

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.

## ■ Contents

<b>Features</b>	04
<b>Precautions</b>	06
<b>Components and Accessories</b>	08
<b>Overview</b>	09
■ Front View	09
■ Side View	10
■ Bottom View	11
■ Rear View	12
<b>Installation Procedures</b>	13
■ Lens	13
· Using an Auto Iris Lens	
· Using a C/CS mount Lens	
■ Connecting a Monitor	17
■ Connecting Power	18
■ Control via RS-485 Interface	19

<b>How to Use the Camera</b>	20
■ Function Menu Structure	20
■ How to Set up the Functions	21
· LENS	22
· EXPOSURE	24
· WHITE BALANCE control	26
· BACKLIGHT	27
· DNR (Digital Noise Reduction)	29
· DAY/NIGHT	30
· IMAGE ADJ	32
· SPECIAL	34
· EXIT	38
<b>Troubleshooting</b>	39
<b>Specifications</b>	41

## ■ 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 colour, and 600 TV lines for B/W.

### Wide Dynamic Range (WDR)

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

### Excellent Sensitivity

The highly sensitive diagonal 6mm (1/3") CCD and digital signal processing technology, can clearly distinguish the outline and colour of a subject even at extremely low luminance levels - for example, under starlight.

Since surveillance is possible in places where the light is poor, the camera is appropriate for day and night surveillance both indoors 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 even in low light.

### Motion Detection

Since the camera detects motion and generates signals without any additional external sensors, activity can be efficiently monitored by connecting the camera to an alarm device.

### Day & Night

The camera identifies whether it is day or night and automatically switches to the appropriate mode, depending on the environment. By day, the camera switches to colour mode in order to maintain optimum colour. At night, it switches to B/W mode to give better picture definition.

### DIS (Digital Image Stabiliser)

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

### Video/DC Drive Lens Support

Either a Video or DC Drive Lens can be selected on the menu.

### Miscellaneous Functions

SYNC (INT/LL), SENS-UP, FREEZE, FLIP (H/V-REV), D-ZOOM, SHARPNESS, MOTION DETECTION and PRIVACY functions are provided.

### RS-485 Communication Control Support

Remote OSD menu control via an RS-485 interface is supported.

### OSD

There are six different languages available for operation of the O.S.D. menus.

- PAL : English, French, German, Spanish, Italian, Chinese

## Warning ■

### The camera requires periodic inspection.

Contact an authorised technician to carry out the inspection.

### Stop using your camera when you find it malfunctioning.

If the camera emits smoke or is unusually hot for a long period, a fire may be caused.

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

If the camera is installed on an inappropriate surface, it may fall and cause injury.

### Do not hold plug with wet hands.

It could cause an electric shock.

### Do not dis-assemble the camera.

It may result in an electric shock or other hazards.

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

It may result in a fire or other hazards.

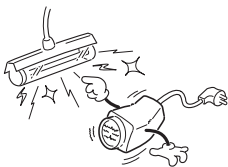
## ■ Precautions

**Do not install the camera in extreme temperature conditions.**



Only use the camera under conditions where temperatures are between  $-10^{\circ}\text{C}$  and  $+50^{\circ}\text{C}$ . Be especially careful to provide ventilation when operating under high temperatures.

**Do not install the camera under unstable lighting conditions.**



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

**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 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 and protect it from physical shocks.**



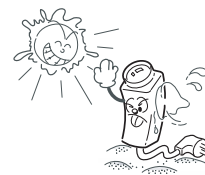
It can cause malfunctions to occur.

**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.

**Never keep the camera pointed directly at strong light.**



It can damage the CCD.

**Do not expose the camera to radioactivity.**



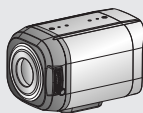
If exposed to radioactivity the CCD will fail.



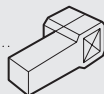
### Note

- If the camera is exposed to spotlight or an object reflecting strong light, smear or blooming may occur.
- Please check the power supply satisfies the normal specification before connecting the camera.

