

# Day/Night IR Vandal Resistant Dome Camera

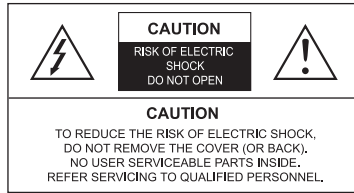
INSTRUCTION MANUAL



• **EL450**

## Dear Customers!

By selecting this product, you have decided to use a professional device that guarantees highest quality and reliability. We would like to thank you very much for your confidence and kindly ask you to read the following instructions carefully before installation and operation in order to take full advantage of all quality features regarding this product.



The lighting flash with an arrowhead symbol, within an equilateral triangle 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.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## INFORMATION

This equipment has been tested and found to comply with 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

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

## CAUTION – To prevent electric shock and risk of the fire hazards

- Do NOT use power source other than that specified.
- Do NOT expose this appliance to rain or moisture.

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

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## 1. Precautions

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- Please read the manual carefully before the installation in order to make use the camera to be set up correctly and to have the best picture quality.
- Please keep the manual in good condition for your future reference and service application.
- Installation and services should only be carried out by an authorized personnel according to local safety regulations.
- If any liquid or solid matter gets into the housing, immediately disconnect the camera from power supply and have it checked by your authorized dealer before reusing.
- Avoid installing the camera at extremely hot or cold places.
- If you are not a certified person, never try to dismantle the camera. To avoid electric shock, never remove the screws or covers. There are no parts inside that need maintenance by the user. All maintenance should be carried by qualified personnel.
- Avoid installing the camera at a place of high humidity.
- Avoid installing the camera at the place exposed to gas or oil.
- Keep the top glass of the lens always clean in order to obtain the best picture quality all the time. Be careful not to be stained by fingerprint.
- Don't face the camera directly toward sunlight or sunlight reflecting area. CCD may go defective at this condition.
- Please give a special attention to keep the unit from dangerous drop or external shock during the process of transportation or handling.
- Never try to touch the camera in wet hand. It may cause an electric shock.
- Do not put objects inside the unit. Make sure that no metal objects or flammable substances get into the camera. It could cause fire, short-circuits or damages.
- Do not expose the camera to radioactivity. It causes a serious damage on the CCD.
- Install away from electric or magnetic fields.

### **Note for 12VDC/24VAC Power type camera user**

Make sure to use a regulated 12VDC or 24VAC power source. Check the power with the power tester to make sure if the power supply gives an exact 12VDC or 24VAC regulation. Even sometimes UL marked power supply unit generates unstable power causing the camera to burn in many cases.

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## 2. Limitation of liability

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This publication is provided "AS IS" without warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for any particular purpose, or noninfringement of the third party's right. This publication could include technical inaccuracies or typographical errors. Changes are added to the information herein, at any time, for the improvements of this publication and/or the corresponding product(s).

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## 3. Disclaimer of warranty

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In no event shall seller be liable to any party or any person, except for replacement or reasonable maintenance of the product, for the cases, including but not limited to below :

- (1) Any damage and loss, including without limitation, direct or indirect, special, consequential or exemplary, arising out of or relating to the product;
- (2) Personal injury or any damage caused by inappropriate use or negligent operation of the user;
- (3) unauthorized disassemble, repair or modification of the product by the user;
- (4) Inconvenience or any loss arising when images are not displayed, due to any reason or cause including any failure or problem of the product;
- (5) Any problem, consequential inconvenience, or loss or damage, arising out of the system combined by the devices of third party.
- (6) Any claim or action for damages, brought by any person or organization being photogenic subject, due to violation of privacy with the result of that surveillance-camera's picture, including saved data, for some reason, becomes public or is used for the purpose other than surveillance.

