USER MANUAL

3D-DNR DAY & NIGHT COLOR CAMERA

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.

ISO14001 CE FC
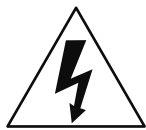
The lightning flash with an arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

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 & CE 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 fire hazards:
☞Do NOT use power sources other than those 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.
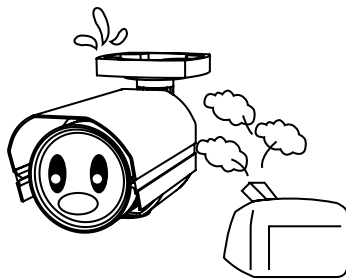
Precautions

Do not install the camera in extreme temperature conditions.

Only use the camera under conditions where temperatures are between -10°C and +50°C. Be especially careful to provide ventilation whenoperating under high temperatures.

Do not install or use the camera in an environment where the humidity is high.
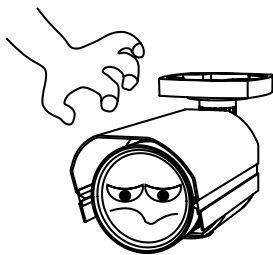
Do not install or use the camera in an environment where the humidity is high.

Do not install the camera under unstable lighting conditions.
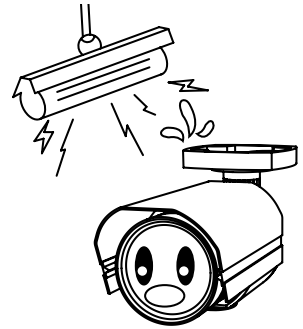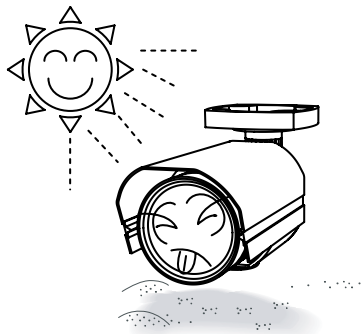
Severe lighting change or flicker can cause the camera to work improperly.

Do not touch the front lens of the camera.

This is one of the most important parts of the camera. Be careful not to leave fingerprints on the lens cover.

Do not drop the camera or subject it to physical shocks.

It can cause malfunctions to occur.

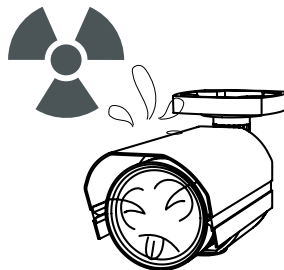Never keep the camera pointed directly at strong light.

Severe lighting change or flicker can cause the camera to work improperly.

Do not expose the camera to rain or spill liquids on it.

If it gets wet, wipe dry immediately. Liquids can contain minerals that corrode the electronic components.

Do not expose the camera to radioactivity.

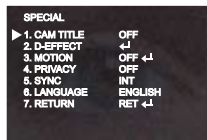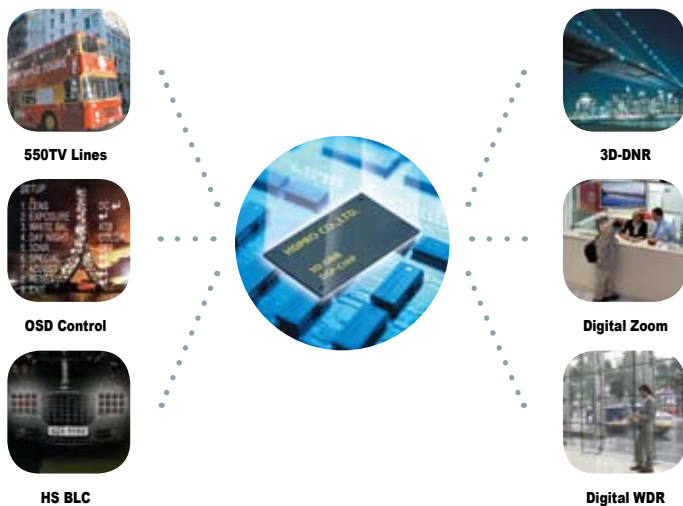If exposed to radioactivity the CCD will fail.

NOTE

* If the camera is exposed to spotlight or object reflecting strong light, smear or blooming may occur.

* please check that the power satisfies the normal specification before connecting the camera.

Contents

About D-WDR/BLC/ 3D DNR

550TV Lines

OSD Control

HS BLC

3D-DNR

Digital Zoom

Digital WDR

GENERAL FEATURES

- 1/3" Sony Super HAD CCD
- Up-Most High Resolution :
  Color - 550TV Line / B/W - 600TV Lines
- Built-In Next Generation 3D DNR with 3D Filter
- Max. Sens-Up (x258), 0.00001 Lux of Min. Illumination
- Convenient OSD control function
- x32 Digital Zoom
- Free Area Selectable function of BLC and MD
- Privacy Color Masking for 8 Area selection
- Max 70% of Disk Saving Effect with Super DNR
- Negative Image Function
- Digital Wide Dynamic Range Function(D-WDR)

```
SETUP
▶ 1. LENS          DC ↵
  2. EXPOSURE      ↵
  3. WHITE BAL     ATB
  4. DAY NIGHT     COLOR
  5. 3DNR          OFF
  6. SPECIAL       ↵
  7. ADJUST        ↵
  8. RESET         ↵
  9. EXIT          ↵
```

```
EXPOSURE
▶ SHUTTER        1 / 60
  BRIGHTNESS     ▮▮▮▮▮ 48
  AGC            HIGH
  SENS-UP        AUTO
  BLC            OFF
  D-WDR          OFF
  RETURN         RET ↵
```

```
SPECIAL
▶ 1. CAM TITLE    OFF
  2. D-EFFECT     ↵
  3. MOTION       OFF ↵
  4. PRIVACY      OFF
  5. SYNC         INT
  6. LANGUAGE     ENGLISH
  7. RETURN       RET ↵
```

3D-DNR OFF

3D-DNR ON

Standard Camera

550TV Lines Camera

Digital WDR OFF

Digital WDR ON

Normal BLC

HS BLC

Standard Image

Minimum Illumination Image

3D Filtering Method of Newly Advanced DNR Function
Newly developed 3D filtering enhances Digital Noise reduction at low light levels. 3D Filtering of the Video Signal Optimises the Signal to Noise ratio, giving vastly improved low light visivility and a powerful Sens-Up function (up to 258 times magnification).

550TV Lines
The combination of a Sony Super HAD CCD image sensor and DNR DSP provides an excellent resolution of 550 TV lines.

D-WDR(Digital Wide Dynamic Range)
D-WDR is a powerful and ultra advanced technology that captures cleaner and superior high Resolution pictures even where images appear dark because there is a strong back light present.

High Spotlight BLC Function
High Spotlight BLC Function is Especially Effective to Read the Number Plate of the Vehicles in the Street or Parking Lot at Night Time. Especially Users Can Adjust and Select the Special Required Area to Observe the Target Object Under the Strong Spots of Light Exist.

Illumination
With an Incredibly Minimum Illumination of Amazing 0.00001 Lux can Capture Good Images Even in Extremely Low Light Conditions and Related Noises are Significantly Reduced by the Ultra Advanced DNR(Digital Noise Reduction) Technology.

