), detection accuracy ±3cm, 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		
LASER	Wavelength	1550nm			1550nm		
SPEC	Detection Range	1.5m~200m(@10%)			1.5m~300m(250m@10%,)		
	Range Accuracy	±2cm			±2cm		
	Horizontal (FOV)	120°			120°		
	Vertical (FOV)	25°			25°		
	Horizontal (Angular Resolution)	0.03°(1Hz)	0.06°(2Hz)	0.07°(4Hz)	0.09°(10Hz)	0.18°(20Hz)	
	Vertical (Angular Resolution)	0.05°(1Hz)	0.05°(2Hz)	0.075°(4Hz)	0.2°(10Hz)	0.2°(20Hz)	
	FPS	1 / 2 / 4 Hz			10 / 20 Hz		
	Data Point Generating Rate	2,000,000 pts/sec			1,700,000 pts/sec		
	20x20cm Object	200m(Min 4 points)			*		
EXPORT	Communication Interface	Automotive Ethernet			Industrial Ethernet		
ELECTRIC	Input Voltage	9~36V DC			12~36V DC		
ENVIRONMENT	IP Grade	IP6K9K			IP67		
	Operating Temperature	-40℃~60℃			-40℃~60℃		
MACHINE	Weight	≤2kg			≤2kg		
	Dimensions (LxWxH)	247.5x244x76 mm			220x220x45 mm		

MS03

Long-Range 1550nm LiDAR

MS03 is a LiDAR based on TOF principle, using Class I eye safety laser, the detection distance is up to 2000m, the measurement accuracy ±2cm, widely used in high-precision map, smart city, 3D urban modeling, land survey, fire emergency, power inspection, track inspection, mine inspection, tunnel inspection, forest inspection, bridge collision prevention and other field.

High Frequency Recombination   High Accuracy   Long Range

		MS03
LASER	Wavelength	1550nm
	Laser Class	Class I (IEC-60825)
SPEC	Channels	4
	Detection Method	TOF
	Detection Range	Max 2000m
	Range Accuracy	±2cm
	Horizontal FOV	120°
	Echo Times	1~3
EXPORT	Communication Interface	Industrial Ethernet
	GNSS Port	TTL Synchronization Pulse
ELECTRIC	Input Voltage	14V~36V DC
ENVIRONMENT	IP Grade	IP67
	Operating Temperature	-20℃~60℃
	Storage Temperature	-40℃~85℃
MACHINE	Weight	3kg
	Dimensions (LxWxH)	230x120x106 mm

Detection Range	2000m	1000m	500m	300m	200m
Angular Resolution	0.096°: 10Hz 0.192°: 20Hz	0.048°: 10Hz 0.096°: 20Hz	0.024°: 10Hz 0.048°: 20Hz	0.014°: 10Hz 0.028°: 20Hz	0.01°: 10Hz 0.02°: 20Hz
Laser Frequenc	75kHz	150kHz	300kHz	500kHz	750kHz
Data Point Generating Rate(pts/sec)	50,000	100,000	200,000	333,000	500,000

MS05

Civil Helicopters 1550nm Anti-Collision LiDAR

MS05 is a high-end long-range LiDAR based on the principle of TOF. It uses the LSLiDAR in-house 1550nm fiber laser as the light source. The detection distance can reach up to 1250m, and the vertical field of view covers 110°. It can realize remote high-resolution detection and perception, and can be applied to high-precision map, smart city, land surveys, helicopters, UAV obstacle avoidance and other fields.

MS05

LASER	Wavelength	1550nm（ClassI)
SPEC	Detection Method	TOF
	Detection Range	2000 / 1250 / 500 / 300 / 200 / 100m
	Laser Frequency	600kHz / 1000kHz / 1500kHz / 2000kHz
	Horizontal FOV	60°~90° (Can be customized)
	Vertical FOV	+20°~-90° (Can be customized)
	Single frame FOV	60°~90°*30° (Can be customized)
EXPORT	Echo Times	1 ~ 3
	Data Point Generating Rate	110,000 / 180,000 / 450,000 / 750,000pts/sec
		1,120,000 / 1,500,000pts/sec
	Communication Interface	GigE Vision
	GNSS Port	TTL
ELECTRIC	Power Consumption	200W
	Input Voltage	14V ~ 36VDC
ENVIRONMENT	IP Grade	IP67
	Operating Temperature	-45℃~ 70℃
MACHINE	Weight	≈16kg
	Dimensions (LxWxH)	404.7*235.48*280.72mm

MS06

Civil Helicopters 1550nm Anti-Collision LiDAR

MS06-A is a LiDAR based on the principle of TOF. It adopts the Class I eye safety laser. The detection range is up to 1250m.

MS06

LASER	Wavelength	1550nm
SPEC	Detection Method	TOF
	Detection Range	1250m
	Range Accuracy	**
	Angle Accuracy	**
	FPS	**
	Horizontal FOV	**
	Vertical FOV	**
	Vertical (Angular Resolution)	**
EXPORT	Communication Interface	**
	GNSS Port	**
ELECTRIC	Power Consumption	**
	Input Voltage	**
ENVIRONMENT	IP Grade	**
	Storage Temperature	**
	Operating Temperature	**
MACHINE	Weight	**

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.

Self-regulation   Long Range Detection   Visualization
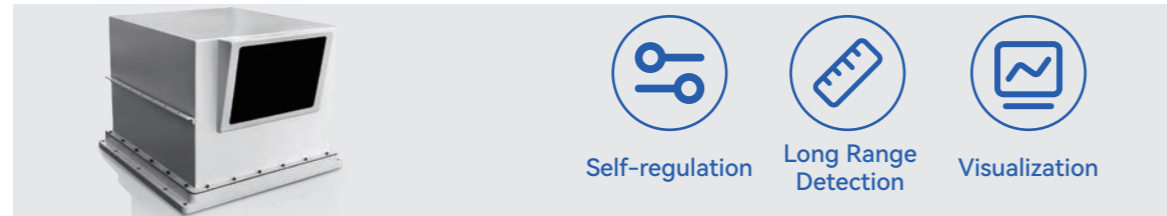
LS30MVA

LASER	Wavelength	1550nm
SPEC	Max Range	2000m
	Min Range	10m
	Range Accuracy	±15cm
EXPORT	Data Point Generating Rate	1000 pts/sec
	Accuracy of Laser Pitch Angle	0.01°
	Communication Interface	Industrial Ethernet
ELECTRIC	Input Voltage	AC/170~264V DC
	Power Consumption	50W(Max)
ENVIRONMENT	IP Grade	IP66(Customizable)
	Operating Temperature	-10℃~60℃
	Vibration Test	Able to withstand vibration shock with acceleration of 0.73 G
MACHINE	Weight	≈17.5kg
	Dimensions (LxWxH)	350x272.5x487 mm

CX Series

Auto-grade Hybrid Solid-state LiDAR

Thanks to the breakthrough have been made by LSLiDAR, CX series is built on the miniaturion technology on automotive grade hybrid-solid state LiDARs. 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.

