



## Product Specification

M210

Logging Stud

Clearview Intelligence offer a unique and innovative solution for traffic planners looking for a low-cost vehicle counter solution in both permanent and occasional surveys.

The M210 solar powered logging stud provides count information in a simple, self-contained unit.

### Information trends

Traffic planners regularly need high levels of information to help accurately manage the roads within their network. Gathering details such as long term trends can be difficult where the only solution is to install a wide network of loop based traffic counters, but this is often not economically practical due to installation and maintenance costs.

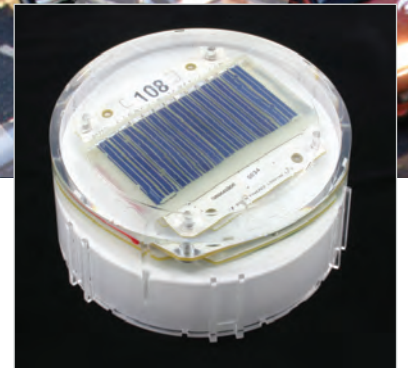
### Simple solution

The M210 solar powered logging stud can provide a solution to this problem, by combining our extensive expertise with a range of technologies including solar power, radio communications and magnetometer based vehicle detection.

This self-contained traffic counter is installed into a 13cm diameter hole in the centre of the lane. Once installed it will continuously count passing vehicles, recording volumetric data in one minute intervals, storing it within the unit. An integrated solar panel stores power in a high efficiency rechargeable battery to ensure continuous operation for many years without the need for any form of routine maintenance.

### Easy data collection

Data collection is straightforward by utilising the specially designed USB radio dongle and the simple download application.



## Key Benefits

- Quick and easy, low cost installation, minimising road closure time, worker exposure and traffic disruption
- Data collection trips can be scheduled around operator requirements thus saving time, money and carbon emissions
- Renewable solar energy source and small footprint reduces environmental impact
- Unobtrusive installation means less likely to sustain damage from road users
- Roadside wireless connection enables safe data collection by operator teams

## Key Features

- Solar powered magnetometer sensor for detecting and counting vehicles
- Binned vehicle count in one minute intervals
- 1 year data storage capacity
- 13cm diameter
- Self-contained with no roadside cabinet, mains power or loops required
- Quick and simple installation
- Maintenance free operation
- Almost "invisible" once installed



#### Typical uses

Data can be used for a wide range of applications including:

- Local authorities - for providing additional granularity to the comprehensive data generated by other traffic monitoring infrastructure.
- Retail environments - to provide a clear historic record of vehicle movements in and out of car parks and surrounding road traffic flows.
- Country parks - to give an indication of visitor numbers.
- Car park entrance and exits - to give clarity on the number of vehicles entering and leaving the car park, and to provide peak flow information.
- Monitor seasonal traffic patterns especially in the roads surrounding event locations including showgrounds, sporting events, air shows, and exhibition centres.

#### BATTERY SPECIFICATION

##### Battery technology

3.6V 1900mAh Nickel Metal Hydride (NiMH) battery pack

##### Battery operation

Continuous operation for at least 4 weeks from full charge without any solar input

##### Battery charge time

2 hours from flat to operating charge (@100 klux - sunny day)

50 hours from flat to full charge (@100 klux - sunny day)

#### DATA SPECIFICATION

##### Count accuracy

5 to 30mph	97%	30 to 70mph	98%+
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#### Data storage

16Mb internal memory, each event being 1 byte

#### Data retrieval

Binary survey data is downloaded from the stud via the MLINK or MLINK S software, using the M211 USB dongle connected to laptop to communicate with the M210 stud.

MLINK enables the retrieval of all data held on the stud or just the new data that has been recorded since the last time data was retrieved. MLINK S simply retrieves all data held on the stud.

Retrieving one week's data takes approximately 20 seconds; retrieving one month's data will take approximately one minute.

#### Data analysis

MLINK S provides basic graphical and tabular event output capability, enabling the user to plot data retrieved between any two dates and display with granularity of 1 min, 5 min, 15 min, hourly or daily. Both MLINK and MLINK S export this data to '.csv' format for additional manipulation and analysis in packages such as Microsoft Excel.

#### Companion products

MLINK - Windows based configuration and data retrieval software. MLINK S - Windows based data retrieval and analysis software. M211 Amplified Dongle with Directional Antenna - USB amplified dongle providing improved range and faster downloading of data compared to the standard M211 dongle. Ideal for situations where environmental interference may be an issue.

M211 Amplified Dongle with Omnidirectional Antenna - USB amplified dongle and Omni-directional antenna providing low power radio communications to enable downloading of data from the studs.

## Specifications

#### OPERATING TEMPERATURE RANGE

-20°C to 60°C (-4°F to 140°F)

#### DETECTOR TECHNOLOGY

Magnetometer

#### DETECTION CAPABILITY

All major types of motorised vehicles, including motorcycles, cars, vans, articulated lorries

#### DETECTION ZONE

For optimal accuracy, some part of the metal chassis must pass directly above sensor

#### DIMENSIONS

Ø112 x 52mm

#### WEIGHT

740g

#### HOUSING

Polycarbonate and polyester compound

#### SOLAR PANEL CAPACITY

305mW

#### RECORDING INTERVALS

1 minute bins

#### SPEED RANGE

5mph to 70mph+

#### POWER CONSUMPTION

1mA during normal operation

35mA during download

#### ENVIRONMENTAL PROTECTION

IP68

#### RADIO FREQUENCY/RANGE

2.4GHz band using Zigbee communications between stud and dongle

M211 Amplified Dongle with Directional Antenna

- Range up to 50m between stud and dongle

M211 Amplified Dongle with Omnidirectional Antenna - Range

up to 35m between stud and dongle