

## Some simple comparisons between lasers and radar speedmeters

There is no doubt that there are circumstances in which a laser can be used to measure vehicle speeds where it would be impossible for a radar to be used. For instance on a motorway or in a dense stream of traffic. This is possible because a laser is able to pinpoint a specific vehicle by having a very narrow beamwidth. However, for every advantage there is often a corresponding disadvantage and in this case, because the laser beam is very narrow, it **MUST** be aimed with great accuracy or the vehicle will not be held in the beam and the reading will be lost. Easy to do if it is a vehicle approaching head-on down a straight road, but not so easy where the laser has to be panned to follow the vehicle, or the road is undulating.

To achieve this accuracy of aiming is difficult when the laser is hand held and with cold hands very difficult. The answer is of course to use a tripod, but then the user has to set it up and is then tied to the laser position. There is no longer the opportunity to quickly check a vehicle that suddenly appears to be speeding if the officer is engaged on other matters, nor is it feasible to quickly throw a laser in the back of a vehicle and give chase to an offender, nor even to leave the laser to assist the public for whatever reason. The user is tied to the spot on which the laser is set up unless there are two people operating the speed check, which is not a very efficient use of precious manpower.

Then there is the cost difference. For the price of an average laser it is possible to purchase three SpeedGun. This means that during speed campaigns or when monitoring complaint locations, far greater coverage can be obtained for the same equipment cost. Also where community policing is practiced, the low cost of a Speedgun means that it is economically feasible for local stations to have their own set so that local complaints can be checked quickly to see if they warrant the attention of the traffic department.



Cost of ownership is another factor. Lasers must be treated with considerably more care than radar guns. If the optics of a laser are disturbed through rough handling or impact damage (being dropped in other words) then the repair costs are going to be high and the time it is out of service may be long bearing in mind that it will almost certainly have to be returned to the manufacturers in the USA for repair. Of course you may be lucky enough to be loaned a replacement unit whilst it is away!

Radars have served well for the past 15 or so years and although there has been an advance in other technologies over the years, it does not seem sensible to abandon a tried and useful system simply because there is a something new available. There has been an advance in radar technology as well. Now, with SpeedGun, it is for the first time possible to know which way a target vehicle is moving so that this radar can now be used with confidence on a road where there is opposing traffic flow. The operator is in no doubt as to which vehicle the radar is locked onto, and with the narrower beamwidth of the SpeedGun it will remain locked onto its target much longer in the presence of other vehicles.

# Speed Gun Plus



## Incorporating features never before available in a hand-held radar speedmeter

- ▶ For the first time ever radar can be used with confidence on roads with opposing traffic flows. SpeedGun's display clearly shows in which direction vehicle is being tracked.
- ▶ The internal clock shows the time at which a reading was locked.
- ▶ An internal memory holds the speed limit for the road being checked and displays it when a reading is locked.



## 128x64 dot LCD display shows

Large rounded numbers, no segments to fail, no ambiguous displays  
 Direction of target vehicle either oncoming or receding  
 State of radar : running or locked  
 Current time of day

Removable mobile phone battery giving 6 hours use per charge

Rubber handle does not chill operator's hand

Time that speed was locked

Current speed limit

Time and speed limit setting buttons

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# Specification

Speed Gun Plus is a hand-held speed and direction measuring Doppler radar , with large backlit 128x64 dot graphic display. Capable of measuring speeds in Miles or Kilometers per Hour and displaying system messages in any language

## Electrical

<b>Operating frequency</b>	24.1GHz $\pm$ 25 MHz
<b>Power output</b>	5 mW
<b>Power density</b>	< 0.3mW/cm <sup>2</sup>
<b>Beamwidth (-3dB)</b>	12°
<b>Sidelobes</b>	> 22 dB down on main lobe
<b>Front to back ratio</b>	> 40dB

<b>Speed measuring range</b>	20-120 MPH, 150 MPH at reduced sensitivity 30-190 km/h, 240 km/h at reduced sensitivity
<b>Accuracy</b>	$\pm$ 1 digit
<b>Range</b>	500 Metres dependent on target

## Environmental

<b>Storage</b>	-25°C + 70°C
<b>Use</b>	-10°C + 40°C

<b>Housing</b>	Extruded aluminium case, black powder coated finish Rubber handle with Lanyard fixing point
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<b>Power source</b>	Standard Ericsson mobile phone Ni MH battery 1.2Ah capacity, removable for charging, 2 supplied each sufficient for 6 hours typical use without recharging
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## Operating

Microcomputer controlled with built in time and date facility  
 Storage for operator input speed limit  
 Large rounded numerals 30mm high clearly show speeds and cannot give erroneous readings caused by segment failure in conventional 7 segment displays  
 Speed readings may be locked and when locked the time of locking and the direction of the target are also displayed  
 Low battery and RF interference warnings appear on the display as appropriate  
 Ability to output speed readings and time and date via RS232 link

**Supplied with tuning fork, 2 batteries, charger, carrying case and calibration certification**