Mini Size   Perfectly Fit Car   Long Range

		CX128S1	CX128S2
LASER	Wavelength	905nm	905nm
	Laser Class	Class I (IEC-60825)	Class I (IEC-60825)
SPEC	Channels	128	128
	Detection Method	TOF	TOF
	Detection Range	180m@10%	180m@10%
	Range Accuracy	±3cm	±3cm
	Horizontal (FOV)	120°	120°
	Vertical (FOV)	25°(-12.5°~12.5°)	25°(-12.5°~12.5°)
	Horizontal (Angular Resolution)	0.1°@10Hz	0.1°@10Hz
	Vertical (Angular Resolution)	0.2°	0.125°ROI, 0.25° non ROI
	FPS	10 Hz / 20 Hz	10 Hz / 20 Hz
EXPORT	Data Point Generating Rate (pts/sec)	1,560,000	1,530,000
	Communication Interface	Automotive Ethernet	Automotive Ethernet
ELECTRIC	Input Voltage	9V~36V DC	9V~36V DC
	Power Consumption	18W	15W
ENVIRONMENT	Anti-interference	Laser Code	Laser Code
	AUTOSAR	Support (A) / Not support (I)	Support (A) / Not support (I)
	IP Grade	IP6K9K	IP6K9K
	Operating Temperature	-40℃~85℃	-40℃~85℃
	Vibration Test	5Hz-2000Hz, 3G rms	5Hz-2000Hz, 3G rms
	Shock Test	500m/sec², lasting for 11ms	500m/sec², lasting for 11ms
MACHINE	Weight	800g	800g
	Dimensions (LxWxH)	141x90x45 mm	137x99x47mm

CB64S1 / CH64W

Wide field of view (FOV) LiDAR
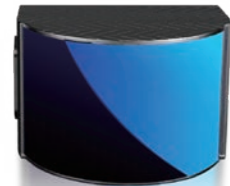
CB64S1/CH64W wide field of view (FOV) LiDAR is specially designed for cleaning up blind areas. It has an ultra-wide field FOV of 180°x40°, and the measurement accuracy is accurate to ±3cm. It can efficiently identify obstacles within a short range and bring accurate environmental perception to the driving blind areas of automobiles, robots and AGV.

CB64S1 / CH64W

		CB64S1 / CH64W
LASER	Wavelength	905nm
	Laser Class	Class I (IEC-60825)
SPEC	Channels	64
	Detection Method	TOF
	Detection Range	100m(45m@10%)
	Range Accuracy	±3cm
	Horizontal (FOV)	180°
	Vertical (FOV)	40°(-25°~15°)
	Horizontal (Angular Resolution)	0.12°:10Hz / 0.16°:10Hz / 0.24°:10Hz / 0.36°:10Hz
	Vertical (Angular Resolution)	0.63°
	FPS	10Hz、20Hz
EXPORT	Data Point Generating Rate (pts/sec)	1,010,000 / 760,000 / 500,000 / 330,000
	Communication Interface	Automotive Ethernet / Industrial Ethernet
ELECTRIC	Input Voltage	9V~36V DC
	Power Consumption	12W
ENVIRONMENT	Anti-interference	Laser Code
	AUTOSAR	Support (A) / Not support (I)
	IP Grade	IP6K9K
	Operating Temperature	-40℃~85℃
	Storage Temperature	-40℃~105℃
	Vibration Test	5Hz-2000Hz，3G rms
	Shock Test	500m/sec², lasting for 11ms
MACHINE	Weight	1kg
	Dimensions (LxWxH)	116x90x76 mm

CH128 Series

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.
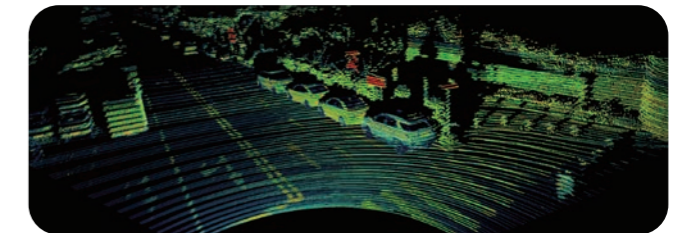
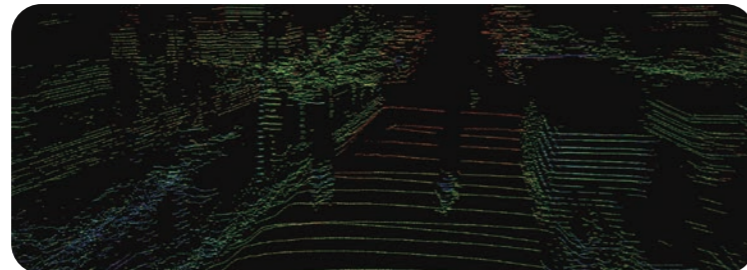|		CH128X1	CH128S1
LASER	Wavelength	905nm	905nm
	Laser Class	Class I (IEC-60825)	Class I (IEC-60825)
SPEC	Channels	128	128
	Detection Method	TOF	TOF
	Detection Range	200m (160m@10%)	200m (160m@10%)
	Range Accuracy	±3cm	±3cm
	Horizontal (FOV)	120°	120°
	Vertical (FOV)	25°(-18°~7°)	25°(-12.5°~12.5°)
	Horizontal (Angular Resolution)	0.2°@10Hz	0.2°@10Hz
	Vertical (Angular Resolution)	0.125°@ROI, 0.25°@non ROI	0.125°@ROI, 0.25°@non ROI
	FPS	5 Hz / 10 Hz / 20 Hz	5 Hz / 10 Hz / 20 Hz
EXPORT	Data Point Generating Rate (pts/sec)	760,000	760,000
	Communication Interface	Automotive Ethernet、Industrial Ethernet	Automotive Ethernet、Industrial Ethernet
ELECTRIC	Input Voltage	9V~36V DC	9V~36V DC
	Power Consumption	12W	12W
ENVIRONMENT	Anti-interference	Laser Code	Laser Code
	AUTOSAR	Support (A) / Not support (I)	Support (A) / Not support (I)
	IP Grade	IP6K9K	IP6K9K
	Operating Temperature	-40℃~85℃	-40℃~85℃
	Vibration Test	5Hz-2000Hz，3G rms	5Hz-2000Hz，3G rms
	Shock Test	500m/sec², lasting for 11ms	500m/sec², lasting for 11ms
MACHINE	Weight	≈1kg	≈1kg
	Dimensions (LxWxH)	118x90x75 mm	118x90x75 mm

CH32/16

Hybrid Solid-state LiDAR

CH32/16 hybrid solid-state LiDAR is designed for autonomous vehicles and auto-grade. It uses a hybrid solid-state structure, with 150m detection, measurement accuracy ±3cm. and 120° horizontal field of view angle, which can bring more accurate environment perception for semi-autonomous and autonomous driving.