**1. Ultra High Resolution  
WDR Day&Night CCD Camera**



**2. Auto Iris Lens Connector Plug**



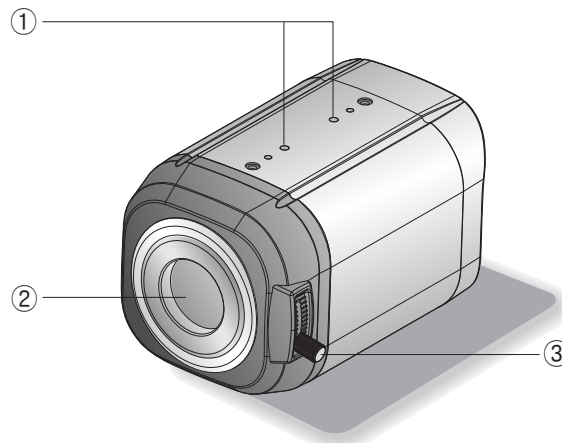
**3. C-Mount Adapter**



**4. Instruction Manual**



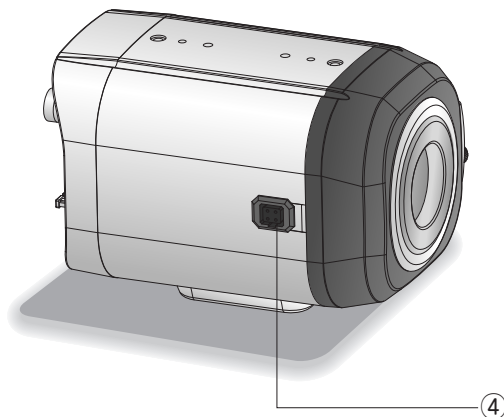
### Front View



- ① **Tripod Mounting Bracket Screw Hole**  
Used to fix the Tripod Mounting Bracket to the top of the camera.
- ② **C-Mount Lens Adapter**  
Install this adapter to use a C-Mount Lens.
- ③ **Back Focus Control Lever**  
Adjust Back Focus using this control lever.

## Overview

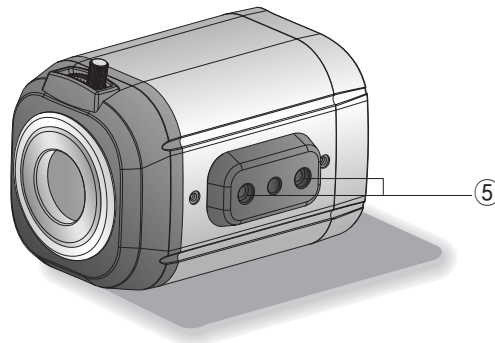
### Side View



**④ Auto Iris Lens Connector**

Used to connect Auto Iris Lens plug.

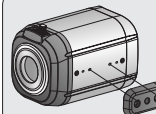
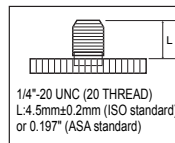
### Bottom View



**⑤ Tripod Mounting Bracket Screw Hole**

Used to fix the camera onto a bracket or tripod.

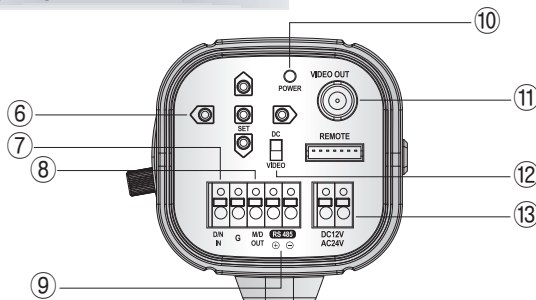
The screw sizes for this hole are as follows:



The Tripod Mounting Bracket can be unscrewed and installed on the top or bottom of the camera. Make sure to use the Tripod Mounting Bracket when fixing the camera to a bracket or tripod, otherwise the camera may be unstable and the internal circuitry of the camera may get damaged.

## Overview

### Rear View



#### ⑥ OSD Setup Buttons

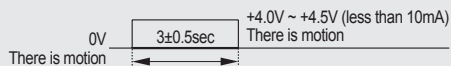
- SET Button : Displays the menu on the screen. Press this button to confirm status or after changing a selected item.
- Up and Down Button : Used to move the cursor up or down in the menu screen to select a desired menu item.
- Left and Right Button : Used to move the cursor left or right in the menu screen or to change the value of the selected item.

#### ⑦ D & N Input Port (GND, Open : Colour)

Switch to Day or Night Mode by connecting an external signal to this port.

#### ⑧ MD Output Port

Motion detection signal is output through this port.



#### ⑨ RS-485 Control Port

The SETUP MENU can be controlled via this port using an external controller that supports RS-485 communications. For details, see page 19.

#### ⑩ Power LED

When power is properly connected, the LED illuminates.

## Installation Procedures

#### ⑪ Video OUT Port

Video signals are output through this port. Connect this port to the Video IN port of a Monitor/DVR.

#### ⑫ Auto iris lens selection switch

Used to change between DC or Video depending upon the type of auto iris in use.

#### ⑬ Power IN Port

Connections for camera power, as specified for each model.

### Lens

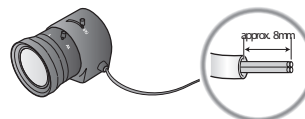
The lens is not supplied with this camera. Purchase a lens suitable for the environment. This camera accepts an auto iris lens, and both C-and CS-mount lenses.

#### Note

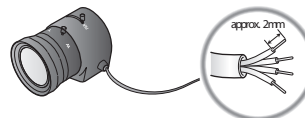
- It is recommended to use the DC type Auto Iris Lens to effectively enjoy the major functions of this camera.
- Keep the lens surface clean, as the picture quality suffers if there is dirt or fingerprints on the Lens.

### Using an Auto Iris Lens

1. Strip 8mm of insulation from the end of the Auto Iris Lens cable..



2. Strip 2mm of insulation from each of the cores of the cable.

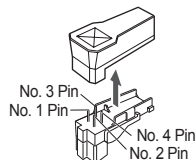


## ■ Installation Procedures

- Remove the cover of the Auto Iris Lens connector plug and solder the lens cable to the connector pins of the plug.

