



Extreme CCTV®
SURVEILLANCE SYSTEMS

INSTALLATION INSTRUCTIONS

REG - M1



www.ExtremeCCTV.com

Toll free: 1-888-409-2288
MAN-REG-M1-01



IMPORTANT

For best results, please read this Instruction Booklet prior to installing the **REG-M1** camera.



WARNING !

CSA Certified / UL Listed CLASS 2 power adaptors must be used in order to comply with electrical safety standards.

This installation should be made by a qualified service person and conform to all local codes.

EXTREME CCTV™ will not be responsible for injuries or damages resulting from the improper installation or use of any camera sold by **EXTREME CCTV™**, their agents, distributors or dealers.



EU Directives covered by this declaration:

72/9/EC Low Voltage Directives

89/336/EEC Electromagnetic Compatibility Directive

INDEX – REG - M1 Camera

Description.....	1
Unpacking.....	2
Parts List.....	2
Items Required for Installation.....	2
Initial Preparations.....	3
Guidelines.....	3
1. Mechanical Specifications REG-M1.....	4
2. Power and Video Connections.....	5
2.1 Video Box (Supplied with RXM1 Option).....	7
2.2 Camera Software Control (RXM1 Option Only).....	11
3. Mounting Specification.....	13
4. Troubleshooting Guide.....	17
5. General specifications.....	20

DESCRIPTION

The **REG-M1** license plate capture camera unit consists of one IR-sensitive monochrome camera and one integrated panel of Infrared LEDs. The license plate capture camera produces optimum license plate images during day and night settings in all-weather conditions. The camera has optical filtering technology that help block out unwanted ambient light such as headlamps or sunlight, thus ensuring no bloomed-out or washed-out images of the license plates.

The all-weather housing with a covert acrylic window contains all the electronics. Low voltage operation, low power consumption, LED illuminator, and solid-state CCD technology make this camera very reliable and efficient. A voltage regulator circuit allows for *DC* operation between 12 and 24 volts. The 12VDC input is ideal for on –vehicle installations since 12VDC is readily available from the vehicle battery. It also designed to withstand normal driving conditions in a mobile environment.

The **REG-M1** is available in several models designed to meet specific needs. Contact Extreme CCTV® for information.

- sales@ExtremeCCTV.com
- Tel: 1-888-409-2288 (Toll free NA)

See the Light. Get the Picture.™

UNPACKING

Care should be taken when unpacking the shipped unit. Check the parts list and confirm all items have been located. Inspect the equipment thoroughly to ensure nothing was damaged in transit.

Contact Extreme CCTV® if a problem is noted.

- quality@ExtremeCCTV.com
- Tel: 1-604-420-7711 or see the rear of the booklet for contact numbers.

PARTS LIST (items supplied with unit)

- **REG-M1** camera assembly
- Installation Instructions booklet

Note: Software CD (RXM1 optional only)

ITEMS REQUIRED FOR INSTALLATION (not supplied with units)

- Mounting hardware
- Mounting Tools
- Proper Power Supply

INITIAL PREPARATIONS

- Determine the operating voltage at the installation site. The camera's Voltage Regulator Board accepts 12 VDC input from the vehicle battery power output.
See Section 2, Input Power/Video Output Connections.
- Determine the optimum location for the camera.
See Section 3, Mounting Specification.
- All cameras have been tested prior to shipment. After the wiring has been reconnected, it is advisable to check the camera's operation before installation.

