High Resolution
Super DNR
WDR
Dome Camera
User's Manual

(DC12V Only)
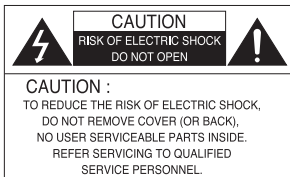
INFORMATION - This equipment has been tested and found to comply with limits for a Class A digital device, pursuant to part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
This equipment 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 fire hazards:

◆ Do NOT use power sources 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.

■ Features

Ultra High Resolution

By adopting a double-speed 410,000 pixel Sony CCD, the camera produces clear picture quality with a horizontal resolution of 560 TV lines for color, and 700 TV lines for B/W.

Excellent Sensitivity

Adopting a Diagonal 6mm (1/3"), highly sensitive CCD and digital signal processing technology, it can clearly distinguish the outline and color of a subject in an extremely low luminance environment . even, for example, under starlight. Since surveillance is possible in places where the light is poor, the camera is appropriate for day and night surveillance outdoors or on the outside of buildings.

DNR (Digital Noise Reduction)

The amount of low illuminance noise has been significantly reduced, and the signal-to-noise ratio (S/N ratio) as well as horizontal resolution have been improved, resulting in a clear and sharp image display even in the dark.

PRIVACY Function

The PRIVACY function conceals the areas you do not wish to appear on the screen.

Wide Dynamic Range(WDR)

The camera delivers clear, high quality pictures even in backlight, by increasing exposure in dark areas while decreasing it in bright areas a corrected image with clear details results.

Day & Night

The camera identifies whether it is day or night and automatically switches to the appropriate mode, depending on its environment. By day, the camera switches to color mode in order to maintain optimal color. At night, it switches to B/W mode so as to obtain better picture definition.

DIS (Digital Image Stabilizer)

The DIS function compensates for any camera movement, to produce more stable pictures.

Controlled by OSD Menu

The camera can be controlled by selecting text displayed on the monitor screen.

Additional Functions

SENS-UP, MOTION DETECTION, MIRROR, SHARPNESS and SYNC (INT/LL) functions are also available.

The camera needs periodic inspection.

Contact an authorized technician for inspection.

Stop using your camera when you find a malfunction.

If you use your camera around smoke or unusual heat for a long time, fire may be caused.

Do not Install the camera on a surface that can not support it.

Unless the surface is suitable, it could cause falling or other hazards.

Do not hold plug with wet hands.

It could cause an electric shock.

Do not disassemble the camera.

It may result in fire, electric shock or other hazards.

Do not use the camera close to a gas or oil leak.

It may result in fire or other hazards.

WDR Color Dome

3

■ Contents

WDR Color Dome

4

WDR Color Dome

■ 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 when operating under high temperatures.

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

It can cause the image quality to be poor.

Do not install the camera under unstable lighting conditions.

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

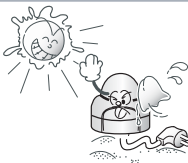**Do not touch the front lens of the camera.**

It is one of the most important parts of the camera. Be careful not to be stained by fingerprint.

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

It can cause malfunctions to occur.

Never keep the camera face to strong light directly.

It can damage the CCD.

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

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

Do not expose the camera to radioactivity.

If it is exposed to radioactivity, For heated CCD, it will be out of order.

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.

① **LENS : Vari-Focal Auto Iris Lens**
   (F1.2, 4.0mm ~ 9.0mm) (F1.2, 2.8mm ~ 11mm)
   Fixed Lens
   (3.6mm, 4mm, 6mm)

42

42

(unit : mm)

② **OSD PCB**

UP

SET

LEFT

RIGHT
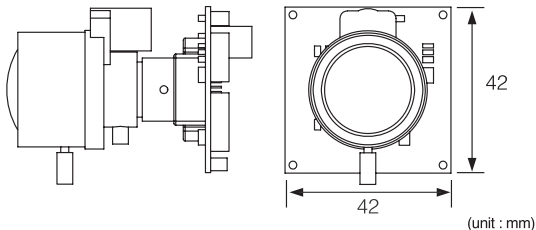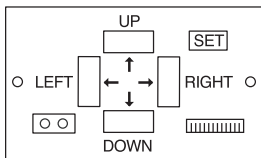
DOWN

● **SETUP button** : Used for the menu display. This button can be used to confirm settings after changing the value of the selected function or current conditions.

● **UP & DOWN buttons** : Used for selecting items by moving the cursor up or down on the menu screen.

● **LEFT & RIGHT buttons** : Used when changing item values, by moving the cursor to the left or right on the menu screen.

③ VBS-EXTRA FOR CONNECTING TO LCD Monitor

Please use the supplied wire when connecting to LCD Monitor
This enables installers to see the video output through a portable
monitor at the sight .

