

High Contrast License Plate Capture Camera

OPERATION MANUAL



Thank you for choosing our high quality camera.

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

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2. Important Safety Instructions
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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 an unregulated power supply is applied, the product warranty will be void.
2. It is recommended that the camera be used with a monitor that has a CCTV quality 75 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 smears on the picture and possible damage to the image sensor.
5. **Do not remove the serial sticker for the warranty service.**

1. Cautions



WEEE (Waste Electrical & Electronic Equipment)

This marking shown on the product or its literature, indicates 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. Household users should contact either the retailer where they 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.

This product should not be mixed with other commercial wastes 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 un-insulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



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

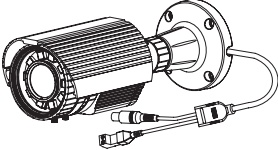



- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do 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.



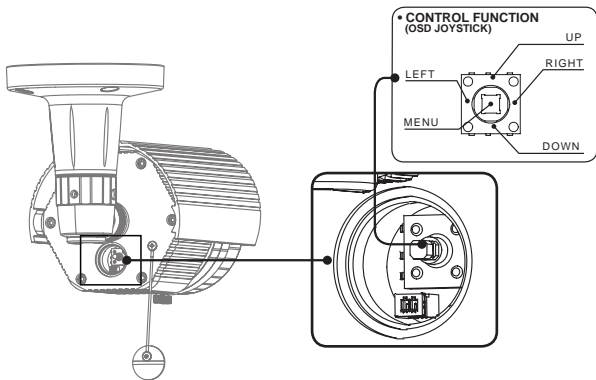
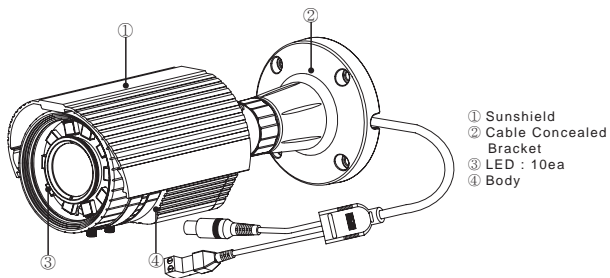
3. Features

- 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 ~ 65ft (5M ~ 20M)
- IP67 rated Water Proof
- Cable concealed bracket
- DC12V / AC24V Dual power with auto-polarity

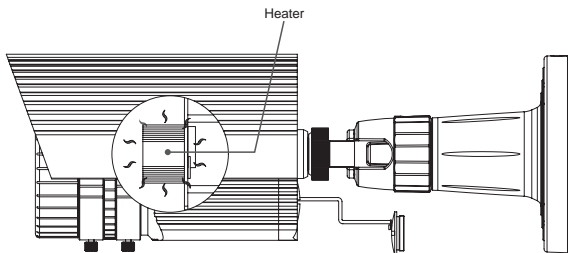
4. Components

LP Camera	 A detailed line drawing of the LP Camera. It features a cylindrical lens housing with a textured surface, a mounting bracket with four screws, and a cable with a connector.
Video Output Test Cable	 A line drawing of a video output test cable, showing a coiled cable with a connector at one end.
L-Wrench / Screws	 A line drawing of an L-wrench and two screws, shown on a small rectangular piece of paper.
Operation Manual	 A line drawing of a small, rectangular operation manual with a simple cover design.

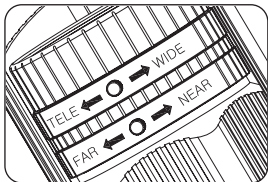
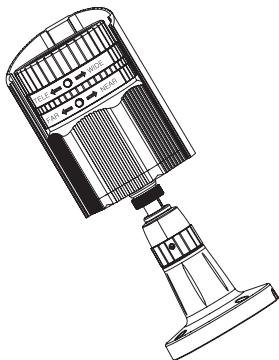
5. Product Diagrams