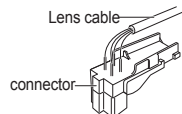
### • For a Video Drive Lens

Pin 1: Red (Power)  
Pin 2: NC  
Pin 3: White (Video Signal)  
Pin 4: Black (Ground)

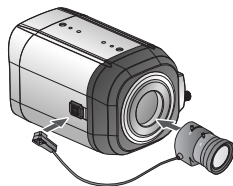


### • For a DC Drive Lens

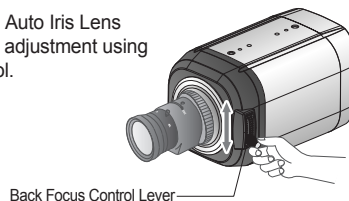
Pin 1: Damping -  
Pin 2: Damping +  
Pin 3: Drive +  
Pin 4: Drive -



- Fit the cover of the auto iris lens connector plug, remove the protective CCD cover from the front of the camera, and fasten the Auto Iris Lens by turning it clockwise.



- Focus the camera using the Auto Iris Lens controls, combined with fine adjustment using the Back Focus control.

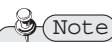
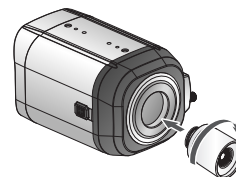


## Using a C/CS mount Lens

Before installing a lens, identify whether the lens to be installed is a C-Mount or CS-Mount. This camera is set for a CS-Mount Lens by default. To install a C-Mount Lens, a simple modification is required.

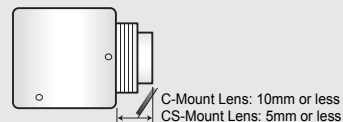
### • When Using a CS Mount Lens

Remove the protective cover from the front of this product and turn the CS-Mount Lens clockwise to install it. Focus the camera using the CS-Mount Lens and Back Focus controls.



### Note

- Use a lens threaded as shown in the following figure. If the dimensions of the thread are incorrect the camera could be damaged, or the lens may not get installed firmly enough.

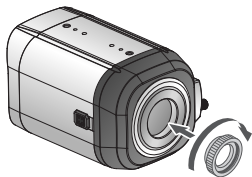


- If the lens is too heavy the camera becomes unbalanced, which may cause problems. Use a lens weighing less than 450g.
- When adjusting the Automatic Level Control (ALC) of an Auto Iris Lens, use Av mode if available. If Pk mode is used the picture brightness may change continuously.

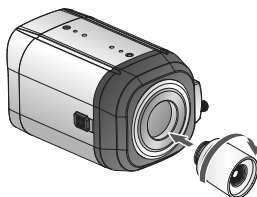
## ■ Installation Procedures

### • Using a C-Mount Lens

1. Remove the protective cover at the front of this product and fit the C-Mount Adapter, turn it clockwise to install it.



2. Turn the C-Mount Lens clockwise to install it.



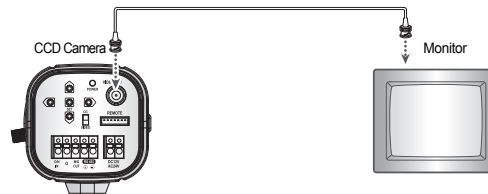
3. Focus the camera using the C-Mount Lens and Back Focus controls.

4. Set the lens selection switch, located on the rear of the camera, to either DC or VIDEO depending on the type of auto iris lens being used.

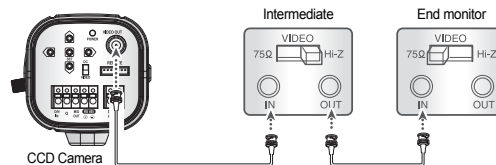


### Connecting to a Monitor

Connect the video output terminal located on the rear of the camera to the Monitor/DVR.



- Since the connection procedure may differ depending on the type of monitor or peripheral device to be connected, refer to the User Manual for the device to be connected.
- Make sure to turn off the device to be connected before making any connections.
- Turn the 75Ω/Hi-Z switches of interim display devices to the Hi-Z position, and the switches of any final device to the 75Ω position.



## ■ Installation Procedures

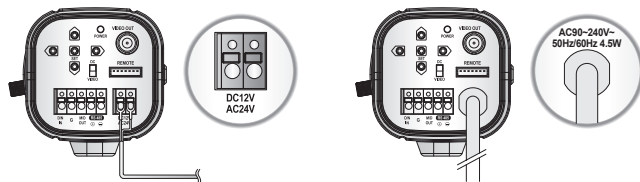
### Connecting Power

Since power specifications differ, depending on the model, make sure to check the model name and exact specification before connecting power. Connect power as shown in the following figure.

### Low Voltage AC / DC Power

- Check the standard power requirement before connecting to power.

**Dual Power Type**  
(AC 24V/DC 12V, AC 24V Class2)  
**DC Power Type** (DC 12V, 500mA)



When the resistance value of copper wire is at [20°C(68°F)]

Copper wire size(AWG)	#24(0.22mm <sup>2</sup> )	#22(0.33mm <sup>2</sup> )	#20(0.52mm <sup>2</sup> )	#18(0.83mm <sup>2</sup> )
Resistance value ( /m)	0.078	0.050	0.030	0.018
Voltage drop(V/m)	0.028	0.018	0.011	0.006

- As shown in the table above, voltage decreases as the wire gets longer. Therefore use of an excessively long adaptor output line for connection to the camera may affect the performance of the camera.
- ※ Standard voltage for camera operation : DC 12V±10%, AC 24V±10%
- ※ There may be some deviation in voltage drop depending on the type of wire and the manufacturer.

