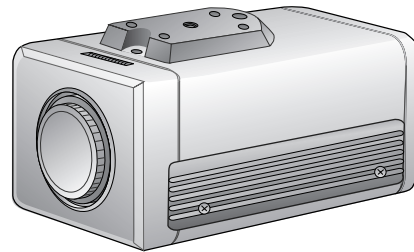


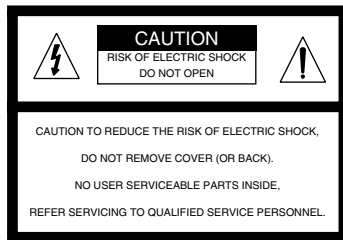
# Operating Instructions

LVC-S60



Before installing and using the camera, please read these instructions thoroughly and retain them for later reference.





This symbol 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.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## Warning

**To prevent fire or shock hazard, do not expose the unit to rain or moisture. To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.**

## Regulatory Notices For U.S.A

This equipment has been tested and found to comply with the 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 in a residential installation! This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.



This product is manufactured to comply with the radio interference requirements of EEC DIRECTIVE 89/336/EEC, 93/68/EEC and 73/23/EEC.

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## FEATURES

This color video camera is designed for use in monitoring system.

- High resolution and high sensitivity with a 1/3 inch Super HAD CCD (Charge Coupled Device)
- Line Lock when using AC24V power.
- CS Mount
- Dual power AC 24V / DC 12V
- Non-polarity DC12V

### Maintenance of the unit

- Remove dust or dirt on the surface of the lens with a blower.
- Use a dry soft cloth to clean the body. If it is very dirty, use a cloth dampened with a small quantity of neutral detergent and then wipe dry.
- Avoid the use of volatile solvents such as thinners, alcohol, benzene, and insecticides. They may damage the surface of the body.

## Cautions for Safe Operation

### Power Supply

They must be operated with a AC 24V class 2 power supply and DC12V alternatively.

\* Notes: Be careful of AC frequency when the camera is operated with Line lock mode.

AC24V(60Hz):S60HM/S60NM

AC24V(50Hz):S60HP/S60NP

### Handling of the unit

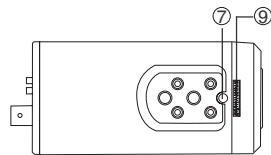
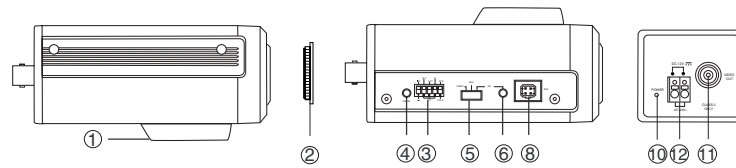
Be careful not to spill water or other liquids on the unit. Be cautions not to get combustible or metallic material inside the body. If used with foreign matter inside, the camera is liable to fail or to get a cause of fire or electric shock.

### Operating and storage location

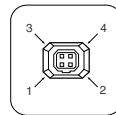
Avoid viewing a very bright object (such as light fittings) during an extended period. Avoid operating or storing the unit in the following locations.

- Extremely hot or cold places (operating temperature -10°C~50°C, however, we recommend that the unit be used within a temperature range of 0°C~45°C)
- Damp or dust place
- Places exposed to rain
- Places subject to strong vibration
- Close to generators of powerful electromagnetic radiation such as radio or TV transmitters.

## OPERATING CONTROLS AND THEIR FUNCTIONS



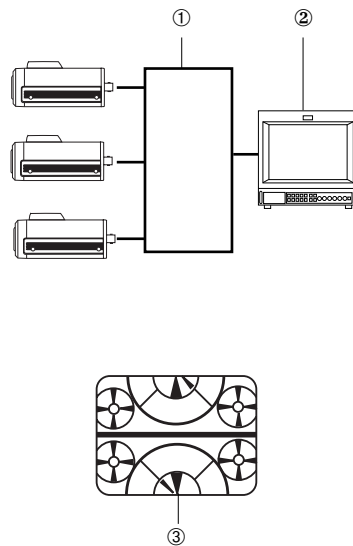
Pin assignment of auto iris lens connector



Pin No.	DC iris	Video iris
1	Damping - Vcc +	
2	Damping + Not used	
3	Drive +	Video
4	Drive -	Ground

- ① Tripod adapter
- ② CCD cover
- ③ Dip switches
- ④ Line phase adjustment volume
- ⑤ Lens selection switch
- ⑥ DC iris level adjustment volume
- ⑦ Back focus lock screw
- ⑧ Auto iris lens connector
- ⑨ Back focus adjustment screw
- ⑩ Power LED
- ⑪ BNC connector for video output
- ⑫ Power input connector

## OPERATING CONTROLS AND THEIR FUNCTIONS



### The Adjustment method of Line Lock Phase

When using a camera switcher to connect 2 cameras or more to one monitor, there may be a vertical roll of the images when switched. In such a case, refer to the below.