3D-DNR DAY & NIGHT COLOR CAMERA

Safety Instructions

- 3 -

Precautions for use

Please read this manual thoroughly before using the camera to become familiar with the correct operational procedures.

Cautions When Using

☞ Do not open the camera body and touch any electrical parts to avoid possible electric shocks.

☞ Do not insert objects into the camera body to prevent fire hazards and electric shock.

☞ Do not touch the camera with wet hands to avoid electric shock.

☞ Do not disconnect the power cord from a power plug when still connected to the outlet.

☞ Always disconnect the power by removing the plug from the power socket.

☞ If the camera emits a burning smell, immediately disconnect it from the power source and report the problem to your distributor.

Cautions When Install

☞ Only apply power after installation of the product.

☞ Do not install the camera in a position facing directly at a strong light source.

☞ Do not install or use the camera in areas of high humidity.

☞ Do not install near any cooling or heating equipment.

☞ Do not install the camera in dusty environments.

☞ Do not install the camera in places where the camera is subjected to physical shocks.

☞ This products must be used with a regulated adaptor for power.

General Features

3D Filtering Method of Newly Advanced DNR Function

☞ Newly developed 3D filtering enhances Digital Noise reduction at low light levels. 3D Filtering of the Video Signal Optimises the Signal to Noise ratio, giving vastly improved low light visivility and a powerful Sens-Up function (up to 258 times magnification).

550TV Lines

☞ The combination of a Sony Super HAD CCD image sen-sor and DNR DSP provides an excellent resolution of 550 TV lines.

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☞ High Spotlight BLC Function is Especially Effective to Read the Number Plate of the Vehicles in the Street or Parking Lot at Night Time. Especially Users Can Adjust and Select the Special Required Area to Observe the Target Object Under the Strong Spots of Light Exist.

Illumination

☞ With an Incredibly Minimum Illumination of Amazing 0.00001Lux can Capture Good Images Even in Extremely Low Light Conditions and Related Noises are Significantly Reduced by the Ultra Advanced DNR(Digital Noise Reduction) Technology.

Disk Saving Effects

☞ Advanced 3DNR technology improves picture quality and saves hard drive space, as less noise means much smaller file sizes - much smaller than standard CCTV camera images.
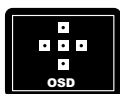
Additional Functions

☞ OSD - On Screen Display menu with multi-Language support.
Privacy Masking - 8 zones, Sens-Up - x258 times, Digital Zoom - x36

Menu Set-Up

SET UP MENU	DEFAULT SET	MENU
LENS	DC / MANUAL	DC : LEVEL (0 ~100 Adjustable)
EXPOSURE	SHUTTER BRIGHTNESS AGC: --- SENS-UP BLC D-WDR RETURN	SHUTTER : FLK/ 1/60 / 1/250, 1/500, 1/2000, 1/5000, 1/10000, 1/100000 BRIGHTNESS (0 ~100 Adjustable) AGC : OFF / LOW / MIDDLE/ HIGH SENS-UP : x2~ x258 Level Selectable BLC : OFF / BLC (GAIN : LOW, MIDDLE, HIGH/ DEFAULT : LEFT/RIGHT, WIDTH, TOP/ BOTTOM, HEIGHT, RTURN) / HSBLC (LEVEL : RANGE 1~8 Selectable/ DEFAULT : LEFT/RIGHT, WIDTH, TOP/BOTTOM, HEIGHT, RETURN) D-WDR : OFF / INDOOR/ OUTDOOR RETURN
WHITE BAL.	ATW	ATW/ AWB/ MANUAL(R Gain : 0 ~100 Level Selectable, B Gain : 0 ~100 Level Selectable) / AWC SET
DAY / NIGHT.	AUTO/B/W COLOR/EXT	COLOR AUTO : DELAY (0~63) / S-LEVEL(0~100)/ E-LEVEL(0~100) RESET
3D-DNR	ON	ON (RANGE : 0 ~100 Level Selectable) / OFF
SPECIAL	Refer to the next page	
ADJUST	SHARPNESS BLUE RED RETURN	SHARPNESS : (RANGE : 0 ~ 31 Level Adjustable) BLUE : (RANGE : 0 ~ 100 Level Adjustable) RED : (RANGE : 0 ~ 100 Level Adjustable) RETURN
RESET	FACTORY	
EXIT		Save the SETUP Menu and exit

Special Menu

SPECIAL MENU	DEFAULT SET	MENU
CAMERA TITLE	OFF	ON / OFF
D - EFFECT	ON	FREEZE / MIRROR/ D-ZOOM/ GAMMA/ NEG. IMAGE
MOTION	ON	AREA SELECT : AREA 1 AREA DISPLAY : ON / OFF LEFT / RIGHT : 0 ~ 100 Level Adjustable WIDTH : 0 ~ 100 Level Adjustable TOP / BOTTOM : 0 ~ 100 Level Adjustable HEIGHT : 0 ~ 100 Level Adjustable SENSITIVITY : 0 ~ 40 Level Adjustable RETURN
PRIVACY	ON	AREA SELECT : AREA 1 AREA DISPLAY : ON / OFF LEFT / RIGHT : 0 ~ 100 Level Adjustable WIDTH : 0 ~ 100 Level Adjustable TOP / BOTTOM : 0 ~ 100 Level Adjustable HEIGHT : 0 ~ 100 Level Adjustable COLOR : Selectable in 15 Color RETURN
SYNC	INT	
RETUEN		END

3D-DNR DAY & NIGHT COLOR CAMERA

Menu Set Up

Menu items can be selected by using the OSD buttons of the camera

1. Press the Set Up button.

* The Set Up menu will be displayed on the monitor.

```
                SETUP
 ▶ LENS           DC    ↵
   EXPOSURE              ↵
   WHITE BAL      ATW
   DAY / NIGHT    COLOR
   3DNR           ON  ↵
   SPECIAL              ↵
   ADJUST               ↵
   RESET                ↵
   EXIT
```
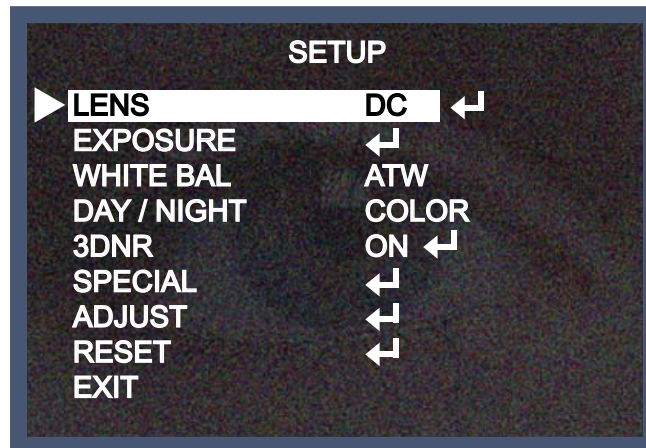
2. Move and select the required function using the Up and Down button.

