

- * Laser radar system for obstacles and dropped objects on the rail
- * High resolution and long range covering large areas with a single unit
- * Simple operation and installation and redundant technology for fail safe thinking
- * Detects foreign on the rail and gives automatic alarms to stop train etc.

LaserGrab PLS 60 is an ideal laser scanner for detecting of obstacles and intrusions on the rail tracks . This system operates with a scanning laser distance meter often called a Ladar system. By measuring the distance to anything giving a reflex and the angle this is a 3D profile over an area. All objects in this area gives a reflex when hit by the laser distance meter beam. The normal condition of the area is stored in the system and all differences over the static image represents a difference in the scene and if the difference corresponds to what is set as an obstacle this activated an alarm.

LaserGrab can measure up to over 500 meter in other applications but this safety applications limits spec to 200 meter in distance range for smaller objects. For larger objects we can do far more and when a reflex is far end us used we can do 1000 meter in max distance.

LaserGrab can see a less 200x200 mm sized objects all over the scanned area in a time of between 1 sec and 5 sec depending on settings and the model use. We recommend to have the optional camera installed so when there is an alarm an alarm operator can see what it is and make a decision what to do. This is a difficult application we a careful analyse is needed before selecting the best suitable model.



Drawing nr LRP 100
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Comments Preliminary

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Laseroptronix AB

Skala 1 / X

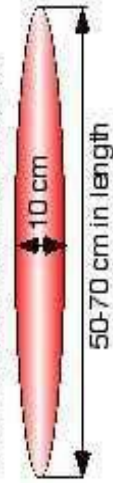
Sweden
www.laseroptronix.com

Property of Laseroptronix. Tel 08-58170064

Bridge with top part removed for better visibility of the application

Laser beam with elliptic shape.
The beam will be like a line with 50-70 cm in length at 30 meter in distance. Objects less 100 mm in dimension can be detected all along the line. This gives more hits to real obstacles than a round beam.