VBS-EXTRA
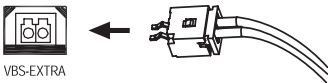
④ SMPS PCB FOR DUAL POWER (option)

WDR Color Dome

9

Dome Base

Housing screw
8 * 38 FZY
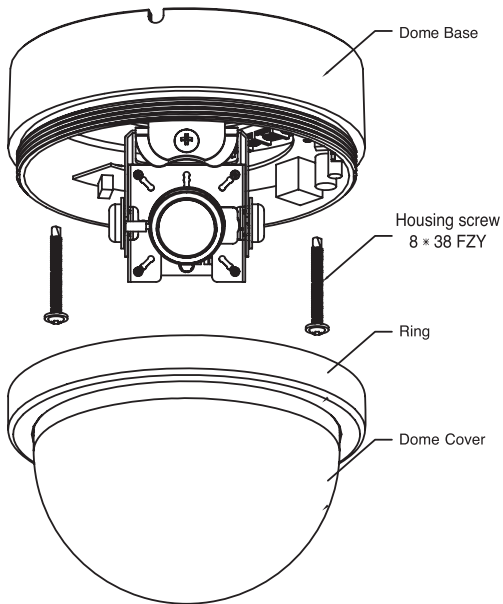
Ring

Dome Cover

1. Dome Base Mounting

- Open the dome cover by unscrewing the ring.
- Mount the base of camera to a sturdy surface using 2 screws and 2 premade holes on the base of the dome.

2. Power Connect & Monitor Impedance

- DC 12V/500mA regulated power supply (DC12V only)
- AC24V Class 2 power supply(AC24V/DC12V-option)
- To avoid fire or shock hazard, must use a UL listed power supply.
- Set the monitor impedance switch to 75Ω. Check the impedance switch when the screen turns blurred.

3. Camera Module Adjustment

- Loosen screws for 3-axis camera bracket and adjust the direction and angle of camera.
- Make sure to retighten the screws for camera bracket.
- Set any function you wish to activate by using the OSD buttons.

4. Dome Cover Mounting

- Replace the dome cover to the base and tighten the ring.

Cable Connection ■
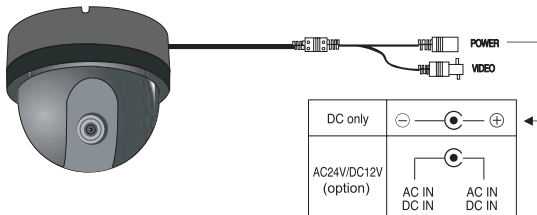
DC only	⊖ ──●── ⊕
AC24V/DC12V (option)	● AC IN AC IN DC IN DC IN

■ Menu

	Setup Menu		
LENS	• DC	• VIDEO	• MANUAL
EXPOSURE	• SHUTTER • RETURN	• AGC	• SENS-UP
WHITE BALANCE	• ATW • OUTDOOR	• MANUAL • INDOOR	• AWC SET
BACKLIGHT	• OFF	• WDR	• HLC
DNR	• ON • OFF		
DAY/NIGHT	• COLOR • EXTERN	• B/W	• AUTO
IMAGE ADJUSTMENT (IMAGE ADJ.)	• FREEZ • D-ZOOM • RETURN	• V-REV • SHARPNESS	• H-REV
SPECIAL	• CAMTITLE • PRIVACY • LANGUAGE	• SYNC • DIS • RESET	• MOTION DET • COMM ADJ • RETURN
EXIT			

■ Settings

Settings can be made using the 5 buttons located in the camera.

```
                    UP
                  ┌──────┐    ┌─────┐
                  │      │    │ SET │
        ┌──┐      └──────┘    └─────┘
  ○ LEFT│  │   ↑                      RIGHT  ○
        │  │ ← → →
        └──┘   ↓
        ┌─────┐ ┌──────┐  ┌─────────┐
        │ ○ ○ │ │      │  │▏▏▏▏▏▏▏▏▏│
        └─────┘ └──────┘  └─────────┘
                   DOWN
```
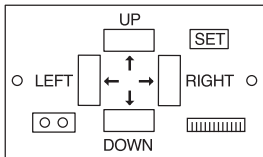
1. Press the SET button.
   * Main setup menu is displayed on the monitor screen.

```
                MAIN SETUP
     ▶ 1. LENS            DC ◢
       2. EXPOSURE ◢
       3. WHITE BAL       ATW
       4. BACKLIGHT       OFF
       5. DNR             ON ◢
       6. DAY/NIGHT       AUTO ◢
       7. IMAGE ADJ ◢
       8. SPECIAL ◢
       9. EXIT
```
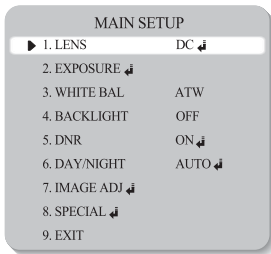
2. Select a desired function using the Up and Down buttons.
   * Place the cursor over a desired item.

