

10x Optical Zoom Auto-Focus High Resolution IR Camera

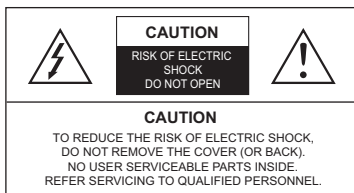
INSTRUCTION MANUAL



• ***EL3000***

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

- 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 expose the camera to radioactivity. It causes a serious damage on the CCD.
- Install away from electric or magnetic fields.

2. Limitation of liability

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).

3. Disclaimer of warranty

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.

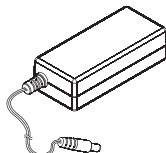
4. Package



10x Optical Zoom Auto-Focus
High Resolution IR Camera 1EA



Instruction manual
1EA



DC24V/1.9A Adaptor
1EA



* Different by Country standard
Adaptor power plug
1EA



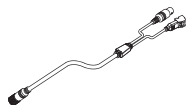
Mounting screws
3EA



Plastic anchor
3EA



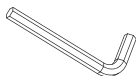
<Option> RS-485 wired
remote control 1EA



Power + Video Cable
1EA



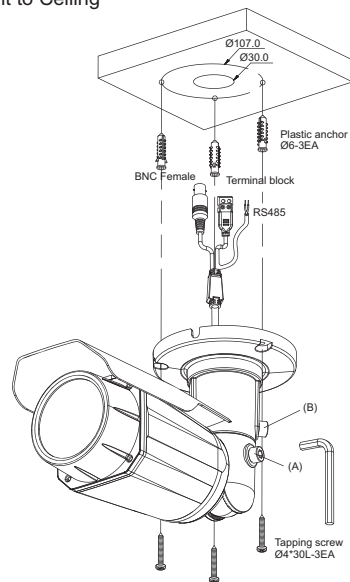
Extra Video output /
RS-485 Cable 1EA



L-Wrench 60
1EA

5. Installation

5-1. How to mount to Ceiling

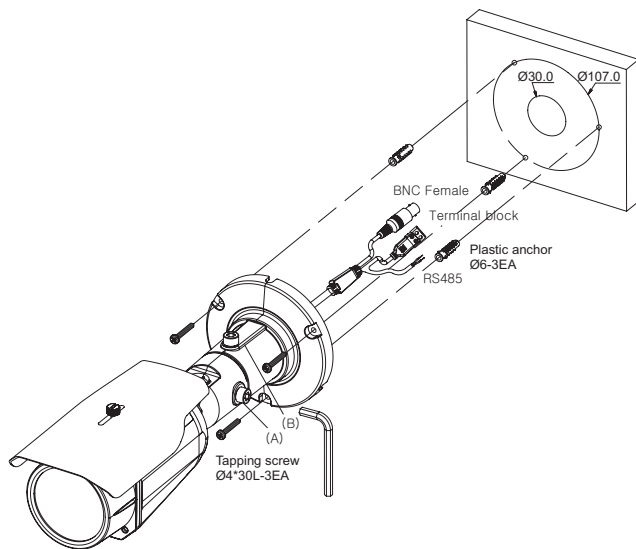


< Picture 1 >

- ① Drill three screw holes on the ceiling plate to fix three plastic anchors (supplied) in the holes.
- ② Fix the plastic anchors in the holes.
- ③ Position the mounting bracket on the screw points.
- ④ Fix the mounting bracket by tightening the screws.
- ⑤ Slightly loosen bolt (A) then adjust tilt(180°) and rotation(360°) of the camera and tighten the bolt firmly.
- ⑥ Slightly loosen bolt (B) then adjust pan(360°) of the camera and tighten the bolt firmly.

5. Installation

5-2. How to install to Wall

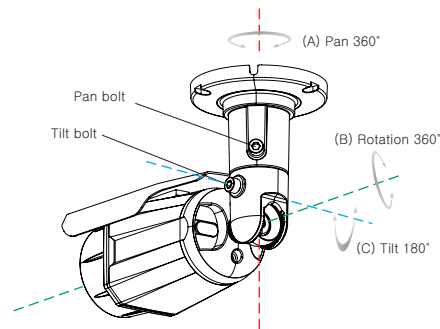


< Picture 2 >

- ① Drill three screw holes on the wall plate to fix three plastic anchors (supplied) in the holes.
- ② Fix the plastic anchors in the holes.
- ③ Position the mounting bracket on the screw points.
- ④ Fix the mounting bracket by tightening the screws.
- ⑤ Slightly loosen bolt (A) then adjust tilt(180°) and rotation(360°) of the camera and tighten the bolt firmly.
- ⑥ Slightly loosen bolt (B) then adjust pan(360°) of the camera and tighten the bolt firmly.

5. Installation

5-3. 3-Axis adjustment



< Picture 3 >

- ① Pan 360°
Slightly loosen Pan bolt then adjust pan of the camera and tighten the bolt firmly.
- ② Tilt 180°
Slightly loosen Tilt bolt then adjust tilt of the camera and tighten the bolt firmly.
- ③ Rotation 360°
Slightly loosen Tilt bolt then adjust rotation of the camera and tighten the bolt firmly.

