



WLR-711 LiDAR Product Manual



Product Brief

WLR-711 is a new generation of high-performance LiDAR independently developed by VanJee Technology Co., Ltd. Using the mature LiDAR-time flight principle, combined with high-frequency LiDAR pulse generation technology, efficient and precise optical system, reliable timing circuit, multiple echo and multiple acquisition technology, and high-speed scanning system, the WLR-711 can be at 180° /40 meters Fast and accurate distance measurement within the range, and can be applied to highway traffic flow statistics, vehicle type identification and classification.

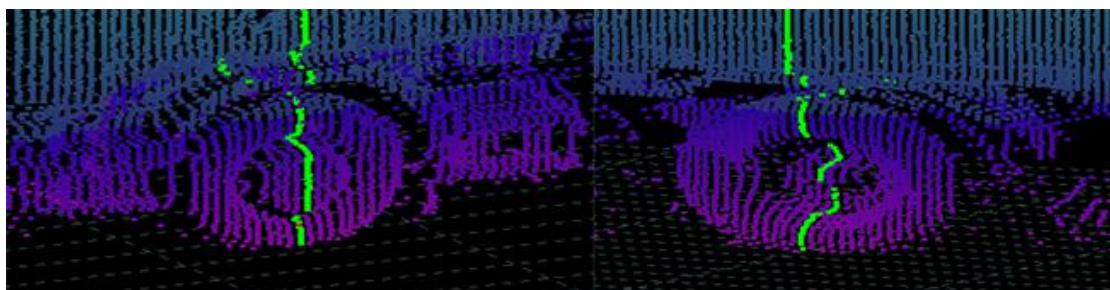
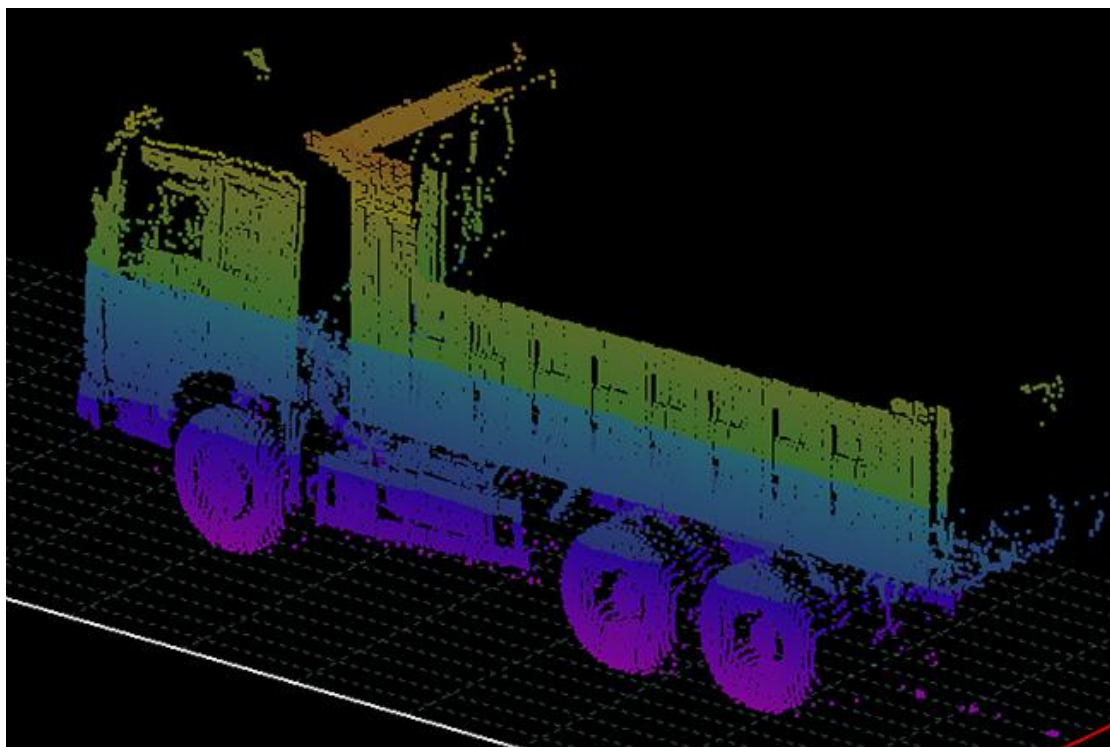
Product Features