■ Camera Operation

Select the function using the UP or DOWN button.

	MAIN SETUP	
▶ 1. LENS	DC ◢	
2. EXPOSURE ◢		
3. WHITE BAL	ATW	
4. BACKLIGHT	OFF	
5. DNR	ON ◢	
6. DAY/NIGHT	AUTO ◢	
7. IMAGE ADJ ◢		
8. SPECIAL ◢		
9. EXIT		

Change the status using the LEFT or RIGHT button.
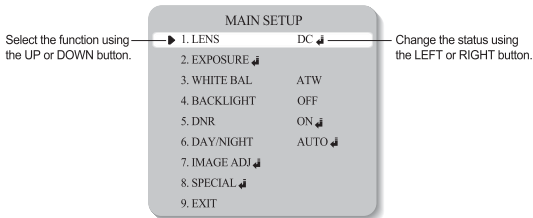
3. Set up a selected item by using the Left and Right buttons.

4. To finish the setting, select 'EXIT' and press the SET button.

Note

• An item with the ◢ icon also has sub menus. To select a sub menu, select an item with the icon and press the SET button.

• An item with the - - - icon is unavailable due to function settings.

LENS

Using this function, you can control screen brightness.

1. When the SETUP menu screen is displayed, select LENS by using the Up and Down buttons so that the arrow indicates LENS .

2. Select the connected lens type by using the Left and Right buttons.

```
              MAIN SETUP
    ▶ 1. LENS            DC ↵
      2. EXPOSURE ↵
      3. WHITE BAL       ATW
```
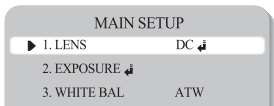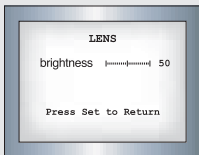
● DC/Video : Select Auto Iris Lens

 * When DC is selected, you can control screen brightness. The range
   of brightness control is between 1 and 70.
   Adjust the brightness appropriately for optimal screen brightness.

● Manual : Select Manual Lens

┌─ Note ──┐

• The brightness of the screen can be adjusted in DC mode. The brightness
  can be adjusted within the range of 1 ~ 70. The optimum level of brightness
  for the user can be achieved by adjustment.

• If you select the MANUAL mode, it can be adjusted in ESC mode.

```
                    LENS
        brightness  |———————| 50


            Press Set to Return
```

└──┘

WDR Color Dome

15

3. Please press the SETUP button if you wish to return to the previous menu

EXPOSURE

MAIN SETUP

1. LENS   DC
▶ 2. EXPOSURE
3. WHITE BAL   ATW
4. BACKLIGHT   OFF
5. DNR   ON
6. DAY/NIGHT   AUTO
7. IMAGE ADJ
8. SPECIAL
9. EXIT

WDR Color Dome
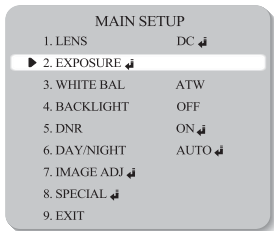
1. When the SETUP menu screen is displayed, select EXPOSURE by using
   the Up and Down buttons so that the arrow indicates EXPOSURE .
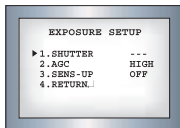2. Select a desired mode using the Up and Down buttons.

16

EXPOSURE SETUP

▶ 1.SHUTTER   - - -
  2.AGC   HIGH
  3.SENS-UP   OFF
  4.RETURN

● SHUTTER : You can select either auto or manual shutter.
  - A.FLK : Select this when you experience picture flicker, which can happen
            when there is a clash with the frequency of the installed lighting.
  - ESC : Select this to control the shutter speed automatically. If ESC is selected,
          the shutter speed is automatically controlled depending on the ambient
          illumination of the subject.
  - MANUAL : You can control shutter speed manually.

Note

- When the SHUTTER is set to ESC after selecting the Internal Synchronization Type, the picture may become unstable if the camera faces a bright fluorescent light. Therefore, take care when choosing the installation position.

- ESC and MANUAL modes are only available together when the lens is set to MANUAL.

- When the SHUTTER is set to MANUAL or A.FLK mode, SENS-UP will be disabled.

● AGC (AUTO GAIN CONTROL):
   The higher the gain level, the brighter the screen - but the higher the noise.
   - OFF : Deactivates the AGC function.
   - LOW : Allows automatic gain control from 0 to 24dB.
   - HIGH : Allows automatic gain control from 0 to 42dB.