- Long detection
  High accuracy
  High angular resolution
- Standard design
  Stable structure
  Lower power consumption
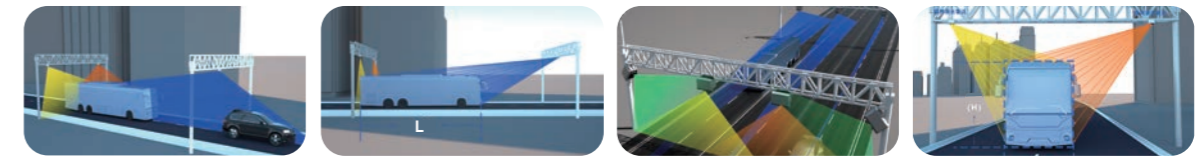- Easier mass production
  Cost-effective

CH32/16

LASER	Wavelength	905nm
	Laser Class	Class I (IEC-60825)
SPEC	Channels	32 / 16
	Detection Method	TOF
	Detection Range	100m / 150 / 200m
	Range Accuracy	±3cm / ±2cm
	Horizontal(FOV)	120°
	Vertical(FOV)	11.25°(-6.67~4.58°) / 6°(-4°~2°)
	Horizontal(Angular Resolution)	5Hz:0.045°/ 10Hz:0.09°/ 20Hz:0.18°
	Vertical(Angular Resolution)	0.33°(Nonlinear Distribution)
	FPS	5Hz / 10Hz / 20Hz
EXPORT	Data Point Generating Rate (pts/sec)	Single Echo 426,000 / 852,000
		Dual Echo 213,000 / 426,000
	Communication Interface	Industrial Ethernet / PPS
ELECTRIC	Input Voltage	9V~36V DC
	Power Consumption	10W / 9W
ENVIRONMENT	IP Grade	IP67
	Operating Temperature	-20℃~65℃ / -20℃~85℃
	Vibration Test	5Hz-2000Hz, 3G rms
	Shock Test	500m/sec², lasting for 11ms
MACHINE	Weight	≈1.5kg
	Dimensions (LxWxH)	155x107.5x90 mm

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
LASER	Wavelength	905nm	905nm
	Laser Class	CLASS 1	CLASS 1
SPEC	Channels	1	4
	Detection Method	TOF	TOF
	Detection Range	30 / 50 / 70 / 100m	100m
	Range Accuracy	±3cm	±3cm
	Horizontal(FOV)	120°	120°
	Horizontal (Angular Resolution)	40Hz:0.09°/ 80Hz: 0.18°/ 100Hz:0.225°/ 120Hz:0.27°/ 160Hz: 0.36°	40Hz:0.09°/ 80Hz: 0.18°/ 120Hz:0.36°
	FPS	40Hz / 80Hz / 120Hz / 160Hz / 200Hz	40Hz / 80Hz / 120Hz
EXPORT	Data Point Generating Rate (pts/sec)	53,000	53,300
	Communication Interface	Industrial Ethernet	Ethernet, PPS
ELECTRIC	Input Voltage	9V~36V DC	9V~36V DC
ENVIRONMENT	IP Grade	IP67	IP67
	Operating Temperature	-20℃~65℃	-40℃ ~ +85℃
	Vibration Test	5Hz-2000Hz, 3G rms	5Hz-2000Hz, 3G rms
	Shock Test	500m/sec², lasting for 11ms	500m/sec², lasting for 11ms
MACHINE	Weight	≈1600g	1500g
	Dimensions (LxWxH)	155x107.5x90 mm	155*90*107.5 mm

CH16X1

Hybrid Solid-state LiDAR

CH16X1 has achieved a major technical breakthrough in the miniaturization technology of auto-grade multiple scanning channels hybrid solid-state LiDAR based on LSLiDAR. It not only meets the requirements of long-range detection and perception performance in autonomous driving, but also has a mini size, which is suitable for embedding in the roof or front bumper, and more suitable for the aesthetic needs of passenger car appearance design.
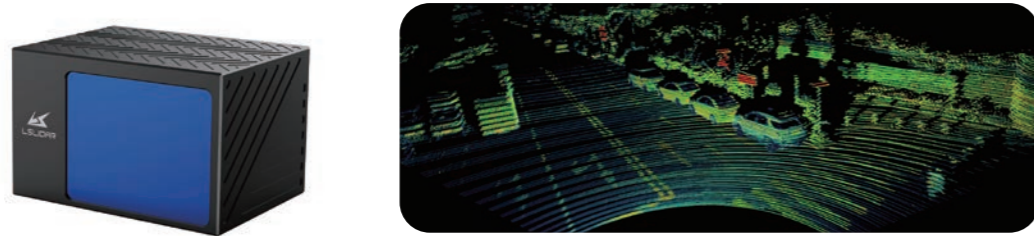
CH16X1

LASER	Wavelength	905nm
	Laser Class	CLASS 1
SPEC	Channels	16
	Detection Method	TOF
	Detection Range	200 m (160 m @10%)
	Range Accuracy	±3cm
	Horizontal (FOV)	120°
	Vertical (FOV)	-2°~2°
	Horizontal (Angular Resolution)	5 Hz: 0.06° / 10 Hz: 0.12° / 20 Hz: 0.24°
	Vertical (Angular Resolution)	0.25°
	FPS	5Hz / 10Hz / 20Hz
EXPORT	Data Point Generating Rate (pts/sec)	95,000
	Communication Interface	100M Automotive Ethernet / Industrial Ethernet
ELECTRIC	Input Voltage	9V~36V DC
	Power Consumption	12W
ENVIRONMENT	IP Grade	IP 6K9K
	Operating Temperature	-40℃ ~ +85℃
	Storage Temperature	-40℃ ~ +105℃
	Vibration Test	5Hz-2000Hz, 3G rms
	Shock Test	500m/sec², lasting for 11ms
MACHINE	Weight	≈1kg
	Dimensions (LxWxH)	118*90*75 mm

CH1W

Auto-grade Hybrid Solid-state LiDAR

CH1W has auto-grade design and 180° ultra-wide field of view Angle, with measurement accuracy of ±3cm, it can efficiently identify obstacles in short range and provide accurate environmental perception for vehicles, robots and AGVs driving blind areas.
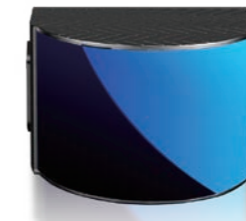
CH1W

LASER	Wavelength	905nm
	Laser Class	CLASS 1
SPEC	Channels	1
	Detection Method	TOF
	Detection Range	100m (80m@10%)
	Range Accuracy	±3cm
	Horizontal (FOV)	180°
	Angular Resolution	0.024° (40Hz)
	FPS	20Hz / 40Hz / 80Hz
EXPORT	Data Point Generating Rate (pts/sec)	316,600
	Communication Interface	Automotive Ethernet
ELECTRIC	Input Voltage	9V~36VDC
	Power Consumption	12W
	Divergence Angle	N/A
ENVIRONMENT	IP Grade	IP6K9K
	Operating Temperature	-40℃ ~ +85℃
	Storage Temperature	-40℃ ~ +105℃
	Vibration Test	5Hz-2000Hz, 3G rms
	Shock Test	500m/sec², lasting for 11ms
MACHINE	Weight	≈1kg
	Dimensions (LxWxH)	116*90*76 mm