LiDAR wavelength	905nm
LiDAR class	LiDAR class 1 (eye safety) IEC60825-1:2007, EN60825-1:2007
Scanning angle	MAX: 180°
Angle resolution	0.25° / 0.5° *(1)
Scanning frequency	50HZ/100HZ (Customized)
Multiple echo	3 times *(2)
Spot diameter	10cm/10m
Heating device	Yes
Working area	0.5m ... 40m
Scanning range of 10% reflectivity	30m *(3)

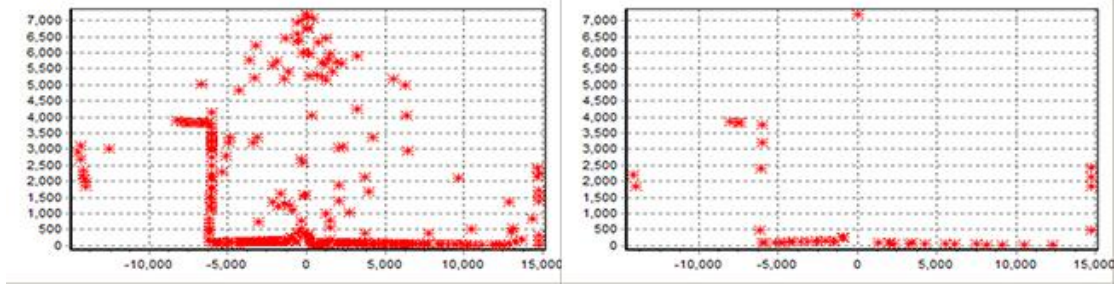
*(1) By switching on the host computer, the scanning resolution of LiDAR can be switched 0.25° / 0.5° on the basis of unchanged scanning frequency. The angle resolution is 0.25° , the partition is meticulous, and the subtle feature recognition.

The following picture is a scanned point cloud photo of the vehicle's outline

recognition, which can clearly distinguish the detailed features of the vehicle.

