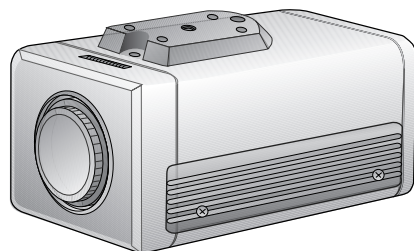


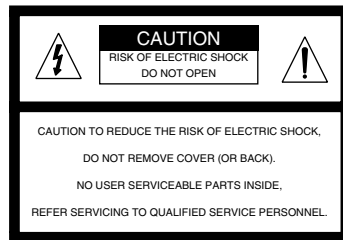
Operating Instructions

LVC-S60HM
LVC-S60HP
LVC-S60NM
LVC-S60NP



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.

2

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.

Wiring methods shall be in accordance with the National Electric Code, ANSI/NFPA 70.

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.

Contents

Features	3
Cautions for Safe Operation	4
Operating Controls and Their Functions	5-6
Connections	7-8
Back Focus Adjustment	9
Installation of Camera.....	10
Specifications.....	11

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 (Adapter Ring Mount for C Lens: Optional)
- 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

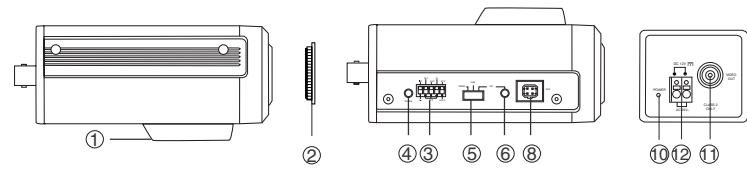
Be careful not to spill water or other liquids on the unit. Be cautions not to get combustible or metallic material inside the body. If used with foreign matter inside, the camera is liable to fail or to get a cause of fire or electric shock.

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

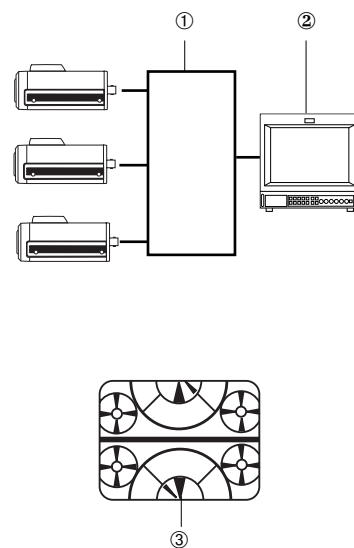


Pin assignment of auto iris lens connector

Pin No.	DC iris	Video iris
1	Damping - Vcc (+9V)	
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° 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

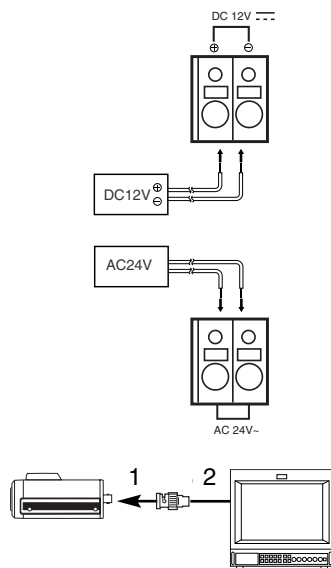
Connect the power cable to the AC/DC compatible input terminal on the rear panel of the camera

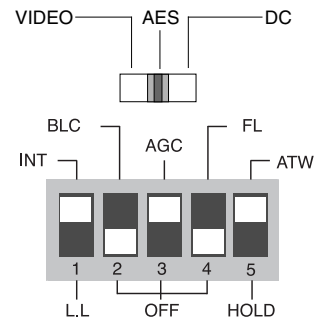
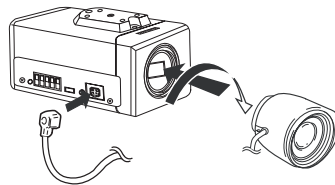
Note :

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

8

Lens Mounting

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

C Mount Lens: You have to use the Adapter Ring Mount (not supplied).