* Move the arrow indicator Up or Down to select the desired feature by pressing

   the Up or Down button.

```
                SETUP
 ▶ LENS           DC    ↵
   EXPOSURE              ↵
   WHITE BAL      ATW
   DAY / NIGHT    COLOR
   3DNR           ON  ↵
   SPECIAL              ↵
   ADJUST               ↵
   RESET                ↵
   EXIT
```
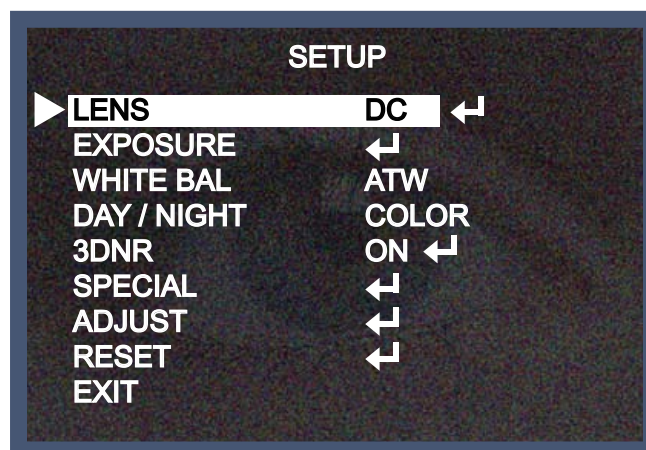
3. Changing menu settings using the Left or Right button.

* Available values or Status are displayed by pressing the Left or Right buttons.

  Press the button until desired value / status is displayed.

4. After completing the setting move the arrow indicator to EXIT and press the

  SET button to EXIT.

NOTE

* Move to the available submenu by moving ↵ arrow to desired feature.

* Submenu is not available when this symbol is display "- - - -"

Lens

1. Move the arrow indicator to LENS using the Up and Down buttons on the Set Up menu screen.

2. Select the desired lens type by pressing the Left or Right button.

```
                    SETUP
    ► LENS          DC      ↵
      EXPOSURE              ↵
      WHITE BAL     ATW
      DAY / NIGHT   COLOR
      3DNR          ON      ↵
      SPECIAL               ↵
      ADJUST                ↵
      RESET                 ↵
      EXIT
```
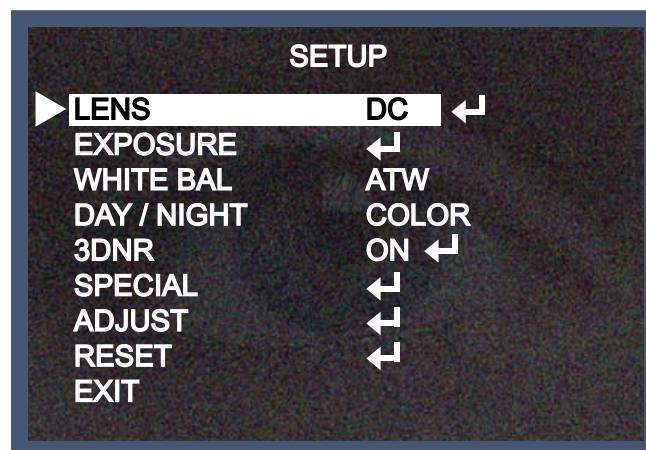
➡ DC:DC Auto Iris Lens

NOTE

* When DC is selected, the brightness can be adjusted. The brightness control range is 1 ~ 100.

Lens

▶ BRIGHTNESS |........|........| 100
RETURN ↵
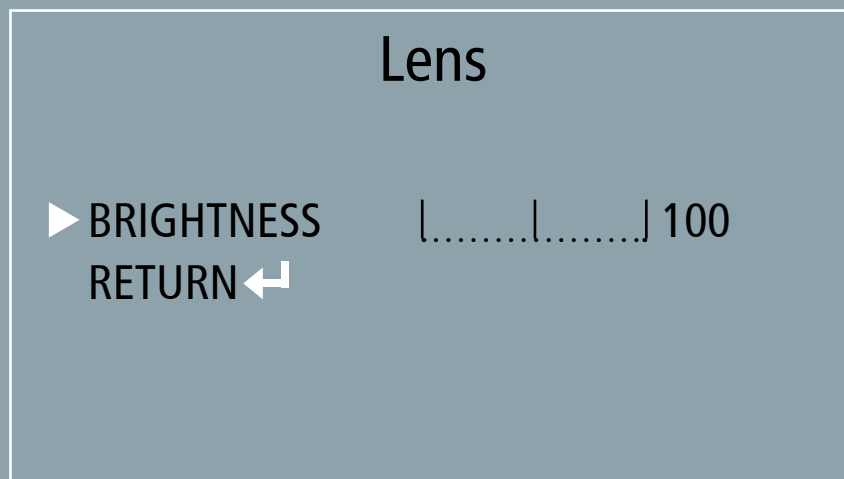
3. Press the RETURN to return to the SETUP menu.

Exposure

This function is used to select Automatic or Manual shutter speed control.

1. On the Set Up menu screen select EXPOSURE by using the Up or Down button.

2. Select the desired shutter mode by pressing the Left or Right button.
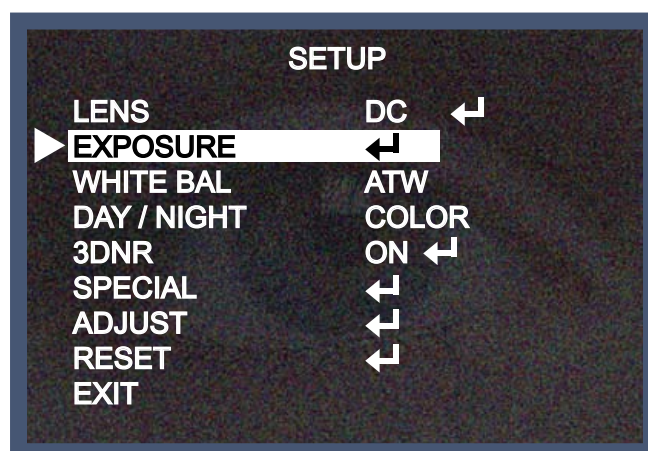
SETUP
LENS   DC   ↵
▶ EXPOSURE   ↵
WHITE BAL   ATW
DAY / NIGHT   COLOR
3DNR   ON ↵
SPECIAL   ↵
ADJUST   ↵
RESET   ↵
EXIT

* FLK : Select FLK mode when flickering occurs; caused by the unmatched frequency of electric lights.

```
   EXPOSURE

▶ SHUTTER          FLK
  BRIGHTNESS       - - - -
  SENS-UP          HIGH
  BLC              AUTO ↵
  D-WDR            BLC  ↵
  RETURN ↵         OFF
```
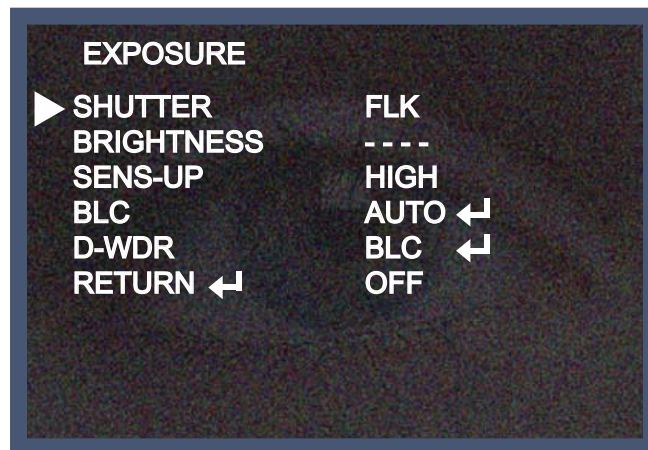
NOTE

* To produce better results with FLK, do not use it in conjunction with the WDR mode in the BACKLIGHT menu.