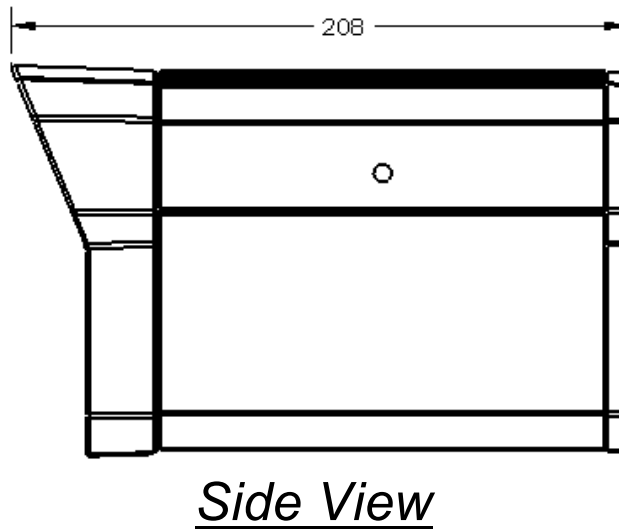
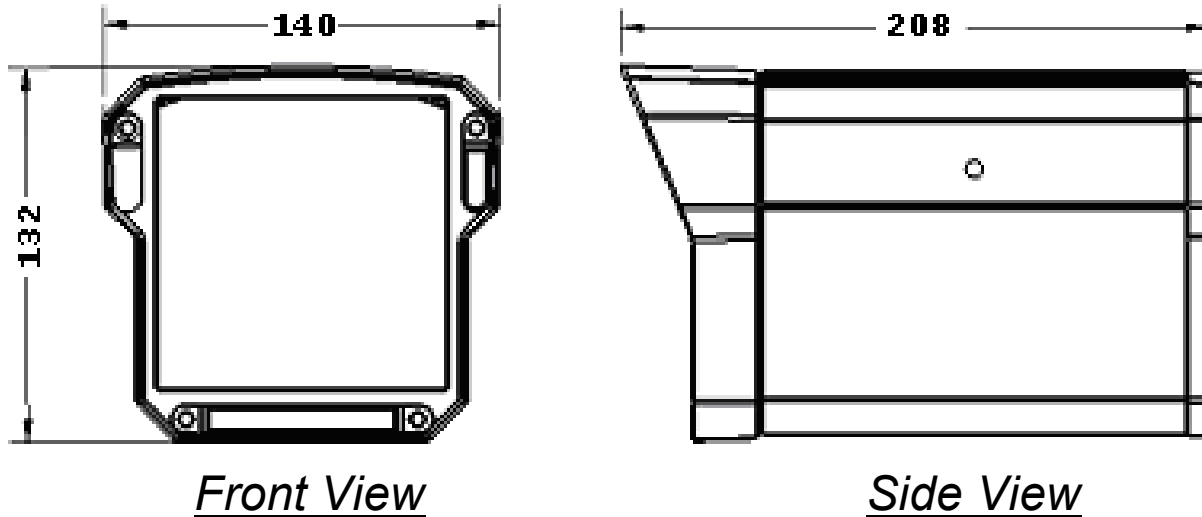
GUIDELINES

The installation of the **REG-M1** camera is explained in Sections 1 to 3.

It is important that these steps are followed and practice proper installation procedures with proper safety equipment.

1. MECHANICAL SPECIFICATIONS—REG M1

(See Section 5 - General Specifications, for more information)



**Mounting kit not included
Please see optional suction cup mounting kit EXMB031B*

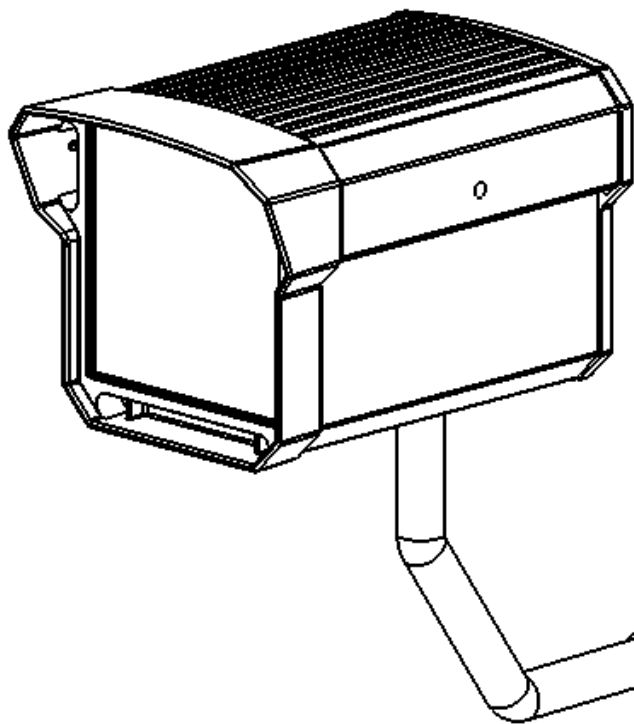
Figure 1 – 1 General Mechanical Specifications