CAUTION

Be cautious not to use Auto Iris Lens with over 30mA

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

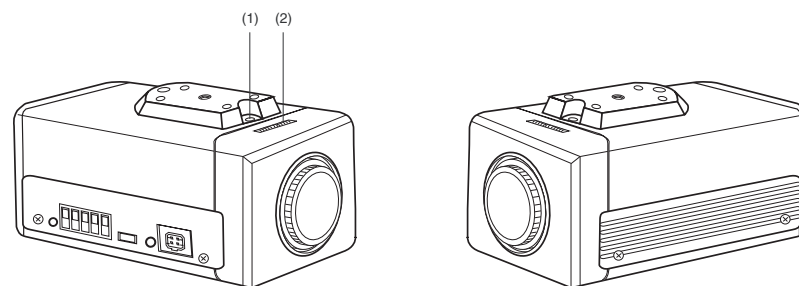
BACK FOCUS ADJUSTMENT

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).

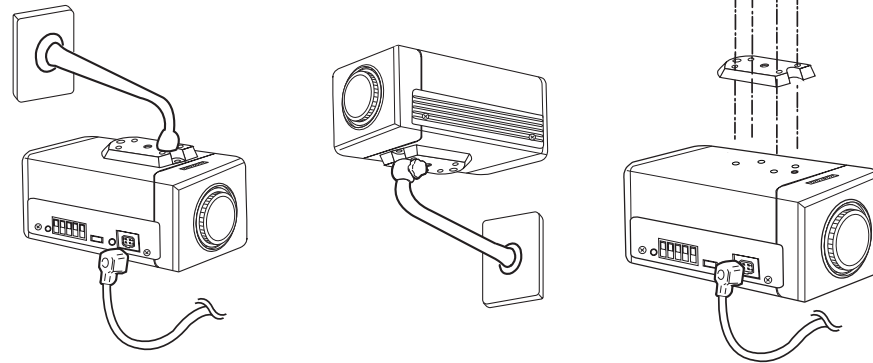
Note :

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



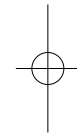
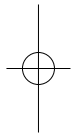
INSTALLATION OF CAMERA

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.

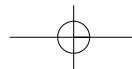


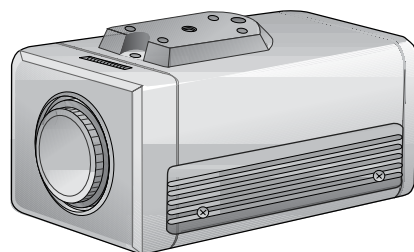
Specifications

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	C / CS MOUNT (Adapter Ring Mount for C Lens: Optional)			
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 500Line(H)	More than 500Line(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	3.5W			
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.: 3834RS0072E





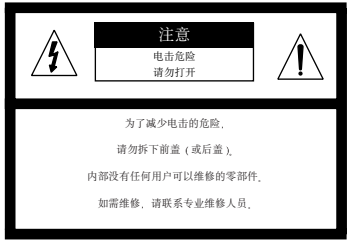
操作指南

LVC-S60HM
LVC-S60HP
LVC-S60NM
LVC-S60NP



在您使用此摄像机之前，请完整阅读此操作指南以供参考。





此符号用于警示用户，产品外壳存在未绝缘的危险电压，会产生对人身造成电击的危险。



此符号用于提醒用户，随设备一起提供的印刷品中包含重要的操作和维护（维修）指南。

警告

为了防止电击事故，请不要将该产品暴露在雨中或潮湿的环境中。为了避免电击的危险，请不要打开机壳，如需维修，请联系专业维修人员。

接线方法应该符合美国国家电气规程 ANSI/NFPA 70 之规定。

规定声明（U.S.A）

本产品经测试符合 FCC 第 15 部分有关 A 类数字设备的限制条件。这些限制条件是为提供合理的保护措施，防止在住宅区安装设备时产生有害干扰而制定的！本设备会产生、使用和辐射无线电频率能量。如未正确安装和使用，可能对无线电通讯造成有害干扰。

然而，并不保证在特殊的安装方式下不产生干扰。如果本设备确实对无线电或电视接收设备造成严重干扰，这可以通过关闭和打开本设备来确定。另外，我们请用户通过以下方法来克服干扰：