C16E Series

Explosion-Proof / Flameproof LiDAR
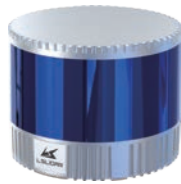
Explosion-Proof LiDAR
(Ex ib I Mb)

Flameproof LiDAR
(Ex d IIC T6 Gb)

C16E series LiDAR is capable of three-dimensional scanning and detection of the surrounding environment. With a horizontal field of view of 360° and a vertical field of view of -15°~15°, there is no blind spot. Its detection range is up to 150 meters and maximum point generating rate is 640,000 points/second. C16E series also supports IP 67 which makes it dust and water resistant.
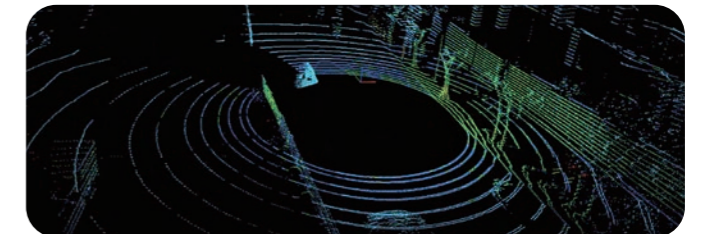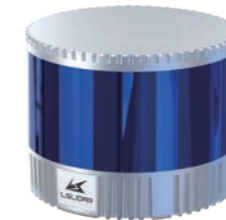
C16E Series

LASER	Wave Length	905nm
	Laser Class	Class I (IEC-60825)
SPEC	Channels	16
	Measurement Principle	TOF
	Detect Distance	100m(50@10%)
	Accuracy	±3cm
	Horizontal FOV	360°
	Vertical FOV	30°(-15°~15°)
	Horizontal Resolution	5Hz:0.09°/ 10Hz:0.18°/ 20Hz:0.36°
	Vertical Resolution	2°
	FPS	5Hz / 10Hz / 20Hz
EXPORT	Point Rate	Single echo 320,000、Double echo 640,000
	Communication Interface	Industrial Ethernet
ELECTRIC	Input Voltage	9V~36V DC
ENVIRONMENT	IP Grade	IP67
	Working Temperature	-20℃~60℃
MACHINE	Ex-mark (Exib)	Ex ib I Mb
	Ex-mark (Exd)	Ex d IIC T6 Gb
	Weight	800g / 1500g
	Size (DxH)	Φ102x81mm / Φ176x100 mm

C32/16

Multi-line Mechanical LiDAR

C32/16 lines mechanical LiDAR realizes 360° three-dimensional fast scanning with dense 32/16 beam laser, the detection range is up to 160m, and the measurement accuracy is accurate to ±1cm. It is widely used in autonomous driving, automotive ADAS, intelligent transportation, service robot, logistics, mapping, security, port, industry and other fields.

		C32	**C16**
LASER	Wavelength	905nm	905nm
	Laser Class	Class I (IEC-60825)	Class I (IEC-60825)
SPEC	Channels	32	16
	Detection Method	TOF	TOF
	Detection Range	110m@10% / 160m@70%	100m@10% / 150m@70%
	Precision	±3cm	±3cm
	Range Accuracy	±1cm	±1cm
	Horizonta (FOV)	360°	360°
	Vertical (FOV)	31°(-16°~15°)	30°(-16°~14°)
	Horizontal (Angular Resolution)	5Hz:0.09°/ 10Hz:0.18°/ 20Hz:0.36°	5Hz:0.09°/ 10Hz:0.18°/ 20Hz:0.36°
	Vertical (Angular Resolution)	Uniform 1°	Uniform 2°
	FPS	5Hz / 10Hz / 20Hz	5Hz / 10Hz / 20Hz
EXPORT	Single Echo (pts/sec)	640,000	320,000
	Dual Echo (pts/sec)	1,280,000	640,000
	Communication Interface	Ethernet / PPS	Industrial Ethernet
ELECTRIC	Input Voltage	12V~36V DC	12V~36V DC
ENVIRONMENT	IP Grade	IP67	IP67
	Working Temperature	-20℃~60℃	-20℃~60℃
	Vibration Test	5Hz-2000Hz，3G rms	5Hz-2000Hz，3G rms
	Shock Test	500m/sec², lasting for 11ms	500m/sec², lasting for 11ms
MACHINE	Weight	1040g	1040g
	Dimensions (DxH)	Φ102x77.9 mm	Φ102x77.9 mm

C1

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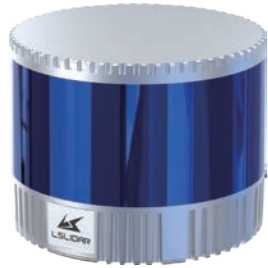
C1 single-line mechanical LiDAR uses the time-of-flight measurement mechanism to achieve a high-speed 360° scan of the surrounding environment, with a detection distance of up to 150 m and an accuracy of ±3cm. It is mainly used in indoor service robots, AGVs and UAVs that require precise positioning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

C1

LASER	Wave Length	905nm
	Laser Class	Class I (IEC-60825)
SPEC	Channels	1
	Measurement Principle	TOF
	Detect Distance	110m@10% / 150m@70%
	Precision	±3cm
	Range Accuracy	±1cm
	Horizonta FOV	360°
	Vertical FOV	N/A
	Horizontal Resolution	5Hz:0.09°/ 10Hz:0.18°/ 20Hz:0.36°
	Vertical Resolution	N/A
	FPS	5Hz / 10Hz / 20Hz
EXPORT	Point Rate	Single echo 20,000、 Double echo 40,000
	Communication Interface	Ethernet, PPS
ELECTRIC	Input Voltage	9V~32V DC
ENVIRONMENT	IP Grade	IP67
	Working Temperature	-20℃~60℃
MACHINE	Vibration Test	5Hz-2000Hz， 3G rms
	Shock Test	500m/sec², lasting for 11ms
	Weight	800g / 1500g
	Size (DxH)	Φ102x81mm / Φ176x100 mm

C8

Multi-line Mechanical LiDAR

C8 mechanical LiDAR realizes 360° three-dimensional high-speed scanning with 8 laser beams. It reaches a detection distance of up to 120 m, and a measurement accuracy of ±3 cm. This lidar sensor is widely used in unmanned driving, automotive ADAS, intelligent transportation, service robot, logistics, surveying and mapping, security, industry, ports and other fields.
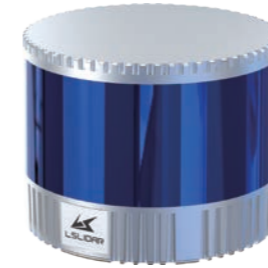
C8