### Control via the RS-485 Interface

The camera can be controlled by using an external controller equipped with RS-485 communications.

- To control using a DVR or keyboard controller  
Connect the RS-485 cable (TRX+, TRX-) to the connection port of the 485 control board in the DVR or controller.

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

\* RS-485 communication default initial values

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



### Note

- To control the camera use Pelco-D protocol.  
(Go Preset 95 : Enters into OSD menu or Set key function)

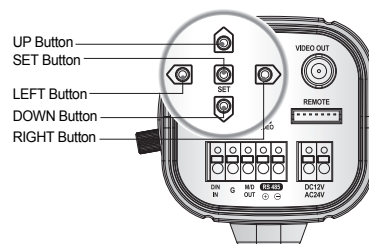
## ■ How to Use the Camera

### On-Screen Display Menu Structure

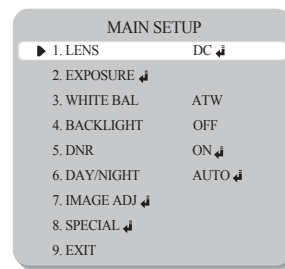
Setup Menu	
LENS	• DC • VIDEO • MANUAL
EXPOSURE	• SHUTTER • AGC • SENS-UP • RETURN
WHITE BALANCE	• ATW • MANUAL • AWC SET • OUTDOOR • INDOOR
BACKLIGHT	• OFF • WDR • BLC • HLC
DNR	• ON • OFF
DAY/NIGHT	• COLOUR • B/W • AUTO • EXTERN
IMAGE ADJUSTMENT (IMAGE ADJ.)	• FREEZE • V-REV • H-REV • D-ZOOM • SHARPNESS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

### How to Set up the Functions

Settings can be made using the 5 buttons on the rear of the camera.

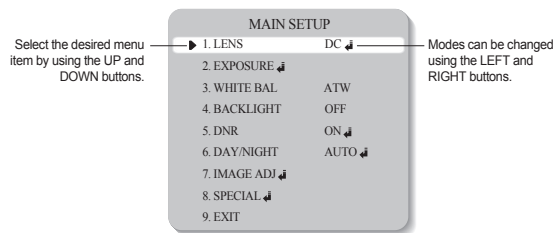


1. Press the SET button.
  - The Setup menu is displayed on the monitor screen.



2. Select a menu item using the Up and Down buttons.
  - Place the cursor over a desired item.


## How to Use the Camera



3. Set up a selected item by using the Left and Right buttons.
4. To finish and save the settings, select 'EXIT' and press the SET button.



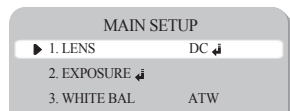
### Note

- An item with the  icon also has sub-menus. To select a sub-menu, press the SET button.
- An item with the --- icon has no sub-menus available for selection.

## LENS

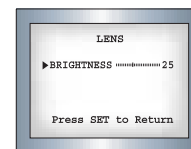
This function is used to adjust the brightness of the screen.

1. When the SETUP menu screen is displayed on the screen, position the cursor to point to LENS using the Up and Down buttons.
2. Select the type of lens using the Left and Right buttons.



### ● DC/Video : Auto Iris Lens selection.

- The screen brightness can be controlled in DC mode. The range of brightness control is between 1 and 70, or 1 to 40 in WDR mode. Adjust the brightness for the optimum level of brightness.



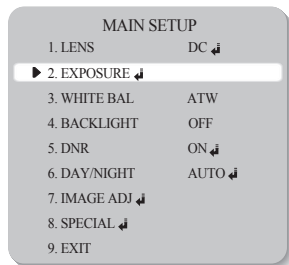
### Note

- Some lenses may not work properly, depending on the settings for the BRIGHTNESS LEVEL.
- When Using a Video-Type Auto Iris Lens
  - ① Check that the ALC adjustment on the lens is appropriate. In general, set it to AV (Average).
  - ② It may not work properly depending on the installed lens. Set the Level VR of the lens to the optimal value.
  - ③ Set AGC / SENS-UP to OFF and adjust the Lens VR to an appropriate brightness.
  - ④ Adjust the Lens VR, adjust the BRIGHTNESS, and then check if the screen brightness changes properly. Otherwise, adjust the Lens VR again.

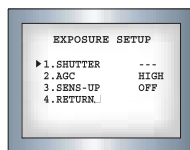
### ● Manual : Select Manual Lens

## ■ How to Use the Camera

### EXPOSURE



1. When the SETUP menu screen is displayed select EXPOSURE using the Up and Down buttons.
2. Select the desired mode using the Left and Right buttons.



- **SHUTTER** : Select either auto or manual shutter.
  - A.FLK : Select this when picture flicker is experienced, 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 according to the ambient illumination available.
  - MANUAL : The shutter speed is controlled manually.



