



**Extreme CCTV®**  
SURVEILLANCE SYSTEMS

# INSTALLATION INSTRUCTIONS

**REG-L1**



[www.ExtremeCCTV.com](http://www.ExtremeCCTV.com)

Toll free: 1-888-409-2288  
MAN-REG-L1-04



## **IMPORTANT**

For best results, please read this Instruction Booklet prior to installing the **REG-L1** camera.

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## **WARNING !**

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

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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

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## DESCRIPTION

The **REG-L1** 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 REG-L1 camera you have purchased is designed and configured to capture images of license plates under a wide range of ambient light to weather conditions.

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 or AC operation between 12 and 24 VAC/VDC. It also provides protection from voltage surges, transient spikes, and reverse voltage.

The **REG-L1** is available in several models designed to meet specific needs. Contact Extreme CCTV® for information.

- [sales@ExtremeCCTV.com](mailto: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](mailto: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-L1** camera assembly
- Installation Instructions booklet

## 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 both 12-24VDC and VAC input without change to internal connections. 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.

*Note: To ensure the camera is working, you must use a retro reflective license plate.*

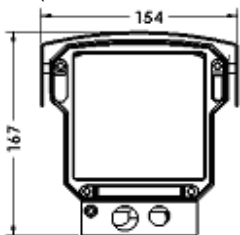
## GUIDELINES

The installation of the **REG-L1** camera is explained in Sections 1 to 3.

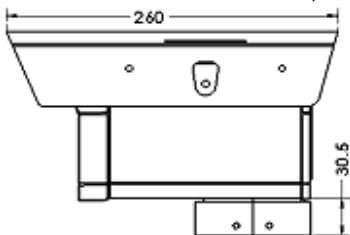
It is important that these steps are followed and practice proper installation procedures with proper safety equipment.

# 1. MECHANICAL SPECIFICATIONS – REG L1

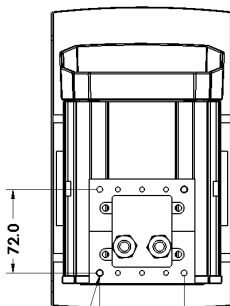
(See Section 5 - General Specifications, for more information)



Front View



Side View



4 X M6x1

Bottom View

\*Optional mounting kits: EXMB028 or EXMB029

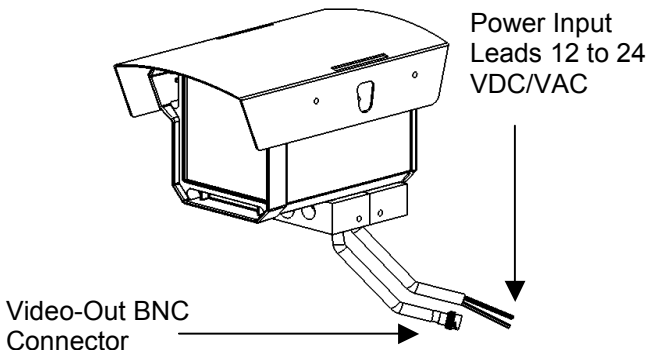
**Figure 1 – 1 General Mechanical Specifications**

## 2. INPUT POWER / VIDEO OUTPUT CONNECTIONS

The camera unit is pre-connected with an electrically isolated power board for 12 to 24 VDC/VAC operation with no wiring change or wiring polarity.

Note:

Input voltage is 12VDC to 24VDC for DC input.  
The AC input range is 12VAC to 24VAC.



**Figure 2 – 1 Power and Video Connections**

### 3. MOUNTING SPECIFICATION

*Caution: Install with appropriate screws to suit mounting surface. Select a suitable location that is protected from accidental damage, tampering and environmental conditions exceeding the camera's specifications.*

*See page 13.*

*Caution: Ensure the selected location is protected from falling objects, accidental contact with moving objects, and unintentional interference from personnel. Follow all applicable building codes.*

☞ 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.

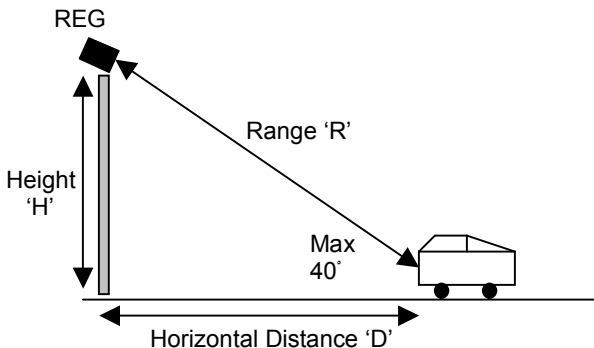
The REG-L1 units have a horizontal field of view of about 10 feet at the specified optimal capture distance for each model of REG-L1 as shown on **Figure3-1** below. This is the normal width for a standard traffic lane and ensures that the number plate is in view whatever the position of the vehicle within the lane. Any number plate recognition installation should aim to control the traffic through a lane.

<b>Model</b>	<b>Range, 'R'</b>	<b>Optimal Distance*</b>
REG-L1-816	12 ft - 22 ft	16 ft
REG-L1-825	20 ft – 34 ft	25 ft
REG-L1-835	27 ft – 48 ft	35 ft
REG-L1-850	40 ft – 68 ft	50 ft
REG-L1-875	55 ft – 80 ft	75 ft

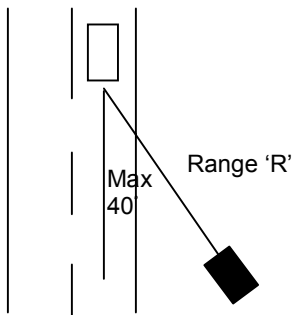
**Figure 3 – 1 REG-L1 Range Chart**

*\* 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  $40^\circ$ . 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 –1 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 from the Field-of-View, especially for side-mounted plates.*

## 4. TROUBLESHOOTING GUIDE

<b><i>PROBLEM</i></b>	<b><i>POSSIBLE CAUSE</i></b>	<b><i>LIKELY SOLUTION</i></b>
<b>No Video</b>	<p>1. Power Supply Connection</p> <p>Voltage Range</p> <p>2. Video Connections</p>	<p>Check the input power connections at the terminal block, ensuring no wires are loose.</p> <p>The supply range is: <i>12 - 24VDC OR 12 – 24VAC.</i> Measure the voltage at the terminal block.</p> <p>Determine if the wiring polarity at the “Video Connector” terminal block is correct. Check BNC connector.</p> <p>If still no video, connect the camera</p>

<p><b>Horizontal Scan Lines, Rolling Up or Down</b></p> <p><b>Negative, scrambled, or faded image</b></p>	<p>Ground Looping on video cable</p> <p>Low voltage</p>	<p>directly to the 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>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 &gt;12VDC/VAC. Video leads reversed connection.</p>
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## **NOTES:**

### **▲ CAUTION**

#### ***Safety and Precaution***

*Do not stare or look into the REG-L1 camera within a distance less than 5 feet (1.5m) directly in front of the camera.*

*When mounting and installing the REG-L1 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 – 24 VDC to 12 – 24 VAC
Enclosure (housing):	Aluminum casting and extrusion (sealed to IP66 / NEMA4)
Viewing Window:	Black Acrylic
Dimensions:	130mm <b>H</b> ( 5.12" ) 134.5mm <b>W</b> ( 5.30" ) 212mm <b>L</b> ( 8.35" )
Operational Temperatures:	-50 <sup>0</sup> C to +50 <sup>0</sup> C
Weight:	2.2kg (4.9 lbs.)

*Subject to change without notice.*

**Note:**

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# Extreme CCTV®

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