LASER	Wavelength	905nm
	Laser Class	Class I (IEC-60825)
SPEC	Channels	8
	Detection Method	TOF
	Detection Range	110m@10% / 130m@70%
	Precision	±3cm
	Range Accuracy	±1cm
	Horizonta FOV	360°
	Vertical FOV	-12°~12°
	Horizontal Resolution	5Hz:0.09°/ 10Hz:0.18°/ 20Hz:0.36°
	Vertical Resolution	2° / 4°
	FPS	5Hz / 10Hz / 20Hz
EXPORT	Single Echo (pts/sec)	160,000
	Dual Echo (pts/sec)	320,000
	Communication Interface	Ethernet, PPS
ELECTRIC	Input Voltage	9V~36V DC
ENVIRONMENT	IP Grade	IP67
	Working Temperature	-20℃~60℃
MACHINE	Vibration Test	5Hz-2000Hz， 3G rms
	Shock Test	500m/sec², lasting for 11ms
	Weight	1050g
	Dimensions (DxH)	Φ102x77.9 mm

C32W

Multi-line 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.

C32W

LASER	Wavelength	905nm
	Laser Class	Class I (IEC-60825)
SPEC	Channels	32
	Detection Method	TOF
	Detection Range	125m@70% / 55m@10%
	Precision	±3cm
	Range Accuracy	±1cm
	Horizontal (FOV)	360°
	Vertical (FOV)	70°(-55°~15°)
	Horizontal (Angular Resolution)	5Hz:0.09°/ 10Hz:0.18°/ 20Hz:0.36°
	Vertical (Angular Resolution)	Min 1.33°
	FPS	5Hz / 10Hz / 20Hz
EXPORT	Data Point Generating Rate (pts/sec)	640,000
	Communication Interface	Ethernet，PPS
ELECTRIC	Input Voltage	9V~36V DC
ENVIRONMENT	IP Grade	IP67
	Operating Temperature	-20℃~60℃
	Vibration Test	5Hz-2000Hz，3G rms
	Shock Test	500m/sec², lasting for 11ms
MACHINE	Weight	≈1500g
	Dimensions (DxH)	Φ102x102 mm

CH32R

Ultra-Wide Angle Blind Spot LiDAR

CH32R LiDAR can realize 360° three-dimensional high-speed scanning with a dense 32 scanning channels. The vertical field of view can reach 90°, the detection distance is 130m, the measurement accuracy is accurate to ±1cm, and the vertical Angle resolution is the minimum 2.8125°. Widely used in driverless, automotive ADAS, intelligent transportation, service robots, logistics, surveying and mapping, security, port, industry and other fields.
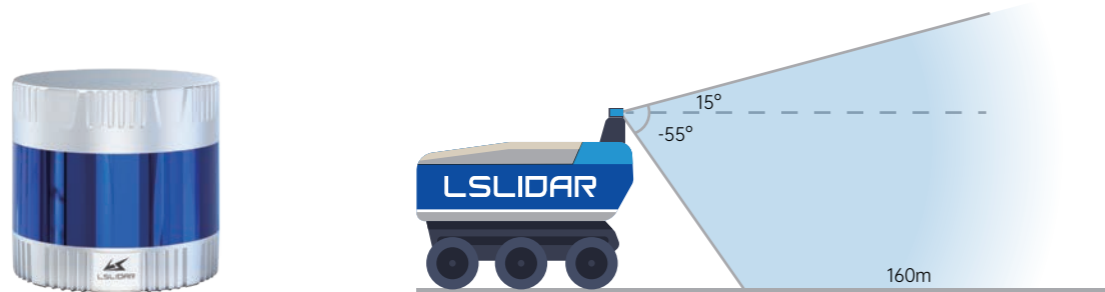
CH32R

LASER	Wavelength	905nm
	Laser Class	Class I (IEC-60825)
SPEC	Channels	32
	Detection Method	TOF
	Detection Range	65m @10% / 130m @70%
	Precision	±3cm
	Range Accuracy	±1cm
	Horizontal (FOV)	360°
	Vertical (FOV)	2.487° ~89.105°
	Horizontal (Angular Resolution)	0.09°(5Hz) / 0.18°(10Hz) / 0.36°(20Hz)
	Vertical (Angular Resolution)	Min 2.8125°
	FPS	5Hz、10Hz、20Hz
EXPORT	Single Echo (pts/sec)	640,000
	Dual Echo (pts/sec)	1,280,000
	Communication Interface	100m Ethernet 、PPS、PTP
ELECTRIC	Input Voltage	12V~32V DC
ENVIRONMENT	IP Grade	IP67
	Operating Temperature	-20℃~60℃
	Vibration Test	5Hz-2000Hz，3G rms
	Shock Test	500m/sec², lasting for 11ms
MACHINE	Weight	1000g
	Dimensions (DxH)	Φ100x110mm

M10 Series

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

	M10	M10P
Wavelength	905nm	905nm
Laser Class	Class I	Class I
Output Data	Distance, Angle	Distance, Angle, High Reflective
Detection Distance	10m@10% / 25m@70%	10m@10% / 25m@70%
Accuracy	±3cm	±3cm
Scan Angle	360°	360°
Scanning Frequency	10Hz / 20Hz	12Hz
Data Point Generating Rate	10,000 pts/sec	20,000 pts/sec
Angular Resolution	0.36° / 0.72°	0.22°
Input Voltage	4.75V~5.25V DC	5V~15V
Operating Temperature	−10℃~ 50℃	−10℃~50℃
Communication Interface	Serial Port, Network Port	Serial Port （Baud rate 51,2000 bps)
Vibration Test	500m/sec², lasting for 11ms	500m/sec², lasting for 11ms
Shock Test	5Hz-2000Hz,3G rms	5Hz-2000Hz, 3G rms
Weight	200g	200g
Dimensions (DxH)	Φ79.3x39 mm	Φ79.3*39mm

N10 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 andobstacle 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	N10 PLUS
Wavelength	905nm	905nm
Laser Class	Class I	Class I
Output Data	Distance, Angle, Intensity	Distance, Angle, Intensity
Detection Distance	0.02~12m@70%	0.02m~15m@70%
Accuracy	±3cm(0~6m);±4.5cm(≥6m)@70%	±3cm@70%
Scan Angle	360°	360°
Scanning Frequency	6~12Hz	6~12Hz
Data Point Generating Rate	4,500 pts/sec	Dual Echo 10,800 pts/sec
Angular Resolution	0.48°~0.96°	0.4°~0.8°
Input Voltage	5V DC (4.75V~5.25V DC)	5V DC （4.75V~5.25V DC)
Operating Temperature	−10℃~40℃	−10℃~40℃
Communication Interface	Standard Asynchronous Serial Port	Standard Asynchronous Serial Port
Anti-light	4K Lux	> 60K Lux
Weight	60g	≈60g
Dimensions (DxH)	Φ52x36.1 mm	Φ52x36.1 mm

