

SAMSUNG

TECHWIN

COLOR CCD CAMERA

INSTRUCTION MANUAL

SDC-311 SERIES SDC-241 SERIES

SAMSUNG

TECHWIN

SALES NETWORK

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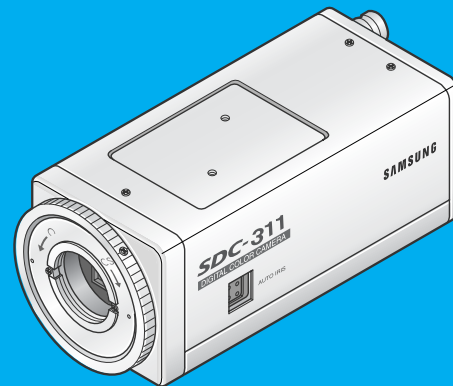
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SAMSUNG CCD CAMERA

Thank you for purchasing a SAMSUNG CCD CAMERA.
 Before operating the camera, confirm the camera model and proper input power voltage. In order that you can understand this manual thoroughly, we'll introduce our model description.

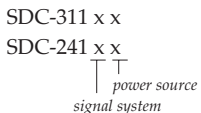
■ SDC-311 Series (410,000 Pixels)

- NTSC models
- SDC-311ND
- SDC-311NA
- PAL models
- SDC-311PD
- SDC-311PA
- SDC-311PH

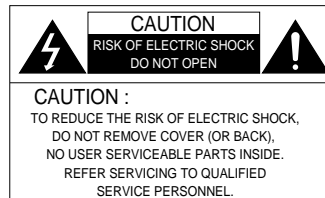
■ SDC-241 Series (270,000 Pixels)

- NTSC models
- SDC-241ND
- SDC-241NA
- PAL models
- SDC-241PD
- SDC-241PA
- SDC-241PH

■ Model Description



- Signal System
 - N → NTSC Model
 - P → PAL Model
- Power Source
 - D → DC 12V ---
 - A → AC 24V \sim
 - H → High Voltage (PAL Model: AC 230V \sim)



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



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

INFORMATION - This equipment has been tested and found to comply with limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING - Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

- CAUTION** : To prevent electric shock and risk of fire hazards:
- ◆ Do NOT use other than specified power source.
 - ◆ 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

Automatic Backlight Compensation

The backlight compensation technology allows the camera to find the best picture conditions in any environment and automatically gives a necessary light level compensation, so that you can always obtain the clear picture, the finest detail and perfect light contrast.

High Resolution

The horizontal resolution of 470 TV lines can be achieved by using a high density CCD having effective 410,000 pixels, which provides clean, noiseless and reliable pictures.

(SDC-241Series have 270,000 pixels and can achieve 330 TV lines)

High Sensitivity

We utilize a high sensitivity Sony color CCD imager. This allows for clear and vivid images under dark situation as low as a minimum of 0.4 lux.

Electronic Iris

Electronic iris shutter is automatically controlled at the speed of 1/60~1/100,000sec(NTSC Models). / 1/50~1/100,000sec(PAL Models).

Video/DC Selection Switch

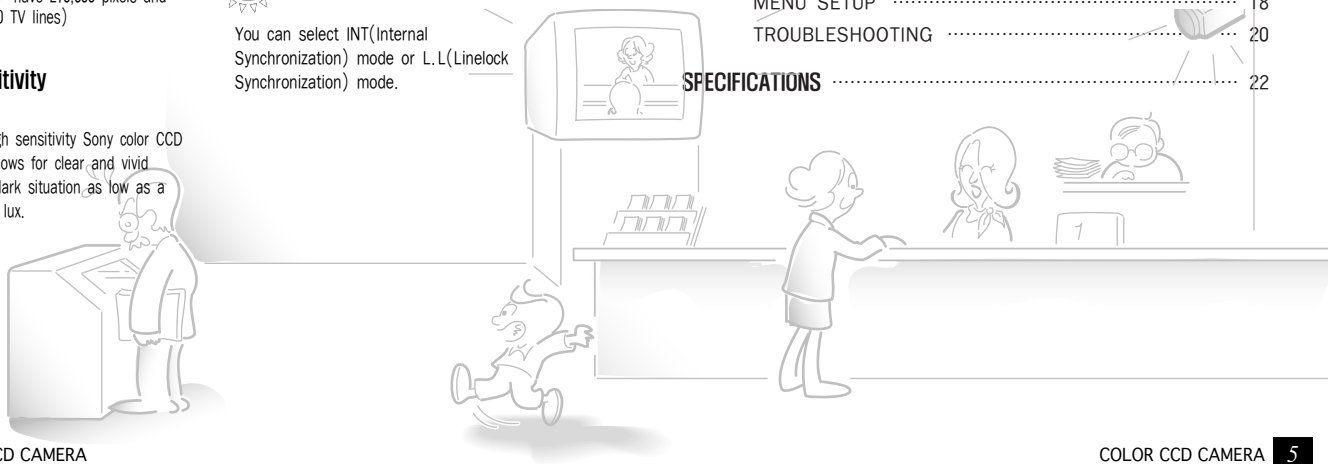
The camera accepts 2 types of auto iris lenses(DC type/VIDEO type) and is set with VIDEO/DC selection switch.

