

## Speeder X1 laser radar

# Noptel

- Accurate speed measurement values with < 2% error
- Secondary speed verification with camera equipment
- Reliable results thanks to overlapping profile analysis
- Vehicle length and height measurement
- Connection to external controller or camera
- Easy installation and calibration
- Advanced dual laser measurement
- Water tight, nitrogen filled enclosure



### Applications

The Speeder X1 is especially designed for vehicle speed measurement. It comprises two integrated laser transmitters with a small angle, allowing measurement of two consecutive overlapping speed profiles from the vehicle. Based on the detailed analysis of the profiles it provides the speed, length and height of the vehicle. Furthermore, time and distance to the previous vehicle is measured.

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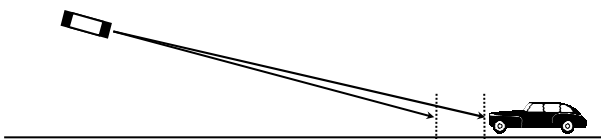
The Speeder X1 is equipped with an advanced dual laser transmitter to allow measurement of two consecutive distance profiles. Both lasers measure the profile from the point where the beam hits onto the vehicle. These profiles are then compared to each other in order to get rid of the unwanted errors caused by the varying shapes of the vehicles.

This enhanced analysis results high accuracy speed values. The measurement onto a vehicle may get result from any part of a vehicle and either from approaching or departing vehicle.



## Technology

The distance measurement sensors utilize pulsed time-of-flight technology and integrated modules together with our own ASICs for time calculation and signal processing. This technology allows high-speed measurement of distances to poorly reflecting surfaces with high dynamic variations and it has excellent resolution. The sensors are small in size, light in weight and have low power consumption. The technological solutions make the sensors compact and reliable. The sensors are nitrogen-filled to ensure reliable operation under varying temperature and environmental conditions.



## Operation

The principle of the operation is to measure two distance profiles onto a vehicle at two successive positions on the road. Both profiles include about 50 to 200 measurement points depending on the setup and speed of the vehicle. Both profiles are then analyzed and converted to speed. Finally the profiles are compared to each other in order to get rid of errors and the final speed value is calculated.

The sensor is typically installed above the lane or on side of the lane, looking forward and down at the road about 20 to 40 meters ahead.

Measured speed information is available in less than 100 milliseconds after the vehicle has passed the measurement point with any speed up to 250 km/h. Speeding trigger information for the camera is arranged in two phases: first a rough speed value for the trigger in a few milliseconds, followed by a final speed value. Furthermore, secondary speed verification is available for the camera image.

## Typical technical specifications

• Measurement range	2 - 75 m (natural surface 28 %)	• Wavelength	905 nm
• Beam divergence	15 mrad	• Weight	316 g
• Max. Measurement rate [kHz]	2 (for speed measurement 8)	• Protection	Nitrogen-filled (IP67)
• Operating temperature range	-20 - + 50 °C	• Size (H/L/W)	36 / 79 / 78 mm
• Supply voltage	10 - 30 VDC	• Laser class	1 (pointer 3R)
• Power	2.4 W	• Interface	RS-232, RS-422, Digital I/O, Ethernet

Pictures are referential. All specifications are subject to change without notice. Ref. M42928AE ©Noptel 2016.