3M
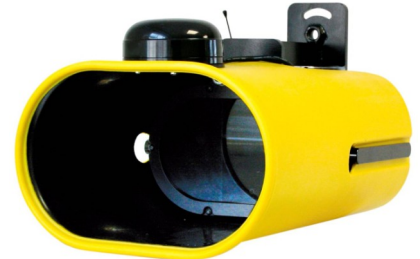
3M™ Average Speed Camera System
Distance Over Time Speed Enforcement

3M™ has developed a cost effective distance over time speed enforcement system, the 3M™ Average Speed Camera System. This can be deployed as:

- Main road speed enforcement for congestion reduction
- Urban speed enforcement, to eliminate rat-runs
- An alternative to speed curtailment ramps and pinch points
- Local short distance speed enforcement of school entrances

The 3M™ Average Speed Camera can be used site to site (any lane to any lane), as a road network solution. The camera system consists of a dual integrated HD ANPR unit, which is easy to install with minimal urban streetscape impact, and a camera server. The camera server is configured with the site-IDs and camera-IDs of the deployed cameras, with the distances between sites and the enforcement speed for the linked sites. The enforcement speed may be independently set as site-A to site-B and site-B to site-A, with each link having a separate enforcement speed if required. Violations are detected between any camera on one site and any camera on another site. The camera system is a cost effective solution, which can provide a complete road network solution for up to 1000 cameras, linked via GPRS (or ADSL), to the 3M™ Average Speed Camera in-station enforcing speeds from 20 – 140mph.

The 3M™ HD ANPR Camera is independently time-locked using GPS time, as a primary time reference and SNTP time-lock, as a secondary reference. When a vehicle passes a camera, the licence plate is read and time-stamped, and this together with the site-ID, camera-ID and event-ID form a summary record which is sent to the camera server. This occurs at every camera that the vehicle passes. The cameras authenticate and encrypt the compressed image which is set into an evidential record associated with the event-ID. Up to 60,000 Evidential Records may be stored locally.

The 3M™ Average Speed Camera Server computes the average speed of every vehicle detected at every site and compares this with the enforcement speed. If a violator is detected, a combined Violation Record is generated. This comprises the link definition, camera site-IDs, enforcement speed, measured speed and times. The authenticated and encrypted Evidential Records, containing the images of the vehicle passing the linked sites, are pulled from each camera for the offence. The violation record is authenticated and encrypted as a whole, at the time of generation, and can be written to CD in order to be passed across an air-gap.

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3M™ Average Speed Camera System Specifications

Weight: 6.7kgs without hood. 7.3kgs with hood

Size: 160 mm wide, 110mm high x 155mm long excluding hood

Power: 35W, 48Vdc

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Key Features

- Distributed ANPR cameras with central server providing distance over time speed enforcement
- Site to Site (any lane to any lane)
- GPRS or ADSL communications
- Single integral ANPR unit, easy to install
- Small urban streetscape impact
- HA approved pole or bridge mounts
- Automatic enforcement, 24 hour operation, 365 days a year
- Evidential Record from each camera includes plate patch, IR whole image, Overview (colour) image and contextual views (pre-event & post-event overviews)
- Generates full Violation record combining images from offence detection cameras together with link definition, camera site-IDs, enforcement speed and measured speed
- Supports timed Enforcement Sessions for highest security
- GPRS communications, pulling the images only when required
- Resilient to communication outages, storing up to 60,000 vehicle events locally
- Distributed accurate time with primary and secondary time references
- Minimum baseline distance of only 100m, for up to 3.75m offset from the centre of the lane, when pole mounted
- Full SHA-1 authentication and AES 256 encryption for financial level security
- Stand-alone security key generation program for key transfer across air gap
- Open interface to Offence Viewing and Decision System (OVDS) back office
- Simple power-only installation possible
- The 3M™ Average Speed Camera In-Station security is of the highest standard and is in excess of many of the current HOSDB requirements
- Cost Effective Enforcement