JENOPTIK

VECTOR LX

Traffic technology solutions to improve roads, journeys and communities

VECTOR-LX, level crossing enforcement solution with HOTA.

VECTOR-LX is a highly capable monitoring and enforcement tool that continually and automatically captures and analyses data at Level Crossing sites. Using a unique combination of ANPR, video and scanning radar, VECTOR-LX not only identifies when offences occur, but gathers a wealth of 'situational awareness' data to identify behaviours at different times of the day. This is delivered without the need for road loops or intrusive connections to the wigwags, providing a system that is powerful, effective and simple to maintain.

VECTOR-LX Capabilities

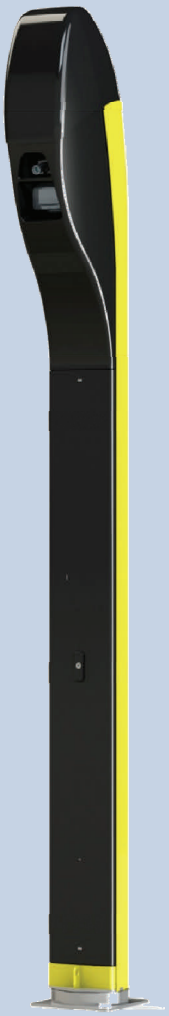
- Home Office Type Approved (HOTA)
- Red Light Enforcement
- Stranded Vehicle Detection
- Police ANPR
- Queue Length Monitoring
- Dwell Time
- Vehicle Speeds
- User Statistics by Time/Vehicle Class

The combination of technologies used in **VECTOR-LX** provides a rich set of data, which will allow for Red Light enforcement to take place. In addition, the system also provides valuable data capture and intelligence, relating to the behaviour of pedestrians, cyclists and vehicles of different classes as they use the crossing.

Whilst much of this data will not be used in the issue of tickets, it will allow operators to learn about user behaviour, which could be used for safety interventions or intelligence-led decisions.

VECTOR-LX can operate in multiple modes, simultaneously or at different times, depending upon the selected requirement. Current UK Home Office rules don't permit dual use when enforcing, so the system can be configured to operate either: Red Light enforcement; or Police ANPR, user behaviour monitoring and data capture.

The system can also be configured to prioritise 'alarm mode', if a hazardous situation is identified.



Level Crossing Enforcement Solution

VECTOR-LX Solution Overview

ANPR - At the heart of VECTOR LX is the VECTOR ANPR camera module. This is a standard, integrated ANPR camera that forms the back bone of Jenoptik advanced ANPR solutions (including Average Speed enforcement, Bus Lane enforcement and more).

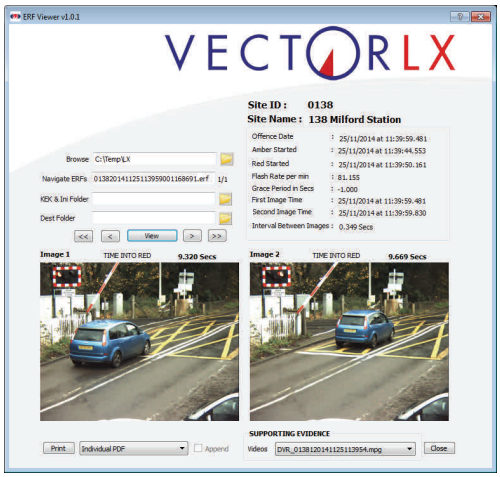
Video - The VECTOR camera captures overview scene video in addition to the ANPR image and data capture. This video shows the context in which a vehicle has been captured, day or night using a day/night mode camera. Additional video cameras are used to monitor all relevant wigwag signs (flashing lamps), providing triggers when the amber or red lamps illuminate as well as capturing video to demonstrate sign activity.

Radar - Scanning millimetric radar allows all objects within a fixed radius to be monitored, regardless of time of day, weather conditions or vehicle speed. The radar can provide a trigger, showing when a vehicle passes a defined line on the road, or when a vehicle dwells within a defined zone. In addition, the radar system allows for additional objects to be monitored including pedestrians, cyclists or foreign objects/debris.

Data Capture - The combination of technologies outlined above will provide a rich data set for Red Light Enforcement in compliance with Home Office Type Approval (HOTA) Red Light requirements. In addition, the VECTOR LX hardware can allow for Yellow Box monitoring to take place, and will also provide other valuable intelligence information, relating to the behaviour of pedestrians, cyclists and vehicles (of different classes) over the crossing. Level Crossing Managers will be able to better understand behaviours taking place on their crossing: what happens, when it happens and how it could be prevented.

VECTOR LX Specification

VECTOR LX Outstation Column
Dimensions: Height: 4000mm, Width: 350mm, Depth: 600mm
Power: 240V AC input, 150W max nominal power consumption
Operating Temperature: -10°C to +50°C (80% humidity above +20°C) IP55 rated
Situational Awareness: Scanning millimetric radar (tracking enforcement triggering)
ANPR Capture: Jenoptik VECTOR ANPR / Overview camera
Trigger: HD colour camera (no signal interconnections or in-road loops)
Onboard Processor: Embedded PC with Intel Core i7 processor with Linux OS
Clock: Primary: integrated GPS module with PPS signal. Secondary: integrated clock with high precision crystal, synchronised to GPS time source
Communications: Wired LAN 10/100 baseT Ethernet connection; 3G/GPRS/GSM to remote antenna inside column; WLAN (WiFi) connection between column pairs
External Connectivity: Power (230 VAC mains input), Telephone socket for optional ADSL Broadband connection
Security: Anti-tamper switch inside column. High security locking mechanism



VECTOR LX produces an offence file that provides all of the evidence needed to secure a prosecution.

As well as identifying offences, VECTOR LX gathers a wide range of data regarding crossing users and behaviour. This allows intelligent decisions and interventions to be made through an analysis of behaviours, rather than purely detecting violations.

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