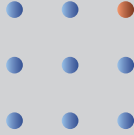


. Day & Night IR Camera Series



P/N : 3810-0102G
(Ver.0804E)

Color Video Camera Series

- Design and specifications are subject to change without notice.



Digital Slow Shutter

DSS

Weatherproof IR LED Day & Night Color Camera



COLOR VIDEO CAMERA
with DAY & NIGHT and IR LEDs

OWNER'S MANUAL

SDNR

Super Digital Noise Reduction

DIGITAL



. User Information



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.

Explanation of two Symbols



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated "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.

THE GRAPHIC SYMBOLS WITH SUPPLEMENTAL MARKING ARE ON THE BOTTOM OF THE SYSTEM.

"WARNING-TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THE UNIT TO RAIN OR MOISTURE"

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 their own expense.

WARNING

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 except for that specified.

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

Contents

- Thank you for purchasing this COLOR VIDEO CAMERA.

Before operating the camera, confirm that you have the right camera model and proper power voltage.

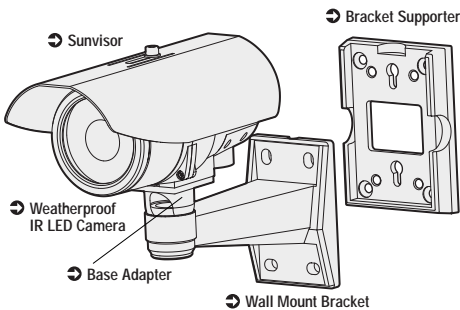
In order to help you understand this manual, we'll introduce our model's description.

1. Precautions	5
2. Composition	6
3. Features	7
4. Name and Function of Each Parts	8
5. Installation	11
6. Specifications	16
7. Troubleshooting	18

1. Precautions

- **Do not install the camera in extreme temperature conditions.**
An operating temperature of -10°C to +45°C is standard. this temperature range can be widened when a built-in fan/heater works automatically. (-30°C to +50°C)
- **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.
- **Never use the camera close to a gas or oil leak.**
It can cause malfunctions to occur.
- **Do not disassemble the camera.**
There are no user-serviceable parts inside it.
- **Do not drop the camera or subject them to physical shocks.**
It can cause malfunctions to occur.
- **Never keep the camera face to strong light directly.**
It can damage CCD.
- **Note**
When this camera is installed near wireless communication devices that emits strong electromagnetic field, irregularity such as noise on the monitor may appear.

2. Composition



L-Wrench



L-Torx Wrench



Service Monitor Cable



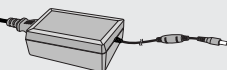
BNC Cable



Owner's Manual



AC PLUG

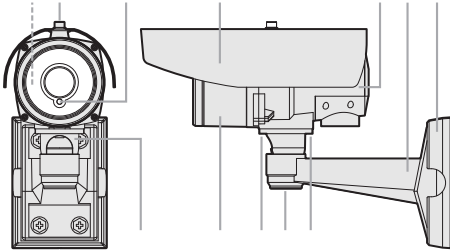


AC Adapter (Option)

3. Features

- 1. Super High Resolution**
The horizontal resolution of 550 TV lines can be achieved by using a high density CCD which provides clean, noiseless and reliable pictures.
- 2. SDNR (Super Digital Noise Reduction)**
By SDNR, this camera can reduce video noise, and improve the S/N ratio. By this technology, this camera can show the clear and exact image even in a gloomy place.
- 3. High Sensitivity (Digital Slow Shutter)**
This camera can detect automatically darkness or night and support it to take a clear and bright image. As the grade of darkness, this camera can accumulate up to 32 fields.
- 4. IR LED**
Determines whether IR LED light will be on/off at night, for use of external IR LED lamp when Day & Night mode is on
- D/N ON : uses built-in IR LED in night state.
- D/N OFF : dose not use built-in IR LED night state.
- 5. Digital Zoom Function**
This camera can magnify its image in a distance.
On the mode of D-ZOOM, it magnifies twice(x2) than the real image.
- 6. Electronic Iris**
Electronic iris shutter is automatically controlled at the speed of
1/60 ~ 120,000sec (NTSC models),
1/50 ~ 120,000sec (PAL models).
- 7. Built-in Fan / Heater**
Depends on internal temperature, it operates automatically.
- Fan ON : over 45°C
- Heater ON : under 10°C

4. Name and Function of Each Parts



Fixing Bolt for Sunvisor: You can unfasten the bolt in order to fix mounting bracket above.