SYNC. System

You can select INT(Internal Synchronization) mode or L.L(Linelock Synchronization) mode.

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Precautions

Do not install the camera in extreme temperature conditions.



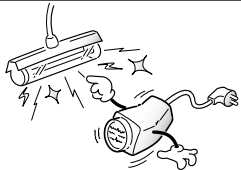
Do use the camera under conditions where temperatures are within -10°C to 50°C . Especially be careful for ventilation under high temperature.

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.



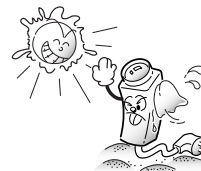
It can cause malfunctions to occur.

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 face to strong light directly.



It can damage the CCD.

Do not touch the front glass of the camera.



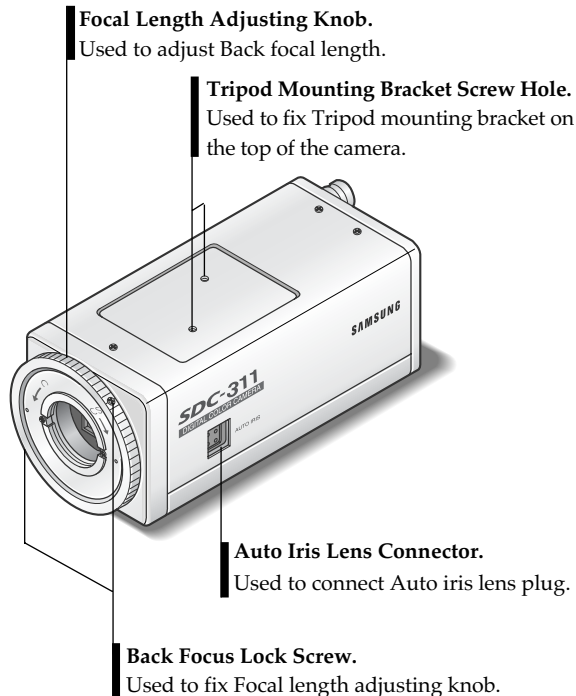
It is one of the most important parts of camera. Be careful not to be stained by fingerprint.



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

Getting to Know Your Camera

Front



Bottom

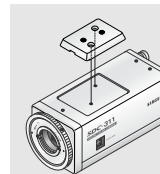
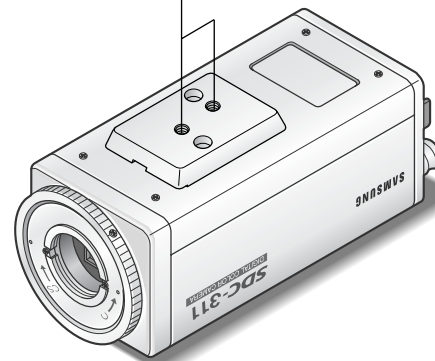
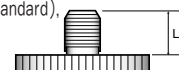
Tripod Mounting Hole

Used to install the camera on an optional tripod. The tripod must be equipped with the screw specified as shown below.