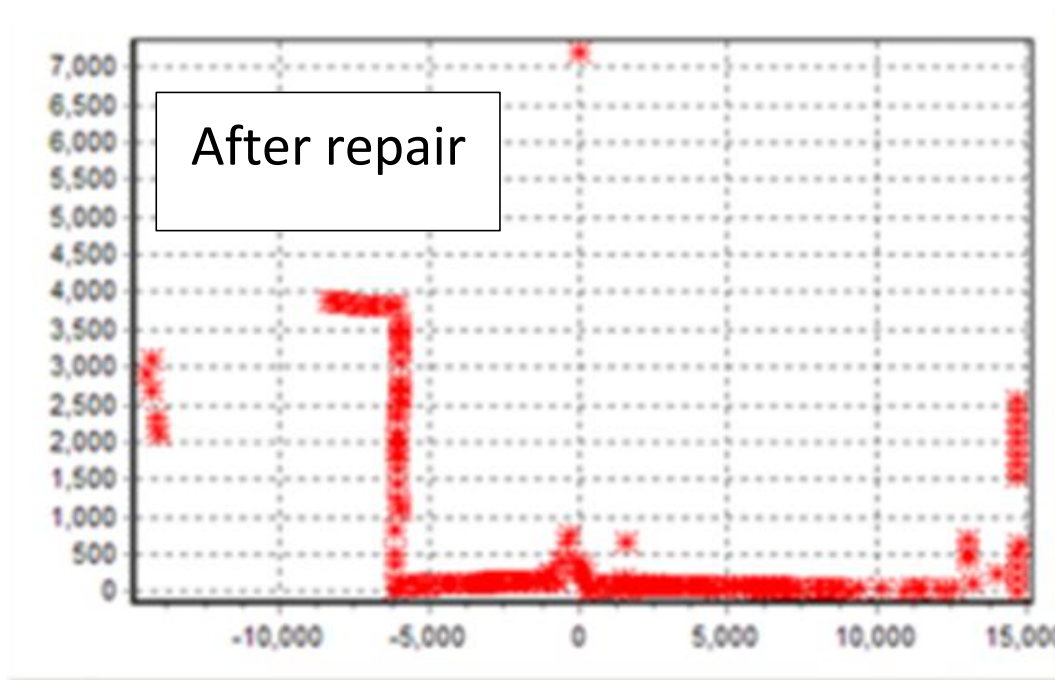


*(2) Using self-designed timing technology, it can realize multi-pulse echo and multi-collection, overcome the influence of rain and fog weather on LiDAR ranging, and has strong anti-interference ability.



Snow day

Rain day



*(3) is the ranging distance of the standard 10% reflective surface. This value can reflect the ranging capability and range of the LiDAR.

Product Features

Response time	$\geq 20\text{ms}$
Recognizable object shape	Almost any shape
System error	$\pm 30\text{mm}$ *(4)

*(4) Standard value; actual value depends on environmental conditions.

Mechanical and electrical parameters

Operating voltage	20V DC....28 V DC *(5)
Power consumption	9W typical, 60W maximum
Enclosure protection grade	IP68 (EN60529)
Shell color	white
Volume	221 X 130 X 120mm (length X width X height) without hood
	221 X 270 X 394mm (length X width X height) with hood
Net weight	4.4Kg

*(5) It is recommended to use DC24V switching power supply.

Environmental parameters

Object reflectivity	2%... >1000% (inverter)
Electromagnetic compatibility (EMC)	EN 61000-6-2:2005 / EN 61000-6-4 (2007-01) EN 61000-6-1:2005 / EN 61000-6-3 (2007-01)
Vibration resistance	GB-T2423Z.11-1997
Impact resistance	GB T 2423.8-1995 drop test method
Working environment	-55℃-80℃
Storage temperature range	-10℃-40℃
Ambient light resistance	40000 lx

