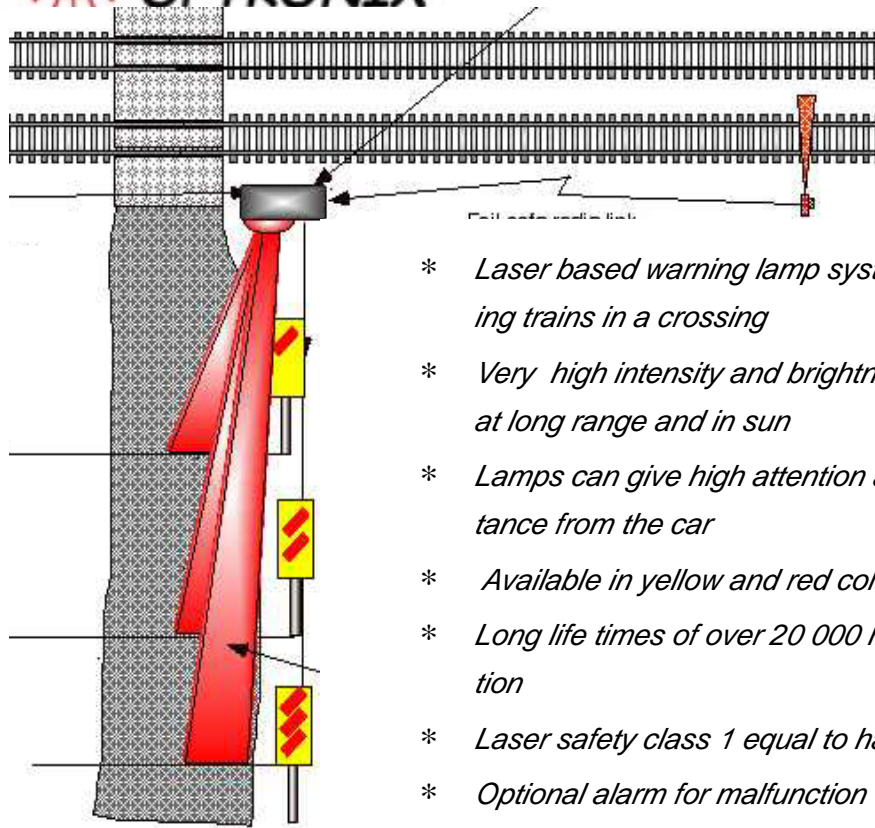




## Train Alert Laser Lamps Train safety system



- \* Laser based warning lamp system to cars for approaching trains in a crossing
- \* Very high intensity and brightness gives good attention at long range and in sun
- \* Lamps can give high attention at 200-300 meter in distance from the car
- \* Available in yellow and red colours
- \* Long life times of over 20 000 hours in continuous operation
- \* Laser safety class 1 equal to harmless for the eye
- \* Optional alarm for malfunction or broken unit

TrainAlertLaser Lamps offered by Laseroptronix is an own developed product with very unique characteristics. By using a laser source as lamp we can get many advantages over traditional lamp systems. The intensity of the laser is far better than any other lamp system. The possibility to get a small illuminated area at long range is only possible with a laser system. Train Alarm Laser Lamps can give a beam of 2x3 meter in size at 300 meter in distance and in this area the attention factor is equal to a normal lamp at 5-10 meter in distance. Depending on demands we offer a mix of LED with special optics and lasers when this is the most attractive solution. LED lamps with special optics are useable up to 50-70 meter with good results.

Train Alert Laser Lamps admits an early warning for all cars coming to the crossing that a train is coming. The todays situation with a sudden alert a few meters before the crossing has generated a lot of accidents and they can no be reduced by this solution. The early alarm do not demand any complicated installations or cables as all is located at the place of todays lamp system.

Lasers can offer a very long life time and life cycle costs are lower than any other normal lamp as they do not need frequent maintenance and exchange.

Train Alert Laser Lamps is a very cost efficient solution and a low cost to get better safety in railroad crossings.

