

Black CAT Radar

Above Ground Vehicle Count, Speed and Classification

The Black CAT Radar unit allows for the collection of traffic data without the need for in-road traffic sensors. This newly developed radar product has the ability to detect the lane position of vehicles, thus allowing the device to monitor two lanes of traffic travelling in the same direction. Furthermore, improvements with the on-board algorithms ensure that the vehicle length measurement is more accurate, allowing for VBV classification.

The device can either be battery powered for short term surveys, or can be solar powered for permanent installations. Units can be fitted with a GSM / GPRS or 3G modem and users can specify the way data is collected. It can record either VBV or binned data and can log the data both historically or in real-time.

In historical mode the Black CAT Radar waits for the user to collect the data, in real-time mode it sends the data automatically to the in-station at user configurable time periods.



Radar Range 15M (Maximum 2 lane operation)

Bi-directional Traffic

Volume	98% accuracy with a 95% confidence
Speed	+/- 2mph or 3% whichever is greater
Length	+/- 40cm or 5% whichever is greater with a 95% confidence

Dual Carriageway Traffic

Volume	97% accuracy with a 95% confidence
Speed	99% accuracy with a 95% confidence
Length	+/- 40cm or 5% whichever is greater with a 95% confidence

* Results excluding obscuration. Ideal CA Traffic site conditions are specified in the user manual.

With the advancements of the CA Traffic Black CAT Radar, which utilises the latest radar technology, it is now possible to accurately detect and record two individual lanes of traffic travelling in the same direction, for example half a dual carriageway with an individual channel per lane.

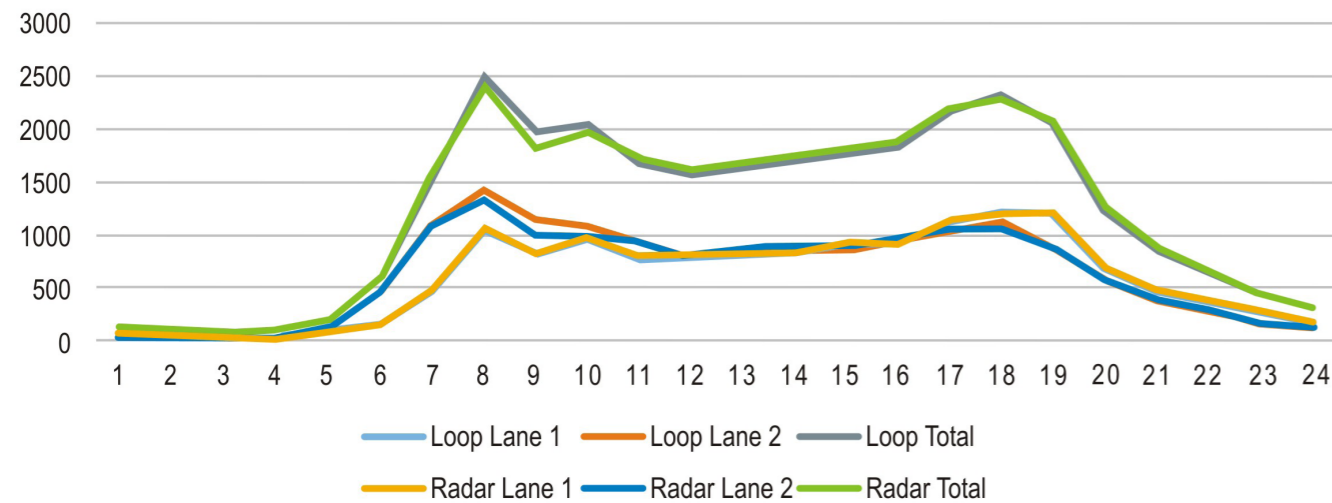
In light of this we feel it's important to measure the performance against a conventional inductive loop site which has a proven volumetric accuracy of 99.5% with a 95% confidence. There are almost always obscuration issues when dealing with Radar Outstations due to high sided near side traffic, however thanks to state-of-the-art platoon splitting algorithms the majority of far side traffic can now be correctly resolved.

Due to the advances in technology and hardware developments for dual carriageway operation, the BlackCAT Radar has also inherited advanced single carriageway performance. This functionality enables the Black CAT radar to be utilised as a viable alternative to loop based systems at both temporary and permanent installations.