#### Note

- To produce better results with A.FLK, do not use it in conjunction with the WDR mode on the BACKLIGHT menu.
- When the SHUTTER is set to ESC, and the camera is set to Internal Synchronisation, 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 is disabled.

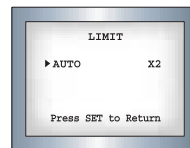
#### ● AGC (AUTO GAIN CONTROL):

- 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.



#### ● RETURN :

Select this to save the changes in the EXPOSURE menu and return to the SETUP menu.



#### Note

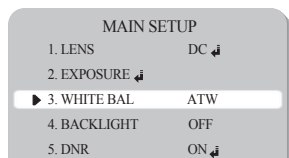
- If you press the SET button in 'AUTO' mode, You can adjust brightness by increasing or decreasing the shutter speed. (X2~X256)
- Note that the higher the zoom level, the brighter the screen, but the more likely it is that an after-image will appear.
- Although Noise, Spots, and Whittish symptoms may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

## ■ How to Use the Camera

### White Balance (White Bal.)

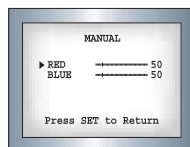
Use the White Balance function to adjust the screen colours.

1. Position the cursor to point to WHITE BAL on the SETUP menu screen, select using the Up and Down buttons.
2. Select the desired mode using the Left and Right buttons.



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

- **ATW** : Select when the colour temperature is between 1800°K and 10500°K
- **INDOOR** : Select when the colour temperature is between 4500°K and 8500°K
- **OUTDOOR** : Select when the colour temperature is between 1800°K and 10500°K. (sodium light inclusion)
- **AWC SET** : To obtain the optimum state under the current luminance levels, direct the camera to point toward a sheet of white paper and press the SET button. If the environment changes, including the light source, the white balance will require re-adjustment.
- **MANUAL** : Select to "fine-tune" the White Balance manually. Set White Balance first using the ATW or AWC mode. Afterwards switch to MANUAL mode, fine-tune the White Balance and then press the SET button.



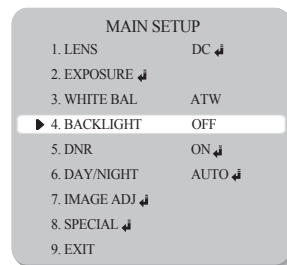
### Note

- Under the following conditions White Balance may not work properly. In such cases, select the AWC mode.
  - ① When the colour temperature of the subject environment has a very high temperature range (e.g. clear sky, or sunset)
  - ② When the ambient illumination of the subject is low.
  - ③ If the camera is directed toward 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 to deliver a clear and distinct image of both subject and background, even when the subject is in a backlight.

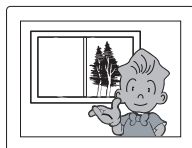
1. Position the cursor to point to BACKLIGHT on the SETUP menu screen using the Up and Down buttons.



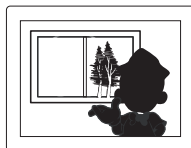
2. Select the desired mode using the Left and Right buttons.

## ■ How to Use the Camera

- **WDR** : When the image has simultaneous bright and dark areas, the Wide Dynamic Range makes both areas distinct.
- **OFF** : Deactivates the WDR function.

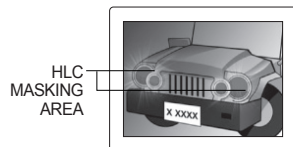


WDR

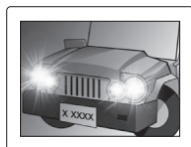


OFF

- **BLC** : Enables the user to directly select an area of a picture to activate and control.
- **HLC (High Light Compensation)** :  
If there is a high light installed in a limited environment such as an apartment parking garage or gas station entrance, removing the high light makes it possible to view car license plates efficiently.  
- **DAY** : In normal daylight conditions, the HLC is not activated.  
- **NIGHT** : If a high light that is larger than a certain size is present on the screen, remove the high light to see license plates clearly.

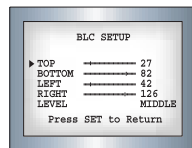
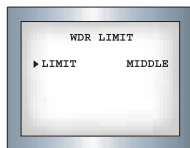


HLC ON



HLC OFF

3. Select the desired mode using the Left and Right buttons and press the SET button.
  - Select 'WDR' to adjust the WDR LIMIT. • Select 'BLC' to adjust the area to be enhanced by the WDR function.
  - Select LOW, MIDDLE, or HIGH.



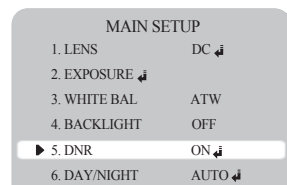
### Note

- The WDR cannot be used when MANUAL mode or A.FLK mode in the 'SHUTTER' menu is selected.
- If the following symptoms occur when WDR is selected, deactivate it.
  - ① Colour of screen changes unnaturally.
  - ② Noise appears in the brightest part of the screen.
- As the performance of the WDR function can be affected by an area of brightness on the image, optimise the installation angle to eliminate any bright spots for the best performance.
- If LIMIT is increased, the image may become distorted.
- For the best WDR performance use a DC Iris Lens rather than a Manual Lens.