Pls. also see other rail road safety products offered by Laseroptronix

*Many of our products protected by patents and other rights.*

*LaseroptTrainAlertLaserLamps 2005 11 01*

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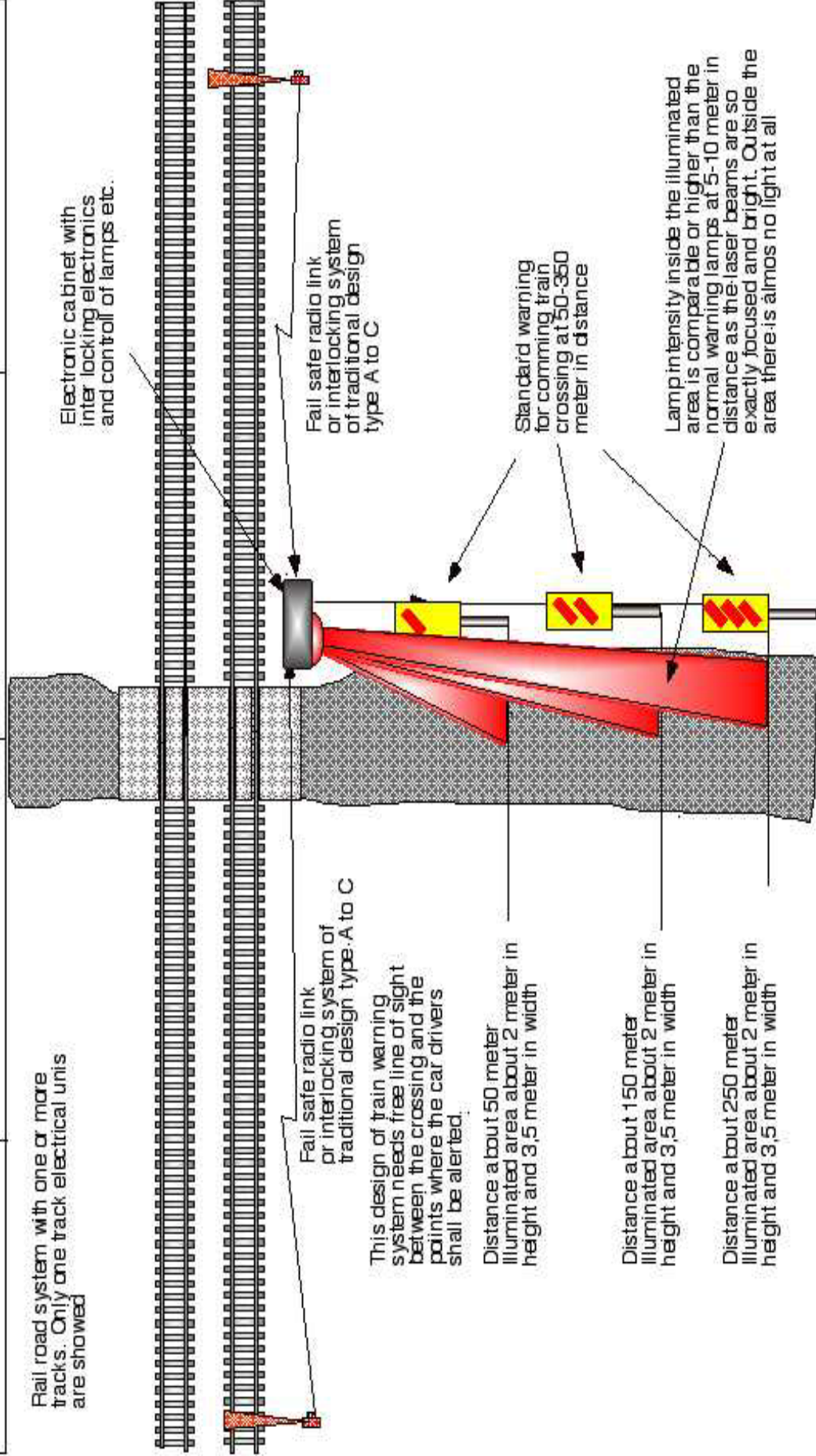
# Train Alarm Laser Lamps

Ritningsnummer Laser Lamps  
Comments. Train application

Datum 20030715  
Skala 1/X

Laseroptronix AB  
Svedjevägen 8  
186 32 Vallentuna  
Tel 08-5817006-4  
Fax 08-5817006-1

Rail road system with one or more tracks. Only one track electrical units are showed





## Train Alert Laser Lamps

### Laser illumination systems

#### Technical specifications Train Alert Laser Lamps

Colours of lamps	Red 635 nm+ Green 532 nm and yellow / orange
Type of light source	Red Diode Laser or high intensity LED + optics Green Diode pumped Yag laser or LED + optics Yellow= Green + Red laser + colour mixing Yellow High intensity LED + special optics White by RGB mixing light sources
Lamp spot at 50 to 350 meter	To be spec when order / offering is done. Typically we recommend 2 meter in height and 3-4 meter in width equal to one lane of the road and variations in car design and position of the car.
Beam diameter / illuminated area	Over 1 meter at 350 meters distance and up to 90 degree of needed.
Aperture of light sources	Typically 100 mm or more
Laser safety class	Class 1
Aiming system	Special camera based aiming system
Aiming Camera system	CCD black/white camera. PAL screen interface
Temperature range in Celsius ( C )	Red lasers - 40 to + 60 degree Green lasers - 40 to + 40 degree C Yellow lasers - 40 to + 40 degree C
Life time of light sources	Red lasers over 50 000 hours Green lasers over 20 000 hours LED sources typically 100 000 hours ( 10 years+)
Illumination alarm / fail safe operation	The lamps can have internal alarm for bad operation or broken units as an option.
Optional communicationfor alarms	GSM phone and / or SMS messaging imaging by integrated camera
Encapsulation	Up to IP 68 on all models, Casted aluminium
Dimensions	400x220x180 mm
Weight	4-8 Kg depending on model and specifications

#### **For ordering Train Alert Laser Lamps**

Pls. spec colour and installation height.

Pls. spec the different distances where the extra attention shall be made to driver

Pls. spec the area of attention equal to the area where the face of driver can be including all from motor cycles, sports cars and large trucks.

These systems are available in many more models. Pls. contact us for more information about your application.

*Many of our products protected by patents*

*Data sheet nr LaseroptTrainAlertLaserLamps 2005 11 01*

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