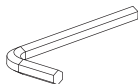
## 4. Package



Day/Night IR Vandal  
Resistant Dome Camera 1EA



Instruction manual  
1EA



L-Wrench (3.0mm)  
1EA



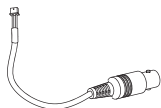
Fixed Screws  
4EA



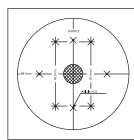
Plastic anchor  
4EA



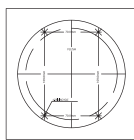
Tapping screws  
4EA



Extra Video output cable  
1EA



<Surface>



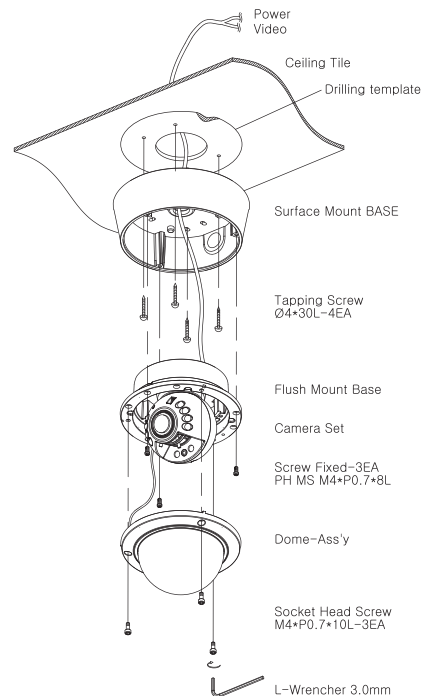
<Flush>

Drilling template  
1EA

## 5. Installation

### 1) Installation overview

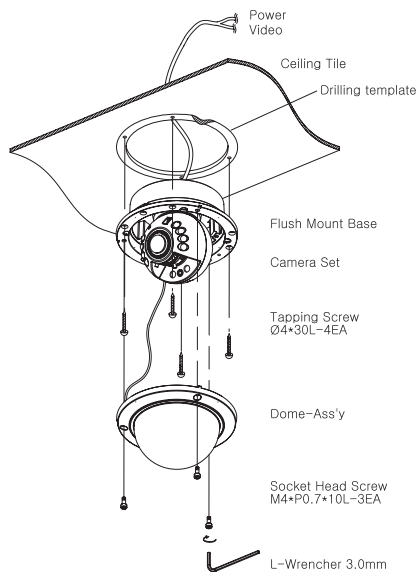
#### A. Surface Mount



- ① Paste a Drilling Template on the ceiling or wall and drill screw points which will be done for installation.
- ② Fix a Surface Mounting Base by using Tapping Screws with Ø4 provided.
- ③ Fix a Flush Mounting Base to the Surface Mounting Base by using Fixed Screws with M4 provided.
- ④ Point a Camera Ball to a desired direction and assemble a dome cover to the Flush Mounting Base with Socket Screws by using L-Wrencher provided.

## 5. Installation

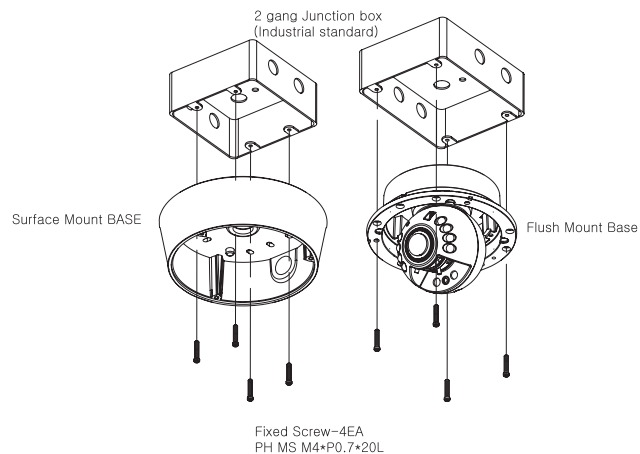
### B. Flush Mount



- ① Paste a Drilling Template on the ceiling and drill screw points which will be done for installation.
- ② Fix a Flush Mounting Base on the ceiling by using Tapping Screws with Ø4 provided.
- ③ Point a Camera Ball to a desired direction and assemble a dome cover to the Flush Mounting Base with Socket Screws by using L-Wrench provided.

## 5. Installation

### 2) Junction Boxes

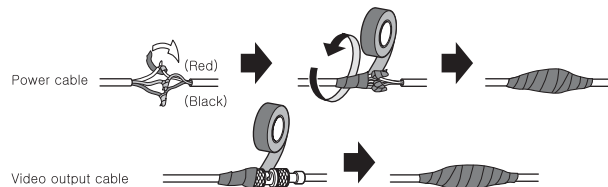


- ① Fix a Surface Mounting Base or a Flush Mounting Base to 2 Gang Junction Box by using Fixed Screws with M4 provided.

### 3) Waterproof processing of cable connection

Make sure to use a butyl tape. (Do not use a sealing material on those parts)

- ① It is useful to connect the cable ends from camera to the extension cable for waterproof.
- ② Connect and tape the power cables (Power-Power/Ground-Ground).
- ③ Bind the power cables together with the tape.  
When DC-Jack is used, tape the DC-DC joint.
- ④ Tape the BNC-BNC joint.