6. Features

6-1. Key Features

- Digital Zoom Camera (Optical 10x plus Digital 10x)
- High performance 1/4" Sony Super HAD CCD
- High resolution of 500 TVL at Day/570 TVL at Night
 - Greatly enhanced Sensitivity of 0.0007 Lux at F1.8
 - Easy-to-use OSD functions
 - IR Sensitive mechanical Day/Night filter system built-in
 - True Color at Day and Real B/W at Night conversion
- RS485 remote control (Pelco-D)
- Mountable on the Ceiling, Wall with 3-Axis mechanism
- IP66 Weatherproof
- Installation with existing telephone cable up to 100M long
- Long IR Beam Distance : 70M View
- Easy to use OSD menu control
 - Motion detection
 - Camera ID
 - Sens-up (2 x ~ 128 x)
 - Super Noise Reduction (SNR)
 - Privacy masking

6-2. Advantageous ways of installation

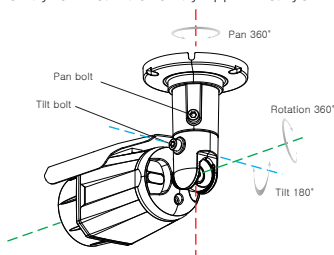
A. Tool-free 3-Axis mounting mechanism

One-stop quick & easy installation to any location and to any application you want!

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 with hand!



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

6. Features

B. IP66 Weatherproof

The unit is duly passed IP66 international weatherproof standard, allowing the camera working safely from even extremely harsh water storming weather condition.

C. Extended IR LEDs' life cycle and the sensitivity

The EL3000 adapts the ICRealtime's special IR life protection technology that extends the life cycle of IR LEDs at its maximum period of life span. Conventional IR cameras tend to produce a bright IR image at the beginning but the LED's performance are reduced day by day and finally burned to dead in short time period after the installation. Consequently the night vision performance of conventional cameras is seriously reduced within after several months of operation.

6-3. Perfect protection from all kinds of conceivable dangers



A. Free from Shock and Vibration

3-axis mounting mechanism is strong enough to hold the camera set against severe vibration or shock.

B. Rust free against salty environment

The EL3000 is fully protected from a salt mist environment with hard salty-water resistant coating.

C. Dust and Moisture free (IP66 Weatherproof)

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

D. Fire resistant

Hard die-cast body and fully metallic internal camera mount mechanism is designed to be totally protective from fire breaks or fire interception.

E. Perfect Surge voltage protection

The EL3000 builds-in a highly reliable surge absorptive circuit so as to protect the camera from an excessive voltage input.

6. Features

6-4. State-of-the-art image enhance technologies

A. 10x Optical Auto Focus Zoom (f3.8mm ~ 38mm)



Normal optical view



10x optical zoom

The unit incorporates f3.8mm ~ 38mm 10x optical and 10x Digital AF zoom lens, Built-in ICR enables the unit to create clear image quality for 24 hours Day & Night. With OSD menu control, the user can capture the view of up to 100 times closer.

B. The Maximum sensitivity with the best sensor and the latest technology



Conventional



EL3000

Used with the latest Sony Double scan CCD sensor, the VN80DZ provides the highest light sensitivity of 0.3 Lux/F1.8. In addition the built-in Day/Night function completely removes the color signal noises for an ultra clear nighttime image quality.

C. Wide range of Automatic White Balance (1,800°K ~ 10,500°K)



False White Balance



EL3000

Automatic White Balance of this unit provides an extensive range of color temperature control that covers from 1,800°K to 10,500°K, generating a natural color image without being red or blue in varying light conditions.

D. Sens-up



2 x



80 x



128 x

The Sens-up function allows the camera to display the bright image even in extreme darkness.

Important Tips : IR Distance can be extended twice longer when <Sens-up> is set 2x~128x.

Caution : When Sens-up is adjusted for more than 8 times(8x), the picture becomes brighter but the frame rate is relatively slower resulting in the picture becomes slow motioned.

E. Intelligent image compensation against IR saturation



Conventional



EL3000

Can you recognize the picture when the object is getting closer to a strong IR illumination?

A new image processing technology is adapted to eliminate the 'WHITE OUT' problem. Now the picture is automatically processed so that the camera can observe recognizable objects instead of seeing all white saturation.

6. Features

F. Greatly improved Day & Night response

Does the picture convert itself between color and b/w at the right time exactly and is the IR illumination on and off at the same time as well?

A new technology of Day and Night control is added to this device. An accurate control of image conversion and a precise operation of day & night filter movement at the right moment, gives a reliable image capturing capability in Color mode at daytime and in B/W mode at nighttime.



Color image in daytime

Image conversion from Color to B/W at 5lux darkness.



Color is still alive, IR is not started



Converted to B/W mode and IR is ON simultaneously.



B/W image at night

Image conversion from B/W to Color at 5lux darkness.



Image is remained as B/W even in daytime.



Converted to Color mode and IR is OFF simultaneously.

G. Non-IR reflection



IR Reflected image



Clear image

Are IR lightings reflecting?