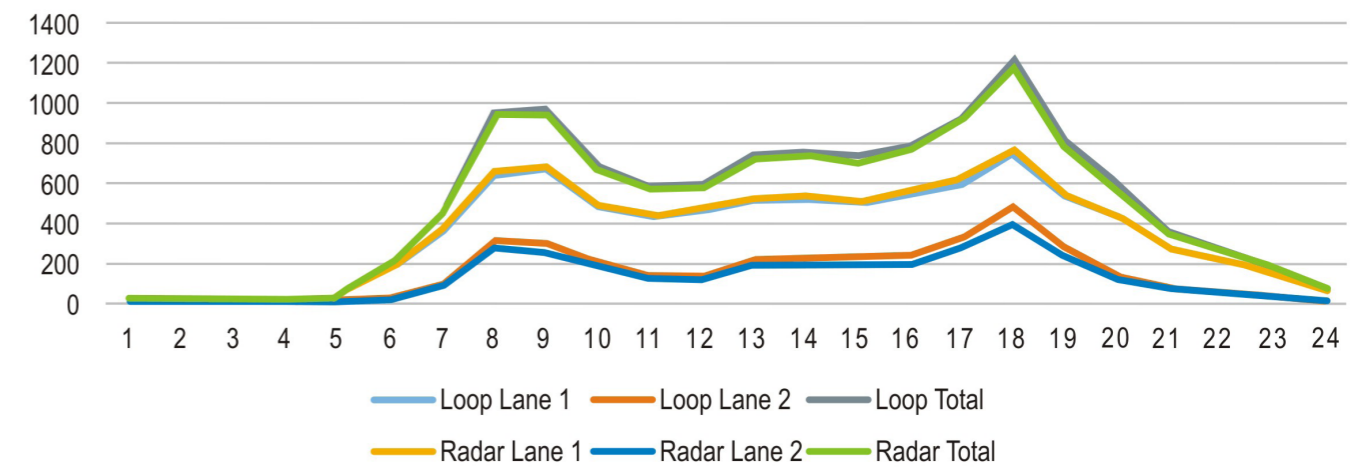
Below is a graph depicting a Black CAT Radar detecting vehicles vs a Black CAT inductive loop system on a single carriageway across two lanes reading bi-directional traffic.



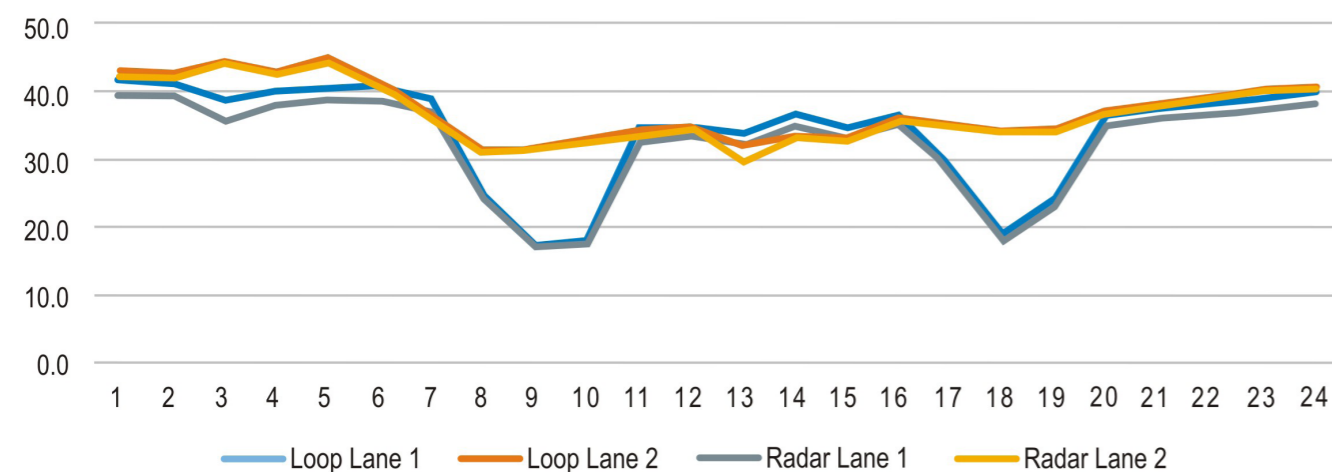
A41 Bi-directional Volumetric Comparison of Black CAT Radar and Black CAT Loop Unit