## DNR

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

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



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.

## ■ How to Use the Camera

- Set the DNR mode to 'ON' and press the SET button. The noise reduction level can now be adjusted.



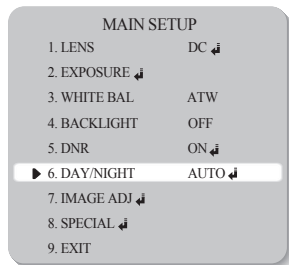
### Note

- You cannot set the DNR to 'ON' or 'OFF' when the AGC mode in the EXPOSURE menu is 'OFF'.
- When adjusting the noise reduction level in DNR mode, remember that the higher the level is set, the greater the reduction in noise level, but it also increases the possibility of ghosting.

## DAY/NIGHT

Pictures can be displayed in either colour or black and white.

- When the SETUP menu screen is displayed, select 'DAY/NIGHT' using the Up and Down buttons.



- Select the desired mode using the Left and Right buttons.

- COLOUR : The picture is displayed in colour.
- B/W : The picture is always displayed in black and white.
- AUTO : This camera has an IR Cut-Filter and automatically changes to the appropriate mode according to lighting levels. To set up the switching time and switching speed for the AUTO mode press the SET button.



- EXTERN : This mode allows the application of a filter to external signals.

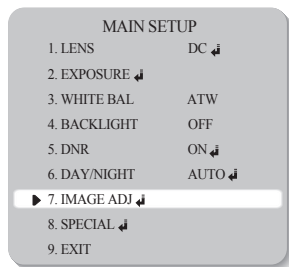
### Note

- When using a Video Auto Iris Lens, if the lens level is too low, automatic switching between Colour and Black & White may not occur.
- The DAY/NIGHT menu cannot be controlled when AGC in the EXPOSURE menu is 'OFF'. If so, the changeover between DAY mode and NIGHT mode operates the same as selecting 'COLOUR' mode.
- The OSD keys do not work for 3 seconds after switching to Colour or B/W. This is to ensure a stable camera operation.
- The camera focus will "shift" marginally under infrared illumination at night. Always use an IR Corrective extra-low dispersion Lens to obtain sharp pictures in colour and monochrome.

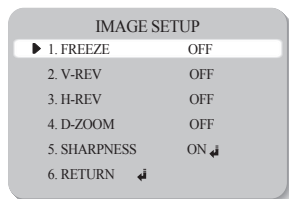
## ■ How to Use the Camera

### IMAGE ADJ.

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

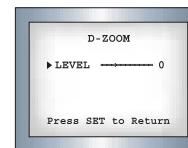


2. Select the desired mode using the Left and Right buttons.

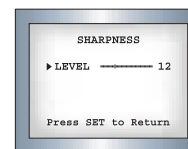


- FREEZE : View still pictures.
- V-REV : Flips the picture vertically on the screen.
- H-REV : Flips the picture horizontally on the screen.

- D-ZOOM : Digitally zooms, the range is x1~x10.



- SHARPNESS : As this value is increased the picture outline becomes stronger and clearer.



- RETURN : Select this to save the settings for the IMAGE ADJ. menu and to return to the SETUP menu.



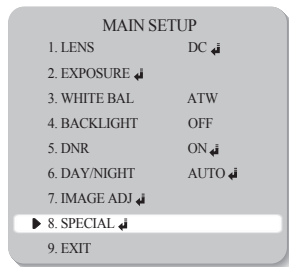
#### Note

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

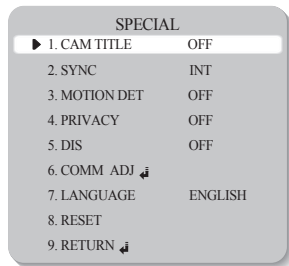
## ■ How to Use the Camera

### SPECIAL

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



2. Select the desired mode using the Left and Right buttons.



- CAM TITLE : If a title is entered, the title appears on the monitor.

- ① When the SPECIAL menu screen is displayed, use the Up and Down buttons to point the cursor to 'CAM TITLE'.

- ② Set to 'ON' using the Left and Right buttons.

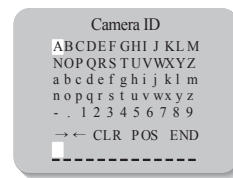


#### Note

- When the CAM TITLE menu is 'OFF', no title will be displayed on the monitor screen even if one has been entered.



- ③ Press the SET button.



- ④ Use the 4 directional buttons to move to a character, and select it by pressing the SET button. Repeat this action to enter multiple characters. Up to 15 alphanumeric characters can be used.



#### Note

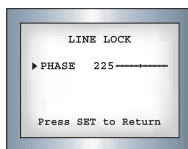
- If the cursor is moved to CLR and the SET button pressed, all letters are deleted. To edit a letter, change the cursor to the bottom left arrow and press the SET button. Move the cursor over the letter to be edited, move the cursor to the letter to be inserted and then press the SET button.