Unlike conventional IR LED cameras this unit provides a smart mechanism that eliminates IR reflections.

H. Clear image quality under IR illumination



Defocused IR image



Focus corrected

Does IR responded image clear?

When IR illumination is combined, the IR responded image becomes defocused. This unit incorporates a clear solution for this conventional problem. The image quality of this unit is absolutely sharp and clear under IR lights in operation.

6-5. Other features

A. Camera ID setting

Users can use the camera identification (Camera ID) to assign a name of the camera. The camera ID consists of up to 20 alphanumeric characters.

B. Privacy zone masking



When the unit is observing a wide area, the captured image can be masked for privacy purposes. Users can easily configure the size and position of the required privacy zones.

7. How to operate key functions

7-1. OSD functions

A. How to set up functions

Use 6 tact switches on the Back Board.



B. Extra video output

To enable an installer to check and adjust the camera set up via service monitor on the spot.

C. Function key

1) OSD Function key / PTZ Controller

Remote SET Button / PTZ IRIS OPEN Button---To access the main setup menu.
Remote UP Button / PTZ Joystick Up---To move the arrow indicator to up.
Remote DOWN Button / PTZ Joystick Down---To move the arrow indicator to down.
Remote LEFT Button / PTZ Joystick Left---To move the arrow indicator to left.
Remote RIGHT Button / PTZ Joystick Right---To move the arrow indicator to right.

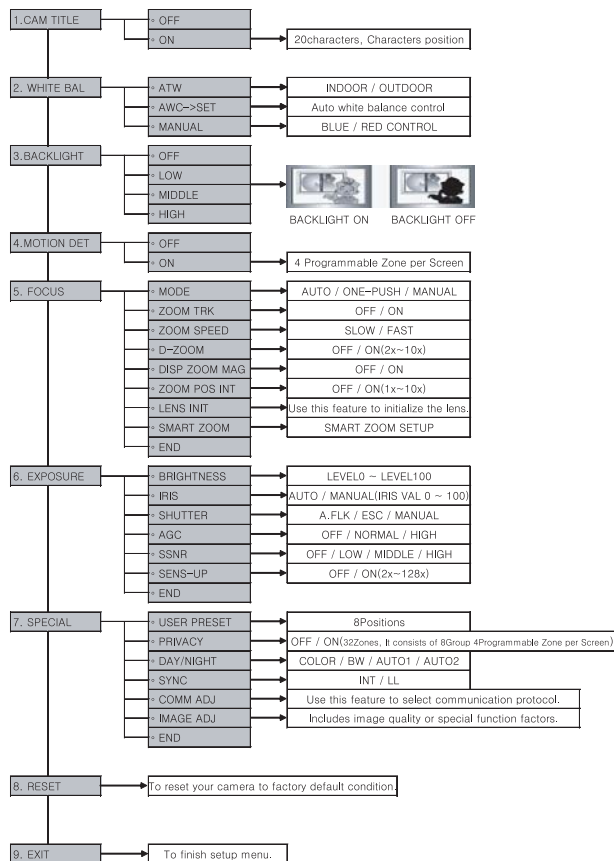
2) Focus Function key / PTZ Controller

Remote TELE Button / PTZ TELE Button---To close in on a far object.(ZOOM IN)
Remote WIDE Button / PTZ WIDE Button---To widen the view.(ZOOM OUT)
Remote NEAR Button / PTZ NEAR Button---To see a near object clearly.
Remote FAR Button / PTZ FAR Button---To see a far object clearly.
Remote AF Button---To activate auto focus just once.

⚠ **CAUTION** : When to use a controller, please press <IRIS OPEN> key on the controller's key board in order to enter <MAIN MENU> of OSD window.(IRIS Open key at controller act as a MENU Button at VN80.Mainly use it to SET the selection.)

7. How to operate key functions

7-2. MEMU Tree



7. How to operate key functions

7-3. Main MENU

MAIN MENU	
1. CAM TITLE	OFF
2. WHITE BALANCE	ATW←
3. BACKLIGHT	OFF
4. MOTION DET	OFF
5. FOCUS←	
6. EXPOSURE←	
7. SPECIAL←	
8. RESET	
9. EXIT	

- 1.1 Press the SET button to access the main setup mode. Main setup menu is displayed on the monitor screen.
- 1.2 Select the desired feature using the UP or DOWN button.
 - Each pressing of the UP or DOWN button moves the indicator to the next or previous feature.
 - Move the arrow indicator to the desired feature item.
- 1.3 Change the status of the selected feature using the LEFT or RIGHT button.
- 1.4 completed, move the arrow indicator to 'EXIT' and press the SET button.

⇨ NOTE : ◦ Features marked with a ← have an accessible submenu.
◦ Access the submenu by pressing the SET button.

7-4. Sub MENU

1. Cam title

Use this feature to designate a name for the camera, which will display on the monitor screen.