● SENS-UP :
   When it is night or dark, the camera automatically detects the light level and maintains a clear picture if this mode is activated.
   - OFF : Deactivates the SENS-UP function.
   - AUTO : Activates the SENS-UP function.

```
            LIMIT

  ▶AUTO            X2



  Press SET to Return
```
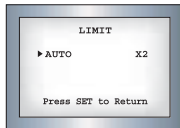
● RETURN :
   Select this to save the changes in the EXPOSURE menu and return to the SETUP menu.
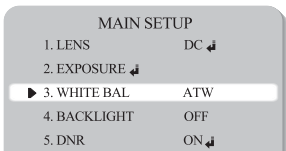

Note

- If you press the SET button in 'AUTO' mode, You can adjust brightness by increasing or decreasing the shutter speed. (X2~X256)
- Note that the higher the zoom level, the brighter the screen, but the more likely it is that an after-image will appear.
- Although Noise, Spots, and Whitish symptoms may occur in SENS-UP operation when the zoom level is increased, this is normal.
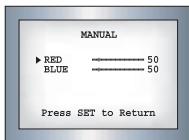
White Balance (White Bal.)

Use the White Balance function to adjust the screen color.
1. When the SETUP menu screen is displayed, select 'White Bal.' by using the Up and Down buttons so that the arrow indicates 'White Bal.'
2. Select a desired mode using the Up and Down buttons.

```
                    MAIN SETUP
         1. LENS            DC ◢
         2. EXPOSURE ◢
       ▶ 3. WHITE BAL       ATW
         4. BACKLIGHT       OFF
         5. DNR             ON ◢
```

※ Select one of the following 5 modes, as appropriate for your purpose.

● ATW : Select this when the color temperature is between 1800°K and 10500°K

● INDOOR : Select this when the color temperature is between 4500°K and 8500°K.

● OUTDOOR : Select this when the color temperature is between 1800°K and 10500°K. (sodium light inclusion)

● AWC → SET : To find the optimal setting for the current luminance environment in this mode, set the point the camera towards a sheet of white paper and press the SET button. If the environment changes, readjust it.

● MANUAL : Select this to fine-tune White Balance manually. Set White Balance first by using the ATW or AWC mode. After that switch to MANUAL mode, fine-tune the White Balance and then press the SET button.
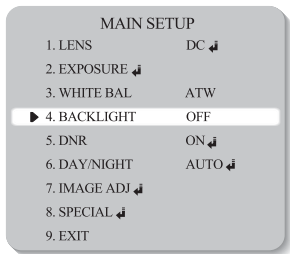
```
                  MANUAL
       ▶ RED    ▬▬▬▬━▬▬▬▬  50
         BLUE   ▬▬▬▬━▬▬▬▬  50


         Press SET to Return
```

WDR Color Dome

18

- White Balance may not work properly under the following conditions. In this case select the AWC mode.
① When the color temperature of environment surrounding the subject is out of the control range (e.g. clear sky, or sunset)
② When the ambient illumination of the subject is dim.
③ If the camera is directed towards a fluorescent light or is installed in a place where illumination changes dramatically, the White Balance operation may become unstable.

BACKLIGHT

This camera is designed so that it delivers a distinctive subject and background at the same time, even when the subject is in backlight, unlike conventional cameras, by adopting a proprietary SV-IV DSP chip.

1. When the SETUP menu screen is displayed, select 'BACKLIGHT' by using the Up and Down buttons so that the arrow indicates 'BACKLIGHT' .

```
              MAIN SETUP
         1. LENS          DC ◄
         2. EXPOSURE ◄
         3. WHITE BAL     ATW
       ▶ 4. BACKLIGHT     OFF
         5. DNR           ON ◄
         6. DAY/NIGHT     AUTO ◄
         7. IMAGE ADJ ◄
         8. SPECIAL ◄
         9. EXIT
```
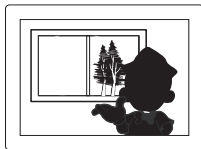
2. Select a desired mode using the Left and Right buttons depending on the camera purpose.

● WDR : When there are both bright and dark areas at the same time, this mode makes both areas distinctive.
● OFF : Deactivates the WDR function.
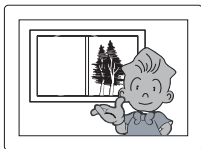
| WDR | OFF |

● BLC : Enables a user to directly select a desired area from a picture, and to view the area more clearly.