## ■ How to Use the Camera

- 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 using the 4 directional buttons and press the SET button. When the position is determined, select 'END' and press the SET button to return to the SPECIAL menu.



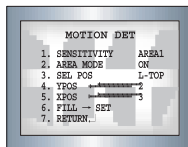
- **SYNC** : In areas where the supply is 60Hz, multiple cameras using the power synchronisation function (Line-Lock), without using a synchronisation signal generator.
  - INT : Internal Synchronisation Type
  - L/L : Power Synchronisation Type, Line-lock
  - Press the SET button.
  - Select a phase between 0 and 359.



### Note

- When using AC power at a 60Hz frequency Line-Lock synchronisation can be used.
- When the power is DC 12V, the SYNC. menu is fixed to the 'INT' mode.

- **MOTION DET**:  
Connecting an alarm device to this camera enables efficient activity monitoring, because a signal is generated by the camera whenever motion is detected. The motion detection signal is output through the MD OUT port.



- ① When the SPECIAL menu screen is displayed, press the Up and Down buttons so that the cursor points to MOTION DET.
- ② Set up the function using the 4 directional buttons.
  - SENSITIVITY : Select up to eight MD areas. When the SENSITIVITY value is high, motion detection sensitivity is increased to recognise small movements.
  - 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 co-ordinates of the vertical axis for SEL POS.
  - XPOS : Determines the co-ordinates of the horizontal axis for SEL POS.
  - FILL → SET : Fills in a selected MD area. Fills in a selected MD area. The colour 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.

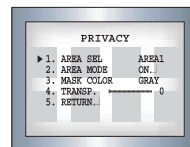


### Note

- MD areas show only on the MOTION DET menu. Therefore, MD areas are not displayed on the monitor screen.

- **PRIVACY** : Hide an area so that it is not displayed on the monitor.

- ① When the SPECIAL menu screen is displayed, press the Up and Down buttons so that the cursor points to 'PRIVACY'.



- ② Set up using the 4 directional buttons.
  - AREA SEL : Up to 8 areas are selectable.
  - AREA MODE :  
Determines whether to use the area selected in the AREA SEL, and the size and position of the area.



## ■ How to Use the Camera

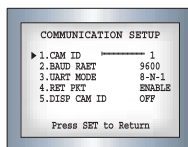
- MASK COLOUR : Determine area colour. Select Grey, Green, Red, Blue, Black or White.
- TRANSP : Determine the transparency of the selected area, the range is from 0 to 3.
- RETURN : Select this to save the PRIVACY menu settings and return to the SPECIAL menu.

### ● DIS (Digital Image Stabiliser) :

This function mitigates picture movement caused by external factors, such as wind.

### ● COMM ADJ (Communication Adjustment) :

This function sets up the camera communication status when controlling the camera through an external device.



- ① When the SPECIAL menu screen is displayed, press the Up and Down buttons so that the cursor points to '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 : Select 2400/4800/9600/19200/38400/57600 bps.
  - UART MODE : 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 the camera title on the top left corner of the screen.

### ● LANGUAGE : Select the appropriate menu language.

### ● 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.

## Troubleshooting ■

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 authorised technician.

Problem	Solution
<b>Nothing appears on the screen.</b>	<ul style="list-style-type: none"> <li>• Check the power connections.</li> <li>• Check the VIDEO signal line connection.</li> </ul>
<b>The image on the screen is not clear.</b>	<ul style="list-style-type: none"> <li>• Make sure the lens is clean. Clean the lens with a soft clean lint free cloth.</li> <li>• Adjust the monitor contrast &amp; brightness controls.</li> <li>• Re-position the camera if necessary.</li> </ul>
<b>The image on the screen is dark.</b>	<ul style="list-style-type: none"> <li>• Adjust the contrast control of the monitor.</li> <li>• If you have an intermediate device, set the 75Ω / Hi-z properly.</li> </ul>
<b>The camera is not working properly, and the surface of the camera is hot.</b>	<ul style="list-style-type: none"> <li>• Check that an appropriate power source is connected to the camera.</li> </ul>
<b>The DAY/NIGHT menu does not work.</b>	<ul style="list-style-type: none"> <li>• Check that AGC in the EXPOSURE menu is set to 'OFF'.</li> </ul>
<b>The SENS-UP function does not work.</b>	<ul style="list-style-type: none"> <li>• Check that AGC in the EXPOSURE menu is not set to 'OFF'.</li> <li>• Check that SHUTTER in the EXPOSURE menu is not set to 'A.FLK' or 'MANUAL'.</li> </ul>