MAIN MENU	
1. CAM TITLE	OFF
2. WHITE BALANCE	ATW←
3. BACKLIGHT	OFF
4. MOTION DET	OFF
5. FOCUS←	
6. EXPOSURE←	
7. SPECIAL←	
8. RESET	
9. EXIT	

1. Press the SET button to display the main setup menu and move the arrow indicator to 'CAM TITLE' using the UP or DOWN button.
2. Set 'CAM TITLE' to 'ON' using the LEFT or RIGHT button.

⇨ NOTE : ◦ If the CAM TITLE feature is set to 'OFF', the name will not displayed in the monitor.

CAM TITLE SETUP	
A B C D E F G H I J K L M N O	
P Q R S T U V W X Y Z a b c d	
e f g h i j k l m n o p q r s	
t u v w x y z 0 1 2 3 4 5 6 7	
8 9 () < > - / # ! ? , .	
M _ _ _ _ _	
← → CLR POS END	

3. Press SET button.
4. You can enter up to 20 characters.
 - A. Move the cursor to the character entry field using the LEFT or RIGHT button.
 - B. Use UP, DOWN, LEFT, and RIGHT buttons to select a desired character.
 - C. Press the SET button to confirm selection of the blinking character. The Character is then saved, and the cursor in the entry field moves to the next position.

D. Repeat steps 1.througt 3. until the desired name has been entered.

5. Select on screen position of the CAM TITLE.

- A. Move the cursor to the character entry field using the LEFT or RIGHT button.
 - B. The CAM TITLE is displayed on the top-left of the monitor screen. (Default position)
 - C. Select the position by using the 4-directional buttons, the press the SET button to confirm the position.
6. When completed, move the cursor to 'END' and press SET button.

7. How to operate key functions

2. White Balance Control

Your camera provides three 'WHITE BAL' control modes for your choosing in adjusting the white balance

1. Press the SET button to access the main setup menu and move the indicator to 'WHITE BAL' using the UP or DOWN button.
2. Set 'WHITE BAL' using the LEFT or RIGHT button.

The three white balance control modes are as follows :

• ATW(Auto Tracking White Balance) :

OUTDOOR : This mode can be used within the color temperature range 1800~10500°K
(Ex :fluorescent light, outdoor, sodium vapor lamp or inside tunnels)

INDOOR : This mode can be used within the color temperature range 3000~1050°k

• AWC(Auto White balance Control) :

The white balance is automatically adjusted in a specific environment. In order to obtain the best result, press the SET button while the camera focuses on white paper. If the environment including the light source is changed, you have to adjust the white balance again

• Manual :

To fine adjust, select the Manual mode. You can increase or decrease the red or blue factor while monitoring the difference on the screen. Set to 'MANUAL' mode and press the SET button. Increase or decrease the value for red(R-Gain) and blue(B-Gain), watching the color of the picture, and press the SET button when you obtain the best color.

⇨ NOTE : Proper White Balance may not be obtained under the following conditions.

1. When the scene contains mostly high color temperature object, such as a blue sky or sunset.
2. When the scene is dim.
3. If your camera directly faces a fluorescent lamp or is used in an environment of varying lighting conditions.

3. Backlight

When there is a strong backlight behind the object, clear images of the background as well as the object can still be obtained by using the BACKLIGHT function.

1. Please position the arrow to point to 'BACKLIGHT' on the setup menu by using the UP and DOWN buttons.
2. Please select the mode you wish to operate by pressing the LEFT or RIGHT button.

MAIN MENU	
1. CAM TITLE	OFF
2. WHITE BALANCE	ATW←
3. BACKLIGHT	OFF
4. MOTION DET	OFF
5. FOCUS←	
6. EXPOSURE←	



Backlight ON



Backlight OFF

- HIGH/MIDDLE/LOW : You can adjust the sensitivity of Backlight Compensation.
- OFF : BACKLIGHT function does not operate.

7. How to operate key functions

4. Motion Detection

This product has a feature that allows you to observe movements of objects in 4 Different areas on the screen, and the words 'MOTION DETECTED' appear on the Screen when movement is detected; hence a single individual can conduct supervision Efficiently. The camera detects an object's movement by sensing disparity of outline, And level of brightness and color. The camera receives detection signal from MD Output terminal.

- Please press the SETUP button.
- OFF : MOTION DETECTION mode is cancelled.
- ON : Any motion in the selected areas is observed.
- Please select the area you wish to observe from the 4 areas in AREA SEL mode.
- Please select ON mode for the chosen area.
- Please adjust the size of the area to be observed by using the UP, DOWN, LEFT or RIGHT button.
- Please press the SETUP button to save changes and complete the setting.

MD SETUP	
>DISP ALARM	OFF
AREA SEL	AREA1
AREA MODE	ON
TOP	10-----
BOTTOM	50-----
LEFT	10-----
RIGHT	50-----
END	

- DISP ALARM : Displays "DISP ALARM" on the monitor when a subject is detected.
- AREA SEL : Selects Areas you wish to observe from 4 Areas.
- AREA MODE : Displays the outline of the area chosen.
- TOP, BOTTOM, LEFT, RIGHT : Adjusts to size of the area to be observed.