5. Product Diagrams



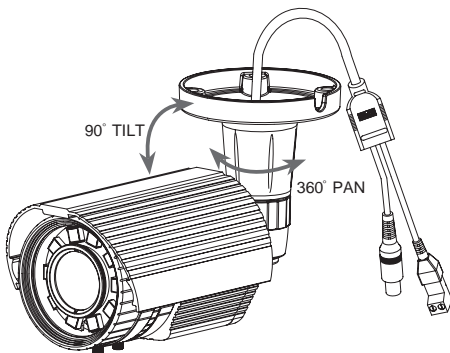
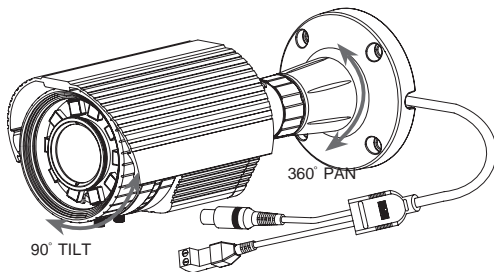
Built in heater protects the camera from low temperatures.
(Operating temperature with Heater: -40°C)



External Zoom & Focus Adjuster

6. Installation Diagrams

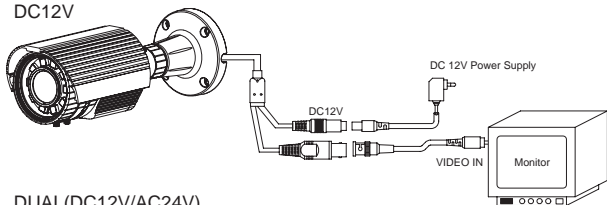
• MOUNTING POSITION



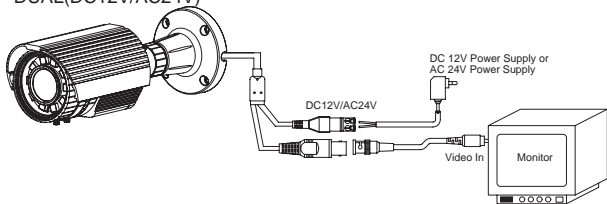
6. Installation Diagrams

• Monitor Connection

DC12V

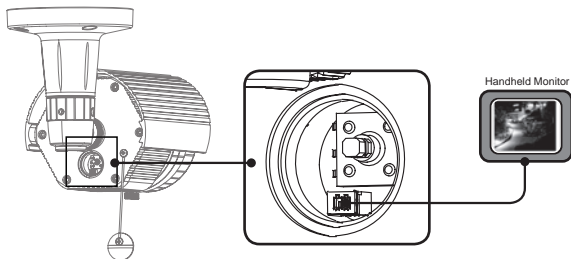


DUAL(DC12V/AC24V)



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

• Service Video Connector



7. Functions

OSD Menu Structure

• MODE

- INSTALLATION

Installation Mode provides a bright video screen for adjusting the angle and focus.

- LICENSE-PLATE

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

SETUP

```
▶ MODE    LICENSE-PLATE
  SHUTTER          1/9000
  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: 1/9000).

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

SETUP

```
MODE    LICENSE-PLATE
▶ SHUTTER          1/9000
  NEG. IMAGE      OFF
  EXIT
```

• NEGATIVE

The user can select positive or negative image.



SETUP