2. POWER AND VIDEO CONNECTION

The **REG-M1** camera includes a single composite DIN connector cable attached to the camera. This cable mates with an optional plug-in cable assembly that provides the wiring for the camera's input power and output video as shown in **Figure 2 - 1**.

The camera unit is pre-connected with a electrically isolated power board for 12VDC operation with no wiring change or wiring polarity.

- 2.1) Connect the plug-in connector assembly to the attached composite cable from the camera.
- 2.2) Connect the power leads to a 12VDC source with **red** as **positive** and **black** as **negative**.
- 2.3) Connect the video coax to the male BNC video output from the plug-in connector assembly.



Video and Power Cable Assembly terminates with BNC video and power leads

75-ohm BNC Video Out

Power In leads (red-positive, black-negative)

Figure 2 – 1 Video and Power Cable Assembly

2.1 Video Box (RXM1 Option Only)

The REG-M1 RXM1 license plate capture system includes a video box that interface the camera to a laptop or desktop computer

- 2.1.1) Open the ruggedized case for the RXM1 kit that include all the parts as shown in **Figure 2 – 2**.
- 2.1.2) Carefully remove the REG-M1 camera out from the case foam with the attached composite cable and swivel-suction mounting bracket (*see **EXMB031B instructions for proper mounting procedure***)
- 2.1.3) Carefully remove the video box out from the case foam by the hand slots. The power cigarette adapter and USB cables are attached to the video box.
- 2.1.4) Open the video box top cover by loosening the enclosure screws with a Philips screw driver.
- 2.1.5) Carefully plug in the USB License dongle in to one of the available USB ports in the USB hub as shown in **Figure 2 – 3**.

- 2.1.6) Close the video box top cover and tighten the enclosure screws.
- 2.1.7) Connect the single composite cable from the camera to the video box.
- 2.1.8) Power the video box either through an in-vehicle 12V power outlet or via the optional 12VDC adapter supplied.
- 2.1.9) Plug the USB cable from the video box to the optional laptop computer via the USB 2.0 port.

