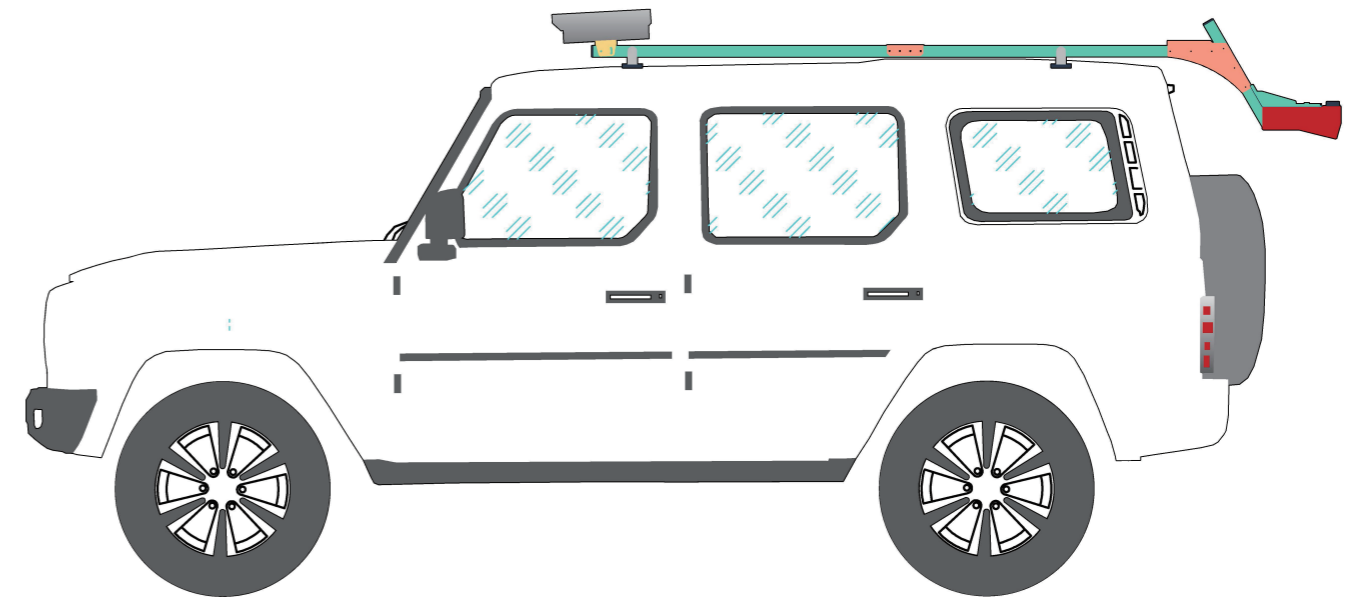


3DLS_{LR}

A Sensor Unit for General Purpose



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The 3DLS (3D Surface Light Section Sensor Unit), developed by InteSensor, is one of the world's leading technologies for transport infrastructure surface (highways, runways, city roads and railways) auto-measuring and intelligent data processing. The 3DLS for highway detection includes two types of sensor units.

- 01** 3DLS_{HR} (for high standards highways), with features of high accuracy, high speed, multi-functions and auto-data processing, can measure 6 different kinds of data with running speed up to 100km/h.
- 02** 3DLS_{LR} (for low standards roads), with features of multi-functions and auto-data processing, can measure 4 different kinds of data with speed up to 60km/h.

The following sections are the descriptions of performance of the 3DLS_{LR} sensor unit for general purpose.

A Performance of the 3DLS_{LR}

The 3DLS_{LR} is a multi-functional sensor unit (Figure-1), integrated inside a 3D depth camera, a high-accuracy laser, a GNSS, an IMU and a MPU etc. It is designed for low standards roads surface measurement including county and village roads.

The 3DLS_{LR} can measure 4 different types of data:

- 01** 3D surface images (3D depth image and 2D picture)
- 02** Longitudinal profiles
- 03** Geometry
- 04** GNSS position and mileage

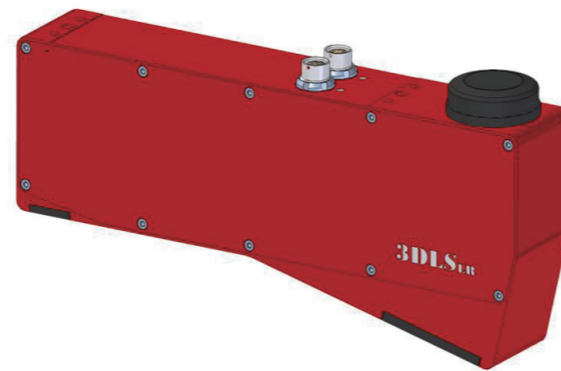


Figure-1 3DLS_{LR} for Low Standards Roads

B Parameters of the 3DLS_{LR}

The 3DLS_{LR} can measure a surface width wider than 2.70meters and be able to pick up cracks wider than 1.0~1.5mm as listed in Table-1.

Table -1 Parameters of the 3DLS_{LR}

No.	Name	Parameters	Note
01	Measuring Speed	0~60km/h	
02	Measuring width	270~300cm	
03	Measuring ability	Crack width: 1.0 mm	visible cracks
		Depth of pothole: 13~20cm	
04	Resolutions (x, y, z)	1.0×1.0×(0.3~0.5) mm	transverse longitudinal depth/vertical
05	Light sensitivity	Middle & high	
06	Dimension	300×52×125 mm	length width height
07	Hanging height	170~180cm	from land surface
08	Weight	2.2kg	
09	Types of Data	3D surface	3D depth image and 2D picture
		Longitudinal profiles	can be selected
		Geometry	
		Position and mileage	GNSS and distance
10	Data flow (size)	<1.8 GB/km	can be selected
11	Temperature	-20℃~50℃	
12	Humidity	5%~95%	

C Metrological Certification of the 3DLS_{LR}

The performance (repeatability, accuracy and reliability) of the 3DLS_{LR} has passed the metrological certification tests conducted by the national metrological institution.