NOTE : Tips on Using the Motion Detection Feature

- The feature may not function properly under flickering light conditions.
- The camera interprets sudden changes in lighting and subsequent change in brightness of an object as motion.
- With the feature enabled, other algorithms may require additional time to operate than usual.
- This system does not guarantee prevention of fire or theft. The manufacturer shall not be held responsible for any accident or damage incurred.

5. FOCUS

MAIN MENU	
1. CAM TITLE	OFF
2. WHITE BALANCE	ATW---
3. BACKLIGHT	OFF
4. MOTION DET	OFF
5. FOCUS---	
6. EXPOSURE---	
7. SPECIAL---	
8. RESET	
9. EXIT	

- Press the SET button to access the main setup manu and then position the indicator over FOCUS using the UP or DOWN button.
- Press the SET button.
 - MODE : You can select the most suitable zoom mode. Move the arrow indicator to 'Mode' using UP or DOWN button.

7. How to operate key functions

FOCUS SETUP	
>MODE	ONE PUSE --
ZOOM TRK	ON
ZOOM SPEED	FAST
D-ZOOM	OFF
DISP ZOOM MAG	OFF

- A. AUTO : Select AUTO and press the SET button to confirm. Increase or decrease optical zoom (ZOOM) or digital zoom (D-ZOOM) positions using the UP or DOWN button while verifying the changes on screen. Enabling D-ZOOM (ON) means that digital zoom will activate once optical zoom ends. Focus is automatically adjusted with moving zoom.

ZOOM / FOCUS POS SETUP	
↑ TELE	↓ WIDE
Press SET to Return	

- B. ONE PUSH : Focus is automatically adjusted just once, after zoom position is changed. Select 'ONE PUSH' and press the SET button to confirm. Increase or decrease optical zoom(ZOOM) or digital zoom(D-ZOOM) positions using the directional buttons while verifying the changes on screen. Press the SET button once desired image quality is obtained.

ZOOM / FOCUS POS SETUP	
↑ TELE	↓ WIDE
← NEAR	→ FAR
Press SET to Return	

- C. MANUAL : Select 'MANUAL' and press the SET button to confirm. Increase or decrease optical zoom(ZOOM) or digital zoom (D-ZOOM) positions using the directional buttons while verifying the changes on screen. Press the SET button once desired image quality is obtained. Focus can be manually adjusted, independent of moving zoom.

ZOOM / FOCUS POS SETUP	
↑ TELE	↓ WIDE
← NEAR	→ FAR
Press SET to Return	

- ZOOM TRK : You can select to use 'ZOOM TRK'. Move the arrow indicator to 'ZOOM TRK' using UP or DOWN button. Set 'ZOOM TRK' to on using LEFT or RIGHT but.

FOCUS SETUP	
MODE	ONE PUSE --
> ZOOM TRK	ON
ZOOM SPEED	FAST
D-ZOOM	OFF
DISP ZOOM MAG	OFF

- ZOOM SPEED : Configure zoom tracing speed using this feature. Position the indicator over 'ZOOM SPEED' using the UP or DOWN button and then set to desired mode using the LEFT or RIGHT button.

7. How to operate key functions

FOCUS SETUP	
MODE	ONE PUSE --
ZOOM TRK	ON
> ZOOM SPEED	FAST
D-ZOOM	OFF
DISP ZOOM MAG	OFF

--FAST : To move zoom fast.

--SLOW : To move zoom slowly.

The 'ZOOM SPEED' mode cannot be used if 'MODE' is set to 'AUTO' and 'ZOOM' TRK is 'ON'.

- D-ZOOM : Configure magnification limit from x2~x10 using this feature. Position the indicator over 'D-ZOOM' using the UP or DOWN button. Set 'D-ZOOM' to 'ON' and press the set button to confirm.

FOCUS SETUP	
MODE	ONE PUSE --
ZOOM TRK	ON
ZOOM SPEED	FAST
> D-ZOOM	ON

D-ZOOM LIMIT SETUP	
> LIMIT	X2
END	

Set 'ZOOM LIMIT' to the desired level using the LEFT or RIGHT button.

- DISP ZOOM MAG : Use this feature to display the current zoom magnification level on screen. Position the indicator over 'DISP ZOOM MAG' using the UP or DOWN button. Then set to ON using the LEFT or RIGHT button.

FOCUS SETUP	
MODE	ONE PUSE --
ZOOM TRK	ON
ZOOM SPEED	FAST
D-ZOOM	ON
> DISP ZOOM MAG	ON

- ZOOM POS INIT : When reset the power after setting this function, this unit works at determined zoom position.

FOCUS SETUP	
MODE	AUTO--
ZOOM TRK	ON
ZOOM SPEED	FAST
D-ZOOM	ON
DISP ZOOM MAG	ON
> ZOOM POS INIT	OFF
LENS INIT	
SMART ZOOM--	
END	

7. How to operate key functions

- LENS INIT : Use this feature to initialize the lens. Position the indicator over LENS INIT, using the UP or DOWN button. Press the SET button to confirm.