* Desired shutter speed can be selected by user 1/60, 1/250, 1/500, 1/2000, 1/5000, 1/0000, 1/100000, FLK .

* Brightness just can operate when selected the Manual mode(Option), When selected DC mode, brightness will be disabled .

* AGC(AUTO GAIN CONTROL):

   A higher gain increases brightness but also increases any noise.

OFF : Deactivates the AGC function

LOW : Allows automatic gain control to LOW.

MIDDLE : Allows automatic gain control to MIDDLE.

HIGH : Allows automatic gain control to HIGH

* SENS - UP:

   At night and/or in dark conditions, the Sens-Up mode can be selected desired value from x2 ~ x258.

* FLK : Select FLK mode when flickering occurs; caused by the unmatched frequency of electric lights.

```
   SENS-UP

▶ SENS-UP          x 2
  RETURN           ↵
```
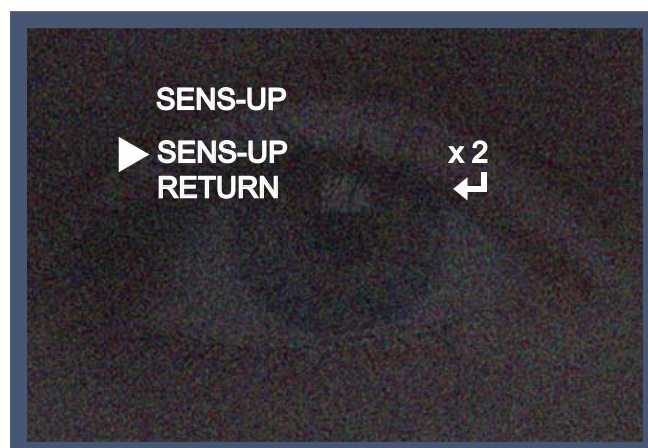
* RETURN:

Select Return to save the changes in the EXPOSURE menu and retun to the SETUP menu.

NOTE

* Pressing the SET button in AUTO mode allows adjustment of image brightness by increasing or decreasing the shutter speed (x2 ~x258).
* The higher the level, the brighter the image becomes, but it is possible that an after image (ghosting) could appear.
* When SENS-UP is activated the increased magnification can induce noise and pixelation; this is quite normal.

Back Light(BLC)

This camera provides intelligent light level control to overcome even strong backlight conditions.

1. Move the allow indicator to BACKLIGHT using the Up or Down button on the SETUP menu screen.

2. Select the desired level by using the Left or Right button.

```
   EXPOSURE

  SHUTTER        1/60
  BRIGHTNESS     - - - -
  AGC            LOW
  SENS-UP        - - - -
 ▶BLC            BLC        ↵
  D-WDR    ↵     OFF
  RETURN               ↵
```
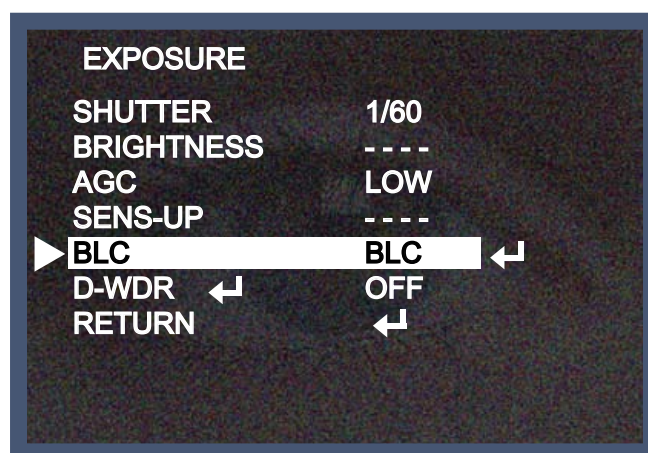
* OFF : BLC function does not operate.

* BLC : Users can select and define a specific area in a scene, and view the area clearly.

* HSBLC : When there are simultaneous brightness & dark image areas HSBLC makes both distinct.

BLC ON

BLC OFF

3. Select a mode using the Left and Right buttons then press the SET button.

Select BLC to adjust the desired BLC area and GAIN level.

* GAIN : Adjust the BLC sensitivity by selecting LOW, MIDDLE or HIGH.

* DEFAULT : Press the Default to back to the factory default when input the wrong data .

① Move the arrow indicator to select the WIDTH of cells to increase or decrease by using the Left / Right button from 0 ~ 7 cells.

BLC						
GAIN					LOW	
DEFAULT					↵	
LEFT / RIGHT		- - - - - | - - - - -		7		
WIDTH		- - - - - | - - - - -		8		
TOP / BOTTOM		- - - - - | - - - - -		7		
HEIGHT		- - - - - | - - - - -		8		
RETURN						

② Move the arrow indicator to select the HEIGHT of cells to increase or decrease by using the Left / Right button from 0 ~ 7 cells.

③ Move the arrow indicator to the LEFT / RIGHT and TOP / BOTTOM to select the desired area positon by using the LEFT or RIGHT button.

* Move the arrow indicator to RETURN and press the Set Up button after complete the BLC area set to return to EXPOSURE menu.

4. Select HSBLC(High Suppress Backlight Compensation) by using the Left and Right buttons then press the Set Up button to set up the desired HSBLC area and GAIN level.

HSBLC OFF

HSBLC ON

* LEVEL : Adjust the HSBLC sensitivity by selecting between 0~8.
* DEFAULT : Press the Default to return to the factory default when input the wrong data .

① Move the arrow indicator to select the WIDTH of cells to increase or decrease by using the Left / Right button from 0 ~ 7 cells.

② Move the arrow indicator to select the HEIGHT of cells to increase or decrease by using the Left / Right button from 0 ~ 7 cells.

③ Move the arrow indicator to the LEFT / RIGHT and TOP / BOTTOM to select the desired area positon by using the LEFT or RIGHT button.

D-WDR(digital WDR)

This camera provides intelligent light level control to overcome even strong backlight conditions.

1. Move the allow indicator to D-WDR using the Up or Down button on the EXPOSURE menu screen.

2. Select the desired feature by using the Left or Right button.

```
    EXPOSURE

    SHUTTER          1/60
    BRIGHTNESS       - - - -
    AGC              LOW
    SENS-UP          - - - -
    BLC              BLC        ↵
  ▶ D-WDR            OFF
    RETURN                      ↵
```
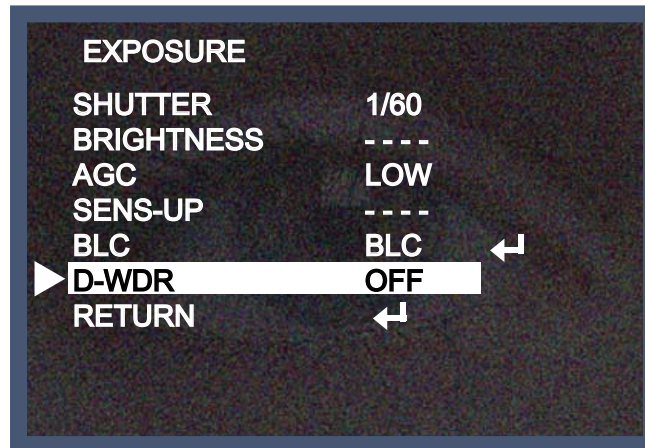
* D-WDR : When there are simultaneous brightness & dark image areas WDR makes both distinct and can be selected desired feature between OUTDOOR and INDOOR.