3. Select a desired mode using the Left and Right buttons and press the SET button.
  • Select WDR to adjust the WDR LIMIT. Select LOW, MIDDLE, or HIGH.


```
        WDR LIMIT

▶ LIMIT        MIDDLE
```
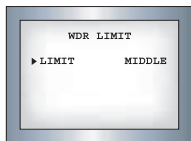
  • Select 'BLC' to adjust the area to be enhanced by the WDR function.


```
          BLC SETUP

▶ TOP      ═══════ 27
  BOTTOM   ═══════ 82
  LEFT     ═══════ 42
  RIGHT    ═══════ 126
  LEVEL           MIDDLE
     Press SET to Return
```
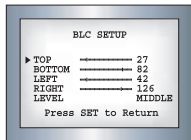
Note

- You cannot use the WDR mode when MANUAL or A.FLK mode in 'SHUTTER' menu is selected.
- Since the following symptoms may occur according to the ambient illumination when WDR is selected, set it to OFF.
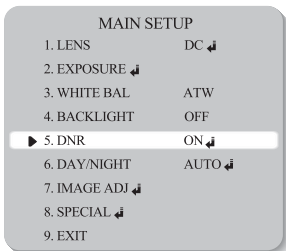 ① Color or screen changes unnaturally.
  ② Noise appears in the bright part of the screen.
- Since the performance of the WDR function may be affected by the area of the bright part of the screen, optimize the installation angle for the best WDR performance.
- If you increase LIMIT, the screen display may be distorted.
- For high performance of WDR function, using DC Iris lens rather than manual lens is recommended.

DNR

This function reduces the background noise in a low luminance environment.

1. When the SETUP menu screen is displayed, select íDNRí by using the Up and Down buttons so that the arrow indicates íDNRí .

```
                   MAIN SETUP
        1. LENS              DC ◄┘
        2. EXPOSURE ◄┘
        3. WHITE BAL        ATW
        4. BACKLIGHT        OFF
      ▶ 5. DNR              ON ◄┘
        6. DAY/NIGHT        AUTO ◄┘
        7. IMAGE ADJ ◄┘
        8. SPECIAL ◄┘
        9. EXIT
```

2. Select a desired mode using the Left and Right buttons.
   - OFF : Deactivates DNR. Noise is not reduced.
   - ON : Activates DNR so that noise is reduced.

3. Set the DNR mode to ´ON´ and press the SET button. Then you can adjust the noise reduction level.

```
            SSNR
  ▶ LEVEL  ━━━━━━━ 11


      Press SET to Return
```
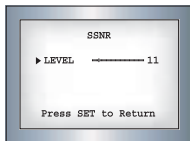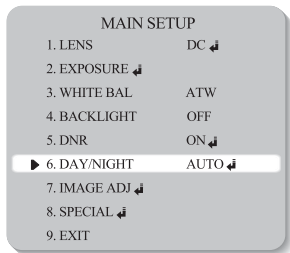
Note

- You cannot set the DNR to ´ON´ or ´OFF´ when the AGC mode of the EXPOSURE menu is ´OFF´.
- When adjusting the noise reduction level of the DNR mode, remember that the higher the level set, the more the noise level will be reduced but that after image may also occur.

DAY/NIGHT

You can display pictures in color or black and white.

1. When the SETUP menu screen is displayed, select ´DAY/NIGHT´ by using the Up and Down buttons so that the arrow indicates DAY/NIGHT .

```
              MAIN SETUP
      1. LENS            DC
      2. EXPOSURE
      3. WHITE BAL       ATW
      4. BACKLIGHT       OFF
      5. DNR             ON
    ▶ 6. DAY/NIGHT       AUTO
      7. IMAGE ADJ
      8. SPECIAL
      9. EXIT
```

2. Select a desired mode using the Left and Right buttons according to the picture display you want.

- COLOR : The picture is always displayed in color.
- B/W : The picture is always displayed in black and white.
- AUTO : The mode is switched to Color in a normal environment, but switches to B/W mode when ambient illumination is low. To set up the sswitching time or speed for AUTO mode, press the SET button.

```
           AUTO SETUP

  ▶ DWELL TIME      10 SEC
    DURATION        FAST


    Press SET to Return
```
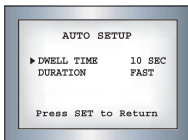
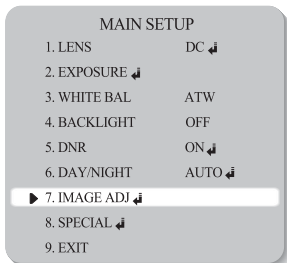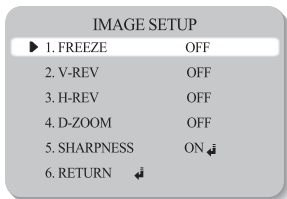- EXTERN: This mode allows you to apply a desired filter to external signals.