Beam shape at 30 meter distance

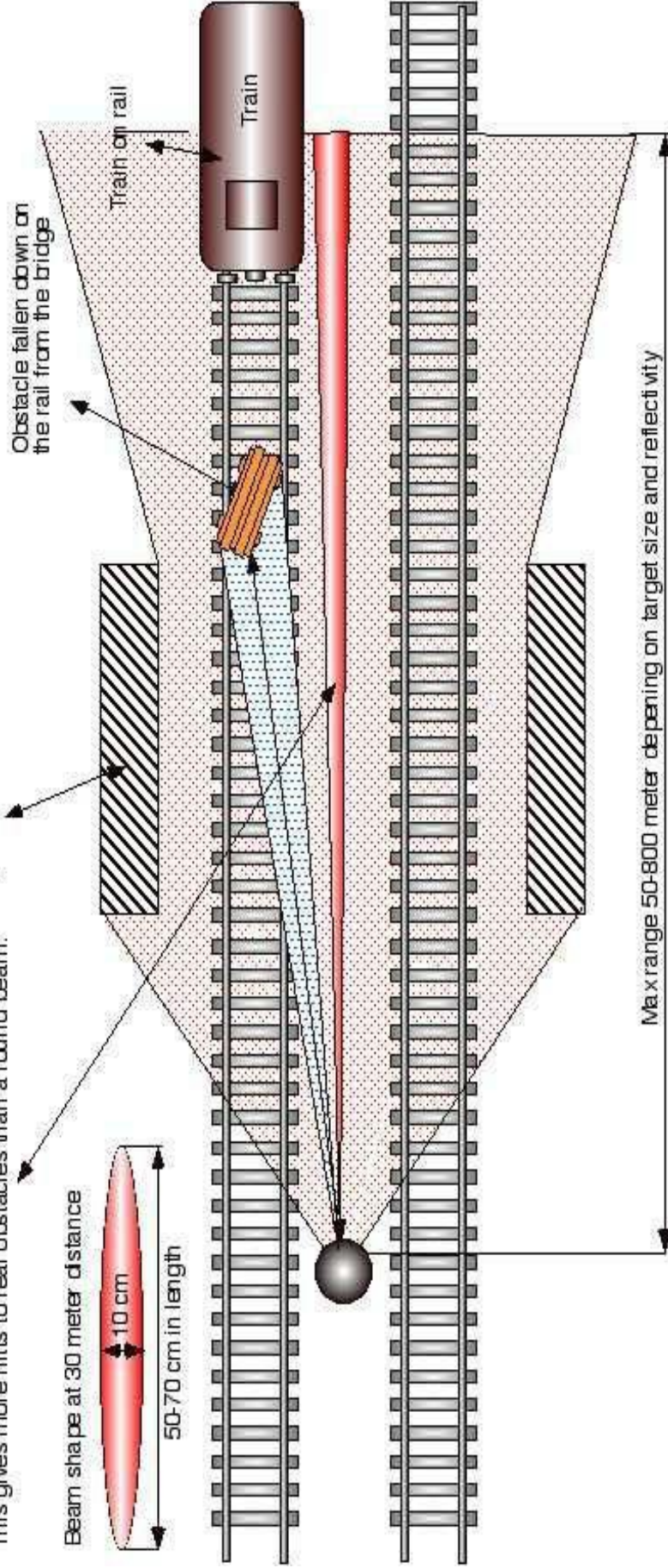


Obstacle fallen down on the rail from the bridge

Train on rail

Train

Max range 50-800 meter depending on target size and reflectivity



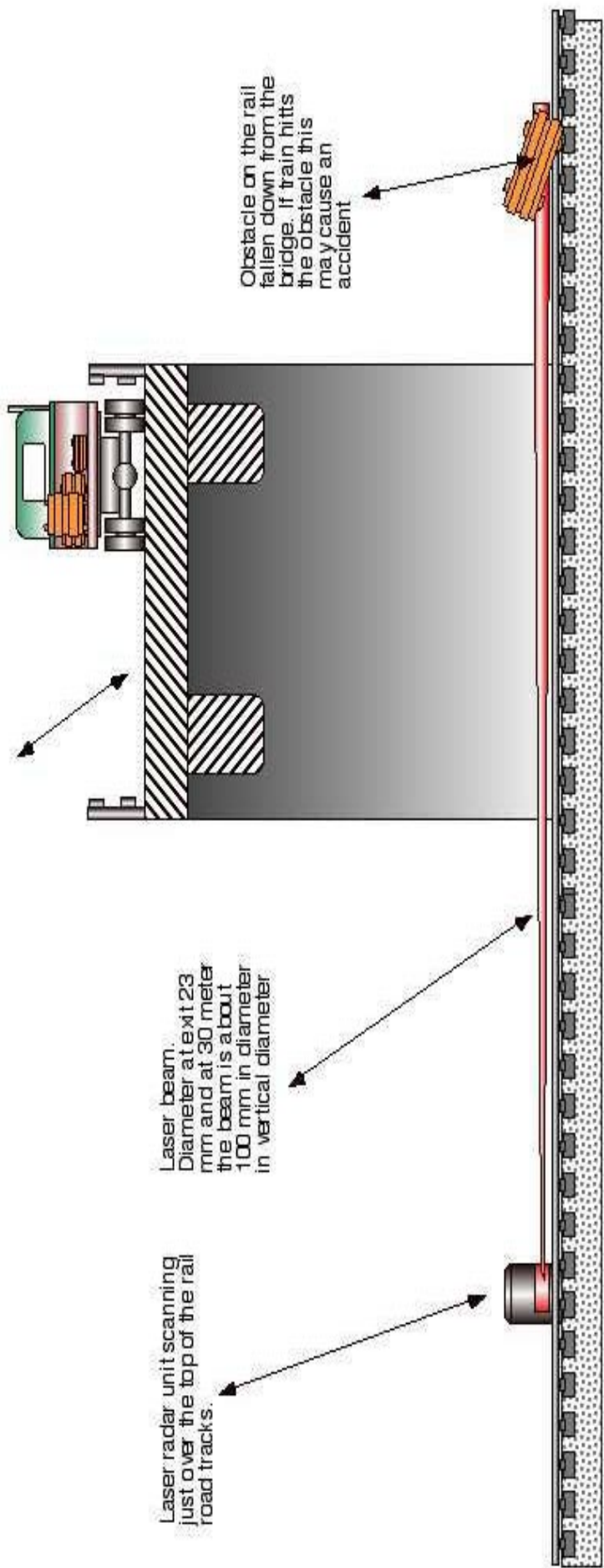


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Bridge over the rail road tracks





LaserGrab PLS 60

Debris on rail detection system



Technical specifications LaserGrab PLS60 laser radar system

Model	PLS60 HS	PLS60 LC
Distance range 20% R target	4-200 meter	4-200 meter
Distance range with reflex in far end max	400 meter	Max 1000 meter
Distance resolution	+/- 10 cm at +/- 1 Sigma	1 meter
Internal measurement speed	1000 Hz	200 Hz
	5000 Hz optional with reduced resolution	
Scanning angle	Adjustable mechanically from zero to 60 degree	
Angular resolution	Less 0,1 degree	Less 0.1 degree
Scanning speed	5 Hz	1 Hz
Response time for alarm	Less 0,5 sec	2-5 sec
Alarm output	Relay for alarm	Relay for alarm
Standard communication	RS 232 for control and settings	Se left
Beam diameter at exit	22 mm	25 mm
Beam diameter at 100 meter distance	25 cm	30 cm
Laser wavelength	905 nm near IR	905 nm near IR
Laser safety class	Class 1	Class 1
Laser model	Pulsed Laser diode	Pulsed Laser diode
Aiming system	Optional camera sights or other aiming system	
Temperature range in Celsius (C)	-10 to + 50 degree	- 10 to + 50 degree
Temperature options standard	From - 50 degree c to + 80 degree C by coolers and heaters	
Encapsulation	IP54 Steel cabinet	IP 54 Steel cabinet
Dimensions	450x300x150 mm	450x00x150 mm
Weight	7 Kg	7 Kg
Humidity non condensing	0-100%	0-100 %
Integrated heater for stop condensing	Optional	Optional

These systems are available in many different models. We can offer fail safe systems based on Laser radar.

Pls. contact us for mote information and a discussion about your specific needs.

Many of our products are protected by patents and other rights Data sheet nr LaserGrab Bridge Eng 2005 11 01

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