

# High Contrast License Plate Capture Camera

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## OPERATION MANUAL



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Thank you for choosing our high quality camera.

Before attempting to connect operate this unit, please read and follow these instructions.

# Contents

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1. Cautions
2. Important Safety Instruction
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## CAUTION

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

**Use Class 2 Power Supply Only**

# 1. Cautions

## **This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions;**

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

### **Note -**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense."

### **WARNING -**

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

### **Caution -**

Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## **CAUTION**

1. A regulated DC12V 3A power supply is recommended for use with this camera for the best picture and the most stable operation.  
**An unregulated power supply can cause damage to the camera.**  
**When unregulated power supply is applied, product warranty will be out of subject.**
2. It is recommended that the camera is used with a monitor that has a CCTV quality 75Ω video impedance level.  
If your monitor is switched to high impedance then please adjust accordingly.
3. Do not attempt to disassemble the camera to gain access to the internal components.  
Refer servicing to your dealer.
4. Never face the camera towards the sun or any bright or reflective light, which may cause smear on the picture and possible damage to the Image Sensor.
5. **Do not remove the serial sticker for the warranty service.**
6. Do not expose the camera to rain or other types of liquid.
7. The apparatus must be connected to a mains socket-outlet with a protective earthing connection.

# 1. Cautions



## Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

**(Applicable in the European Union and other European countries with separate collection systems)**

This marking shown on the product or its literature, indicate that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

This product should not be mixed with other commercial wastes purchased this product, or their local government office, for details of where and how they can take item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract.

Household users should contact either the retailer where they for disposal.



### CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN



CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance(servicing) instructions in the literature accompanying the appliance

## 2. Important Safety Instruction

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- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



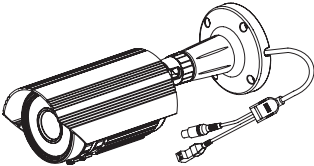



### 3. Features

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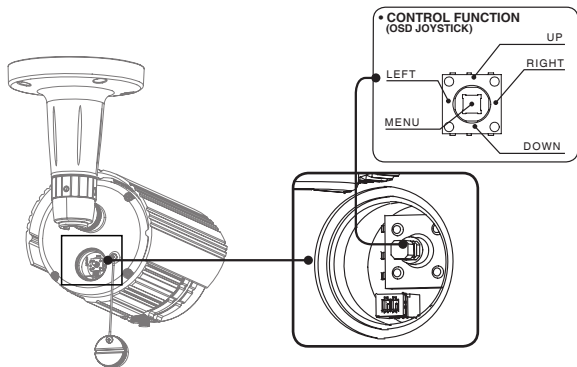
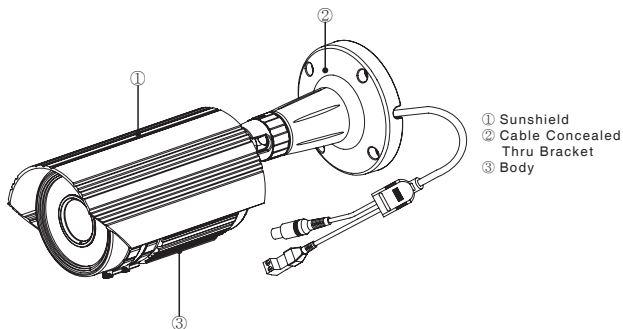
- 1/3" 960H SONY EXview HAD CCD II
- High Resolution 700TV Lines
- Special filter and IR LED provides maximum readability despite headlight glare
- Plate capture up to 75mph (120Km/H)
- 5.0 ~ 50.0mm Vari-focal lens captures license plate from 16ft to 91ft (4.8M to 27M)
- IP66
- Cable through concealed bracket
- DC12V / AC24V Dual power with auto-polarity