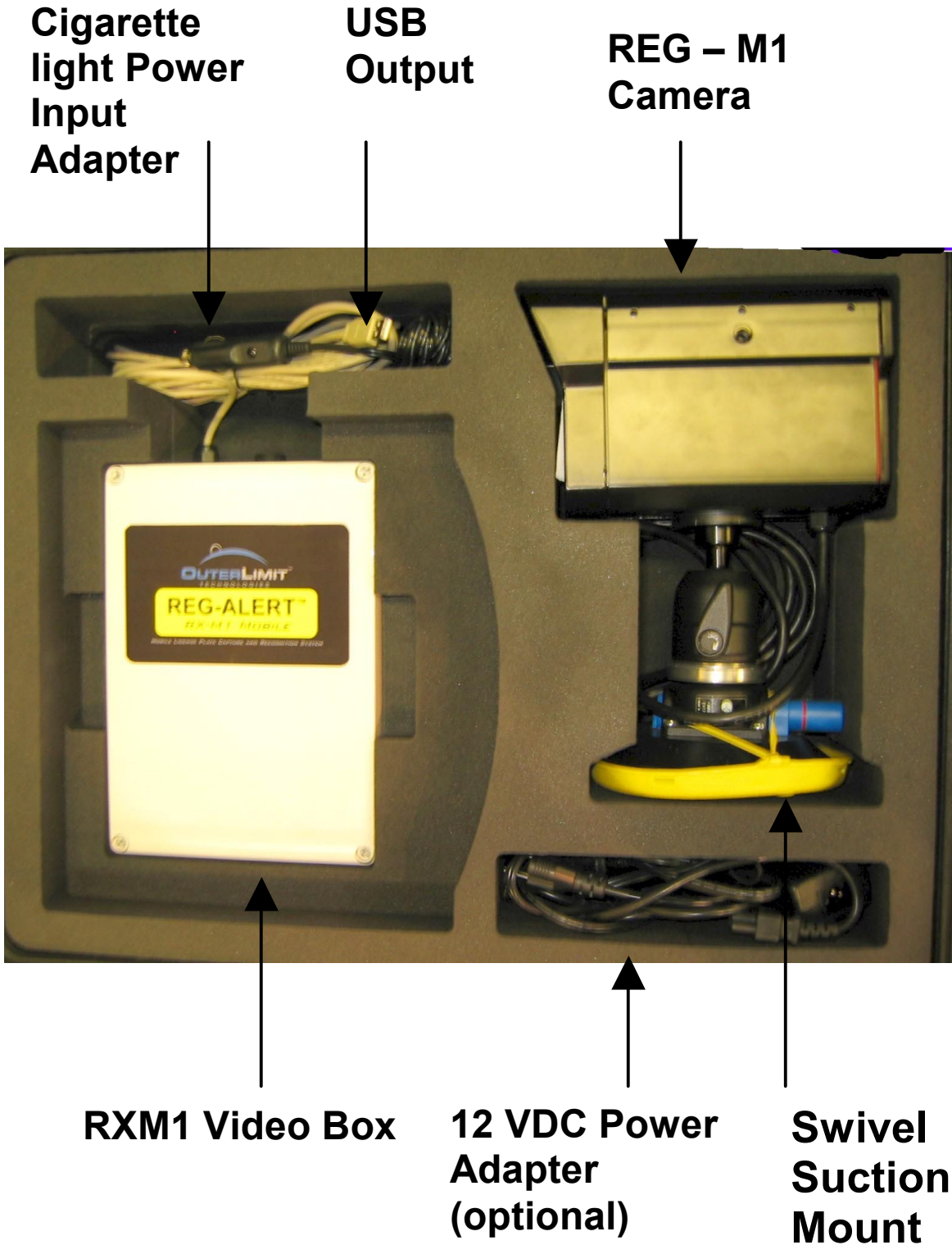


Figure 2 - 2 RXM1 CONFIGURATION

USB 2.0 Hub



**USB Hardware
License Dongle**

Figure 2 - 3 License Dongle Setup

2.2 Camera Software Control (RXM1 Option Only)

The **REG-M1** camera in the RXM1 kit is designed to have control for the camera shutter and gain through a software interface. This allows the user to change the camera settings setting in a mobile environment where the lighting condition constantly changes.

- 4.1) Connect the camera composite cable into the RXM1 video box.
- 4.2) Connect the video box input power plug into a proper 12VDC in-vehicle power outlet or the 12VDC power supply (optional).
- 4.3) Copy the two files from the Camera Setup Software CD, **shutter.exe** and **MXCOMM32.OCX** on to the PC or laptop and run **shutter.exe**.

Note: *Please ensure the USB-ATEN Serial Bridge is set to COM Port 1: in the Windows device driver list.*

4.4) Open the appropriate video capture program on the PC or laptop.

Note: *ExtremeCCTV recommends using Amcap video capture program to verify the camera operation. This is a freeware program.*

4.5) Click the desired shutter setting on the menu and confirm that the video settings are changed as shown in **Figure 2 – 4**.

