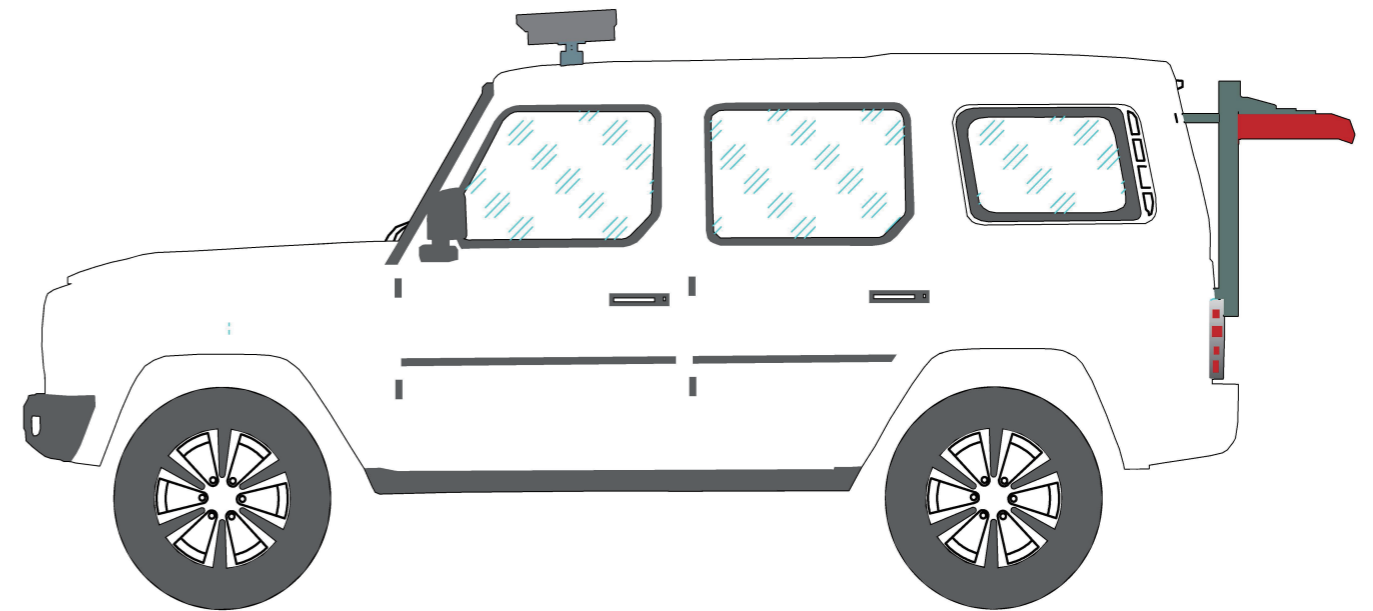


3DLS_{HR}

A Sensor Unit for Accurate Applications



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3DLS_{HR} A Sensor Unit for Accurate Applications

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 data auto-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 a running speed up to 60km/h.

The following sections are the descriptions of performance of the 3DLS_{HR} sensor unit for accurate applications.

A Performance of the 3DLS_{HR}

The 3DLS_{HR} is an integrated multi-functional sensor unit (Figure-1), included inside a 3D depth camera, high-accuracy lasers, a GNSS, an IMU and a MPU etc.

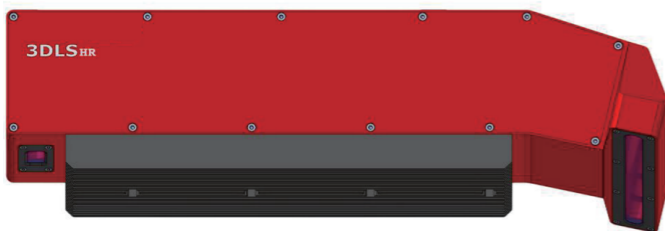


Figure-1 3DLS_{HR} for High Standards Highways

3DLS_{HR}
The 3DLS_{HR} can measure 6 different types of data:

- 01** 3D surface images (3D depth image, 2D picture and 3D surface map)
- 02** Longitudinal profiles
- 03** Transverse profiles
- 04** Texture profiles
- 05** Geometry
- 06** GNSS position and mileage

B Parameters of the 3DLS_{HR}

The 3DLS_{HR} can measure a surface width between 3.50 to 3.75 meters (Figure-2) and be able to pick up 1mm wide mini-cracks as listed in Table-1.

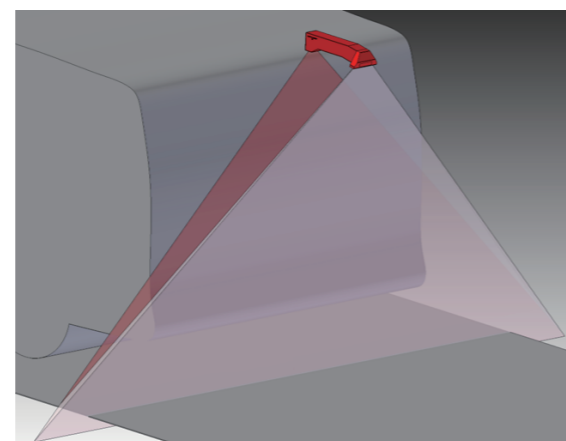


Figure-2 Measuring Width and Hanging Height of the 3DLS_{HR}

Table -1 Parameters of the 3DLS_{HR}

No.	Name	Parameters	Note
01	Measuring Speed	0~100km/h	
02	Measuring width	3.50~3.75m	can be varied between 3.50m and 3.75m
03	Measuring ability	Crack width: 1.0mm	visible cracks
		Depth of pothole: 20cm	
04	Resolutions (x, y, z)	1.0×1.0×0.25 mm	transverse longitudinal depth/vertical
05	Light sensitivity	Middle & high	
06	Dimension	445×110×140 mm	length width height
07	Hanging height	180~190cm	Standards height
08	Weight	3.8kg	
09	Types of Data	3D surface	can be selected
		Longitudinal profiles	
		Transverse profiles	
		Texture profiles	
		Geometry	
		Position and mileage	
10	Data flow (size)	1.8 ~ 15.0 GB/km	can be specified
11	Temperature	-20 C ~50 C	
12	Humidity	5%~95%	

C Metrological Certification of the 3DLS_{HR}

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