FOCUS SETUP	
MODE	AUTO--
ZOOM TRK	ON
ZOOM SPEED	FAST
D-ZOOM	ON
DISP ZOOM MAG	ON
ZOOM POS INIT	OFF
> LENS INIT	
SMART ZOOM--	
END	

- Smart Zoom is operating with linking to Motion Detection. If motion detects when Smart Zoom detection sets to On in the condition of Motion DEC On, Zoom is activating as determined Target Zoom. After Zoom is fixed and Dwell time is over, Smart zoom is returned to Start Zoom. Selecting the item of Smart Zoom and pushing SET button in the menu of Focus Setup, you can change the Function Setting of Smart Zoom.

FOCUS SETUP	
MODE	AUTO--
ZOOM TRK	ON
ZOOM SPEED	FAST
D-ZOOM	ON
DISP ZOOM MAG	ON
ZOOM POS INIT	OFF
LENS INIT	
> SMART ZOOM--	
END	

SMART ZOOM SETUP	
MODE	ON
START ZOOM	x1
TARGET ZOOM	x5
DWELL TIME	3sec
END	

- END : To revert to the main setup menu.

6. EXPOSURE

EXPOSURE SETUP	
> BRIGHTNESS	40.....
IRIS	AUTO
SHUTTER	--
AGC	NORMAL
SSNR	LOW
SENS-UP	AUTO--
END	

- Press the SET button to access the main setup menu and then position the indicator over 'EXPOSURE' using the UP or DOWN button.
- Press the SET button to confirm.

- A. BRIGHTNESS : Use this feature to adjust image brightness. Position the indicator over 'BRIGHTNESS' using the UP or DOWN button. Then increase or decrease brightness level using the LEFT or RIGHT button while verifying the changes on screen. Set END once desired level is obtained.

EXPOSURE SETUP	
> BRIGHTNESS	40.....
IRIS	AUTO
SHUTTER	--
AGC	NORMAL
SSNR	LOW
SENS-UP	AUTO--
END	

7. How to operate key functions

- B. IRIS : Set 'IRIS' to 'AUTO' or 'MANUAL'. Position the indicator over 'IRIS' using the UP or DOWN button and then select the desired iris mode using the LEFT or RIGHT button.

EXPOSURE SETUP	
BRIGHTNESS	40.....
> IRIS	AUTO
SHUTTER	---
AGC	NORMAL
SSNR	LOW
SENS-UP	AUTO--
END	

- AUTO : The iris is automatically activated upon illumination.
- MANUAL : Manual iris configuration. Set 'IRIS' to 'MANUAL' using the LEFT or RIGHT Button and then press the SET button. Increase or decrease iris level using the LEFT or RIGHT button while verifying the changes on screen.

IRIS MANUAL SETUP	
IRIS VAL	100.....
END	

- C. SHUTTER : Control image brightness by adjusting shutter speed.

- Position the indicator over 'SHUTTER' using the UP or DOWN button. Then select the desired shutter mode(A.FLK, ESC, MANUAL) using the LEFT or RIGHT button.
 - A.FLK (NTSC : 1/100, PAL : 1/120) : Flicker-free mode
 - ESC : Automatic shutter speed setting (optimal)
 - MANUAL : Manual shutter speed setting
- If you choose 'Manual', select the optimal shutter speed.
 - In MANUAL mode, the optimal shutter speed needs to be designated. Select from 1/60 to 1/120,000(NTSC) or from 1/50 to 1/120,000(PAL).
 - * 'Sens-Up' mode can be configured manually (2x to 128x).
 - Verify changes made to the shutter speed by referencing to changes in on screen brightness.

SHUTTER MANUAL SETUP	
SHUTTER VAL	1/60
END	

- Press the SET button to complete.

- NOTE : • Image may become unstable if the camera is set to 'ESC' mode and faces a strong fluorescent light.
- Under 'ESC' mode, the brightness can be adjusted using the LEFT or RIGHT button.
 - Sens-up is disabled under 'MANUAL' or 'A.FLK' mode.

7. How to operate key functions

- D. AGC (Auto Gain Control) : For brighter images.

- Position the indicator over 'AGC' using the UP or DOWN button.
- Set 'AGC' to the desired mode using the LEFT or RIGHT button.

EXPOSURE SETUP	
BRIGHTNESS	40.....
IRIS	AUTO
SHUTTER	---
> AGC	NORMAL
SSNR	LOW
SENS-UP	AUTO--
END	

- HIGH : Wide range gain value adjustment
- NORMAL : Normal range gain value adjustment
- OFF : Disabled

- E. SSNR(Samsung Super Noise Reduction) : On screen noise reduction.

- Position the indicator over 'SSNR' using the UP or Down button.
- Set 'SSNR' to the desired mode using the LEFT or RIGHT button.

EXPOSURE SETUP	
BRIGHTNESS	40.....
IRIS	AUTO
SHUTTER	---
AGC	NORMAL
> SSNR	LOW
SENS-UP	AUTO--
END	

- LOW : Low noise reduction
- MIDDLE : Medium noise reduction
- HIGH : High noise reduction
- OFF : Disabled

- NOTE : • Changing 'AGC' setting from LOW to HIGHT results in greater sensitivity, as Well as on screen noise.
- Setting 'AGC' to OFF locks 'SSNR' configuration.