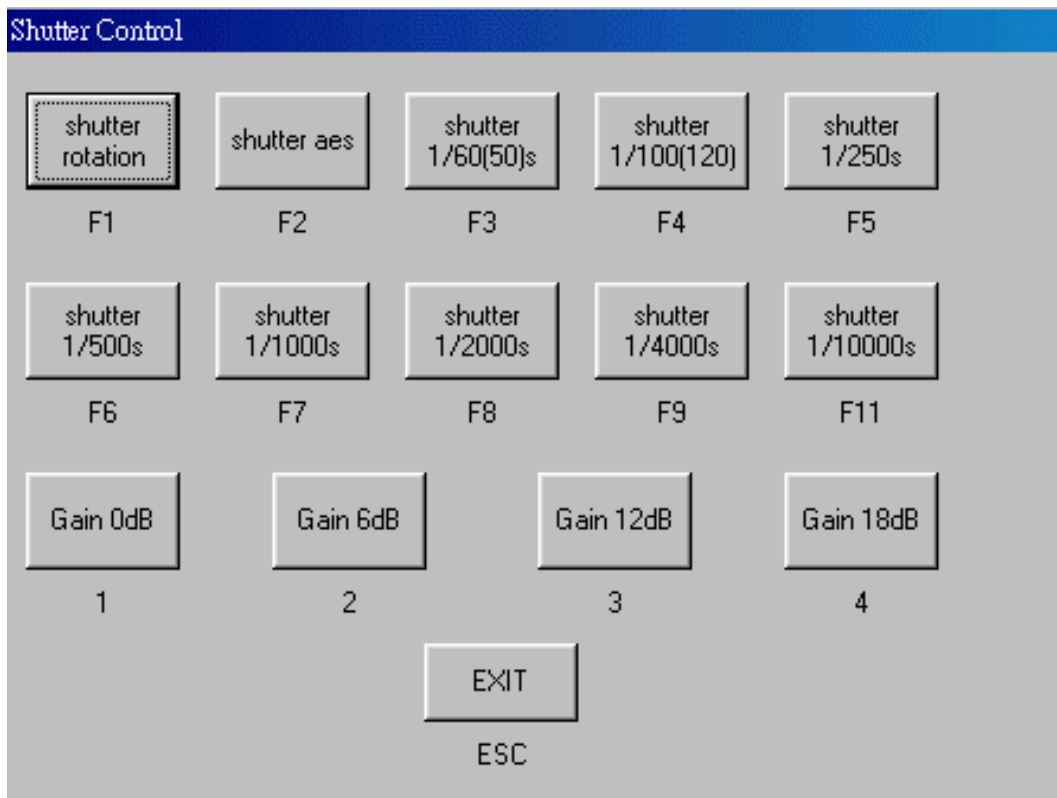


Figure 2 - 4 Software Shutter control

3. MOUNTING SPECIFICATION

Caution: Select a suitable location that is protected from accidental damage, tampering and environmental conditions exceeding the camera's specifications.

See page 20.

Caution: Ensure the selected location is protected from falling objects, accidental contact with moving objects, and unintentional interference from personnel.

🔑 The following installation guidelines must be followed:

- Locate the camera such that it cannot be easily interfered with, either intentionally or accidentally.
- Select a mounting surface capable of supporting the combined weight of the camera and mounting hardware under all expected conditions of vibration and temperature.
- Secure all cabling.

The REG-M1 units have a horizontal field of view of about 10 feet at the specified optimal capture distance for each model of REG-M1 as shown on Figure3-1 below. This is the normal width for a standard traffic lane and ensures that the number plate is in view whatever the position of the vehicle within the lane. Any number plate recognition installation should aim to control the traffic through a lane.