N301-P/401-P

Navigation & Obstacle Avoidance LIDAR

- Wide recognition range, long range, fast response
- Minimum angular resolution reaches 0.18° to ensure the accuracy and stability of the measurement data
- Mapping more rapid and accurate
- Ethernet interface to realize high-speed data transmission
- Through the accelerated impact of rigorous testing certification, anti-gravity acceleration up to 40g
- Advanced optical and algorithm system, excellent detection performances for strong light, black and white objects, high reflective objects

	N301-P	N401-P
Wavelength	905nm	905nm
Laser Class	CLASS 1	CLASS 1
Channels	1	1
Detection Method	TOF	TOF
Detection Range	10m/20m/30m/40m/50m	10m/20m/30m/40m/50m
Range Resolution	2 mm（1.6 Protocol）; 4 mm（1.7 Protocol)	2 mm（1.6 Protocol）; 4 mm（1.7 Protocol)
Range Accuracy	±3cm	±3cm
FOV	360°	360°
Angular Resolution	5 Hz: 0.09°; 10 Hz: 0.18°; 20 Hz: 0.36°	5 Hz: 0.09°; 10 Hz: 0.18°; 20 Hz: 0.36°
FPS	5Hz/10Hz/20Hz	5Hz/10Hz/20Hz
Data Point Generating Rate	20,000 pts/sec	20,000 pts/sec
Communication Interface	100M Ethernet	100M Ethernet
Output Data	Distance, Angle	Distance, Angle, High Reflective
Input Voltage	9~32VDC(Typical Input 12/24VDC)	9~32VDC(Typical Input 12/24VDC)
Drive Method	Brushless Motor	Brushless Motor
Operating Temperature	-20℃~60℃	-20℃~60℃
Anti-light	80K Lux	80K Lux
Vibration Test	5Hz-2000Hz，3G rms	5Hz-2000Hz，3G rms
Shock Test	500m/sec², lasting for 11ms	500m/sec², lasting for 11ms
Weight	≈406g	≈406g
Dimensions (DxH)	Φ80*79.1mm	Φ80*79.1mm

W Series

Navigation & Obstacle Avoidance LIDAR

- Principle of TOF detection
- Designed for collision avoidance and intelligent area detection applications
- Can output switch quantity and point cloud data simultaneously
- Can be set freely in the measurement range according to the environment
- Maximum of 15 detection areas can be switched by input.
- Detection areas can be divided into independent type and associated type
- Industry-leading impact and vibration resistance, high reliability and stability

|	
Wavelength	905nm
Laser Class	Class I (IEC-60825)
Output Data	Switching Value、Data Value / Switching Value
Detection Range	5m/10m/20m/30m
Range Accuracy	±3cm
FOV	270°
Scanning Rate	10Hz
Data Point Generating Rate	20,000 pts/sec
Angular Resolution	0.18°
Input Voltage	9V~28V DC
Operating Temperature	-20℃~60℃
Communication Interface	NPN、PNP
Detection Area	Associated / Independent
IP Grade	IP67
Shock Test	500m/sec², lasting for 11ms
Vibration Test	5Hz-2000Hz,3G rms
Weight	397g
Dimensions (DxH)	Φ80x79.1 mm

LS70A

Laser Distance Sensor

LS70A is a high-performance mid-range distance sensor, with excellent detection performance in strong outdoor light. The long-distance range can reach 40m and supports 1000Hz refresh rate. More suitable for fast-moving target detection.

	Wavelength	905nm
	Laser Class	Class I (IEC-60825)
	Detection Range	0.1~40m@90%(100Klux)
		0.1~13.5m@10%(100Klux)
	Accuracy	±5cm(0.1~5m), ±1%(5~40m)
	Repeated Accuracy	±3cm
	FPS	1~1000Hz
	Anti-light	100Klux
	Power Supply	9~36V DC
	Power Consumption	≤0.85W@12V
	Communication Protocol	RS232/RS485
	Operating Temperature	-10℃~50℃
	IP Grade	IP65
	Structure	PC, Matte Black
	Weight	≈60g
	Dimensions (LxWxH)	69x37x52 mm

LS70B

Laser Distance Sensor
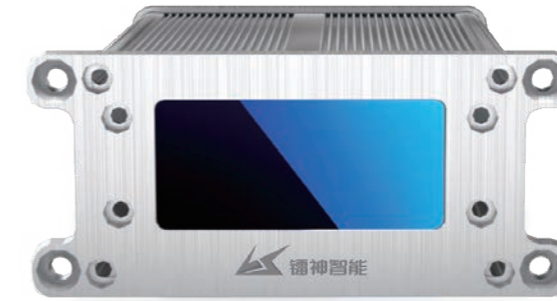
LS70B is a high-performance long-range distance sensor, which helps customers to obtain accurate perception and detection performance with high-cost performance. LS70B has a maximum distance of 150m in outdoor strong light, supports a high refresh rate, and IP67 waterproof & dustproof, which is suitable for more indoor and outdoor application scenarios.

	Wavelength	905nm
	Laser Class	Class I (IEC-60825)
	Detection Range	0.5~150m@20%
	Accuracy	±3cm
	FPS	9~1000Hz(Adjustable)
	Power Supply	24~32V DC
	Communication Protocol	RS422
	Operating Temperature	-20℃~55℃
	IP Grade	IP67
	Structure	Anodized Aluminium Silver
	Weight	≈50g
	Dimensions (LxWxH)	82x44x86.5 mm

LS80A

Laser Distance Sensor

LS80A is a high-precision long-range distance sensor, which helps customers to obtain accurate perception and detection performance with high-cost performance. LS80A has the longest distance measurement in outdoor strong light up to 200m@70% reflectivity, supports high refresh rate, and IP67 waterproof & dustproof, which is suitable for various complex industrial places.

	Detection Method	TOF
	Detection Range	0.3~140m @10%; 0.3~200m@90%
	Blind Area	0.3m
	Accuracy	±3cm
	Repeated Accuracy	±3cm
	Anti-light	100K Lux
	Wavelength	905nm
	Laser Class	Class I
	Data Point Generating Rate	20,000 pts/s
	Channels	3
	Communication Protocol	RS485/CANopen/modbus RTU
	Operating Temperature	-40℃~60℃
	Storage Temperature	-45℃~65℃
	IP Grade	IP67
	Power Consumption	≤15W
	Power Supply	9~28V DC（Typical Value 24V）
	Max Current	3A@24V
	Structure	Anodized Aluminium

LS90A

Laser Distance Sensor

Advanced optical and algorithm system has excellent detection performance for strong light, black and white objects, high-reflection objects, etc. LS90A is light and compact, suitable for embedding in various service robot bodies.