Photo Sensor

IR LED (Infrared LED): Automatically controlled according to light condition.

Sunvisor: To reduce direct sunlight and protect the camera unit from rain or snow outdoor.

Front Cover

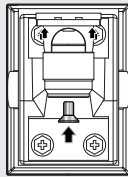
Rear Body

Mounting Bracket Fixing Bolt: Fix the camera main body to bracket by wrench bolt.

Base Adapter

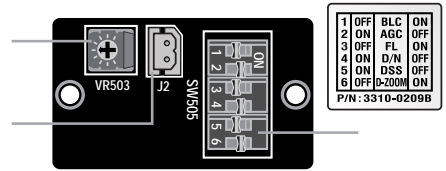
Base Adapter Fixing Bolt

Wall Mount Bracket Bracket Supporter



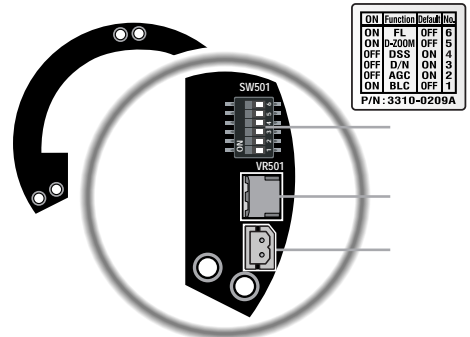
Normal IR LED Type

- IR LED 56EA (850nm 15°, 30° mixed)
- Sensor 1EA (Beam spreads max. 50m)



Hybrid IR LED Type

- Hybrid IR LED 9EA (850nm 15°)
- Sensor 1EA (Beam spreads max. 60m)



Function Selection Switch

- **BLC (Back Light Compensation):** This feature would be useful when camera is facing an object that has excessive light behind it. BLC prevents the center of object from too much darkness. e.g.: Video camera in the store facing the entrance doors.
- **AGC (Automatic Gain Control):** With AGC ON, the setting, camera's sensitivity is automatically increased when the level of ambient light drops. AGC function automatically controls signal gain in the range of maximum 28dB.
- **FL (Flickerless):** If the camera is used with 50Hz fluorescent lighting, there maybe flicker on the screen. In this case, FL switch should be set to ON position. But, FL switch should be set to OFF position if 60Hz power source is used.
- **D/N (Day & Night ON/OFF):** This camera can switch to the COLOR mode to support the best color image in the day time and switch to the B/W mode for the clear image in the night time.
- **DSS (Digital Slow Shutter):** This camera can detect automatically darkness or night and support it to take a clear and bright image. As the grade of darkness, this camera can accumulate up to 32 fields.
- **D-ZOOM (Digital Zoom):** This camera can magnify its image in a distance. On the mode of D-ZOOM, it magnifies twice (x2) than the real image.

DC LEVEL Adjustment V.R

Used to adjust video output level of DC driven auto iris lens or ELC mode, when the brightness control of the monitor does not operate correctly.

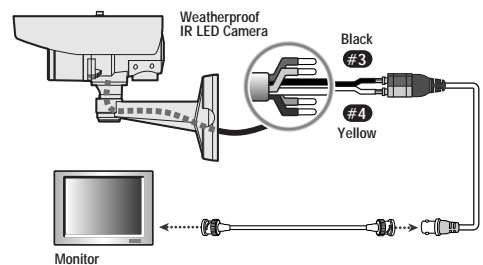
Service Connector (Extra Video Out Connector)

This camera system includes a service connector that outputs extra camera video signal. Use it at the installation site to set up the field of view and focus the camera.

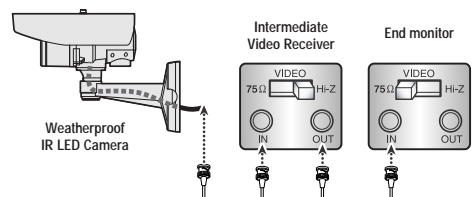
5. Installation

■ Connecting to Monitor

Cable the VIDEO out to the monitor video in jack.