1/4" -20 UNC (20 THREAD)

L: 4.5mm ±0.2mm (ISO standard),

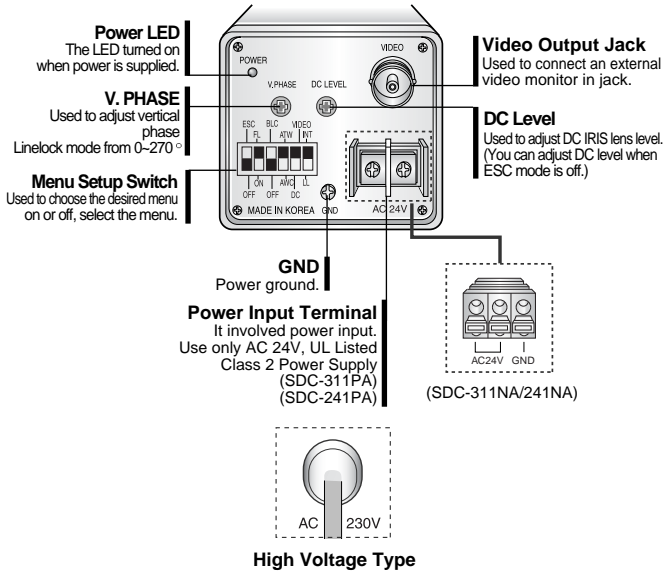
or 0.197" (ASA standard)



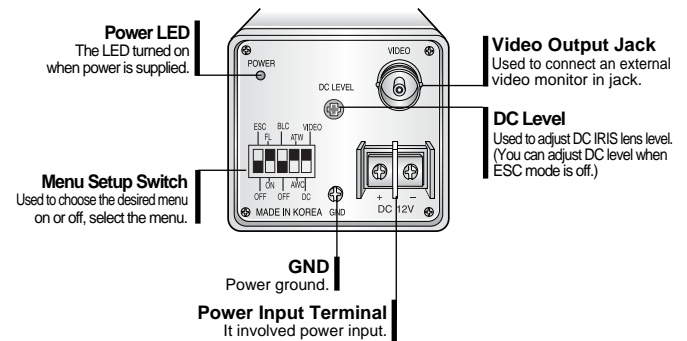
You can remove and install this bracket on the top of the camera. You must use the supplied screw or the equivalent (within 4mm). If not, the bracket may not fix properly.

Back

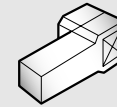
AC type



DC type



Accessories



Iris Lens Plug



Instruction Manual



- Notes**
- The image has been set for optimum performance at the factory. Do not remove the cover unless it is absolutely necessary. It could cause damage to components and problems.
-Be sure to check the power is off when removing the cover.

Connection

Lens

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



- If the lens is stained with fingerprint or something, the image quality might be poor.
- It is recommended to use a high quality lens to improve the image quality under low illumination.

Installing Auto Iris Lens

1. Peel the end of lens cable outer cover approximately 8mm.



2. Peel the end of the cable inner cover approximately 2mm.



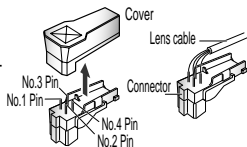
3. Remove the cover from the connector pin supplied, and solder the lens cable to the connector pin as shown below.

• Video type :

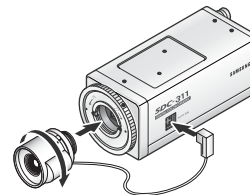
- No.1 Pin ... Red (Power source)
- No.2 Pin ... N. C
- No.3 Pin ... White (Video signal)
- No.4 Pin ... Black (GND)

• DC type :

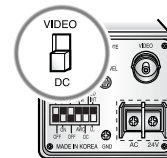
- No.1 Pin ... Damping -
- No.2 Pin ... Damping +
- No.3 Pin ... Drive +
- No.4 Pin ... Drive -



4. Remove the protecting cap, and attach the lens into the camera by turning clockwise.
5. Connect the lens plug to the auto iris connector on the rear of the camera.