* OFF : D-WDR function does not operate.

* RETURN: Select Return to save the changes in the EXPOSURE menu and retun to the SETUP menu.

White Balance

The White Balance function is used to control the "on-screen" colours.

1. Move the allow indicator to WHITE BAL on the SETUP menu screen using the Up and Down button.

2. Select the desired mode by using the Left or Right button.

```
                SETUP
   LENS              DC     ↵
   EXPOSURE                 ↵
 ▶ WHITE BAL         ATW
   DAY / NIGHT       COLOR
   3DNR              ON ↵
   SPECIAL                  ↵
   ADJUST                   ↵
   RESET                    ↵
   EXIT
```
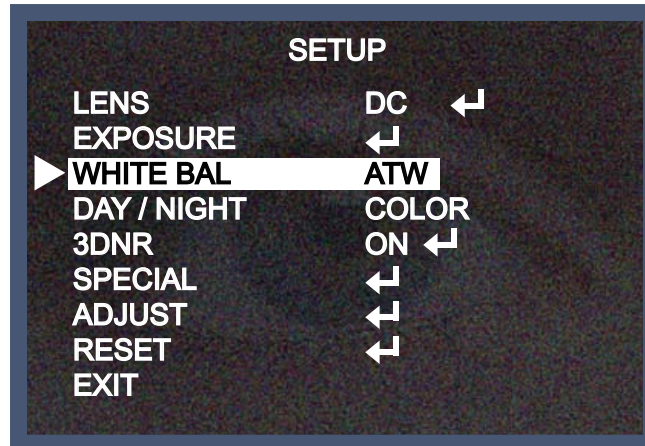
* There are three user selectable White Balance settings available.

* ATW : (Auto Tracking White Balance)

Normal setting; when the colour temperature range is from 1,800°K to 10,500°K. (Ex: a fluorescent lamp or outdoors)

* AWB : The White Balance is automatically adjusted in a specific environment.

* AWC → SET : To obtain the best results press the SET button while the camera is focused onto white paper. If the environment, and/or light source changes, the White Balance will require re-adjustment.

* MANUAL : Used for fine adjustment of White Balance. Set White Balance first using ATW or AWC then change to MANUAL and press SETUP button. Increase or decrease the value of R-Gain(Red) and B-Gain(Blue) while monitoring the colour of the image.

```
            WHITE BAL MANUAL


   BLUE              - - - - - - - -100
   RED               - - - - - - - -100
   RETURN            ↵
```
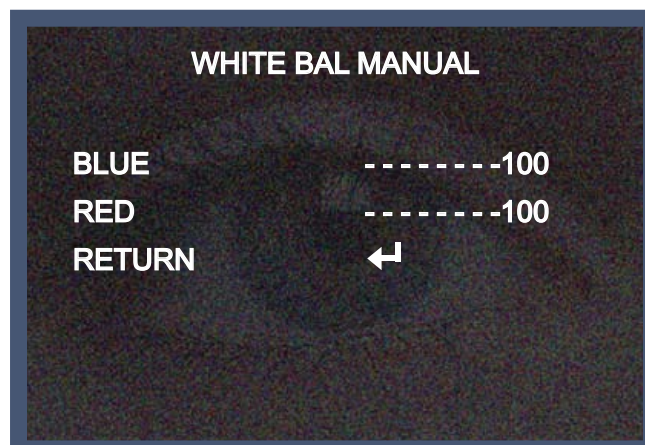
Day / Night

Picture can be displayed in either colour of black and white.

1. Select DAY / NIGHT using the Up or Down button on the SETUP menu screen.

```
              SETUP
  LENS           DC    ↵
  EXPOSURE             ↵
  WHITE BAL      ATW
▶ DAY / NIGHT    COLOR
  3DNR           ON  ↵
  SPECIAL              ↵
  ADJUST               ↵
  RESET                ↵
  EXIT
```
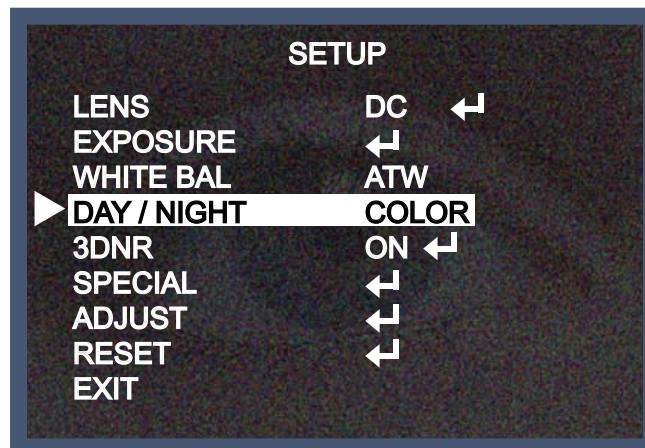
2. Select the desired mode using the Left and Right buttons.

* COLOR : The picture is always displayed in color.

* BW : The White Balance is automatically adjusted in a specific environment.

* AUTO : The mode is automatically switches to COLOUR in normal conditions and switches to B/W mode

when ambient illumination is low. To set the switching time or speed in AUTO mode, press the SET button.

```
           DAY NIGHT AUTO


▶ DELAY              - - - - - - - 63
  S - LEVEL          - - - - - - - -100
  E - LEVEL          - - - - - - - -100
  RETURN               ↵
```
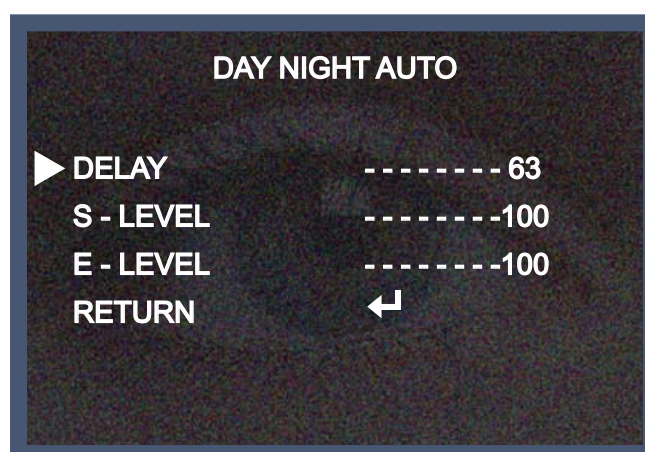
3. Select the desired mode and set the values by using the Left or Right button .

* DELAY : The range can be adjusted between 0 ~ 63.

* S - LEVEL : The start level can be adjusted between 0 ~ 100.

* E - LEVEL : The end level can be adjusted between 0 ~ 100.

3DNR

3DNR is used to reduce the level of background noise in a low luminance environment.