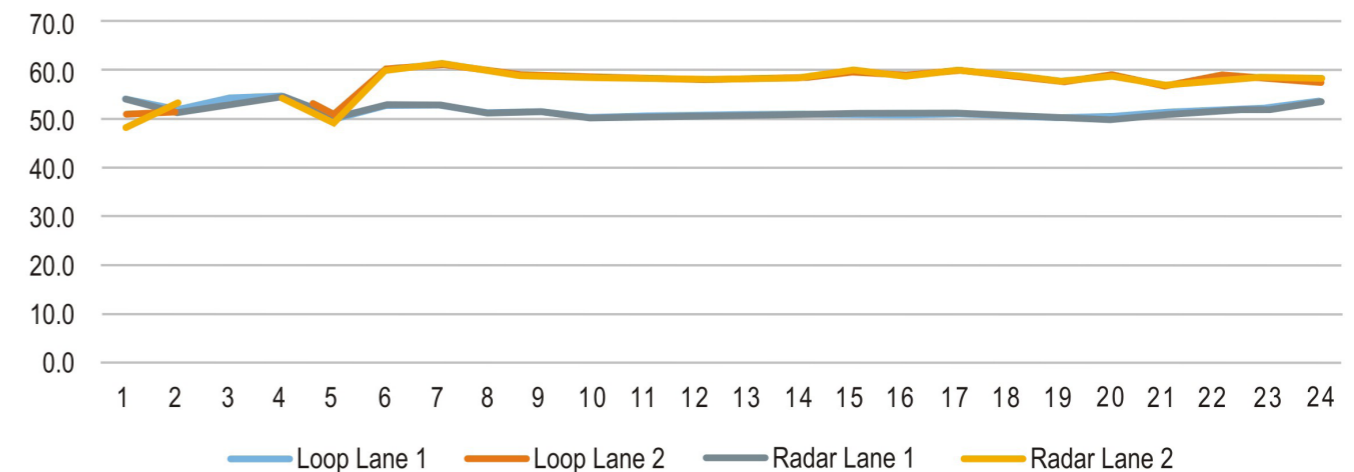
A41 Bi-directional Volumetric Comparison of Black CAT Radar and Black CAT Loop Unit



A41 Speed Comparison of Black CAT Radar and Black CAT Loop Unit



A41 Speed Comparison of Black CAT Radar and Black CAT Loop Unit



Specifications

Configurations	2 Lanes. Supports bi-directional traffic and two lanes same direction.
Bi-directional Traffic	Volume - 98% accuracy with a 95% confidence Speed - +/- 2mph or 3% whichever is greater Length - +/- 40cm or 5% whichever is greater with a 95% confidence
Dual Carriageway Traffic	Volume - 97% accuracy with a 95% confidence Speed - 99% accuracy with a 95% confidence Length - +/- 40cm or 5% whichever is greater with a 95% confidence
Operating time	Dependant upon battery options
Data Storage	2 GB (approx 200,000,000 vehicles), maximum supported 4 GB
Number of files	Maximum of 256 data files
Surveys Supported	Historical VBV, Historical Binned, Real-time VBV and Real-time Binned.
Operating Voltage (V)	12
Temperature	-25°C - + 80°C (Dependant upon batteries used)
Weight & Size	Dependant upon battery option
Setup	The unit can be configured, monitored etc using 'Collect Black'. This software is free of charge and runs on a Windows Platform.
Solar Panel	External Solar Panel.
Approval	CE and FCC approval.

* Results excluding obscuration.
Ideal CA Traffic site conditions are specified in the user manual.

Software

This product is built around the Black CAT development and therefore supports the same software packages as the Black CAT.

Collect Black

This software provides the capability to configure the unit, monitor the live vehicle output to confirm correct operation and to retrieve data files. Collect Black can also be used to dial-up units fitted with a GSM/GPRS modem for remote data collection and monitoring.

Catalyst

Manages Outstation equipment and provides fault management tools. It is also responsible for collecting and processing data and can be configured to insert the data into VDA-Pro R2.

VDA-Pro & VDA-Pro R2

CA Traffic provide a data converter that will format the data into a DMP format so that the data can then be imported into VDA-Pro or VDA Pro R2. The telemetry module will also support dialling up these units when fitted with an internal GSM modem.

Surveys

The Black CAT can support up to a maximum of 4GB mini SD card and a maximum of 256 data files.

Historical Surveys

For Historical surveys the system is designed to have the files broken periodically and the un-retrieved files collected. Periods supported are 1, 2, 3, 4, 5, 6, 10, 15, 20, 30, 60 & 1440 Mins

Real-time Surveys

For Real Time surveys the data is designed to be transmitted unsolicited to the In-station, and therefore via a Catalyst In-station and permanent connection. The transmission periods supported are 1, 2, 3, 4, 5, 6, 10, 15, 20, 30 & 60 Mins. For Real Time Binned Surveys, multiple intervals can be collected before being transmitted to improve system efficiency.

Binned Surveys (Historical & Real Time)

These surveys are stored on the unit and wait for the user to collect them either manually or via GSM dialup. The system supports up to 5 data specifiers, each specifier can have up to 30 bins. Specifiers supported are:

- Count
- Speed
- Length
- Headway
- Gap

VBV Surveys (Historical & Real Time)

The user can specify which fields are included and to what resolution. The following fields are supported:

- Headway (includes lane number + direction). field has to be included. The resolution options are 0.1, 0.01, 0.001 seconds.
- Gap. The resolution options are 0.1, 0.01, 0.001 seconds.
- Speed. In either kph or 0.1kph resolution.
- Length. In either cm or 0.1M resolution.



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