- F. SENS-UP : This feature ensures clear images at night or under low lighting conditions.

- Position the indicator over 'SENS-UP' using the UP or DOWN button.
- Set 'SENS-UP' to the desired mode using the LEFT or RIGHT button.

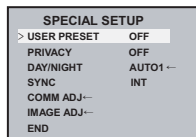
EXPOSURE SETUP	
BRIGHTNESS	40.....
IRIS	AUTO
SHUTTER	---
AGC	NORMAL
SSNR	LOW
> SENS-UP	AUTO--
END	

- AUTO : Select this mode for use in night time or under low lighting conditions. (2x ~ 128x)
- OFF : Disabled.

- NOTE : • Once 'AUTO' mode is set, the user can configure Sens-Up limit by Increasing/decreasing the shutter speed (e.g.:x2,...x32...x64,x128).
- Enabling Sens-Up increases camera sensitivity and may result in additional. Noise and/or other phenomenons. This is normal.

7. How to operate key functions

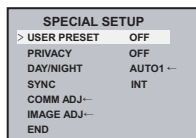
7. SPECIAL



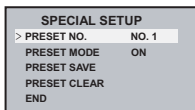
1. Press the SET button to access the main setup menu and then position the indicator over 'SPECIAL' using the UP or DOWN button.
2. Press the SET button to confirm.

A. USER PRESET :

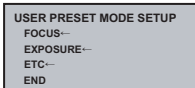
Preset user-designated configurations using this feature. Position the indicator over 'USER PRESET' using the UP or DOWN button and then set to 'ON' using the LEFT or RIGHT button. Press the SET button to confirm.



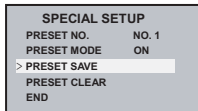
- PRESET NO : Up to eight different preset configurations are supported.



- PRESET MODE : Configure initial settings under FOCUS, EXPOSURE, ETC.

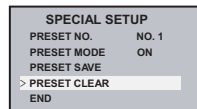


- PRESET SAVE : Save configured preset.

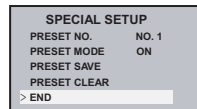


7. How to operate key functions

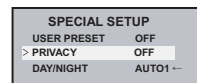
- PRESET CLEAR : Clear configured preset.



- END : Revert to the SPECIAL SETUP menu.



- B. PRIVACY : Mask privacy area using this feature. The mask area expand/contract upon the zoom position.



- GROUP SEL : Choose up to eight groups. Each group can consist of four mask areas.
- AREA SEL : Configure eight mask areas.
- AREA MODE : Mask area display.
- MASK TONE : Adjust desired mask color level.
- TOP : To move the mask area up.
- BOTTOM : To move the mask area down.
- LEFT : To move the mask area left.
- RIGHT : To move the mask area right.

SET PRIVACY	
GROUP SEL	GROUP 1
AREA SEL	AREA 1
AREA MODE	ON
MASK TONE	50 ██████████
TOP	45 ██████████
BOTTOM	110 ██████████
LEFT	45 ██████████
RIGHT	95 ██████████
END	

- C. DAY/NIGHT : Select from COLOR, BW or AUTO1,2 modes.



- COLOR : Color mode.
- BW : BW mode.
- AUTO1,2 : The camera automatically detects lighting conditions and selects the mode accordingly. Auto1 mode is switched to IR Cut Filter more lightning conditions than Auto2.(Auto1 AGC:NORMAL, SSNR:LOW, SENS-UP:8x) (AUTO2 AGC:HIG, SSNR:MIDDLE, SENS-UP:10x)

NOTE : • When selecting AUTO2 mode, the AGC is fixed at HIGH mode.

7. How to operate key functions

D. SYNC : Two synchronization modes are available INTERNAL and EXTERNAL LINE-LOCK. In LINE-LOCK mode, it synchronizes the camera's video out signal to the external SYNC signal.

SPECIAL SETUP	
USER PRESET	OFF
PRIVACY	OFF
DAY/NIGHT	AUTO1 --
> SYNC	INT
COMM ADJ--	

LINE LOCK	
> PHSE	255.....1....
Press SET to Return	

- INT : Internal synchronization
- LL : External line-lock synchronization
 - If you choose 'LL', you can adjust the desired phase. Press the SET button.
 - You can adjust the desired phase from 0 to 359.

NOTE : • For NTSC models, the line-lock mode can be used if the external SYNC signal frequency is at 60Hz.
 • For PAL models, the line-lock mode can be used if the external SYNC signal frequency is at 50Hz.

E. COMM ADJ : Position the indicator over 'COMMUNICATION' using the UP or DOWN button.

COMMUNICATION SETUP	
CAM ID	1
DISP CAM ID	ON
BAUD RATE	9600
UART MODE	8 - N - 1
RET PKT	DISABLE

- CAM ID : Assign an ID number to the camera (1 to 255). Identification number zero is used for remote controller setup.
- DISP CAM ID : Displays camera ID on top left corner of the screen.
- BAUD RATE : Configure parity bit to NON, EVEN, or ODD. Data bit is set to 8bit, and stop bit to 1bit. Set the UART MODE to EVEN if using the Remote Controller.
- RET PKT : Used to transfer a packet.
- END

F. IMAGE ADJ : Includes image quality or special function factors.

- FREEZE : Use this feature to freeze capture an image.
- H-REV : Use this feature to horizontally inverse the screen.
- V-REV : Use this feature to vertically inverse the screen.
- SHARPNESS : Increasing this value sharpens object edges. Too high of a setting, however, produces noise and may obscure the image.
- COLOR : Adjusting this value affects the chroma level only; the burst level is unaffected.