	Wavelength	905nm
	Laser Class	Class I (IEC-60825)
	Output Data	Distance, Intensity
	Detection Range	12m@70%
	Accuracy	±3cm
	FOV	0.5°
	FPS	1~1000Hz（Adjustable）
	Input Voltage	4.75V~5.25V DC
	Operating Temperature	-10℃~40℃
	Communication Interface	CAN
	Dimensions (LxWxH)	Φ52x36.1 mm
	Anti-light	4.5K Lux

LS40/LS40A/LS40B

Phase Method
Laser Distance Sensor

LS40 is a ranging laser sensor with high accuracy and frequency. Adopting phase method for ranging, it is applicable to short-mid range measurement with high precision and temperature stability.

	Wavelength	635 / 780 / 792nm
	Laser Class	Class IIIA
	Detection Range	10m / 16m / 20m@30%
	Accuracy	±1cm(0.1~10 m) , ±2cm(10~20 m)
	Data Point Generating Rate	4k / 10K / 15K pts/sec
	Ranging Resolution	±2mm
	Black And White Gap	±5mm
	Temperature Drift	±5mm
	Light Condition	Indoor operation,not strong sunlight
	Operating Temperature	-20℃~50℃
	Vibration Test	500m/sec², lasting for 11ms
	Shock Test	5Hz-2000Hz, 3G rms
	IP Grade	IP67
	Communication Interface	TTL、RS422
	Input Voltage	6V~24V DC
	Weight	≈200g
	Dimensions (LxWxH)	65x64x22 mm

LS01 Series

Single Line
Triangulation LiDAR

LS01 LiDAR is a two-dimensional detection and ranging product independently developed by LSLiDAR. Adopting the triangulation measurement method, it performs 360° two-dimensional scanning within the detection range to generate plane point cloud map information of the surroundings.

- Using the principle of triangulation, cost-effective
- Maximum acceptable ambient light intensity is 20000 lux
- Small size, low power consumption, long life, safe to use

	LS01B	LS01D
FPS	10Hz	3~11Hz
Detection Range	8m / 12m / 16m	8m
Accuracy	Within 1m < 18mm,	Within 1m < 18mm,
	Over 1m<Actual Distance 2.5%	Over 1m<Actual Distance 2.5%
Data Point Generating Rate	14400 pts/sec	3600 pts/sec
FOV	360°	360°
Angle Resolution	0.25°	1°/0.5°
Light Intensity	20000 lux	20000 lux
Input Voltage	4.75V~5.25V DC	4.75V~5.25V DC
Communication Interface	Serial Port	UART（USB、Bluetooth）
Weight	≈180g	≈197g
Dimensions (DxH)	Φ75.54x40.37 mm	Φ80x54.66 mm

LS02 Series

Solid-state Triangulation LiDAR

- Solid-state has high stability, long working life
- Light weight to 50g
- High precision, high cost performance
- Strong anti-interference ability

	LS02A/B	**LS02C/D**
FPS	10Hz	10Hz
Detection Range	0.1~4m(70% Reflectivity)	0.1~4m(70% Reflectivity)
Accuracy	≤Actual Distance 1.5%	≤Actual Distance 1.5%
Measuring Angle	86°	86°
Data Point Generating Rate	860 pts/sec｜1720 pts/sec	860 pts/sec｜1720 pts/sec
Angle Resolution	1°｜0.5°	1°｜0.5°
Light Intensity	2000lux	2000lux
Input Voltage	3.6V~6V DC	3.6V~6V DC
Communication Interface	Serial Port	Serial Port
Weight	≈50g	≈50g
Dimensions (LxWxH)	40x30x65 mm	40x37x45 mm

LS03

Phase Method LiDAR

Wavelength	780-792nm
Average Laser Power	< 1mW
Laser Class	Class 1
Maximum Range	24m/16m/8m@30%,
Minimum Range	0.1m
Accuracy	±1cm(0.1~10m)，±2cm(10~24m)
Relative Accuracy	±1cm(0.1~10m)，±1cm(10~24m)
Temperature Drift	±5mm
Black And White Gap	±5mm
Data Rate	Max 14400 pts/s
Angle Resolution	0.25º/5HZ; 0.5°，1º/10HZ
FPS	3Hz-10Hz
Communication Interface	Serial Port
Power Supply	+5V
Working Current	720mA
Operating Temperature	-20℃ ~ +50℃
Storage Temperature	-40℃ ~ +80℃
Light Condition	Indoor operation,not strong sunlight
IP Grade	IP20
Dimensions (DxH)	Φ75.54 x42.87 mm
Weight	190g

V2X ROADSIDE PERCEPTION SYSTEM

LIDAR INDUSTRY APPLICATION SOLUTIONS

PROPOSAL

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.
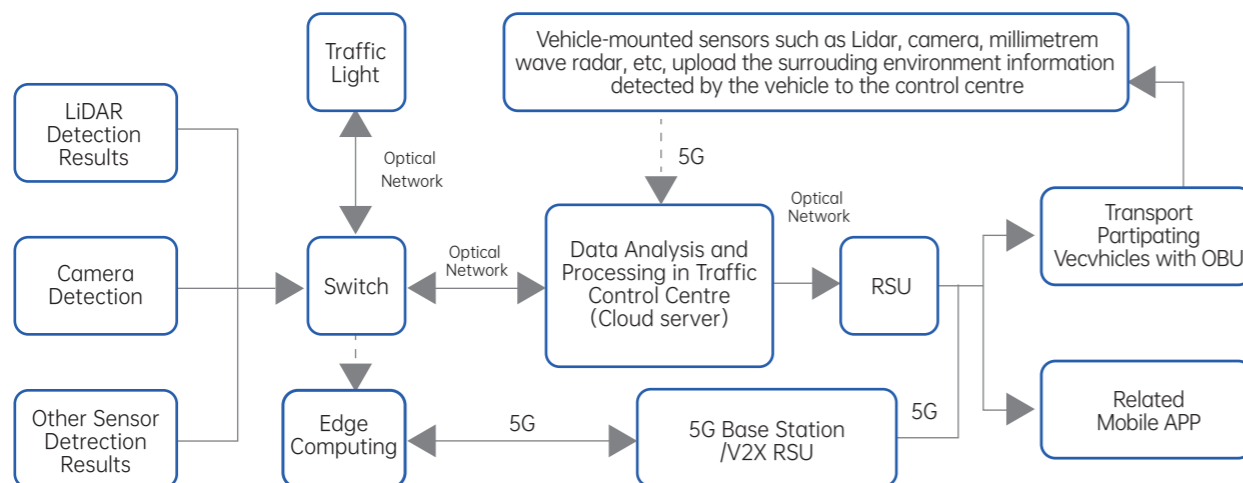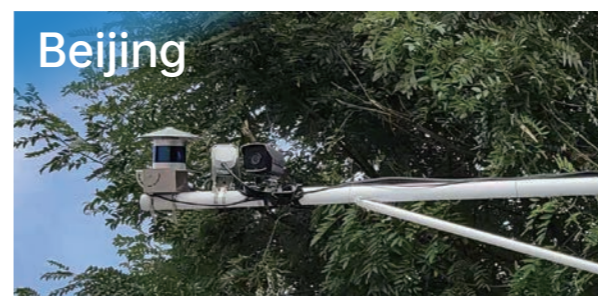