### 4. Components

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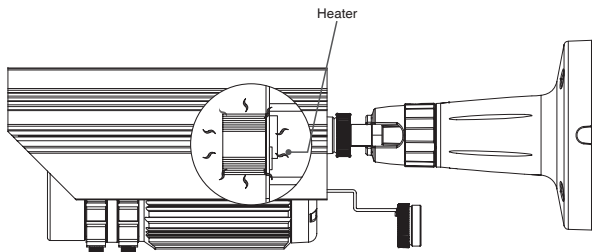
LP Camera	
Video Output Test Cable	
L-Wrench / Screws	
Operation Manual	

## 5. Name and Function

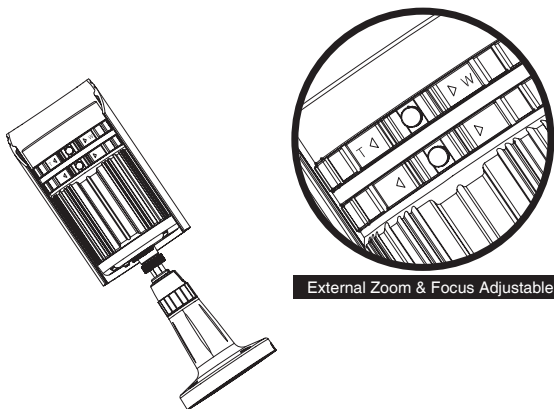


## 5. Name and Function

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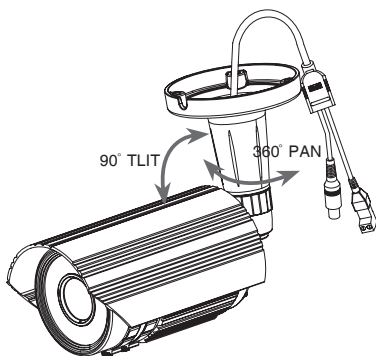
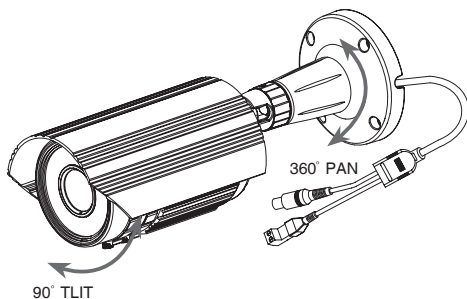


Built in heater protects the camera from low temperature.  
(Operating temperature with Heater:  $-40^{\circ}\text{C}$ )



## 6. Installation

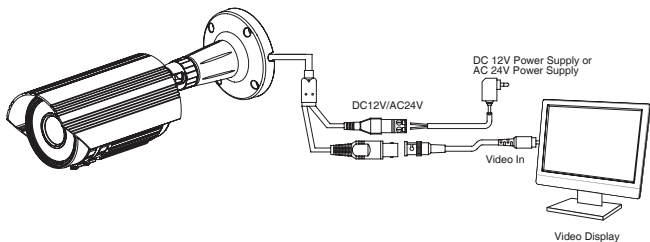
- MOUNTING POSITION



## 6. Installation

### • Camera Installation

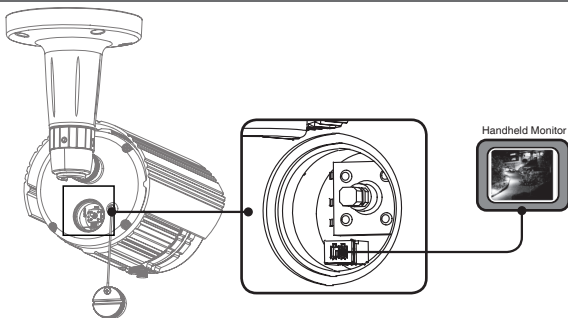
DUAL(DC12V/AC24V)



### • Service Video Connector



When you install the camera, please seal up the end of cable to keep it stable in order to protect the camera from the humidity problems.