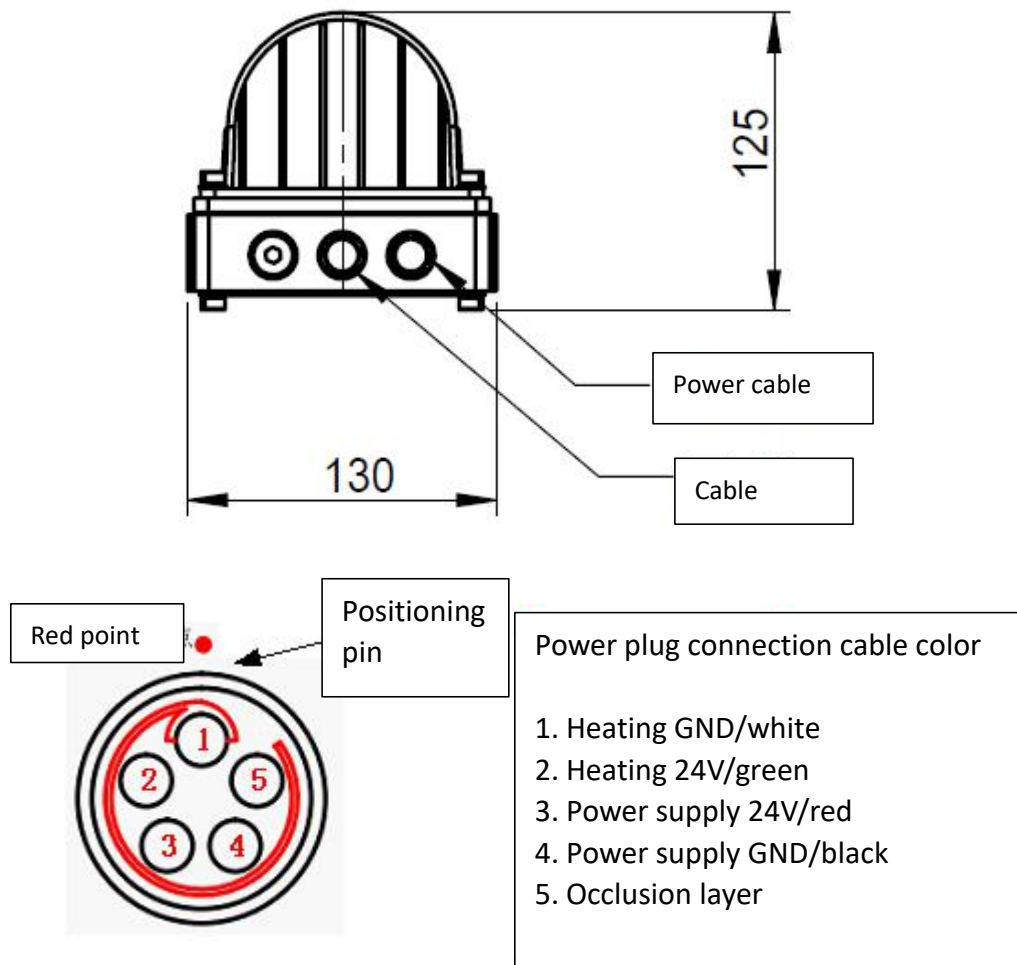
Product interface

Ethernet (TCP/IP)	Host	10/100MBit/s
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Software

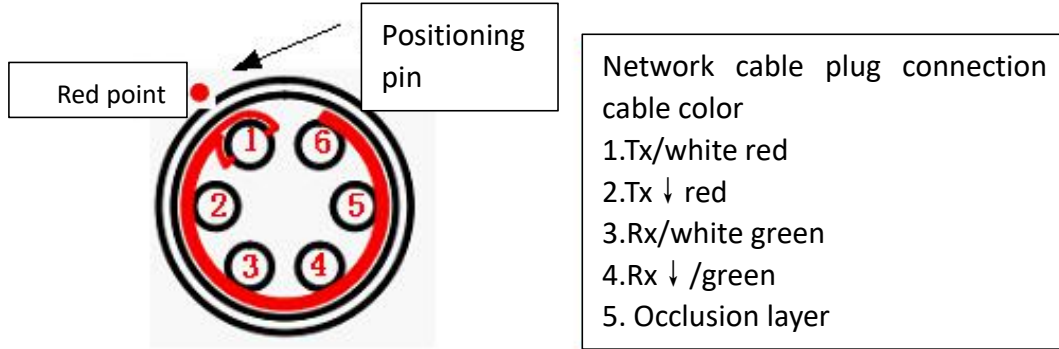
software	WLR-P711-0001
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Interface definition