Note

- When using a Video Auto Iris Lens, if you set the lens level to low, automatic switching between Color and Black & White may not occur.
- You cannot control the DAY/NIGHT menu when AGC in the EXPOSURE menu is 'OFF'.
  At this time, the exchange between DAY mode and NIGHT mode operates as like selecting 'COLOR' mode.
- The OSD key does not work for 3 seconds when switching to Color or B/W, to ensure stable camera operation.
- The camera may focus less well under infrared illumination than under normal illumination.
- Since the camera may not focus as well under infrared illumination at night as it does under normal illumination, install an Extra-low Dispersion Lens to obtain sharp pictures.

IMAGE ADJ.

1. When the SETUP menu screen is displayed, select 'IMAGE ADJ.' by using the Up and Down buttons so that the arrow indicates IMAGE ADJ.

```
              MAIN SETUP
        1. LENS           DC ◢
        2. EXPOSURE ◢
        3. WHITE BAL      ATW
        4. BACKLIGHT      OFF
        5. DNR            ON ◢
        6. DAY/NIGHT      AUTO ◢
      ▶ 7. IMAGE ADJ ◢
        8. SPECIAL ◢
        9. EXIT
```

2. Select a desired mode using the Up and Down buttons.

```
              IMAGE SETUP
      ▶ 1. FREEZE         OFF
        2. V-REV          OFF
        3. H-REV          OFF
        4. D-ZOOM         OFF
        5. SHARPNESS      ON ◢
        6. RETURN         ◢
```

- FREEZE : You can view still or moving pictures.
- V-REV : You can flip the picture vertically on the screen.
- H-REV : You can flip the picture horizontally on the screen.

● D-ZOOM : You can use a digital zoom of x1~x10.

```
            D-ZOOM

  ▶ LEVEL  ━━━┿━━━━━  0



  Press SET to Return
```

● SHARPNESS : As you increase this value, the picture outline becomes
              stronger and clearer. Adjust this value appropriately
              depending on the sharpness of the picture.

```
           SHARPNESS

  ▶ LEVEL  ━━━━┿━━  12



  Press SET to Return
```
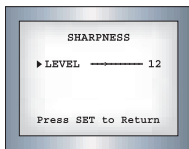
● RETURN : Select this to save the settings for the IMAGE ADJ. menu
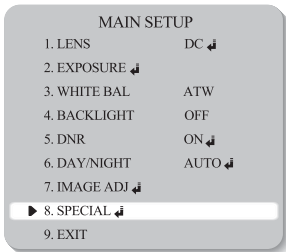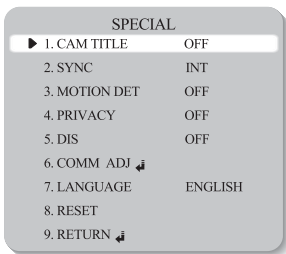   and to return to the SETUP menu.

Note

• When H-REV or V-REV is selected, any text in the picture also will
  be flipped horizontally or vertically.
• If you increase the SHARPNESS level too high, the picture may
  become distorted or noise may appear.

SPECIAL

1. When the SETUP menu screen is displayed, select 'SPECIAL' by using the Up and Down buttons so that the arrow indicates 'SPECIAL'.

```
                MAIN SETUP
        1. LENS              DC ◄┚
        2. EXPOSURE ◄┚
        3. WHITE BAL        ATW
        4. BACKLIGHT        OFF
        5. DNR              ON ◄┚
        6. DAY/NIGHT        AUTO ◄┚
        7. IMAGE ADJ ◄┚
      ▶ 8. SPECIAL ◄┚
        9. EXIT
```

2. Select a desired mode using the Up and Down buttons.

```
                 SPECIAL
      ▶ 1. CAM TITLE        OFF
        2. SYNC             INT
        3. MOTION DET       OFF
        4. PRIVACY          OFF
        5. DIS              OFF
        6. COMM  ADJ ◄┚
        7. LANGUAGE         ENGLISH
        8. RESET
        9. RETURN ◄┚
```

- CAM TITLE : If you enter a title, the title will appear on the monitor.
  ① If the SPECIAL menu screen is displayed, use the Up and Down buttons so that the arrow indicates 'CAM TITLE'.
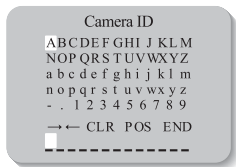
② Set it to 'ON' by using the Left and Right buttons.

SPECIAL	
▶ 1. CAM TITLE	OFF
2. SYNC	INT
3. MOTION DET	OFF
4. PRIVACY	OFF
5. DIS	OFF
6. COMM ADJ ◀	
7. LANGUAGE	ENGLISH
8. RESET	
9. RETURN ◀	

③ Press the SET button.

```
        Camera ID
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
- .  1 2 3 4 5 6 7 8 9
→ ←  CLR  POS  END

_ _ _ _ _ _ _ _ _ _ _ _ _
```

④ Use the 4 direction buttons to move to a desired letter and select the letter by pressing the SET button. Repeat this to enter multiple letters. You can enter up to 15 letters.