7. How to operate key functions

IMAGE SETUP	
FREEZE	OFF
H-REV	OFF
V-REV	OFF
SHARPNESS	ON--
COLOR	50
END	

G. END : Evert back to the USER PRESET menu.

8. RESET

To reset your camera to factory default condition.

9. EXIT

To finish setup menu.

8. Trouleshooting

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
Nothing appears on the screen.	• Please check the power connection. • Please check the video signal line connection.
The video image is not clear.	• Please check if the lens or the outer glass is clean. - 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. • Please check and adjust contrast feature of the monitor • Please check if the camera is exposed directly toward a bright light, sunlight, or sun light reflecting area. Please move the camera's position in this case.
The screen is dark.	• Please check and adjust contrast feature of the monitor • If there is any interim equipment, set the 75Ω position properly and check the terminals. • Please check if the power supply is within the specification. - When the cable connection requires a long distance, there may need a higher power supply or an additional power/video amplification.
The camera's surface is too hot and black stripes appear on the screen.	• Please check if the power supply is regulated and is within the standard requirement of the product.
The screen is flickering.	• Please check if the camera is facing directly toward sunlight or fluorescent light.
IR beam is weak	• 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.

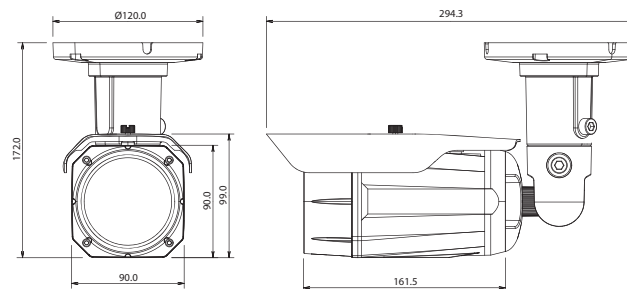
9. Specification

MODEL	EL3000
Image sensor	STD : 1/4" Sony Super HAD CCD
Effective Pixels	768(H) x 494(V) - NTSC, 752(H) x 582(V)-PAL
H.Resolution	NTSC : 500 TV Lines (at Day) / 570 TV Lines (at Night) PAL : 500 TV Lines (at Day) / 570 TV Lines (at Night)
Synchronizing	Internal / Linelock
Scanning system	NTSC 525 Lines PAL 625 Lines 2:1 Interlaced
Video output	1.0 Vp-p composite. 75 Ohms
S/N ratio	More than 50 dB (AGC Off)
Min. Illumination	0.0007 Lux at F1.8(Snes-up On) / 0.3Lux at F1.8(Sens-up Off)
Back Light Compensation	Low / Middle / High / Off
Shutter speed	Auto / manual(NTSC:1/60~1/120,000sec), PAL(1/50~1/120,000sec)
White balance	ATW(Indoor:3,000°K~10,500°K, Outdoor:1,800°K~10,500°K) / AWC / Manual
Gain Control	Normal / High / Off
Sens-up	Auto(2x~128x) / Off
SSNR(Super Noise Reduction)	Low / Middle / High / Off
Privacy	On / Off (Max. 32zone / 8 Programmable zones per screen)
Preset	8Positions
Flip	H-REV(On/Off) / V-REV(On/Off)
Focus control	Auto / Manual / One push
Iris control	Auto / Manual
Motion detection	On / Off (4 Programmable zone per screen)
Communication	RS-485 (Pelco-D)
Smear Effect	0.005%
Power source	24VDC / 24VAC Dual Power
Operating current	140mA at 24VDC (Side IR "off" Day), 450mA at 24VDC (Side IR "on" Night), 130mA at 24VAC (Side IR "off" Day), 380mA at 24VAC (Side IR "on" Night)
Lens	Auto Focus Digital zooms
Zoom ratio	10x, f3.8mm~38mm (F1.8)
Min. Focus distance	1.5M
Angle of view Lens initialization	Horizontal: Appr. 52.2°(Wide) to 5.58°(tele) Vertical: Appr. 39.3°(Wide) to 4.27°(tele)
Digital Zoom	On / Off (2x~10x)
Operating Temperature	14° F~122° F (-10° C~ + 50° C)
Humidity	Within 90% RH
Weatherproof rating	IP66
Measurement (mm)	120(W) x 172(V) x 294.3(L)
Weight (Approx.g)	3000

9. Specification

IR Function	
IR spectrum	High Power 850nm-5Ø x 10° x 32ea High Power 850nm-5Ø x 40° x 12ea
Viewable distance	Up to 70M at moonless night
MTBF of IR	20,000 Hours

10. Dimension



MEMO

MEMO