- The vertical sync phase can be manually adjusted within the range approximately from  $-90^{\circ}$  to  $+90^{\circ}$ .
- Switch the display on the monitor from camera1 to camera2.

Adjust the PHASE volume on camera2 until the vertical roll of the image stops.

If more than two cameras are used, please repeat this procedure for all the cameras.

- If you can't adjust vertical sync. phase, Please exchange the polarity of input terminal.

- ① Camera switcher
- ② Monitor
- ③ Vertical phase

## CONNECTIONS

### Power Connection

**LVC-S60** (DC12V/AC24V Compatible)

#### 1. DC 12V Power Supply

Remove the insulation on the power cable as illustrated and connect the power cord to the AC/DC compatible terminals on rear panel of the camera.

#### Note :

You don't need to be cautious of the polarity of positive and negative.  
(Auto polarity sensing)

#### 2. AC 24V Power Supply

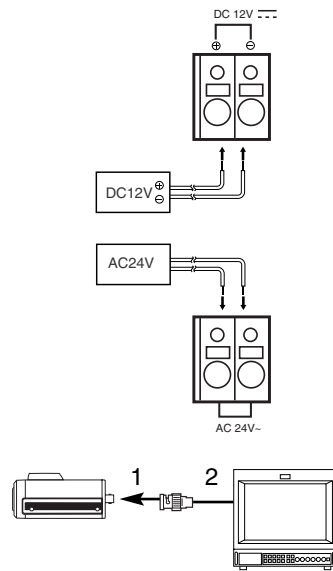
Connect the power cable to the AC/DC compatible input terminal on the rear panel of the camera

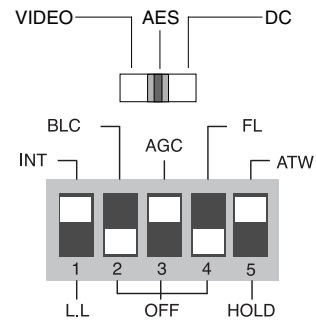
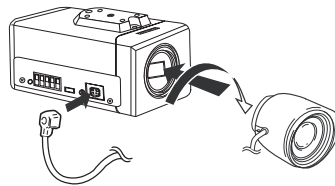
#### Note :

To get the optimum performance from the unit, be sure to connect to an AC supply of 24V  $\pm 10\%$

### Connecting the monitor

- ① To VIDEO OUT
- ② To video input on the monitor





\* Factory Setting

### Lens Mounting

Remove the CCD cover. Then attach the CS mount lens to the camera. Please refer to the drawing on the left.

### CAUTION

Be cautious not to use Auto Iris Lens with over 75mA

DC iris level is preset in the factory. Only if necessary, adjust the DC iris level to achieve the proper picture with AGC off.

### Auto Iris Mode Selection

POSITION	LENS
DC	DC iris lens
AES	Manual or fixed iris lens
VIDEO	Video iris lens

Set the auto iris mode selection switch to the position that corresponds to the lens which is mounted to the camera. Please refer to the table on the left.

No.	NAME	POSITION	FUNCTION
1	Synchronization mode (SYNC)	L.L.	Line lock mode
		INT.	Internal synchronization mode
2	Back light compensation (BLC)	ON	sets to this position when strong light comes in behind the target
		OFF	normal position
3	Auto gain control (AGC)	ON	AGC level varies from 10dB to maximum 30dB
		OFF	10dB (Max.)
4	Flickerless (FL)	ON	shutter speed is fixed. (NTSC : 1/100 sec. PAL : 1/120 sec)
		OFF	shutter speed is not fixed.
5	White Balance (WB)	HOLD	WB is fixed
		ATW	tracks and adjusts WB automatically