Model	Range, 'R'	Optimal Distance*
REG-M1-816	12 ft - 22 ft	16 ft
REG-M1-825	20 ft – 34 ft	25 ft
REG-M1-835	27 ft – 48 ft	35 ft
REG-M1-850	40 ft – 68 ft	50 ft

Figure 3 – 1 REG-M1 Range Chart

** Optimal distance calculated with a 6' lane field of view to allow license plates of 120 pixels wide. Most DVR application can provide readable plates larger than 80 pixels depending on level of image compression set on DVR.*

The maximum angle of the unit to the car is 40° . This is both horizontally and vertically. This limits the amount of skew of the letters on the number plate. If the letters are skewed too much they will start to become unrecognizable and will reduce automatic software recognition rates.

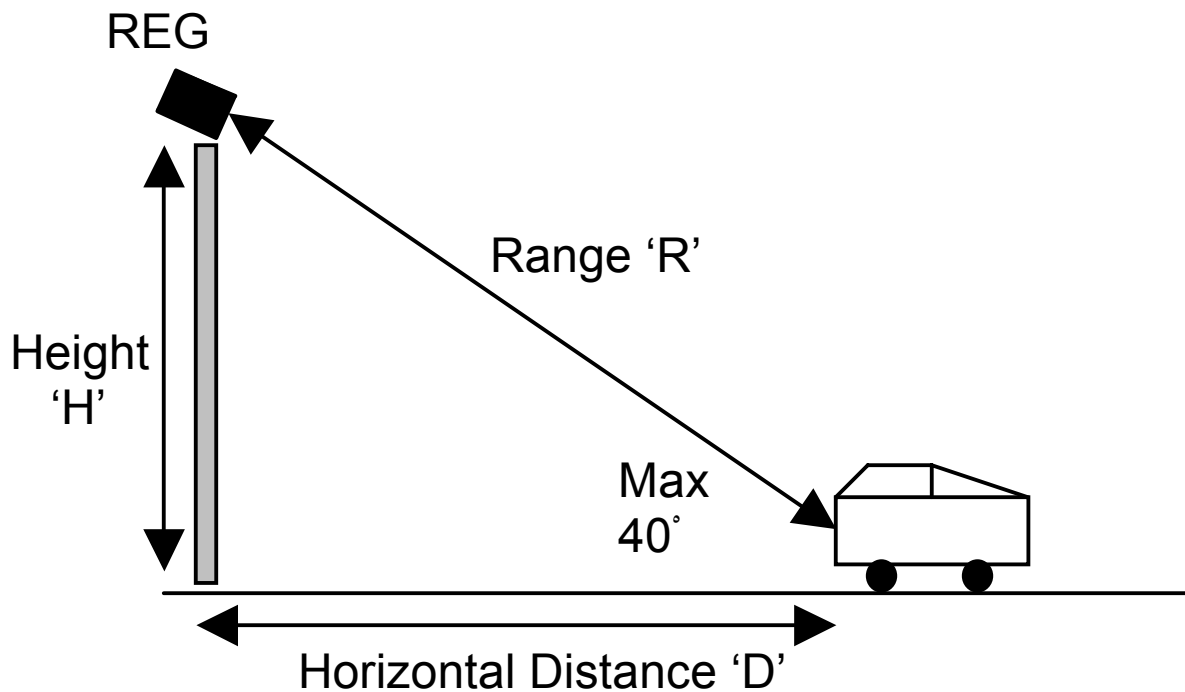


Figure 3 –2 Maximum Vertical Angle

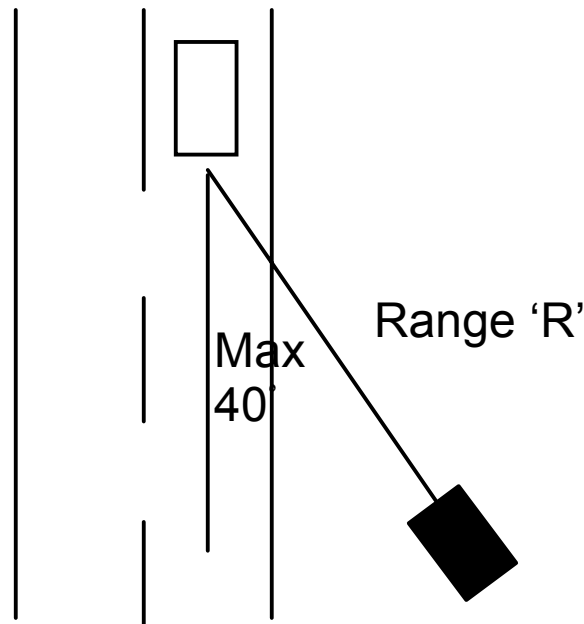


Figure 3 –2 Maximum Horizontal Angle

If the maximum range is exceeded the letters will become smaller and be more difficult to read. At the max range the width of the number plate covers approximately 12% of the width of the screen.

Note: The 'R', Range is the distance from the camera to the license plate. Working below max range gives larger number plates and hence more accurate recognition but less lane area to be covered. If too close the license plate could disappear off Field-of-View, especially for side-mounted plates.

4. TROUBLESHOOTING GUIDE

<i>PROBLEM</i>	<i>POSSIBLE CAUSE</i>	<i>LIKELY SOLUTION</i>
No Video	<p>1. Power Supply Connection</p> <p>Voltage Range</p> <p>2. Video Connections</p>	<p>Check the input power/video connector is probably attached to the video box.</p> <p>The supply range is: <i>12 - 24VDC</i>. Measure the voltage at the power input connection.</p> <p>Determine if the wiring polarity at the "Video Connector" terminal block is correct. Check optional BNC connector.</p> <p>If still no video, connect the camera directly to the</p>