- 重新定向或重新定位接收天线。
- 增大本设备和接收设备之间的距离。
- 将本设备插入另一个插座，使本设备和接收设备位于不同的电路中。
- 咨询经销商或有经验的无线电/电视技术人员以获取帮助。

本 A 类数字设备符合加拿大关于产生干扰的设备之规定中的全部要求。



此产品是按照 EEC DIRECTIVE 89/336/EEC、93/68/EEC 和 73/23/EEC 无线电干扰标准生产的。

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特点

此彩色摄像机是为监视系统专门设计的。

- 高分辨率、高灵敏度的 1/3 英寸 Super HAD CCD (电荷耦合装置)
- 当使用 AC24V 电源时行锁定
- CS 安装（用于 C 镜头的连接环安装：可选）
- 双电源 AC 24V / DC 12V
- 无极性 DC12V

设备维护

- 使用吹风机将表面的灰尘或脏物吹掉。
- 请使用软布清洁机身。如果太脏，请使用带有少量中性清洁剂的软布清洁，然后擦干。
- 请不要使用挥发性溶剂，如稀释剂、酒精、苯和杀虫剂，它们会损坏表面或机身。

安全操作注意事项

电源

它们必须使用 AC 24V 2 类电源或者 DC12V 电源。

注意：当摄像机在行锁定模式下工作时，
请注意 AC 电源的频率。

AC24V(60Hz):S60HM/S60NM

AC24V(50Hz):S60HP/S60NP

搬运设备

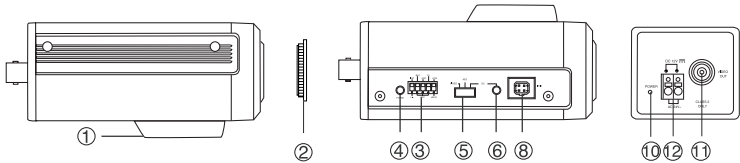
请注意不要将水或其它液体溅到设备上。机身内不能有易燃物或磁性物质。如果摄像机内部有杂质，则可能会导致摄像机故障或引发火灾或电击。

使用和存放地点

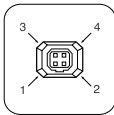
不要长时间观看过于明亮的物体（如灯具）。
避免在以下环境中使用或存放此设备。

- 过热或过冷的地方 (工作温度为 $-10^{\circ}\text{C}\sim 50^{\circ}\text{C}$ ，但是我们建议此设备使用的温度范围为 $0^{\circ}\text{C}\sim 45^{\circ}\text{C}$)
- 潮湿或有灰尘的地方
- 暴露在雨中
- 暴露在有强烈振动的环境中
- 靠近有强电磁辐射的地方，如收音机或电视发射机附近。

操作控制及功能



自动光圈镜头管脚定义



管脚编号	DC 光圈	视频光圈
1	衰减 -	Vcc (+9V)
2	衰减 +	未使用
3	驱动 +	视频
4	驱动 -	地

- ① 三脚架转接器

② CCD 盖

③ DIP 开关

④ 行相位调节开关

⑤ 镜头选择开关

⑥ DC 光圈级别调节
- ⑦ 后焦距锁定螺丝

⑧ 自动光圈镜头接口

⑨ 后焦距调节螺丝

⑩ 电源 LED

⑪ 用于视频输出的 BNC 接口

⑫ 电源输入接口

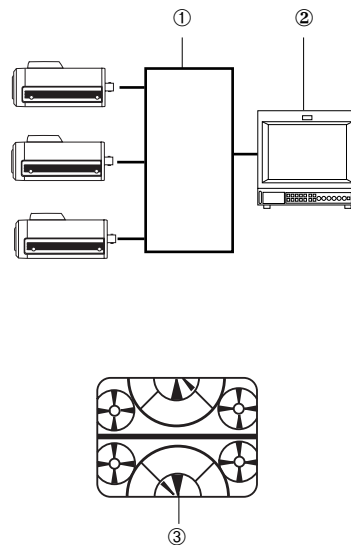
操作控制及功能

行锁定相位调整方法

当使用摄像机切换器连接 2 部或多部摄像机到一台监视器时，在切换时图像可能会有一个垂直滚动。在此情况下，请参照以下说明。

- 垂直同步相位可以手动调整，调整范围大约为 -90° 到 90° 。
- 将监视器上的显示从摄像机 1 切换到摄像机 2。调节摄像机 2 上的 **PHASE** 音量，直到图像的垂直滚动停止。
- 如果使用多部摄像机，请对所有摄像机重复此过程。
- 如果您无法调节垂直同步相位，请交换输入端子的极性。