## 7. Functions

### OSD Menu Structure

- **MODE**

- **INSTALLATION**

- Installation Mode provides bright video screen to adjust angle and focus.

- **LICENSE-PLATE**

- License-plate Mode provides high contrast and clear license plate image for license plate capture

SETUP

► MODE LICENSE-PLATE  
SHUTTER 1/6000  
NEG. IMAGE OFF  
EXIT

- **SHUTTER**

- 1/250, 1/500 ~ 1/10000 (adjusted to 1/500sec measure),  
1/30K, 1/50K, 1/70K, 1/90K, 1/100K.

- Adjusted when LICENSE-PLATE MODE is performed (Initial value: 1/6000).

- Indicated "----" when INSTALLATION MODE is set.

SETUP

MODE LICENSE-PLATE  
► SHUTTER 1/6000  
NEG. IMAGE OFF  
EXIT

- **NEGATIVE**

- User can select positive or negative image.



SETUP

MODE LICENSE-PLATE  
SHUTTER 1/6000  
► NEG. IMAGE OFF  
EXIT

- **EXIT**

- Enable user to EXIT the OSD menu Setting up using SELECT. If Installation Mode is selected, user can see screen as below.

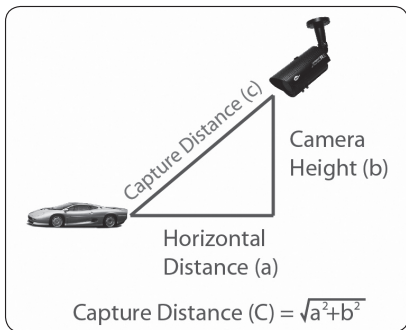
INSTALLATION MODE

FOCUS VALUE: 2 ↑

## 8. Installation Guideline

### Camera Height

- Must consider height in distance calculation.
- Sharper angle will alter appearance of plate.

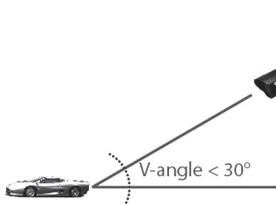


Camera Height (Ft)	Horizontal Distance (Ft)	Capture Distance(Ft)
10	10	14.14
11	20	22.83
12	30	32.31
13	40	42.06
14	50	51.92

## 8. Installation Guideline

### Camera Angles

- Vertical and horizontal angle must not exceed 40 degrees to get optimal view of the license plate.



V-angle less than 30° correct

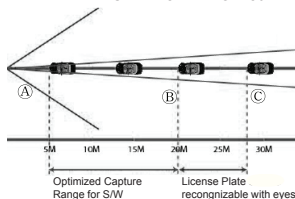


H-angle less than 30° correct

### Capture Zone

- Wider angle provide shorter capture distance.
- Tele angle provide longer capture distance.

WIDE SETTING -66.5° @ f=5mm  
TELE SETTING -7.4° @ f=50mm



What will be the plate look like on screen?  
(All scenes taken with high-beam)



Position "A" with WIDE SETTING



Position "B" with WIDE SETTING



Position "B" with TELE SETTING



Position "C" with TELE SETTING

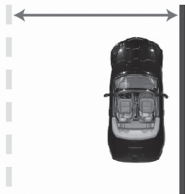
## 8. Installation Guideline

### Lane Width

- Narrow lanes = less variation in plate location.
- Wider lanes = more variation in plate location.
- Lens should cover entire width of the lane.
- Ensure horizontal field of view is wide enough.



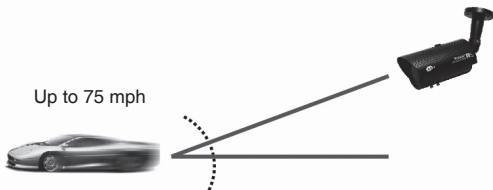
Narrow lane = Easy capture



Wider lane = Difficult capture

### Speed

- Camera can capture moving vehicles up to 75mph.
- Keep camera as low as possible.
- Minimize horizontal angle.
- Zoom in the lens as close as possible.



