WG Portable Under Vehicle Imaging System

The WG Portable Under Vehicle Imaging System (UVIS) is used by border control, security and law enforcement teams for temporary checkpoints.

The WG-P UVIS is a highly portable under vehicle inspection system providing security professionals with the highest performance under vehicle imaging solution for this essential aspect of vehicle search operations.

The image capture sub-system which sits in the roadway, complete with 5 underside capture cameras and 1 front view camera.

The image processing and display sub-system. The software acquires and processes the images from each of the cameras and generates the composite single image for display to the operator on the 19″ daylight viewing monitor. It takes about 1 second to process and display the composite image.

Mobility – is a really important factor when deploying a UVIS for a temporary requirement. The two WG-P sub-systems can be easily carried in the trunk of a car and installed by 1 or 2 people in less than 5 minutes. It does not need a trailer to move it around.

Installation is simple: put the WSU into the centre of the traffic lane; connect the Interconnection Cable to the VCU; apply power; log-in and start to use.
GENERAL SPECIFICATION

Environmental
- The system can operate in the following environmental conditions:
  WSU:
  - Temperature - -20°C to 55°C
  - Humidity - 90% non-condensing
  - Dust/Liquid – IP67+
  WCU:
  - Temperature - -10°C to 55°C
  - Humidity - 90% non-condensing
  - Dust/Liquid – IP67+

Note: when installed in location where the WSU will be exposed to direct sunlight for extended periods, it is recommended that it is shaded.

Robustness
The WG WSU is designed to withstand being driven over by vehicles with gross weights not exceeding 40 tonnes, i.e., a maximum of 10 tonnes per axle.

Compliant with all relevant CE requirements.

Service and Support
The system is modular and designed to allow speedy and inexpensive servicing in the field.
The systems are equipped to allow diagnostic analysis through remote access using the internet.

Reliability
MTBF of > 10,000 hours when used in accordance with the specification and operating instructions.
- Up to 12x zoom at full resolution
- Storage and recovery of all images
- LPR Assist which provides a built in basic licence plate read function
- Image comparison from stored images
- Frame by frame inspection
- Free flow and single vehicle modes
- Forward and reverse vehicle flow modes

OPTIONS
- 24 vdc battery pack with charger
- Automatic License Plate Recognition [ALPR]
- Extension cables up to 70m long (copper) or 500m (fibre optic).
- Operation from 24 vdc supply
- Second display unit to show the Detail / Zoom view
- Shockproof case for the Control Unit (WCU)
- Shockproof case for the second display
- Traffic guidance lozenges to keep vehicles central over the WSU.
- Viewer software licence to allow examination of archived records on another PC

STANDARD SOFTWARE
- A whole full colour under vehicle image is displayed in about a second after the rear edge of the vehicle has passed over the WSU.
- Detail / Zoom images – the user can inspect the image frame by frame, if required.
- LPR Assist which uses the front camera image to provide the operator with the assistance to read / recognise the Licence Plate for many countries.
- Single and free flow modes of operation
- Vehicle speeds up to 20 km / hr.
- Archive and retrieval of images from the internal hard disk.
- Automatic retrieval of “verified” images for comparison.
- Storage of images and data onto removable storage media.
- Remote access for system analysis and upgrade.

Optional
- Full Automatic License Plate Recognition
- Transmission via local area network (copper wire or optical fibre) from the WCU.
- Second 19” high brightness display unit to show the Detail / Zoom view, also in a moulded, wheeled case.

SYSTEM OPTIONS

All systems
- Easy to use
- Software
- Robust construction
- 19” rack Control Unit
- Voltage supplies from 90 to 260 volts ac or 24 volts dc

Portable
- Suitable for all road vehicle types
- 2 people can deploy a VISOR-P in less than 5 minutes
- Can be transported in a car – it does NOT need a trailer
- 19” high brightness LCD display for daylight viewing
- Moulded, wheeled cases for the Control and Camera Units

Static
- Suitable for all road vehicle types
- No vault required in the roadway
- 19” desktop LCD display

Compact
- Suitable for cars and light vans
- Compact camera unit
- Models for temporary and permanent checkpoints

Rail
- Suitable for Rail vehicles
- Supplementary lighting module
- Models for temporary and permanent installations
WG SURVEY UNIT (WSU)

- WG Survey Unit (WSU) comprises the main (camera and lighting) unit, forward looking camera and the optional Automatic Licence Plate Recognition (ALPR) module.

Dimensions
- The overall dimensions of both the WSU are:
  - Length (between the wheels) - 90 cm
  - Width (direction of motion of the vehicle) - 25 cm
  - Height - 8 cm

Weight (Unpacked)
- VSU - 22kg

Electrical
- Lighting - Low energy LED lighting ensures adequate and uniform illumination of the underside of vehicles up to 1.2 m from ground level.
- The LED lighting has a high Colour Redering Index (CRI).

Cabling
- The standard inter-connection cable between the WSU and WCU is 10m long.
- Optional - extensions provide up to 70m with [conventional data connection] or 500m [optical fibre data connection].

Construction
- The WSU is made from powder coated aluminium
- The WSU is built to IP67+ standard
- The WSU will withstand a drive-over by a 40T vehicle with a maximum 10 tonne axle weight

Imaging
- The WSU has 5 cameras to image the underside of vehicles and, forward looking camera which images the front face of oncoming vehicles to allow the number plate to be recorded. Vehicles to be scanned can range from small cars to articulated trucks.
- The underside vertical range (height) is from 12 cm to 120 cm. For an underside 120 cm from the ground the WSU will provide a complete underside image of a vehicle 2.75m wide

Connectors
- A single connector is used for power and data. External connectors are compatible with IP67 and are easy to use by an operator

Packaging
- The WSU is supplied with a moulded transportation case with wheels

CONTROL UNIT (WCU)

Mechanical
- The Control Unit is housed in a single moulded wheeled case complete with end covers which houses:
- The system computer, 19” diagonal daylight viewing LCD display, Keyboard and mouse, System power controls, Connector for the VSU connection cable
- Construction – The 19” daylight viewing LCD display is mounted into a slide out tray. The front end cover houses the keyboard & mouse. The WCU-P provides environmental protection compatible with indoor operation.
- Optional: shockproof wheeled, moulded case

Dimensions
- Length (cm) – 60 Width (cm) – 44 Height (cm) - 22
- Weight (kg) - 21

Environmental - Compatible with indoor operation
- Main front panel - Power On/Off
- Functions - System start
- 20m interconnection cable

Camera & Software
- Resolution: 320 x 240 pixels minimum
- Sensor: Sony, colour
- Frame rate: 30 fps
- Lens: 2.1 mm focal length
- Software: Image management software has been developed to ensure the highest quality images. The image software preserves the data of each frame from each camera. Each frame can be examined at full resolution.
- Unlike other systems, the displayed image is not limited to a fixed number of pixels. Typically, the WG image size for a car is 25 million pixels; unlike other systems where the image size is compressed to a fixed number of pixels, often as few as 2 million with a consequent loss of resolution.

Operational Over Extended Distances
- To allow operation over extended distances, extension cables are available as an option.
- Conventional copper cable extensions of up to 70m can be specified as an option.
- For data transmission distances of more than 70m and up to 500m, the optional fibre optic link should be specified.

Electrical
- Power (input) - 110 to 240 vac 50 / 60 Hz maximum
- OR
- Optional - 24VDC External supply
- Optional - external 24VDC battery pack
- Connectors - External connectors are compatible with IP67.