1. Move the arrow indicator to 3DNR by using the Up and Down button.

```
                    SETUP
    LENS            DC      ↵
    EXPOSURE                ↵
    WHITE BAL       ATW
    DAY / NIGHT     COLOR
  ▶ 3DNR            ON  ↵
    SPECIAL                ↵
    ADJUST                 ↵
    RESET                  ↵
    EXIT
```
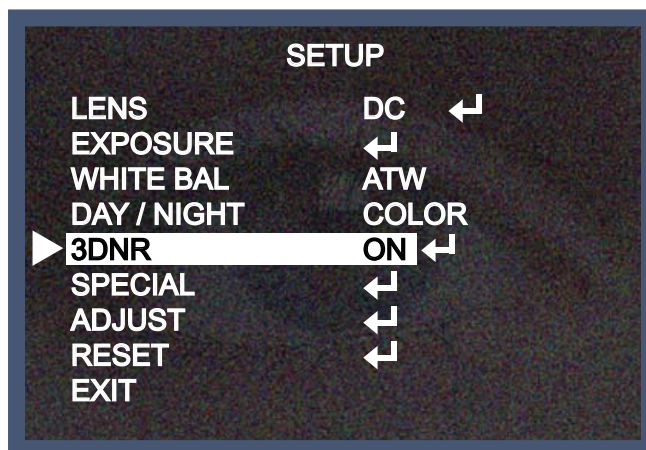
2. Select whether or not to activate 3DNR by using the Left and Right buttons.

* ON: Activates 3DNR - Digial noise reduction can be adjusted between 0 ~ 100.

* OFF: Deactivates 3DNR - noise is not reduced.

```
    3DNR


  ▶ LEVEL          - - - - - - - -100
    RETURN              ↵
```
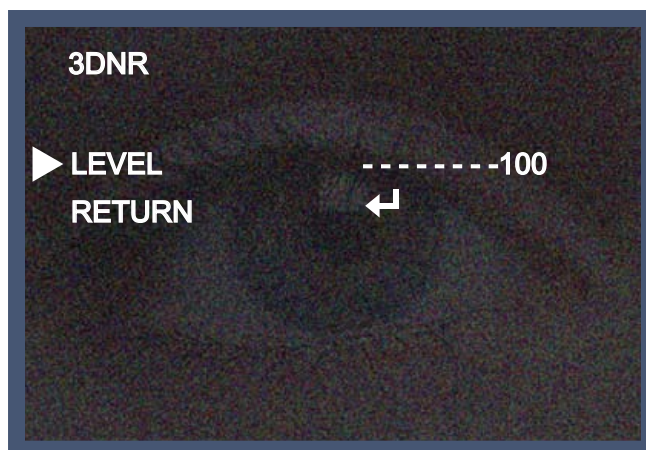
* Select RETURN by using the Up or Down button to return to Set Up menu.

Special

1. When the SETUP menu screen is displayed, select SPECIAL using the Up and Down buttons.

```
              SETUP
   LENS            DC    ↵
   EXPOSURE             ↵
   WHITE BAL       ATW
   DAY / NIGHT     COLOR
   3DNR            ON  ↵
 ▶ SPECIAL             ↵
   ADJUST             ↵
   RESET              ↵
   EXIT
```
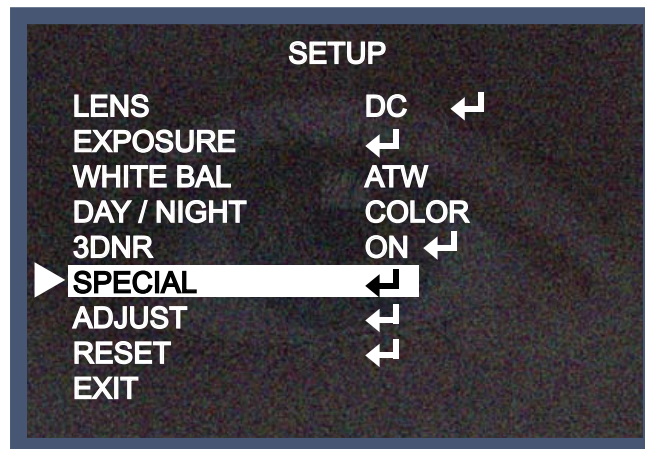
2. Select one of the mode using the Up and Down button.

```
   SPECIAL

 ▶ 1. CAM TITLE OFF      OFF
   2. D - EFFECT          ↵
   3. MOTION OFF         OFF
   4. PRIVACY OFF        OFF
   5. SYNC OFF           OFF
   6. RETURN             ↵
```
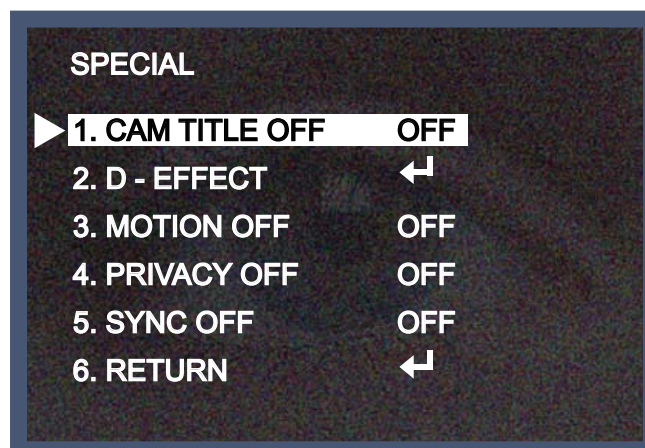
1. CAM TITLE : When input, the Camera ID is displayed on the monitor.

1-1) Move the arrow indicator to CAMERA ID using the Up or Down button on the SETUP menu screen.

1-2) Set to ON using the Left or Right button.

NOTE

* When CAMERA TITLE is set to OFF, the CAMERA TITLE is not displayed on the monitor.

3) Press the SETUP button.


```
            CAMERA TITLE

                0 1 2 3 4 5 6 7 8 9
        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
        ▷  →  ←  ↑  ↓  ( )  -
        —  _ □ / = & : ~ , .
        ←  →      CLR  POS  END
```

1-4) The CAMERA TITLE can be up to 15 alphanumeric characters in length.

① Move the cursor to choose an alphanumeric character.


```
            CAMERA TITLE

                0 1 2 3 4 5 6 7 8 9
        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
        ▷  →  ←  ↑  ↓  ( )  -
        —  _ □ / = & : ~ , .
        ←  →      CLR  POS  END
```

② Choose a character in displayed range A~Z, a~z, 0~9 using the Up, Down, Left and Right buttons.

③ Select the desired character by pressing the SETUP button.

- The cursor moves to the next position, after character input, by pressing the SETUP button.

④ Repeat the above steps until the Camera ID has been created.

NOTE

* In cases where the wrong Camera ID has been input........

Move the cursor to CLR and press SETUP button to erase characters from left to right, and repeat the above steps to input the characters again.

1-5) To select the position where the Camera ID should be displayed on the screen.

① Move the cursor to POS and press the SET button.