## 6. Features

### 1) Key Features

- 1/3" Super HAD II CCD
- Clear focus at night with Anti-IR focus distortion technology
- IR sensitive BW switching at night & true color at day
- High resolution of 550TVL(Max)
- Extremely reliable IR Protection technology
- Long Viewable distance up to 20M at "0" Lux darkness
- DC12V/AC24V Dual power
- Weatherproof(IP66)
- Tool-free 3-Axis
- Surface / Flush mount compatible
- The impact consolidation & incombustiblensness (Body : aluminum / Dome : polycarbonate)

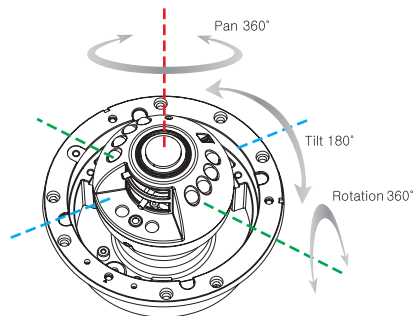
### 2) Advantageous ways of installation

#### A. Tool-free 3-Axis mounting mechanism

##### Perfect Tri-axis!

- Panning axis up to 360° degree
- Tilting axis up to 180° degree
- Rotation axis up to 360° degree

No need to use a tool for adjustment!  
All adjustments are done quick and easy by hand!

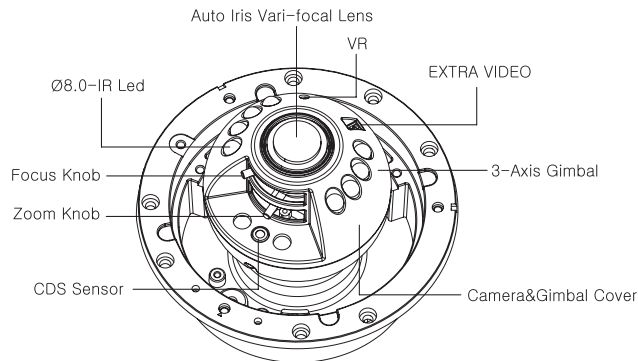


#### NOTE

Angle adjustment from each of 3 different axis can be positioned to its maximum angle of view so that the camera gets the full central picture at any location.

## 6. Features

### B. Dome Inside View



- **Focus Knob**  
LEFT Control : ∞  
RIGHT Control : Near

- **Zoom Knob**  
LEFT Control : Tele  
RIGHT Control : Wide

- **Extra video output**  
To enable an installer to check and adjust the camera set up via service monitor on the spot.

- **DC IRIS CONTROL VR**  
To control a shutter speed of DC Iris lens.

## 6. Features

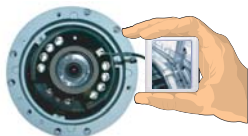
### C. Industrial standard mounting arrangement



Compatible to the industrial standard 2-gangs junction box  
The mounting hole is compatible to the standard electric junction box for a quick and easy installation.

1/2" standard conduit hole  
Pipe insertion from the side or from the back of the dome is provided.

### D. Additional service monitoring output



Additional Video Output terminal is provided so that the installer can adjust the zoom/focus and direction of camera on the spot.

### 3) Perfect protection from all kinds of conceivable dangers



#### A. Vandal-proof

The body is made of 4.0mm thick die-cast and the dome made of 2.2mm thick polycarbonate to be protective from a high impact of vandalism on the dome.

#### B. Tamper resistant

The dome is secured with a tailor-made stainless steel safety screws. (Option)

#### C. Free from Shock and Vibration

The tool-free internal 3-axis mounting mechanism is strong enough to hold the camera set against severe vibration or shock on the dome.

#### D. Rust free against salty environment

The EL450 is fully protected from a salt mist environment with hard salty-water resistant coating.

#### E. Dust and Moisture free (IP66 Weatherproof)

The unit is duly passed IP66 international weatherproof standard, allowing the camera free from moisture and dust.

#### F. Fire resistant

Hard die-cast body and fully metallic internal camera mount mechanism are designed to be totally protective from fire breaks or fire interception.  
1/2" Conduit-holes are provided for fire resistant cable management.

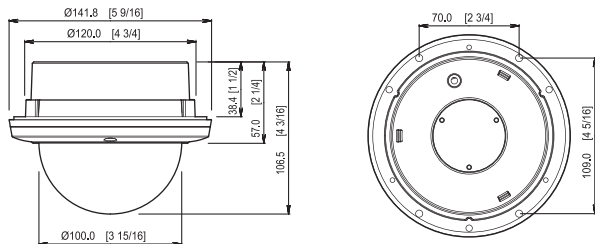
## 7. Troubleshooting guide

Before sending the camera out for repair, check the items below. If the problem persists after checking these items, contact your service center.