C32/C16   CH128X1

SYSTEM FRAMEWORK

- LiDAR Detection Results
- Camera Detection
- Other Sensor Detrection Results
- Traffic Light
- Switch
- Optical Network
- Edge Computing
- Data Analysis and Processing in Traffic Control Centre (Cloud server)
- Vehicle-mounted sensors such as Lidar, camera, millimetrem wave radar, etc, upload the surrouding environment information detected by the vehicle to the control centre
- 5G
- Optical Network
- RSU
- Transport Partipating Vecvhicles with OBU
- 5G Base Station /V2X RSU
- 5G
- Related Mobile APP

CASE

Tianjin

Xi'an

Inner Mongolia

Nanjing

Guangzhou

Beijing

Shenzhen

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.

LSLIDAR

HIGH-WAY ETC ACTIVATION SYSTEM

LIDAR INDUSTRY APPLICATION SOLUTIONS

PROPOSAL

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

LSLiDAR CX series LiDAR fusion camera

LSLiDAR CH series LiDAR fusion camera

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.

CASE

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.

LSLiDAR

LIDAR 3D SLAM AMR SYSTEM

LIDAR INDUSTRY APPLICATION SOLUTIONS

PROPOSAL

LSLiDAR 's LiDAR 3D SLAM AMR system solution is designed for automatic material handling operation scenarios such as airports, ports, factories, and logistics centers. It consists of a world-leading high-precision, high-flexibility, and high-stability AMR ontology system with an intelligent multi-machine scheduling system. Each AMR has a high-precision 360° three-dimensional environment perception capability, and its trackless navigation function can flexibly respond to complex indoor and outdoor environments. The flexibility and automation of the LiDAR 3D SLAM AMR system are far ahead of the second generation of reflector navigation technology solution.
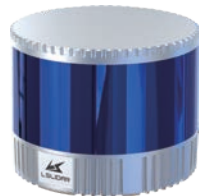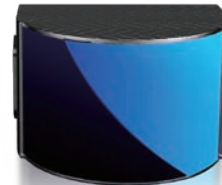
C32/16	N301	CH128X1	CH64W

Automated Guide & Navigation

AI Pallet Idendification & Location

Sensors Integration & Motion Control

Automated Load & Unload

Intelligent Dispatching System

Multilayer Saftey Protection

Energy Indicate & Auto Charge

LEADING SENSIBILITIES OF ENVIRONMENT

Based on 3D SLAM algorithm, integrate with multi-lines LiDAR, anti-collision LiDAR, Camera, IMU to create stable, high accuracy mapping and locationing results, suitable for 99% outdoor & indoor environment.

HIGH PERFORMANCE SOLUTION

Apply 3D SLAM algorithm, make a high accuracy location and navigation in complicated environment, build-in self checking and protection stratagy. Working with AI dispatching system and WMS, make a high efficiency automated storage management.

HIGH EFFICIENCY MULTI DISPATCHING SYSTEM

No need other accesseries, AMR build map by itself, one map can be shared with all other AMRs, flexible adjust for different scenarios, short implement time for multi AMRs.

COST EFFECTIVE

3D SLAM turn key solutions costs much lower than previous standard AMRs solution, make high efficiency and low costs happen together.

LSLIDAR

HIGH-END SECURITY SYSTEM

LIDAR INDUSTRY APPLICATION SOLUTIONS

PROPOSAL

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.
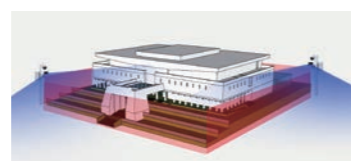
APPLICATION

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.

LSLIDAR

RAILWAY INTRUSION DETECTION SYSTEM

LIDAR INDUSTRY APPLICATION SOLUTIONS

PROPOSAL

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.

LS-S1 Series   **LS-S2 Series**   **LS25D/E**   **CH128X1**

Stable And Reliable

Remote Detection
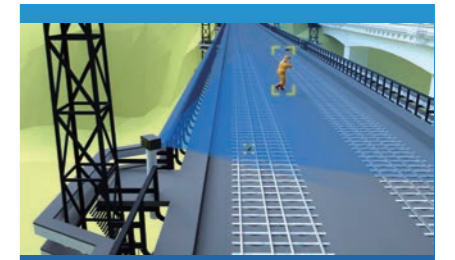
Real-time Warning

INSTALLATION SCHEME

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

LSLIDAR

BRIDGE ANTI-COLLISION INTELLIGENT ALERT SYSTEM

LIDAR INDUSTRY APPLICATION SOLUTIONS

PROPOSAL

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.

MS03

LS30MVA

Active monitoring

Ultra-far Detection

Multi-Level Pre-warning

Linkage Carmeras

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.

Figures 1

LiDAR installed at a specific location on the bridge

Figures 2

LiDAR installed at a specific location on the bridge
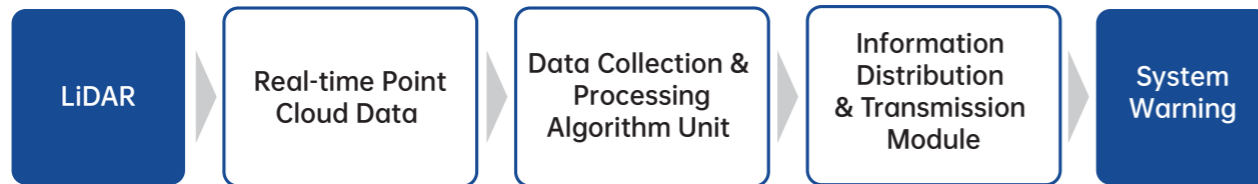
Figures 3

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

LSLIDAR

FLYING CAR OBSTACLE AVOIDANCE

LIDAR INDUSTRY APPLICATION SOLUTIONS

PROPOSAL

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.

LiDAR → Real-time Point Cloud Data → Data Collection & Processing Algorithm Unit → Information Distribution & Transmission Module → System Warning

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

MS03
(Long-distance Obstacle Detection)

LS128S1
(Close-range Obstacle Avoidance & Blind Spot Detection)

LS70B
(Monitor Terrain Clearance)

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

CH128X1
(Long-distance Obstacle Detection)

CB64S1
(Close-range Obstacle Avoidance & Blind Spot Detection)

LS70B
(Monitor Terrain Clearance)

PROPOSAL

Long-range forward obstacle detection

In the obstacle avoidance scheme of flying car with the design of highest speed 120km/h-200km/h, MS03 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.

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.

Accurate flight altitude detection

The bottom of the flying car is installed with LSLiDAR LS70B 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.

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.

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.

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.