- ① 摄像机切换器
- ② 监视器
- ③ 垂直相位



连接

电源连接

LVC-S60 (DC12V/AC24V 兼容)

1. DC 12V 电源

照图所示剥开电源线的绝缘层，将电源线连接到摄像机后面板上兼容 AC/DC 的端子上。

注意：

您无须注意正负极性。
(自动极性检测)

2. AC 24V 电源

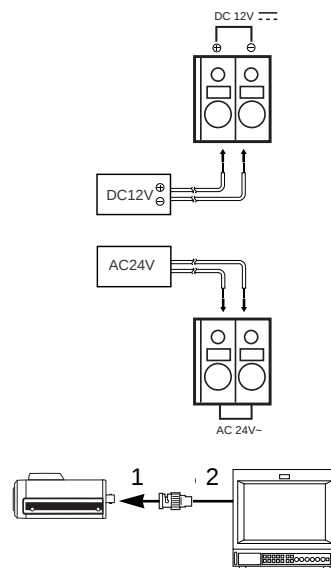
将电源线连接到摄像机后面板上兼容 AC/DC 的输入端子上。

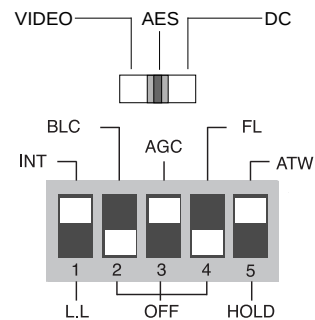
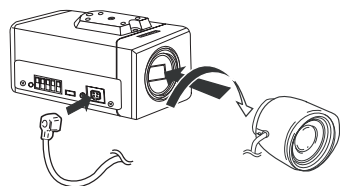
注意：

要获得最佳的设备性能，请连接 $24V \pm 10\%$ 的 AC 电源

连接监视器

- ① 到 VIDEO OUT
- ② 到监视器上的视频输入





* 出厂设置

8

镜头安装

取下 CCD 盖。然后将 CS 安装镜头固定到摄像机上。请参见左图。

CS 安装镜头：您必须使用连接环安装（不附带）。

注意

请不要使用超过 30mA 的自动光圈镜头

DC 光圈级别在工厂预设。如果必要，调节 DC 光圈级别以获得更好的图像（AGC 关闭）。

自动光圈模式选择

位置	镜头
DC	DC 光圈镜头
AES	手动或固定光圈镜头
VIDEO	视频光圈镜头

将自动光圈模式选择开关设定到与摄像机上安装的镜头相对应的位置。请参见左表。

编号	名称	位置	功能
1	同步模式 (SYNC)	L.L.	行锁定模式
		INT.	内部同步模式
2	背光补偿 (BLC)	ON	当物体后面有强光时设定到此位置
		OFF	普通位置
3	自动增益控制 (AGC)	ON	AGC 电平变化，从 10dB 到最大 30dB
		OFF	10dB (最大)
4	无闪烁 (FL)	ON	快门速度固定。(NTSC: 1/100 秒, PAL: 1/120 秒)
		OFF	快门速度未固定。
5	白平衡 (WB)	HOLD	WB 固定
		ATW	自动跟踪和调整 WB

