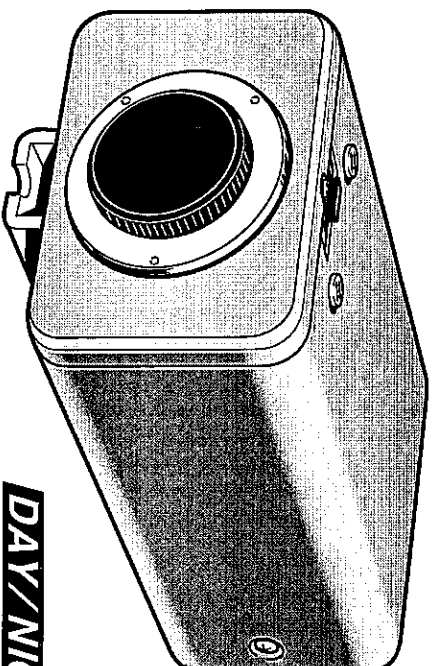


**INSTRUCTION MANUAL
BEDIENUNGSANLEITUNG
MANUEL D'INSTRUCTIONS
使用说明书**

**COLOUR CCD camera
CCD-Farbkamera
Caméra CCD COULEUR
彩色CCD摄像机**



DAY/NIGHT

About this manual

Before installing and using the camera, please read this manual carefully. Be sure to keep it handy for later reference.

Über diese Bedienungsanleitung

Lesen Sie bitte vor der Montage und dem Inbetriebnehmen der Kamera zuerst diese Bedienungsanleitung sorgfältig durch und bewahren Sie sie zum späteren Nachschlagen auf.

A propos de ce manuel

Avant d'installer et d'utiliser la caméra, veuillez lire ce manuel attentivement. Gardez-le à portée de main pour toute référence ultérieure.

关于本说明书

在安装和使用摄像机之前，请仔细阅读本使用说明书，并务必保存好本使用说明书，以备今后查阅。

SANYO

VCC-4312P

Depending on the conditions of use, installation and environment, please be sure to make the appropriate settings and adjustments. If you need help with installation and/or settings, please consult your dealer.

CONTENTS

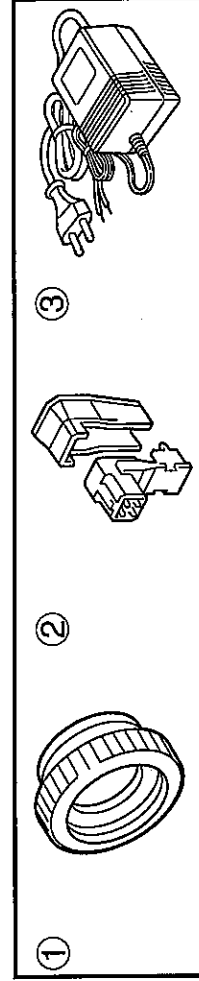
PRECAUTIONS.....	2
PARTS NAMES	3
MOUNTING THE LENS.....	7
CONNECTIONS.....	9
SETTINGS.....	10
TROUBLESHOOTING	13
SPECIFICATIONS.....	14

ACCESSORIES

- ① C mount adaptor (5 mm) 1 pc.

The C mount adaptor must be used to be able to install a C mount lens on the camera.

- ② Lens iris plug (4-pin) 1 pc.
- ③ AC adaptor 1 pc.



FEATURES

- The optical filter is switched automatically to colour image or black and white image according to the subject brightness.
- Built-in interline transfer method 1/3" CCD, approx. 320,000 picture elements
- Low smear, anti-blooming, low lag, no burning and no geometric distortion using the CCD solid state image device.
- 100% solid state components giving excellent immunity to shock and vibration
- Not subject to interference from magnetic or electrostatic fields
- High sensitivity, minimum required illumination is 0.05 lux (F1.2)
- Horizontal resolution, more than 330 TV lines
- Power supply: 12 – 15 V DC operation

PRECAUTIONS

■ In case of problem

Do not use the camera if smoke or a strange odour comes from the unit, or if it seems not to function correctly. Disconnect the power cord immediately, and consult your dealer (or a Sanyo Authorized Service Centre).

■ Do not open or modify

Do not open the cabinet, as it may be dangerous and cause damage to the unit. For internal settings and repairs, consult your dealer (or a Sanyo Authorized Service Centre).

■ Do not put objects inside the unit

Make sure that no metal objects or flammable substance get inside the camera. If used with a foreign object inside, it could cause a fire, short-circuits or damages.

If water or a liquid gets inside the camera, disconnect the power cord immediately, and consult your dealer (or a Sanyo Authorized Service Centre). Be careful to protect the camera from rain, sea water, etc.

■ Be careful when handling the unit

To prevent damages, do not drop the camera or subject it to strong shock or vibration.

■ Install away from electric or magnetic fields

If installed close to a TV, radio transmitter, magnet, electric motor, transformer, audio speakers the magnetic field they generate will distort the image.

■ Protect from humidity and dust

To prevent damages to the camera, do not install it where there is greasy smoke or steam, where the dampness may get too high, or where there is a lot of dust.