## 8. Installation Guideline

### DVR

- Camera is fully compatible with industry standard DVRs.
- Check compression settings.
- Non-conditional refresh compression. (i.e. MJPEG or JPEG)
- D1 (720x480) resolution.
- 30fps (each channel) for best results.

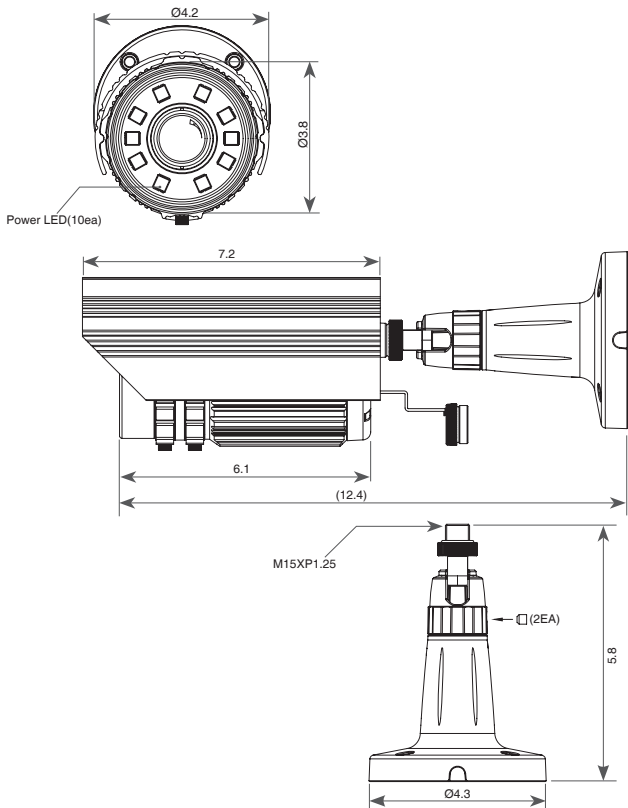
## 9. Specification

Signal Format			NTSC		PAL	
Image Device			1/3" 960H SONY EXview HAD CCD II			
Scanning System			2 : 1 Interlace			
Total Pixels			1020(H) X 508(V)		1020(H) X 596(V)	
Effective Pixels			976(H) X 494(V)		976(H) X 582(V)	
Inter. H/V			15.734KHz(H), 59.94Hz(V)		15.625KHz(H), 50Hz(V)	
H.Resolution			700TV Lines			
Minimum Illumination			0 Lux (IR LED ON)			
S/N Ratio			More than 50dB (AGC Off)			
Sync System			Internal			
Gamma			$\gamma = 0.45$			
Video Output			1.0 Vp-p Composite(75 $\Omega$ )			
Negative Image			On / Off			
Function			Focus Adjust MODE			
Day & Night			BW			
Lens			5-50mm DC Drive Vari-focal lens			
IR LED			850nm, Power LED, 10EA			
License Plate Capture		Speed Range	Up to 75mph (120km/h)			
		Capture Distance	16ft ~ 91ft (4.8m ~ 27m)			
Operating Temperature			14°F~122°F(-10°C~+50°C) / Heater On: -40°F~122°F(-40°C~+50°C)			
Storage Temperature			-4°F~140°F(-20°C ~ +60°C)			
Power Consumption		DUAL	DC	DC12V( $\pm 10\%$ ), Max 820mA (With Heater)		
			AC	AC24V( $\pm 10\%$ ), Max 18W (With Heater)		
Weight			Approx. 1.85Kg			
Dinmension(inch)			4.2(W) x 3.8(H) x 6.1(D)			
IP Rating			IP66			

\* Specifications and designs are subject to change for improving the functionality of this product without notice.

## 10. Dimensions

unit: inch



# Memo

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# Memo

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