WDR Color Dome

27

⑤ Enter a title, move the cursor to 'POS' and press the SET button. The entered title appears on the screen. Select the position to display the title on the screen by using the 4 direction buttons and press the SET button. When the position is determined, select íENDí and press the SET button to return to the SPECIAL menu.

● SYNC : In areas where the supply is at 60Hz, you can synchronize the output phase of multiple cameras using the power synchronization function (Line-Lock) without using a synchronization signal generator.
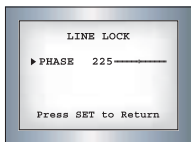
- INT : Internal Synchronization Type
- L/L : Power Synchronization Type, Line-lock
• Press the SET button.
• You can select a desired phase between 0 and 359.

LINE LOCK

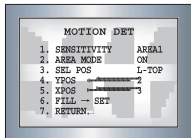▶ PHASE   225———

Press SET to Return

🔖 Note

• When using AC power at 60Hz frequency, you can use the L/L type synchronization.
• When the power is DC 12V, the SYNC. menu is fixed to the 'INT' mode.

● MOTION DET:
If you connect an alarm device to this camera, you can monitor activity more efficiently, because a signal is generated by the camera whenever motion is detected. The motion detection signal is output through the MD OUT port.

MOTION DET
1. SENSITIVITY   AREA1
2. AREA MODE   ON
3. SEL POS   L-TOP
4. YPOS ———   2
5. XPOS ———   2
6. FILL → SET
7. RETURN

① When the SPECIAL menu screen is displayed, press the Up and Down buttons so that the arrow indicates MOTION DET .

② Set up the mode using the 4 direction buttons.

- SENSITIVITY : You can select up to 8 MD areas. When SENSITIVITY number is high, motion detection sensitivity is increased to recognize even small movement.

- AREA MODE : Determines whether to use the MD area selected in SENSITIVITY.

- SEL POS : Determines which of the 4 vertices of each MD area is to be used.

- YPOS : Determines the coordinate of the vertical axis for SEL POS.

- XPOS : Determines the coordinate of the horizontal axis for SEL POS.

- FILL→SET : Fills in a selected MD area. Fills in a selected MD area. The color of filling is sequentially selected as brown, orange, blue, cyan, yellowish green, yellow and red.

- RETURN : Select this to save the MOTION DET menu settings and return to the SPECIAL menu.
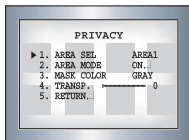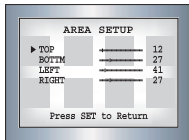
🖈 Note

• MD areas show only MOTION DET menu. Therefore, MD areas donít display on the monitor screen.

● PRIVACY : Hide an area you want to hide on the screen.

① When the SPECIAL menu screen is displayed, press the Up and Down buttons so that the arrow indicates 'PRIVACY'.

```
        PRIVACY
▶ 1. AREA SEL      AREA1
  2. AREA MODE     ON.┘
  3. MASK COLOR    GRAY
  4. TRANSP.         0
  5. RETURN.┘
```
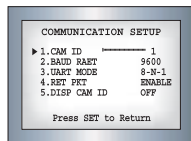
① Set up the mode using the 4 direction buttons.

- AREA SEL : You can select up to 8 areas.

- AREA MODE :
  Determines whether to use the area selected in the AREA SEL, and the size and position of the area.

```
        AREA  SETUP
▶ TOP    ━━━━━━━      12
  BOTTM  ━━━━━━━      27
  LEFT   ━━━━━━━      41
  RIGHT  ━━━━━━━      27

  Press SET to Return
```

- MASK COLOR : Determine area color. You can select Gray, Green, Red, Blue, Black, White.
- TRANSP : Determine the transparency of selected area as controlling number from 0 to 3.
- RETURN : Select this to save the PRIVACY menu settings and return to the SPECIAL menu.

● DIS (Digital Image Stabilizer) :
   This function mitigates any picture movement due to external factors such as wind.

● COMM ADJ (Communication Adjustment) :
   This function sets up the camera communication
   status when controlling the camera through an
   external control device.

```
    COMMUNICATION SETUP
►1.CAM ID          ━━━━━  1
 2.BAUD RAET          9600
 3.UART MODE         8-N-1
 4.RET PKT          ENABLE
 5.DISP CAM ID         OFF

   Press SET to Return
```

   ① When the SPECIAL menu screen is displayed, press the Up and Down buttons so that the arrow indicates 'COMM ADJ'.
   ② Set up the mode using the 4 direction buttons.
      - CAM ID : Determines the camera's identification number (between 0 and 255).
      - BAUD RATE : You can select 2400/4800/9600/19200/38400/57600 bps.
      - UART MODE : You can select NONE, EVEN or ODD for the parity bits.
      - RET PKT : Determines whether to send a command back to the controller device when a communication control command is sent to the camera.
      - DISP CAM ID : Display camera title on top left corner of the screen.