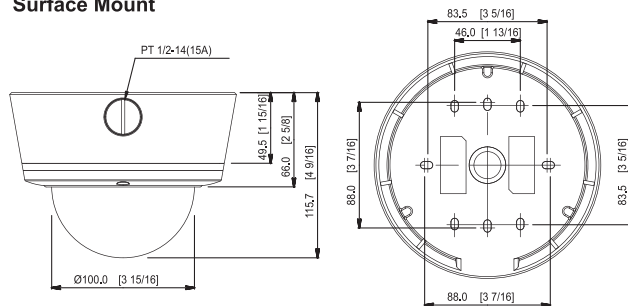
| Problems                                                                       | Troubleshooting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Nothing appears on the screen.</b>                                          | <ul style="list-style-type: none"><li>● Please check the power connection.</li><li>● Please check the video signal line connection.</li></ul>                                                                                                                                                                                                                                                                                                                                                                               |
| <b>The video image is not clear.</b>                                           | <ul style="list-style-type: none"><li>● Please check if the lens or the outer glass is clean.<br/>- Dirt or fingerprints on the lens can affect the image blooming or reflection. Gently wipe any dirt or fingerprints off the lens or the glass with a soft cloth.</li><li>● Please check and adjust contrast feature of the monitor</li><li>● Please check if the camera is exposed directly toward a bright light, sunlight, or sun light reflecting area.<br/>Please move the camera's position in this case.</li></ul> |
| <b>The screen is dark.</b>                                                     | <ul style="list-style-type: none"><li>● Please check and adjust contrast feature of the monitor</li><li>● If there is any interim equipment, set the Hi-z position properly and check the terminals.</li><li>● Please check if the power supply is within the specification.<br/>- When the cable connection requires a long distance, there may need a higher power supply or an additional power/video amplification.</li></ul>                                                                                           |
| <b>The camera's surface is too hot and black stripes appear on the screen.</b> | <ul style="list-style-type: none"><li>● Please check if the power supply is regulated and is within the standard requirement of the product.</li></ul>                                                                                                                                                                                                                                                                                                                                                                      |
| <b>The screen is flickering.</b>                                               | <ul style="list-style-type: none"><li>● Please check if the camera is facing directly toward sunlight or fluorescent light.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>IR beam is weak</b>                                                         | <ul style="list-style-type: none"><li>● Check if the distance of the cable installation is too long or if the cable is not UL standard. Using a lower grade cable or long distance cable installation can cause a serious voltage drop. Please check the voltage output level of the cable and change the power source in this case. Make a special care not to supply too much power over the camera as well.</li></ul>                                                                                                    |

## 8. Dimension (mm)

### Flush Mount



### Surface Mount



## 9. Specification

|                                |                                                                      |
|--------------------------------|----------------------------------------------------------------------|
| <b>Model</b>                   | EL450                                                                |
| <b>Image sensor</b>            | 1/3" Super HAD II CCD                                                |
| <b>Effective Pixels</b>        | NTSC : 768(H) X 494(V) PAL : 752(H) X 582(V)                         |
| <b>H.Resolution</b>            | 550TVL (Max)                                                         |
| <b>Synchronizing system</b>    | Internal                                                             |
| <b>Scanning system</b>         | NTSC 525 Lines PAL 625 Lines 2:1 Interlaced                          |
| <b>Video output</b>            | 1.0Vp-p Composite, 75Ohms                                            |
| <b>S/N ratio</b>               | More than 50dB(AGC off)                                              |
| <b>Min. Illumination</b>       | 0.01Lux at F1.4 w/o LED, 0Lux with LED                               |
| <b>Back Light Compensation</b> | Automatic                                                            |
| <b>White balance</b>           | 2100°K~9100°K Auto                                                   |
| <b>Gain correction</b>         | -6dB~32dB Auto                                                       |
| <b>Gamma correction</b>        | r=0.45                                                               |
| <b>Smear Effect</b>            | 0.005%                                                               |
| <b>Shutter speed</b>           | NTSC : 1/60~1/100,000sec, PAL : 1/50~1/100,000sec                    |
| <b>LED spectrum</b>            | 850nm-Ø8 X 30° X 10EA                                                |
| <b>IR Beam distance</b>        | 20M                                                                  |
| <b>MTBF</b>                    | 20,000hours                                                          |
| <b>Power source</b>            | DC12V/AC24V                                                          |
| <b>Operation current</b>       | DC12V : 400mA / AC24V : 200mA                                        |
| <b>LENS</b>                    | 3.3~12mm(F1.4) Auto DC Iris                                          |
| <b>Operating Temp</b>          | 14°F~122°F(-10°C~+50°C)                                              |
| <b>Humidity</b>                | Within 90% RH                                                        |
| <b>Measurement(mm)</b>         | Flush Mount : 141.8(D) x 106.5(L), Surface Mount : 160(D) x 115.7(L) |
| <b>Weight(Approx.g)</b>        | 1900                                                                 |