6. Set the DC/VIDEO selection switch to DC or VIDEO according to the type of the lens.



Installing C/CS-Mount lens

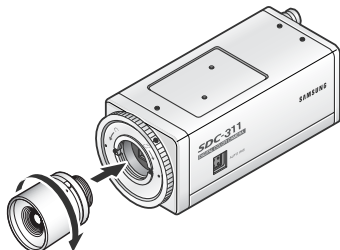
Before mounting a lens, please check whether it is a C-mount or CS-mount lens.

The back focus has set for CS-mount lens at the factory.

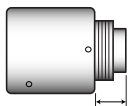
If the mount is changed to the C-mount lens, it may need to be re-adjusted.

◆ In case of mounting a CS-mount lens

After removing the protecting cap, attach the lens into the camera by turning clockwise.



- Use the lens under the specification as shown. Otherwise the lens can damage the camera or abnormal fixing may be resulted in.

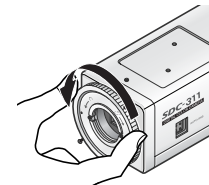
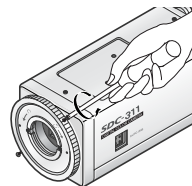


C-mount lens : 10 mm or less
CS-mount lens : 5 mm or less

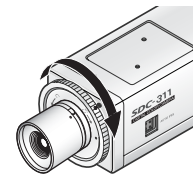
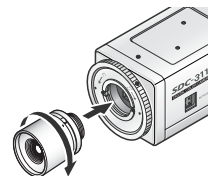
- A heavy lens may disturb the balance with the camera and possibly results in damage. Don't use more than 450g lens.
- It is recommended to set the lens ALC mode to Av mode (Average). Pk mode can be occurred hunting.

◆ In case of mounting a C-mount lens

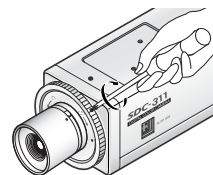
1. After removing the protecting cap, loosen the Back focus lock screw with screwdriver.
2. Turn the Focal length adjusting knob to counterclockwise until locking.



3. Attach the lens into the camera by turning clockwise.
4. Turn the Focal length adjusting knob to clockwise slowly at the best point.



5. Tighten the Back focus lock screw with screwdriver.



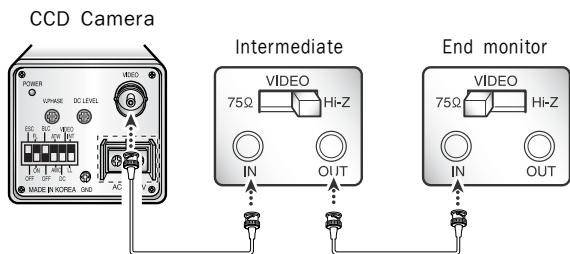
- Do not turn the Focal length adjusting knob too much to clockwise after clicking when use CS-mount lens.

Connecting to Monitor

Connect the VIDEO Out jack to the monitor VIDEO In jack.

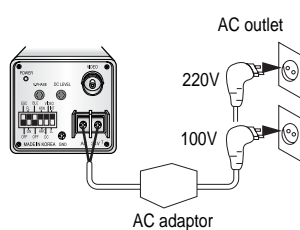


- As a connecting method varies according to instruments, refer to the manual supplied with the instrument.
- Connect the cable after power is turned off.
- Set the 75Ω/Hi-Z selection switch as shown below if you have intermediate device.



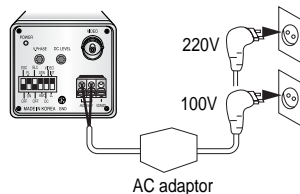
Connecting to Power

Each model has different power specification, please check the name of the model and power specification before connecting to power source. Please refer to the sticker identifying the model, which is attached on the product, for power specification.



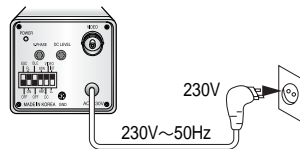
Connecting method for DC or AC power type.

- The wire is polarized. Be sure to connect the wire with white line on its covering to ' - ' terminal and connect the other one to ' + ' terminal.
- Use DC 12V power source for SDC-311(241) ND/PD.
- Use AC 24V~50Hz power source for SDC-311(241)PA. (The wire is non-polarized.)



Connecting method for AC power type.