- As the connecting method varies with the instruments, refer to the manual supplied with the instrument.
- Connect the cable after power is turned off.
- Set the 75 Ω / Hi-Z selection switch as shown below if you have an intermediate device.



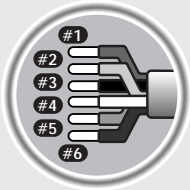
■ Connecting to Power Supply

Normal IR LED Type → : AC 24V / DC 12V Power

- The wire is non-polarized.
- Use AC 24V ~ power source or DC 12V = power source.

Hybrid IR LED Type → : DC 12V Power

- The wire is polarized.
- Use DC 12V = power source.
- Note: Make sure you are using only the supplied AC adapter.

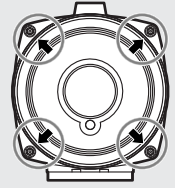
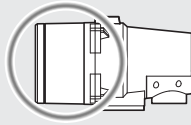


No.	Line Color	Normal IR LED Type	Hybrid IR LED Type
#1	RED	DC 12V/AC24V(H)	DC 12V
#2	ORANGE	GND/AC24V(N)	GND
#3	BLACK	GND(VIDEO)	GND(VIDEO)
#4	YELLOW	VIDEO OUT	VIDEO OUT
#5	GREEN	Not Used	Not Used
#6	BROWN	Not Used	Not Used

■ Zoom and Focus Adjustment

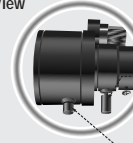
- Undo the four screws and remove the front cover.

• Weather Proof Camera



- Unlock the zoom(or the focus) lever to release.
- Adjust the zoom(or the focus) lever by moving it to Wide(Near) or Tele(Far) position.

• Lens View



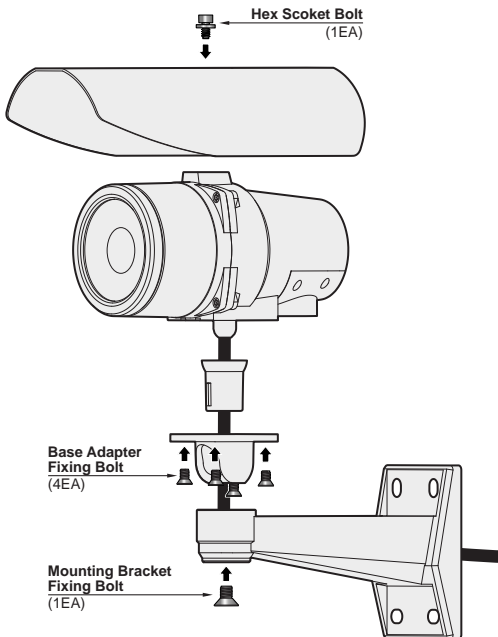
Zoom Lever
Use to adjust zoom magnification.

Focus Lever
Use to provide accurate focusing on an object within lens field of view.

- After adjustment, tighten the zoom(or focus) lever, taking care that the adjusted position does not change.
- After all adjustments are complete, refit the front cover and ensure the screws are properly tightened.

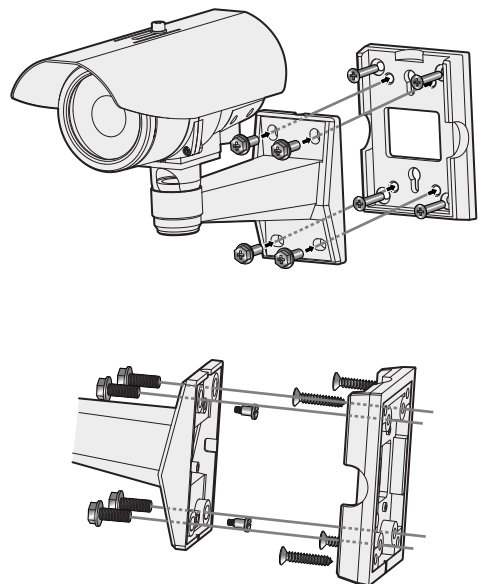
■ Camera Installation

Assembling the sunvisor and the bracket.