## ■ Troubleshooting

Problem	Solution																
The Motion Detection function does not work.	• Check that MOTION DET in the SPECIAL SETUP is not set to 'OFF'.																
Colour is not correct.	• Check the WHITE BAL settings in the SETUP menu.																
The screen flickers continually.	• Check that the camera isn't facing toward a bright light source, such as the sun.																
RS-485 communication fails.	<div>• Check the polarity between the RS-485 Control Port and the RS-485 cable.<table><tr><td>485 Control Board Connection Port</td><td>RS-485 Control Port</td></tr><tr><td>(+) CONNECTION TERMINAL (TRX+)</td><td>485+</td></tr><tr><td>(-) CONNECTION TERMINAL (TRX-)</td><td>485-</td></tr></table></div> <div>• Check the RS-485 Communication default settings.</div> <div>• RS-485 Communication default settings are:<table><tr><td>Item</td><td>Camera ID</td><td>BAUD RATE</td><td>UART MODE</td><td>RET PKT</td></tr><tr><td>Initial value</td><td>1</td><td>9600</td><td>8-NONE-1</td><td>ENABLE</td></tr></table></div>	485 Control Board Connection Port	RS-485 Control Port	(+) CONNECTION TERMINAL (TRX+)	485+	(-) CONNECTION TERMINAL (TRX-)	485-	Item	Camera ID	BAUD RATE	UART MODE	RET PKT	Initial value	1	9600	8-NONE-1	ENABLE
485 Control Board Connection Port	RS-485 Control Port																
(+) CONNECTION TERMINAL (TRX+)	485+																
(-) CONNECTION TERMINAL (TRX-)	485-																
Item	Camera ID	BAUD RATE	UART MODE	RET PKT													
Initial value	1	9600	8-NONE-1	ENABLE													

## Specifications (AC24V / DC12V) ■

		NTSC		PAL	
Power Source		AC24V / DC12V	DC12V	AC24V / DC12V	DC12V
		350mA(AC24V)/490mA(DC12V)	420mA	350mA(AC24V)/490mA(DC12V)	420mA
CCD	Size	SONY 1/3" Vertical Double Density Colour 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			
	Synchronisation	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, German, Spanish, Italian, Chinese	
E L E C T R I C A L	WDR	52 dB			
	Backlight Comp.	ON/OFF			
	Resolution	Colour : 560 TV Lines †		B/W : 600 TV Lines †	
	S/N (Y signal)	52 dB (AGC Off)			
	Min. Illumination	0.3Lux (Colour), 0.03Lux (BW), 0.0005Lux (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 Zones, ALARM Output)			
	PRIVACY	ON/OFF (8 Zones)			
	V-REV	ON / OFF			
	H-REV	ON / OFF			
	FREEZE	ON / OFF			
	SHARPNESS	ON/OFF (Level Adjustable)			
	IRIS Control	DC / Video			
Day & Night	COLOUR / Black& White / AUTO / EXT				
DIS	ON / OFF				
Digital Zoom	ON / OFF (x10)				
Blemish Compensation	256 point (Even 128 Point, Odd 128 Point)				
Communication		RS-485 (2400, 4800, 9600, 19200, 38400, 57600 bps selectable) (STW Protocol, Pelco-D Protocol available)			
Lens Mount		CS Mount (Easy Focus type) (C Mount using adaptor)			
Back Focus Adjustment		Manual			
Operating temperature / Humidity		-10°C to + 50°C / 30% to 80% RH			
Storing Temperature / Humidity		-20°C to + 60°C / 20% to 90% RH			
Dimension		65.8(W) x 60.6(H) x 101.9(D)mm			
Weight		320g			

## ■ Specifications (AC240V)

MEMO ■

		NTSC	PAL
Power Source		AC240V MAX. 4.5W	
CCD	Size	SONY 1/3" Vertical Double Density Colour 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	
	Synchronisation	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, German, Spanish, Italian, Chinese
E L E C T R I C A L	WDR	52 dB	
	Backlight Comp.	ON/OFF	
	Resolution	Colour : 560 TV Lines †	B/W : 600 TV Lines †
	S/N (Y signal)	52 dB (AGC Off)	
	Min. Illumination	0.3Lux (Colour), 0.03Lux (BW), 0.0005Lux (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 Zones, ALARM Output)	
	PRIVACY	ON/OFF (8 Zones)	
	V-REV	ON / OFF	
	H-REV	ON / OFF	
	FREEZE	ON / OFF	
	SHARPNESS	ON/OFF (Level Adjustable)	
	IRIS Control	DC / Video	
	Day & Night	COLOUR / Black& White/AUTO/EXT	
	DIS	ON / OFF	
	Digital Zoom	ON / OFF (x10)	
	Blemish Compensation	256 point (Even 128 Point, Odd 128 Point)	
Communication		RS-485 (2400, 4800, 9600, 19200, 38400, 57600 bps selectable) (STW Protocol, Pelco-D Protocol available)	
Lens Mount		CS Mount (Easy Focus type) (C Mount using adaptor)	
Back Focus Adjustment		Manual	
Operating temperature / Humidity		-10°C to + 50°C / 30% to 80% RH	
Storing Temperature / Humidity		-20°C to + 60°C / 20% to 90% RH	
Dimension		65.8(W) x 60.6(H) x 101.9(D)mm	
Weight		320g	

※ OPTION - Mains Camera : GSDNR-5355W/240

## MEMO



---

**Model : GSDNR-5355W**

# **WDR True Day&Night Camera**

**Instruction Guide**

---



**GENIE CCTV LTD.**

CCTV House, City Park, Watchmead, Welwyn Garden City, Hertfordshire, AL7 1LT

Tel : +44 (0) 1707 330541 Fax : +44 (0) 1707 330543

[www.geniecctv.com](http://www.geniecctv.com)