- The wire is non-polarized.
- Use AC 24V 60Hz power source for SDC-311(241)NA.
- ※ Connect the wire by pushing the button



Connecting method for High Voltage type.

- Use AC 230V~50Hz power source for SDC-311(241)PH.



- Be sure to connect power after all the installation is done.
- Note that AC adaptor is not supplied with camera.
- Since the wire of DC power type is polarized, be careful when Connecting it.

Menu Setup

Use the six Setup Menu buttons on the rear of the camera.

Menu Setup Switch

ESC FL BLC ATW VIDEO INT



OFF ON OFF AWC DC LL

- ① Electronic Shutter speed Control : OFF
- ② Flickerless : OFF
- ③ Backlight Compensation : OFF
- ④ Auto White Balance : ATW
- ⑤ LENS Selection : VIDEO
- ⑥ Sync Mode : INT

(SDC-241/311 AC power only)

Function of Menu Setup Switch

① ESC (Electronic Shutter Control)

You can turn ESC or OFF the Electronic Shutter Control feature.

This ESC mode automatically controls the shutter speed from '1/60' to '1/100,000' sec (NTSC), from '1/50' to '1/100,000' sec. (PAL)

If you want to use DC or VIDEO lens, confirm this switch turn OFF.

(Electronic shutter is fixed in '1/60' sec. (NTSC) or '1/50' sec (PAL)

② FL (Flickerless)

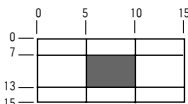
Flickerless function. In this function, electronic shutter is fixed in '1/100' sec(NTSC) or '1/120' sec(PAL)

FL function can compensation the flicker caused by power frequently, but set off in the area not using a 60 Hz AC power on NTSC.

③ BLC (Backlight Compensation)

When the lighting source in the rear of object, the object might be seen some darkness. If you want to see object clearly, turn this switch BLC. The effective area where backlight compensation is fixed in the center of the screen.

If you want to use DC or VIDEO lens, confirm this switch OFF.



④ White balance control mode

- 1) ATW (Auto Tracing White balance) : The camera automatically controls the white balance in any environment.
- 2) AWC (Auto White balance Control) : The White balance is automatically adjusted in a specific environment.



• Please select ESC OFF that chroma may be change periodically because of ATW movement under the fluorescent lights indoor.

⑤ Lens selection

- 1) Manual Lens
Set Menu Setup switch ESC
- 2) Auto IRIS Lens

⑥ VIDEO Lens : Set the ESC OFF in Menu Setup switch, and turn DC/VIDEO selection switch VIDEO.

If you need, adjust the brightness of the screen of the screen with adjustment VR(ALC, LEVEL) on the VIDEO lens.

⑦ DC Lens : Set the ESC OFF in the Menu Setup switch, and the DC/VIDEO selection switch DC.

It may necessary to adjust the bright of the screen. If you needs, handle the DC LEVEL the rear of the camera.

⑧ INT/L.L (Synchronization System Mode)

Two synchronization modes are available. In L.L mode, Use V.Phase adjust relation between the zero crossing point of AC power wave and V—Sync Pulse of the camera's video signal.

The V.Phase has been set at 220 degrees and can be readjusted in the range of 0 to 270 degrees as need.

L.L mode can be used in 60Hz (SDC-241/311NA).

50Hz (SDC-241/311PA/PH)

⑨ AGC (Auto Gain Control)

Always on.

Troubleshooting

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

Problem	Solution
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 made properly. • Check that the DC/VIDEO selection switch on the rear of the camera is set to a proper position according to the type of your auto iris lens.
The image on the screen is dark.	<ul style="list-style-type: none"> • Check that you have set ESC feature
The image on the screen is dim.	<ul style="list-style-type: none"> • Check if the lens are stained. If dirty, clean the lens with soft, clean cloth.
The camera is not work properly, and the surface of the camera case is hot.	<ul style="list-style-type: none"> • Check that you have connected the camera to a proper power.