● LANGUAGE : You can select the menu language according to your requirements.

● RESET : Resets the camera settings to the factory defaults.

● RETURN : Select this to save the SPECIAL menu settings and return to the SPECIAL menu.

EXIT

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

If you have trouble operating your camera, refer to the following table.
If the guidelines do not enable you to solve the problem, contact an
authorized technician.

Problem	Solution
Nothing appears on the screen.	• Check that the power cord and line connection between the camera and monitor are fixed properly. • Check that you have properly connected VIDEO cable to the camera VIDEO output jack.
The image on the screen is dim.	• Is lens stained with dirt? Clean your lens with soft, clean cloth. • Set the monitor to proper condition. • If the camera is exposed to too strong light, change the camera position.
The image on the screen is dark.	• Adjust the contrast feature of the monitor. • If you have an intermediate device, set the 75 / Hi-z properly.
The camera is not working properly, and the surface of the camera is hot.	• Check that you have properly connected the camera to an appropriate power source.
The DAY/NIGHT menu does not work.	• Check that AGC of EXPOSURE SETUP menu is 'OFF'.
The SENS-UP function does not work.	• Check that AGC of EXPOSURE SETUP menu is 'OFF'. • Check that SHUTTER of EXPOSURE SETUP menu is 'A.FLK' or 'MANUAL'.

WDR Color Dome

31

■ Troubleshooting

Problem	Solution
The Motion Detection function does not work.	• Check that MOTION DEF of SPECIAL SETUP menu is 'OFF'.
Color is not correct.	• Check the setting of WHITE BAL SETUP menu .
The screen flickers continually.	• Check that direction of camera turns toward the Sun.
RS-485 (option) communication fails.	• Check the polarity between RS-485 Control Port and RS-485 cable.

485 Control Board Connection Port	RS-485 Control Port
(+) CONNECTION TERMINAL (TRX+)	485+
(–) CONNECTION TERMINAL (TRX–)	485–

• Check the RS-485 Communication establishment initial value

∗ RS-485 Communication establishment initial value

Item	Camera ID	BAUD RATE	UART MODE	PET PKT
Initial value	1	9600	8-NONE-1	ENABLE

		NTSC	PAL
POWER	Input Voltage	DC12V	
	Power Consumption	4.0W	
CCD	Size	Diagonal 6mm (1/3") Sony Highly Sensitive CCD	
	Total Pixels	811(H) x 508(V)	795(H) x 596(V)
	Effective Pixels	768(H) x 494(V)	752(H) x 582(V)
Sync	Scanning System	2:1 Interlace	
	Synchronization	Internal / Line Lock	
	Frequency	Horizontal : 15.734 KHz, Vertical:59.94 Hz	Horizontal : 15.625 KHz, Vertical:50.00 Hz
O.S.D		Korean, English, Japanese, Spanish	English, French, Germany, Spanish, Italy, Chinese
E L E C T R I C A L	Back-light Comp.	OFF/BLC/HLC	
	Resolution	Color : 560 TV Lines ↑ B/W : 600 TV Lines ↑	
	S/N (Y signal)	52 dB (AGC Off, Weight ON)	
	Min. Illumination	0.15Lux(40IRE Color), 0.03Lux(40IRE B/W), 0.001Lux(40IRE Sense-upX256) at F1.2	
	White Balance	ATW / AWC / Manual /Outdoor / Indoor (1800°K ~10,500°K)	
	Electronic Shutter Speed	1/60 ~ 1/120,000 sec	1/50 ~ 1/120,000 sec
	Sens-up	AUTO / OFF (Selectable x2 ~ x256)	
	Gain Control	LOW / HIGH / OFF	
	DNR	ON / OFF (1~32 Level)	
	Motion Detection	ON / OFF (8 Zone, ALARM Output)	
	PRIVACY	ON/OFF (8 Zone)	
	V-REV	ON / OFF	
	H-REV	ON / OFF	
	FREEZE	ON / OFF	
	SHARPNESS	ON/OFF (Level Adjustable)	
	Lens	DC Auto Iris Lens	
	Day & Night	COLOR / Black& White/AUTO/EXT	
	DIS	OFF / ON	
	Digital Zoom	OFF / ON(x10)	
	Blemish Compensation	256 point (Even 128 Point, Odd 128 Point)	
Operating temperature / Humidity		-10°C to +50°C / 30% to 80% RH	
Storing Temperature / Humidity		-20°C to +60°C / 20% to 90% RH	

WDR Color Dome

33

High Resolution WDR Dome Camera

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