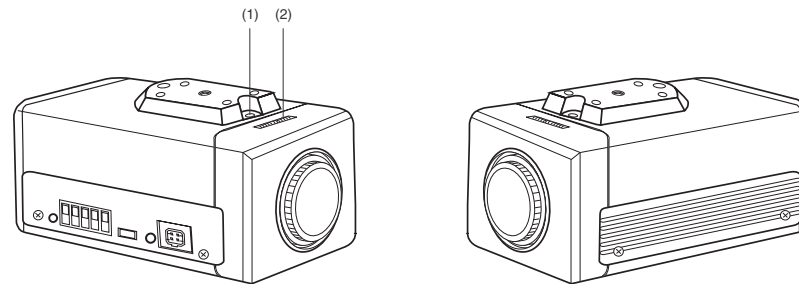
## BACK FOCUS ADJUSTMENT

If back focus has to be adjusted after mounting the lens,

1. Loosen the back focus lock screw (1) on top of the camera with a (+) screwdriver
2. Turn the back focus adjustment screw (2) on top of the camera with hands until the desired focus is reached.
3. Tighten the back focus lock screw (1).

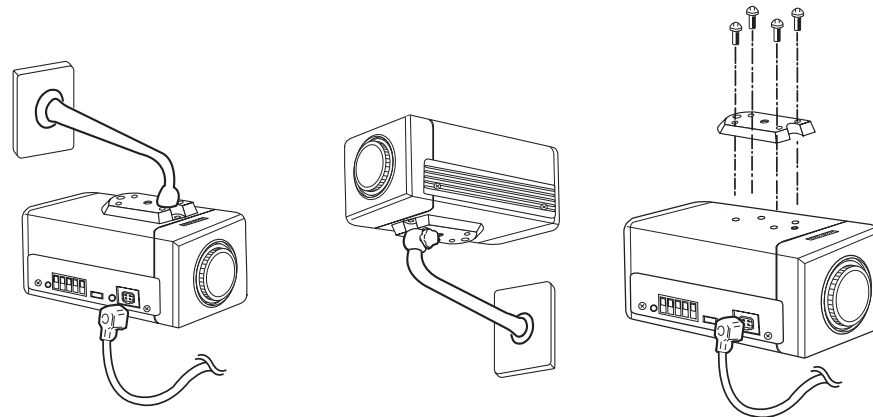
**Note :**

When tighten screw, do not inflict unreasonable force. It may damage to the unit.



## INSTALLATION OF CAMERA

This camera is mounted with tripod which makes it possible to install from both of the bottom and the top of the unit as illustrated.



## Specification

Model	LVC-S60HM	LVC-S60HP	LVC-S60NM	LVC-S60NP
Signal System	NTSC	PAL	NTSC	PAL
Total/Effective Pixels	410K/380K	470K/440K	270K/250K	320K/290K
Pick-Up Device	1/3 - Inch Interline Color CCD(Super HAD)			
Lens	CS MOUNT			
Iris Control	DC / AES / VIDEO			
Signal Process	Digital Signal Process			
Scanning System	2:1 Interlace			
Sync. System	Internal / External (Line Lock)		Internal	
Scanning Frequency	59.94Hz(VD)	50Hz(VD)	59.94Hz(VD)	50Hz(VD)
Resolution	More than 480Line(H)	More than 470Line(H)	More than 330Line(H)	More than 320Line(H)
S/N Ratio	More than 50 dB			
Standard Illuminance	2000Lux (5100°K)			
Sensitivity (1/3 Output)	0.4Lux (F1.0)		0.1Lux (F1.0)	
Video Output Signal	1Vp-p Composite (75Ω)			
Back Light	Manual ON / OFF (with DIP Switch)			
Gain Control	ON (Max. 30dB) / OFF (Max.10dB) (with DIP Switch)			
Flickerless	ON / OFF (with DIP Switch)			
White Balance	ATW / HOLD (with DIP Switch)			
Exposure	Automatic control with DC Iris meter / Video Iris meter / Auto Electronic Shutter (Max. 1/100000)			
Power Source	DC 12V ± 10% (Auto Polarity Sensing) / AC 24V ± 10%			
Power Consumption	2.8W		2.0W	
Operation Temp.	-10°C ~ 50°C (Humidity : 0%RH ~ 60%RH)			
Storage Temp.	-20°C ~ 60°C (Humidity : 0%RH ~ 85%RH)			
Weight	Approximately 300g			
Dimensions	55 (H) X 56 (V) X 123 (D)			



P/NO.: 3834RS0068M