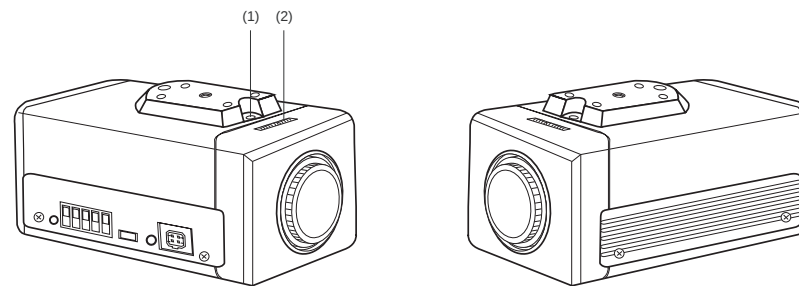
后焦距调整

如果后焦距必须在镜头安装后调整，

1. 使用 (+) 螺丝刀松开摄像机顶部的后焦距锁定螺丝 (1)。
2. 用手向回调整摄像机顶部的后焦距调整螺丝 (2)，直到获得所需的焦距。
3. 上紧后焦距锁定螺丝 (1)。

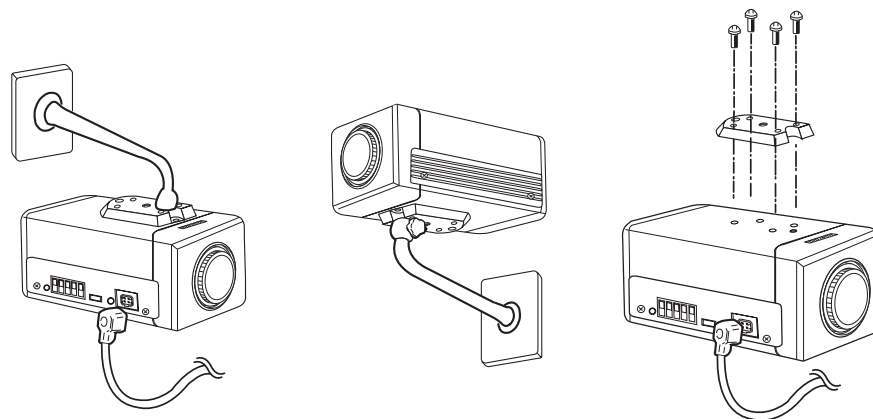
注意：

在上紧螺丝时，且勿太过用力，否则会损坏设备。



摄像机安装

摄像机可以采用如图所示的方式，使用三脚架从底部或顶部安装。



规格

型号	LVC-S60HM	LVC-S60HP	LVC-S60NM	LVC-S60NP
信号制式	NTSC	PAL	NTSC	PAL
总像素 / 有效像素	410K/380K	470K/440K	270K/250K	320K/290K
信号感应设备	1/3 -英寸隔行彩色 CCD (Super HAD)			
镜头	C / CS 安装 (用于 C 镜头的连接环安装 : 可选)			
光圈控制	DC / AES / VIDEO			
信号处理	数字信号处理			
扫描系统	2:1 隔行			
同步系统	内部 / 外部 (行锁定)		内部	
扫描频率	59.94Hz (VD)	50Hz (VD)	59.94Hz (VD)	50Hz (VD)
分辨率	大于 500 线(H)	大于 500 线(H)	大于 330 线(H)	大于 320 线(H)
信噪比	大于 50 dB			
标准亮度	2000Lux (5100°K)			
灵敏度 (1/3 输出)	0.4Lux (F1.0)		0.1Lux (F1.0)	
视频输出信号	1Vp-p 补偿 (75W)			
背光	手动 ON / OFF (使用 DIP 开关)			
增益控制	ON (大于 30dB) / OFF (最大 10dB) (使用 DIP 开关)			
无闪烁	ON / OFF (使用 DIP 开关)			
白平衡	ATW / HOLD (使用 DIP 开关)			
曝光	自动 DC 光圈测量 / 视频光圈测量 / 自动电子快门 (最快 1/100000)			
电源	DC 12V ± 10% (自动极性检测) / AC 24V ± 10%			
功耗	3.5W			
工作温度	-10°C ~ 50°C (湿度 : 0%RH ~ 60%RH)			
储存温度	-20°C ~ 60°C (湿度 : 0%RH ~ 85%RH)			
重量	大约 300 g			
尺寸	55 (H) X 56 (V) X 123 (D)			



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