<p>Horizontal Scan Lines, Rolling Up or Down</p>	<p>Ground Looping on video cable</p>	<p>monitor. Check the video signal. If okay, the problem is with the interconnections.</p> <p>If still no video, contact Extreme CCTV. See the inside front cover of the Service Manual for contact information.</p>
<p>Negative, scrambled, or faded image</p>	<p>Low voltage</p>	<p>Check the coax cable shield is not touching “ground”, e.g. at the couplings. An electrically isolated circuit board or isolation transformer may be required.</p> <p>Check voltage at input power cable. Must be >12VDC/VAC. Video leads reversed connection.</p>

NOTES:

▲ CAUTION

Safety and Precaution

Do not stare or look into the REG-M1 camera for an extended period of time and within a close distance of 5 feet (1.5m) directly in front of the camera.

When mounting and installing the REG-M1 camera, make sure proper safety equipment and procedures are used and practiced. This is to ensure the camera installation will not potentially cause any harm to people around the area and also the installer will be safe while performing the installation.

Only qualified personnel shall install any Extreme CCTV Inc product. Extreme CCTV Inc will not be responsible for injuries or damages resulting from the improper installation or use of any product sold by Extreme CCTV Inc, their agents, distributors or dealers.

5. GENERAL SPECIFICATIONS

Power Consumption:	24W Max.
Input Voltage:	12 VDC
Enclosure (housing): and extrusion	Aluminum casting
Viewing Window:	Black Acrylic
Dimensions:	130mm H (5.12") 134.5mm W (5.30") 212mm L (8.35")
Operational Temperatures:	-50 ⁰ C to -50 ⁰ C
Weight:	2.2kg (4.9 lbs.)

Subject to change without notice.



Extreme CCTV®

SURVEILLANCE SYSTEMS

Canada 3021 Underhill Avenue,
Burnaby, BC V5A 3C2

USA 3873 - C Airport Way,
PO Box 9754,
Bellingham, WA 98227

tel 1-888-409-2288 (toll free)
1-604-420-7711

fax 1-604-420-3300

e-mail tech@ExtremeCCTV.com

web www.ExtremeCCTV.com

Europe Colbourne Cres.
Cramlington, Northumberland
United Kingdom, NE23 1WB

tel +44(0)1670.730.187

fax +44(0)1670.730.188

DEALER / AGENT: