



**ADVANCED TRAFFIC TECHNOLOGY**  
COUNTS, SEPERATES & CLASSIFIES IN **ALL** CONDITIONS

**Technical Sheet No. 12**

# **Idris®**

## **RED LIGHT & SPEED ENFORCEMENT**



The Idris® patented Technology is so versatile it can be implemented into a variety of applications from a single function system to multi tolling applications. The Idris speed detection system is a single function speed solution. It's capable of obtaining highly accurate speed data from standard loop sensors installed under the carriageway on a short base line. Idris Technology is an ideal and lane specific detection or trigger method for generic 35mm or digital camera enforcement systems. Specifically where expensive above ground Radar or problematic 'inroad' multi Piezo sensor sites have been the only available technology. The system can also be adapted to any loop only traffic environment where high accuracy speed data, length and axle classification are of paramount importance.

As an example, to enable the loop sensor array to be installed between, or around the white "stop" line/bar for Speed on Green Enforcement at a Red Light controlled intersection, 1m loops with a separation of 1m would be typically installed resulting in a 3m loop array with the specified +2kph/± 2% on Speed accuracy. The Idris 'loop only' speed detection system has been developed, proven and validated for loop only speed accuracies of better than +/-2 kph at speed ranges from 5 to 100kph, ± 2% above 100 kph, for all vehicle types. Requirements for higher accuracy can be met using detection 2m loops. Using modified Idris vehicle classification algorithms, the developed Idris system is also able to ascertain when an erroneous speed has been detected and positively prevent incorrect image triggers. This creates a secure evidential detection method for enforcement camera systems, i.e. used in traffic signal controlled junctions, at unmanned rail crossings, on urban or rural highways and at road irregularities where traditional detection methods are unsuitable (such as bends or brows of hills).

A range of tests using commercial vehicles, cars and motorcycles have been conducted; these include close following vehicles, vehicles reversing over the site and high speed vehicles passing within the sensor array. In addition, stationary and low speed vehicles have been tested with parked vehicles on or near to the sensor array together with vehicles performing lane changes over the detection point.

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### OPTIONS

Although the speed application is a single function application, due to the “plug & play” nature of the Idris Technology additional functionality may be applied.

**Should the application require additional statistical or trigger facilities the following options are available:**

- Acceleration and deceleration over the site
- Accurate trigger for enforcement purposes
- Variable speed limit by vehicle classification

<b>Example:</b>	Cars	<b>70kph</b>
	2 axle trucks	<b>60kph</b>
	4 axle trucks	<b>50kph</b>
	Passenger service vehicles	<b>50kph</b>

Whilst Speed detection is a single trigger function, most sites demand multi lane applications. The Idris solution can typically provide accurate speed data for any number of lanes at one location or as demanded by the OEM client.

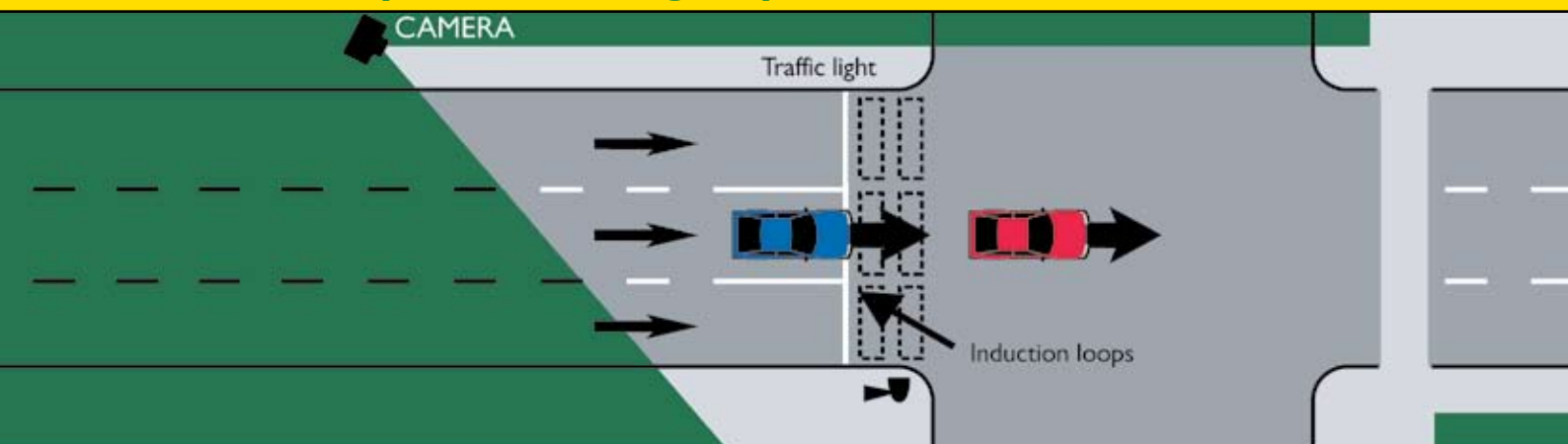
### EQUIPMENT

The Idris speed functionality is available on 3U Euro Card for up to 4 lanes per card using 2 detector slots. No additional hardware is required other than enforcement cameras etc. This system is extremely low cost to install, requires no special road surface, and can be installed by local loop installation companies. In addition to these benefits the detection system triggers and functions in all weathers including snow and ice at all temperatures.

#### System & Hardware Requirements:

- Idris Technology
- Standard inductive loop sensors
- Detectors as required

### Site layout for Red Light Speed Enforcement



## APPLICATION TESTING

This application has been exhaustively tested in a number of locations in the UK and overseas. The latest testing was carried out by DCS supervised by a TUV representative, where 520 runs were carried out between 20 and 140mph using both short baseline loop arrays (1m loops with 1m gap) and long baseline loop arrays. A report was generated by TUV which confirmed that the equipment exceeded both the UK Highways Agency specification for speed enforcement systems and the Idris Speed Accuracy statement. Table 1 summarises the results of the testing. A report detailing the test procedures is available on the Idris technology web site (<http://www.idris-technology.com/papers-and-presentations/speed-validation-project/>). All data accrued during tests were recorded on site by a TUV witness. These provide a physical and non-amendable record of all information. This data is stored in archive at TUV Product Service premises.

All tests on the Idris Speed Enforcement System indicated the system measurement accuracies were better than the specified Idris speed accuracy statement of:

+/- 2kph for speeds below 100kph  
and +/-2% for speeds over 100kph.

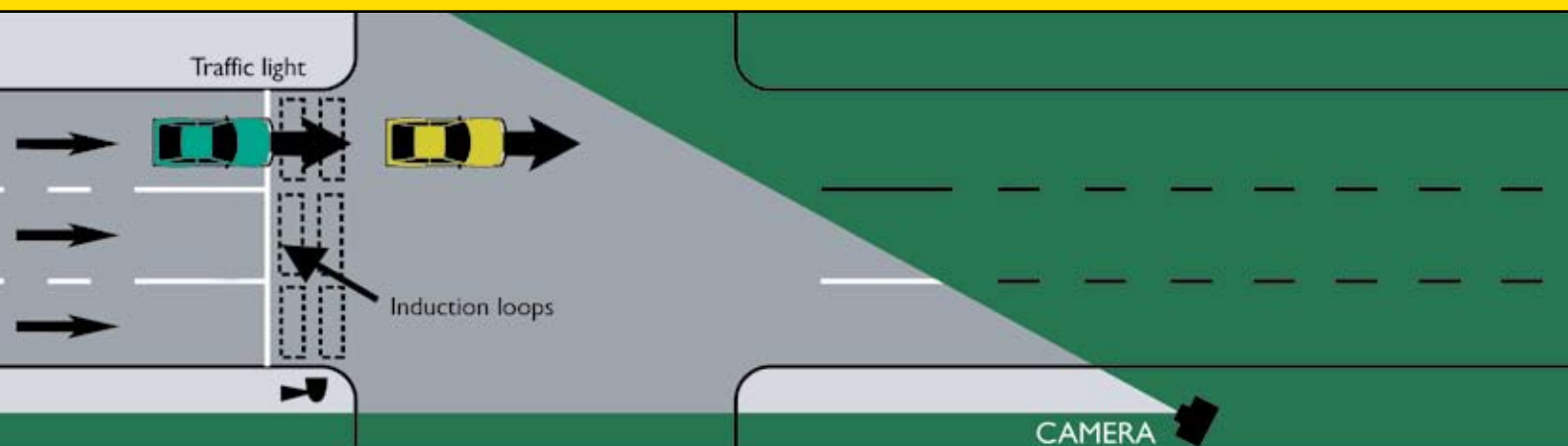
In addition the measurement accuracies were well within the tolerance requirements of the HOSDB Publication No 15/05, listed as:

Positive error not greater than 2mph (or 3%, over 66mph)  
Negative error no greater than 5mph (or 10%, above 66mph)

Table 1. Summary of UK Speed Unit Tests

Idris Speed Trial Results		Below 100kph (60mph)		Above 100kph (60mph) Max 224kph (140mph)	
		Max Neg Err	Max Pos Err	Max Neg Err %	Max Pos Err %
2 m loops	kph	-0.71	0.71	-0.74%	0.62%
	mph	-0.44	0.44		
1 m loops	kph	-0.97	0.45	-1.24%	1.53%
	mph	-0.6	0.28		

Earlier testing with the Victorian Police Authority in Australia achieved similar results.



**Frontal photography**

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Car captured by Idris **Loop Enforcement System**



Motorbike captured by Idris **Loop Enforcement System**

The Idris Technology is protected by one or more of the following patents:  
**EP0879457, USA 6345228, 6483443 and 6337640**

Patent Applications Pending in other Countries

Idris® is a registered trademark of Diamond Consulting Services Ltd.

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