Problem	Solution
The color of the picture is not matched.	<ul style="list-style-type: none"> • Check that you have properly set White Balance Control Mode.
The contrast on the screen is too weak.	<ul style="list-style-type: none"> • Adjust the contrast feature of the monitor. • If the camera is exposed under too strong light, change the camera position.
The image on the screen flickers.	<ul style="list-style-type: none"> • Does the camera face to directly to the sun or fluorescent lighting? Change the camera position. • Check that the DC/VIDEO selection switch on the rear of the camera set to a proper position according to the type of your auto iris lens.
The image on the screen is distorted.	<ul style="list-style-type: none"> • Check that you have used 50Hz (PAL models), 60Hz(NTSC models) the linelock synchronization mode cannot be used. Use the Synchronization Mode to INT mode.

Specifications

SDC-311 Series

Item	SDC-311ND	SDC-311NA	SDC-311PD	SDC-311PA	SDC-311PH
Power Source	DC 12V	AC 24V 60Hz	DC 12V	AC 24V~ 50Hz	AC230V~ 50Hz
Power Consumption	4.5W	6.5W	4.5W	6.5W	6.5W
Input Current	350mA	240mA	350mA	240mA	32mA
SYNC. System	INT Only	INT/Linelock selectable	INT Only	INT/Linelock selectable	
Pick-Up Device	1/3" CCD, 768(H)×494(V)		1/3" CCD, 752(H)×582(V)		
Scanning System	2:1 Interlace(NTSC Standard) 525 Lines / 60 Fields / 30 Frames		2:1 Interlace(PAL Standard) 625 Lines / 50 Fields / 25Frames		
Video Output	1.0 Vp-p NTSC Comp		1.0 Vp-p PAL Comp		
Electronic Iris	1/60~1/100,000 sec		1/50~1/100,000 sec		
Minimum Illumination	0.7 Lux at F 1.2				
Resolution	≥ 480(H) TV lines				
Backlight Compensation	ON/OFF Selectable				
Iris Mode	VIDEO / DC / ESC Selectable				
Lens	C / CS Mount Changeable				
AGC	Always On				
Flickerless	ON/OFF Selectable				
White Balance	ATW / AWC				
Gamma	$\gamma=0.45$				
S/N Ratio	≥ 48dB (AGC OFF)				
Ambient Temp	- 10°C~+50°C				
Dimension	55(W)×50(H) × 121(L) mm (Without Lens)				
Weight	320g (Without Lens)	530g (Without Lens)	320g (Without Lens)	530g (Without Lens)	550g (Without Lens)
Accessory	Iris jack, Instruction Manual				

※ Design and specifications are subject to change without notice.

SDC-241 Series

Item	SDC-241ND	SDC-241NA	SDC-241PD	SDC-241PA	SDC-241PH
Power Source	DC 12V	AC 24V 60Hz	DC 12V	AC 24V~ 50Hz	AC230V~ 50Hz
Power Consumption	4.0W	6.0W	4.0W	6.0W	6.0W
Input Current	320mA	240mA	320mA	240mA	28mA
SYNC. System	INT Only	INT/Linelock selectable	INT Only	INT/Linelock selectable	
Pick-Up Device	1/3" CCD, 510(H)×492(V)		1/3" CCD, 500(H)×582(V)		
Scanning System	2:1 Interlace(NTSC Standard) 525 Lines / 60 Fields / 30 Frames		2:1 Interlace(PAL Standard) 625 Lines / 50 Fields / 25Frames		
Video Output	1.0 Vp-p NTSC Comp		1.0 Vp-p PAL Comp		
Electronic Iris	1/60~1/100,000 sec		1/50~1/100,000 sec		
Minimum Illumination	0.3 Lux at F 1.2				
Resolution	≥ 330(H) TV lines				
Backlight Compensation	ON/OFF Selectable				
Iris Mode	VIDEO / DC / ESC Selectable				
Lens	C / CS Mount Changeable				
AGC	Always On				
Flickerless	ON/OFF Selectable				
White Balance	ATW / AWC				
Gamma	$\gamma=0.45$				
S/N Ratio	≥ 48dB (AGC OFF)				
Ambient Temp	- 10°C~+50°C				
Dimension	55(W)×50(H) × 121(L) mm (Without Lens)				
Weight	320g (Without Lens)	530g (Without Lens)	320g (Without Lens)	530g (Without Lens)	550g (Without Lens)
Accessory	Iris jack, Instruction Manual				

※ Design and specifications are subject to change without notice.