■ Camera Installation

Assembling the bracket supporter



6. Specifications - Normal IR LED Type

Model	Super High Resolution	
	NTSC	PAL
Signal System	NTSC	PAL
CCD Pick-up Element	2:1 Interlace Transfer 1/3 Inch Super HAD CCD	
Effective Pixels	768(H) x 494(V)	752(H) x 582(V)
Video Output	Composite: 1.0V p-p, 75	
Sync. System	Internal Sync	
Luminance S/N Ratio	More than 50dB (AGC OFF)	
Resolution	550 TV lines	
Sensitivity	0.3 Lux(Color), 0.008 Lux(DSS 32 FLD), 0 Lux(IR LED ON)	
Lens	DC Iris Vari-focal Lens (f=3.8~9.5mm F1.2)	
Electronic Shutter	1/60 ~ 120,000 Sec.	1/50 ~ 120,000 Sec.
White Balance	AWB	
Auto Gain Control	On / Off Selectable	
Back Light Compensation	On / Off Selectable	
Day & Night	On / Off Selectable	
Flickerless	On / Off Selectable	
IR LED & Sensor	IR LED 56EA (850nm 15°, 30° mixed), Sensor 1EA (Beam spreads max. 50m)	
Digital Slow Shutter	Max. 32 FLD (On/Off)	
D-ZOOM	2 x (On/Off)	
Digital Noise Reduction	Auto	
Operating Temperature	-10 ~ +45 / -30 ~ +50 (with Fan & Heater)	
Storage Temperature	-20 ~ +65	
Power Consumption	AC 24V (20W~28V) or DC 12V (11V~15V) Max. 25W (AC 24V) / 20W (DC 12V)	
Dimensions (WxHxD)	110.8 x 218.6 x 325.7 mm	
Weight	Approx. 1.6kg	

6. Specifications - Hybrid IR LED Type

Model	Super High Resolution	
	NTSC	PAL
Signal System	NTSC	PAL
CCD Pick-up Element	2:1 Interlace Transfer 1/3 Inch Super HAD CCD	
Effective Pixels	768(H) x 494(V)	752(H) x 582(V)
Video Output	Composite: 1.0V p-p, 75	
Sync. System	Internal Sync	
Luminance S/N Ratio	More than 50dB (AGC OFF)	
Resolution	550 TV lines	
Sensitivity	0.3 Lux(Color), 0.008 Lux(DSS 32 FLD), 0 Lux(IR LED ON)	
Lens	DC Iris Vari-focal Lens (f=7.5~50mm F1.3)	
Electronic Shutter	1/60 ~ 120,000 Sec.	1/50 ~ 120,000 Sec.
White Balance	AWB	
Auto Gain Control	On / Off Selectable	
Back Light Compensation	On / Off Selectable	
Day & Night	On / Off Selectable	
Flickerless	On / Off Selectable	
IR LED & Sensor	Hybrid IR LED 9EA (850nm 15°), Sensor 1EA (Beam spreads max. 60m)	
Digital Slow Shutter	Max. 32 FLD (On/Off)	
D-ZOOM	2 x (On/Off)	
Digital Noise Reduction	Auto	
Operating Temperature	-10 ~ +45 / -30 ~ +50 (with Fan & Heater)	
Storage Temperature	-20 ~ +65	
Power Consumption	DC 12V (11V~15V) Max. 18W (1.5A / DC 12V)	
Dimensions (WxHxD)	110.8 x 218.6 x 325.7 mm	
Weight	Approx. 1.6kg	

7. 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 authorized technician.

Problem	Solutions
Nothing appears on the screen.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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. Adjust the lens' focus properly.
The image on the screen is dark.	<ul style="list-style-type: none"> Adjust the contrast feature of the monitor. If you have an intermediate device, set the 75 / Hi-z properly. (refer to page 11) Adjust DC Level, VR Level properly. (refer to page 10)
The camera is not working properly, and the surface of the camera is hot.	<ul style="list-style-type: none"> Check that you have properly connected the camera to an appropriate power source. (refer to page 12)
The image on the screen flickers.	<ul style="list-style-type: none"> Is the camera facing to direct sunlight or fluorescent lighting? Change the camera position.

Dimensions(mm)