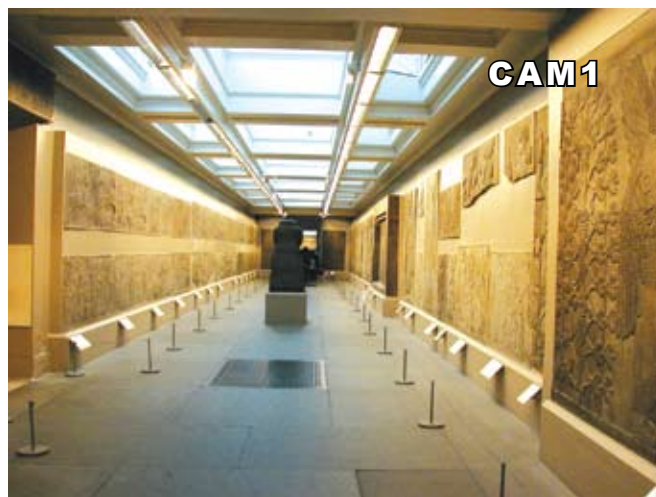CAMERA TITLE

```
        0 1 2 3 4 5 6 7 8 9
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
▷  →  ←  ↑  ↓  ( )  -
—  _ □  /  =  &  :  ~  ,  .
←  →        CLR  POS  END
```

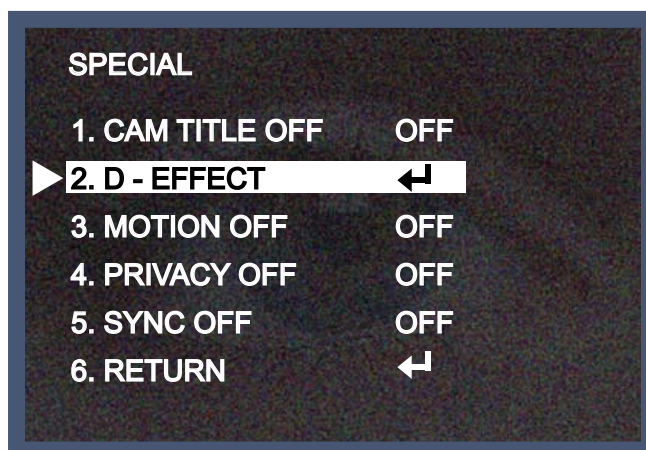② Created camera ID is displayed.

(Factory default position) ⟶ CAM1

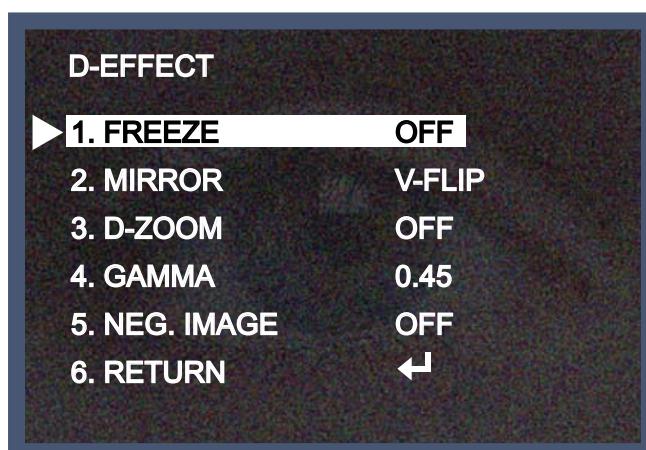③ Select a new position by using the four directional button, Press the SET button to confirm the position.

2) D - EFFECT

Move the cursor to D-EFFECT and press the SET button to set the other image functions.


```
SPECIAL

  1. CAM TITLE OFF      OFF
▶ 2. D - EFFECT           ↵
  3. MOTION OFF         OFF
  4. PRIVACY OFF        OFF
  5. SYNC OFF           OFF
  6. RETURN             ↵
```

2 -1) FREEZE : Image freezing or moving Image


```
D-EFFECT

▶ 1. FREEZE          OFF
  2. MIRROR          V-FLIP
  3. D-ZOOM          OFF
  4. GAMMA           0.45
  5. NEG. IMAGE      OFF
  6. RETURN          ↵
```

2 -2) MIRROR : Flip the image horizontally on the screen.


```
D-EFFECT

1. FREEZE          OFF
▶ 2. MIRROR        V-FLIP
3. D-ZOOM          OFF
4. GAMMA           0.45
5. NEG. IMAGE      OFF
6. RETURN          ↵
```
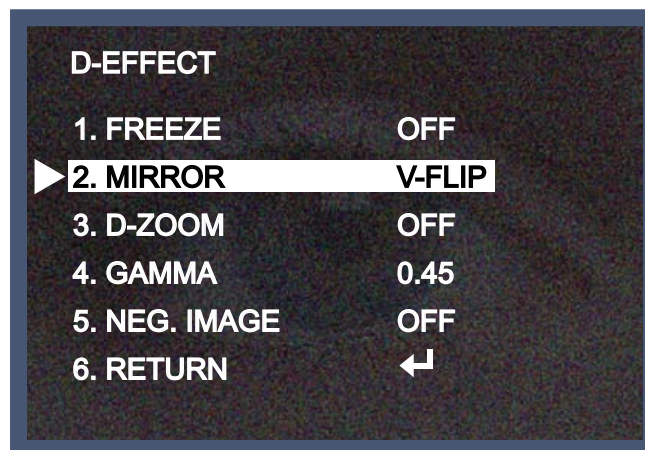
* V-FLIP : Flip the image vertically on the screen.

* ROTATE : Flip the horizontal image vertically on the screen.
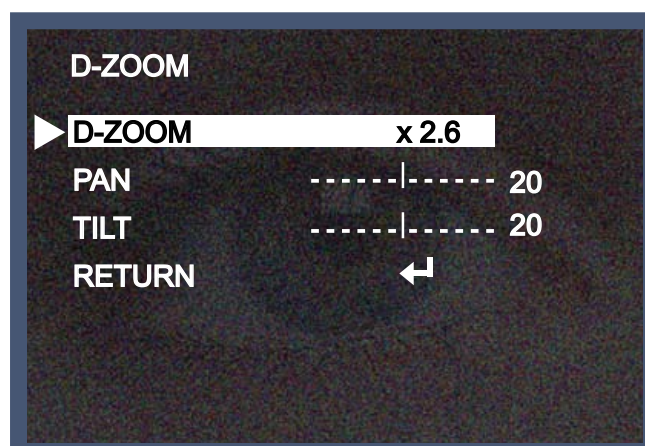
* OFF : Disabled.

MIRROR ON

MIRROR OFF

3) D - ZOOM: Digital zoom available, range x1 ~ x32.

PAN : The pan range can be controlled between -10 ~ + 100

TILT : The pan range can be controlled between -10 ~ + 100


```
D-ZOOM

▶ D-ZOOM            x 2.6
PAN        - - - - - | - - - - -  20
TILT       - - - - - | - - - - -  20
RETURN              ↵
```

NOTE

* PAN and TILT function should be available when using the digital zoom.

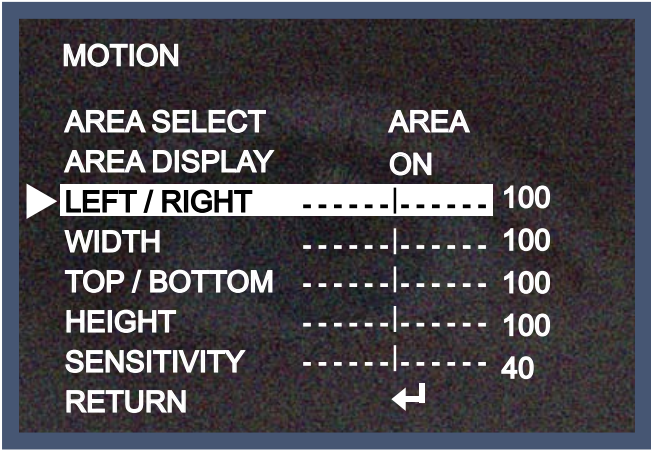2-4) GAMMA : Desired gamma values can be adjusted between 0.05 ~ 1.00.

2-5) NEG. IMAGE :

ON : Activates negative image just like film

OFF : Normal image

2-6) RETURN : Move the arrow indicator to RETURN after complete the setup to return to SPECIAL menu.