```
MODE    LICENSE-PLATE
SHUTTER          1/9000
▶ NEG. IMAGE      OFF
  EXIT
```

• EXIT

Enables user to EXIT the OSD menu by using SELECT. If Installation Mode is selected, the user can see the screen as below.

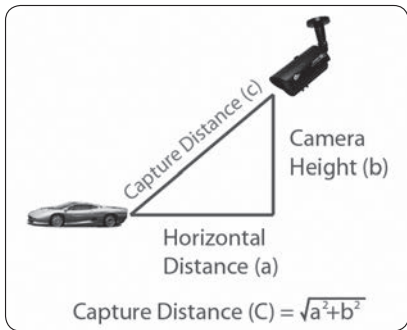
INSTALLATION MODE

FOCUS VALUE: 2 ↑

8. Installation Guidelines

Camera Height

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

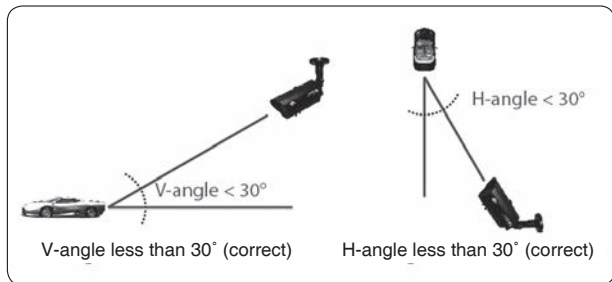


Camera Height (Ft)	Horizontal Distance (Ft)	Capture Distance(Ft)
10	10	14.14
11	20	22.83
12	30	32.31
13	40	42.06
14	50	51.92

8. Installation Guidelines

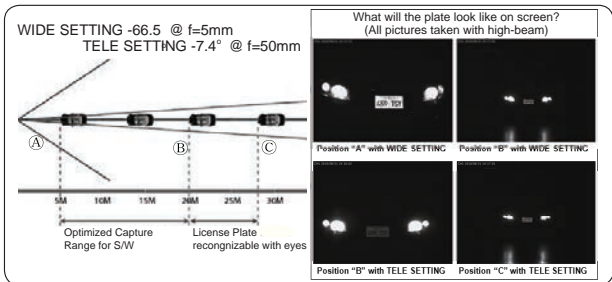
Camera Angles

- Both the vertical and the horizontal angle must be less than 30 degrees in order to get an optimal view of the license plate.



Capture Zone

- Wide angle provides a shorter capture distance.
- Tele angle provides a longer capture distance.



8. Installation Guidelines

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 that the horizontal field of view is wide enough.



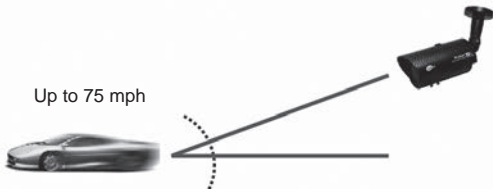
Narrow lane = Easy capture



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 Guidelines

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.

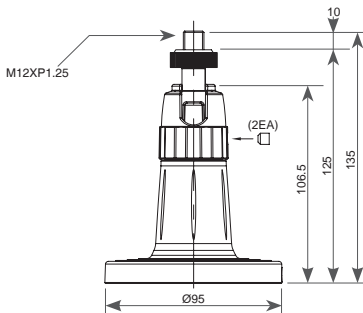
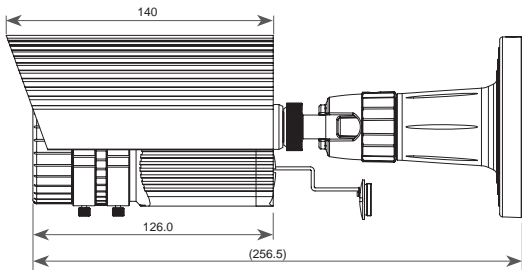
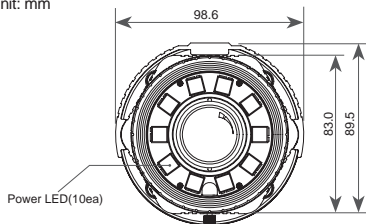
9. Specifications

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	71 OTV Lines		
Minimum Illumination	0 Lux (IR LED ON)		
S/N Ratio	More than 50dB (AGC Off)		
Sync System	Internal		
Gamma	r= 0.45		
Video Output	1.0 Vp-p Composite(75Ω)		
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 ~ 65ft (5m ~ 20m)	
	Capture Angle	Maximum 30 degree offset	
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	DC	DC12V(±10%), Max 700mA (Without Heater) DC12V(±10%), Max 1.6A (With Heater)	
		DC	DC12V(±10%), Max 760mA (Without Heater) DC12V(±10%), Max 990mA (With Heater)
	DUAL	AC	AC24V(±10%), Max 9W (Without Heater) AC24V(±10%), Max 20W (With Heater)
Weight	Approx. 1.37Kg		
Dimension(mm)	98.6(W) x 83(H) x 126(D)		
IP Rating	IP67 (rated Waterproof)		

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

10. Dimensions

unit: mm



Mount Guide