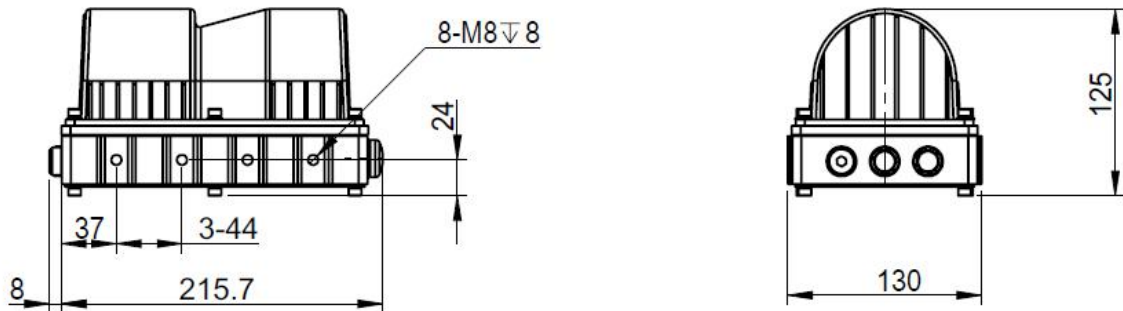
Power cord interface definition





Network cable interface definition

Product Dimension



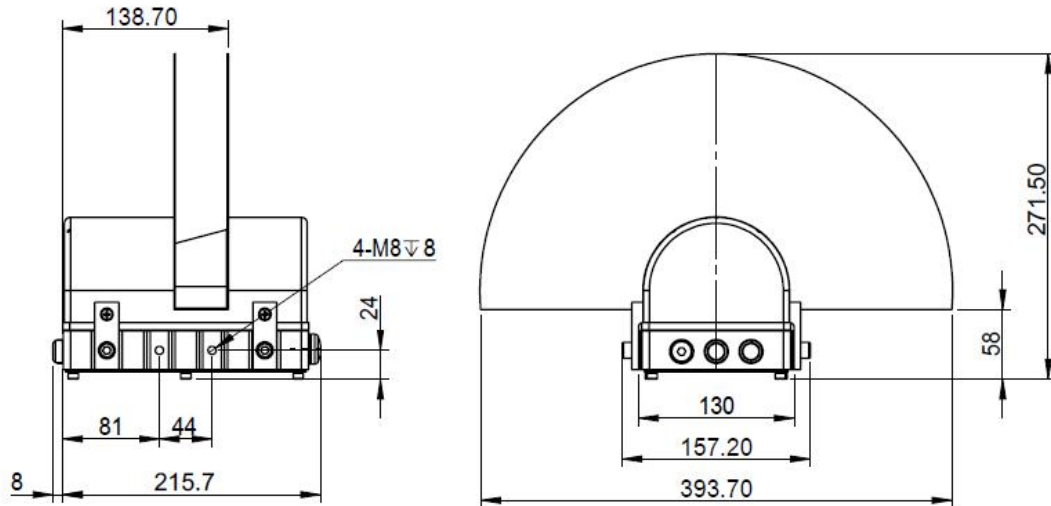
Dimension of LiDAR sensor

Product List

Item	Name	Model	Unit	Quantity
1	Scanning-type LiDAR	WLR-711	Set	1
2	Instructions		Piece	1
3	Certificate of conformity		Piece	1

Installation accessories (optional)

Item	Name	Model	Unit	Quantity
1	Safety shield		Piece	1
2	Power cable		Piece	1
3	Network cable		Piece	1
4	Ground wire		Piece	1



Hood

- When the LiDAR is used outdoors, it is best to choose a protective cover. The light exiting part of the LiDAR is an optical window. Using a protective cover can prevent direct sunlight from entering the LiDAR. At the same time, the optical window is protected against ash and water pollution.



Network cable



Power cable

- Users can choose the cable according to the application requirements on site, the cable material and length.

Item	Name	Category	Length	Scope of application
1	Power cable	Outsider cover PVR	1 m----100 m	Ordinary region
2	Power cable	Outsider cover-PU	1 m----100 m	Alpine region (temperature below minus 10)
3	Network cable	CAT5E (category 5) , Outsider cover - PVR	1 m----100 m	Ordinary region
4	Network cable	CAT5E (category 5) , Outsider cover - PU	1 m----100 m	Alpine region (temperature below minus 10)

Application introduction

The LiDAR sensor of WLR-711 introduces multi-pulse echo technology, which can realize multiple acquisitions, and at the same time increase the angle resolution of 0.5° & 0.25° adjustable function, so it has unique advantages in close-range detection accuracy and fine feature recognition.



Profiling Detection System



Vehicle classification system in entrance & exit



Vehicle dimension measurement system

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