3. MOTION

3-1) When the special menu screen is displayed, use the Up or Down botton to access the MOTION menu.

① AREA SELECT : Determines whether the MD area selected AREA 1, 2, 3, 4.

② Move the arrow indicator to select the HEIGHT of cells to increase or decrease by using the Left / Right

button between the level 0 ~ 100.

③ Move the arrow indicator to the LEFT / RIGHT and TOP / BOTTOM to select the desired area positon by

using the LEFT or RIGHT button.

④ Move the arrow indicator to select the WIDTH of cells to increase or decrease by using the Left / Right
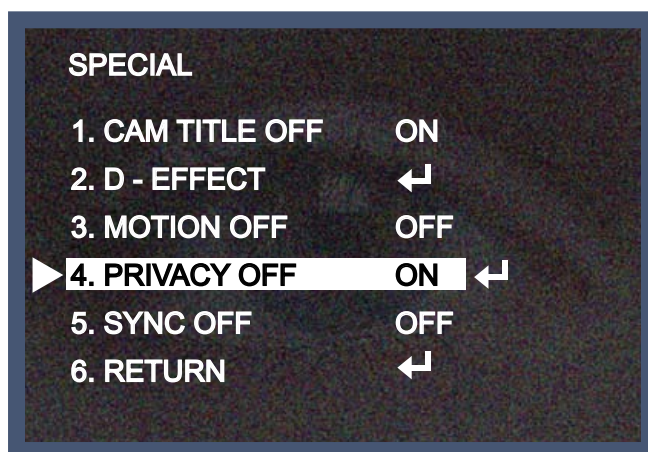
button between the level 0 ~ 100.

⑤ Move the arrow indicator to select the SENSITIVITY to increase or decrease by using the Left / Right

button between the level 0 ~ 40.

RETURN : Move the arrow indicator to RETURN after complete the setup to return to SPECIAL menu.
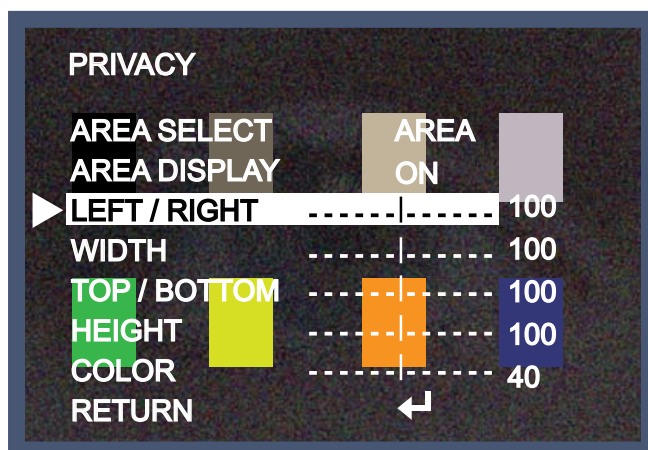
4. PRIVACY

Hide an area you want to hide on the screen.

4-1). When the SPECIAL menu screen is displayed, press the Up and Down buttons to set to PRIVACY.

4-2). Set up the area mode using the 4 direction buttons.

① AREA SELECT : You can select up to 8 MD area.

② AREA DISPLAY : OFF : Disabled

ON : Activates area display

③ Move the arrow indicator to WIDTH to make desired width of cells to increase or decrease by using the Left / Right button between the level 0 ~ 100.

④ Move the arrow indicator to HEIGHT to make desired height of cells to increase or decrease by using the Left / Right button between the level 0 ~ 100.

⑤ Move the arrow indicator to the LEFT / RIGHT and TOP / BOTTOM to select the desired area positon by using the LEFT or RIGHT button.

⑥ Move the arrow indicator to COLOR to select the desired color of each area cells by using the Left / Right button between the 15 different color.
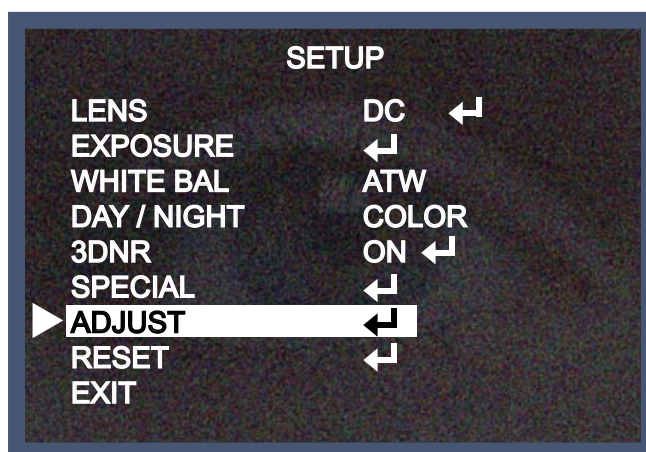
RETURN : Move the arrow indicator to RETURN after complete the setup to return to SPECIAL menu.

5) SYNC : INT (Internal Synchronisation)

Move the arrow indicator to RETURN after complete the setup to return to SETUP menu.

ADJUST

1. When the SETUP menu screen is displayed, select ADJUST using the Up and Down buttons.

```
                    SETUP
      LENS            DC    ↵
      EXPOSURE              ↵
      WHITE BAL       ATW
      DAY / NIGHT     COLOR
      3DNR            ON  ↵
      SPECIAL               ↵
    ► ADJUST                ↵
      RESET                 ↵
      EXIT
```

2. Select the desired mode by using Up or Down button..

```
                    ADJUST

  ▶ SHARPNESS        - - - - - - - -100
    BLUE             - - - - - - - -100
    RED              - - - - - - - -100
    RETURN                 ↵
```

SHARPNESS : Improving image clarity. The level can be adjusted to obtain an improved image. However,

when the level is set too high it can distort the image or cause noise.

* Select BLUE or RED to increase or decrease the value of R-Gain(RED) and B-Gain(BLUE) while monitoring

the color of the image.

RETURN :Move the arrow indicator to RETURN after complete the setup to return to SETUP menu.

RESET

Resets the camera settings to the factory defaults.

EXIT

Press the SET button in the EXIT menu to save the current settings and exit the SETUP menu.

Trouble Shooting

PROBLEM	POSSIBLE CAUSE
Northing appears on the screen.	☞Check the power cable, power supply output and video connection between the camera and monitor.
The image on the screen is dim.	☞Are the camera lens or the lens glass dirty? 　Clean the lens / glass with a soft clean cloth. ☞Adjust the monitor controls, as required. ☞If the camera is facing a very strong light, change the camera position. ☞Adjust the lens focus.
The image on the screen is dark.	☞Adjust the contrast control of the monitor. ☞If there is an intermediate device, correctly set the 75Ω/Hi-z.
The camera is not working properly and the surface of the camera is hot.	☞Check the camera is correctly connected to an appropriate regulated power source.
Motion Detection is not activated.	☞Has MOTION DET been set to ON in the menu? ☞Has MD AREA been properly defined?
The color of the picture is not correct.	☞Check the settings in WHITE BALANCE menu.
The image on the screen flickers.	☞Make sure that the camera isn't facing direct sunlight or fluorescent lighting. If necessary,change the camera position.
The SENS-UP does not work.	☞Check that the AGC setting in the EXPOSURE menu is't set to OFF. ☞Check the EXPOSURE menu and make sure SHUTTER is set to------.

-MEMO-