■ Protect from high temperatures

Do not install close to stoves, or other heat generating devices, such as spotlights, etc., or where it could be subject to direct sunlight, as that could cause deformation, discoloration or other damages.

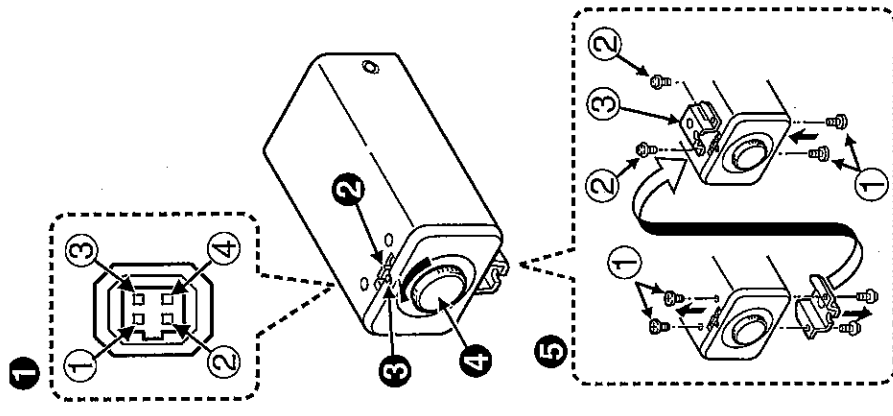
Be careful when installing close to the ceiling, in a kitchen or boiler room, as the temperature may raise to high levels.

Install where the temperature range will stay between -10°C and 50°C .
(no condensation)

■ Cleaning

- Dirt can be removed from the cabinet by wiping it with a soft cloth. To remove stains, wipe with a soft cloth moistened with a soft detergent solution and wrung dry, then wipe dry with dry soft cloth.
- Do not use benzine, thinner or other chemical product on the cabinet, as that may cause deformation and paint peeling. Before using a chemical cloth, make sure to read all accompanying instructions. Make sure that no plastic or rubber material comes in contact with the cabinet for a long period of time, as that may cause damage or paint peeling.

PARTS NAMES



1 Lens iris output connector (4 pin)

This 4-pin connector is used to send the DC control signal and power supply to an auto-iris type lens.

2 Flange-back adjustment lever (See page 6)

3 Flange-back lock screw

4 Lens mount cap

The cap is installed to protect the lens mount section.

Remove the lens mount cap before installing a lens (sold separately).

5 Camera installation bracket

The bracket can be fixed at the top or bottom of the camera. When fixing the bracket, be sure to use the longer screws and install the shorter screws on the opposite side to seal the openings.

CAUTION:
When installing the camera support, select a location that can support the total weight of the camera and accessories.

① Shorter screws: M3 x 4

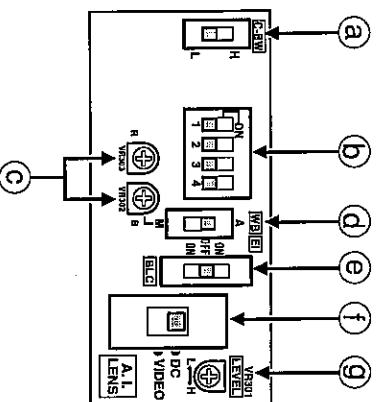
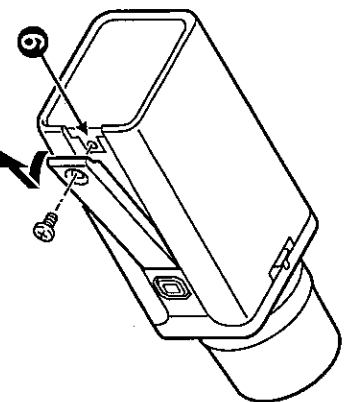
② Longer screws: M3 x 6

③ Camera mounting

screw hole:

1/4"-20 UNC

PARTS NAMES



6 Camera setup section (under the cover)

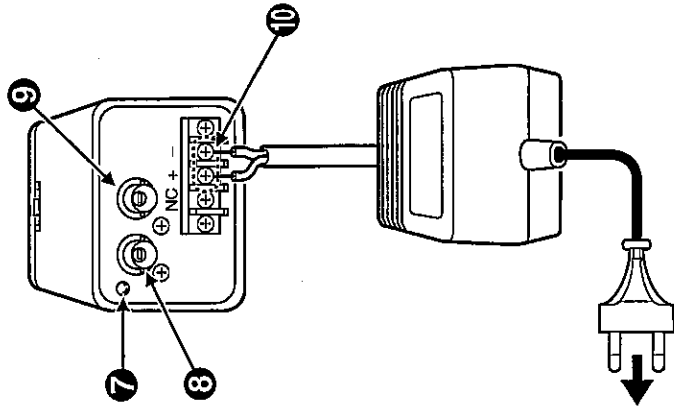
This unit factory settings are as indicated below. These settings are for when using a 1/3 inch CS mount **DC** (without **EE** internal amplifier) type lens. However, if due to installation conditions or environment the settings may need to be modified for best results (see "**SETTINGS**"). To access the controls, remove the cover fixing screw, then remove the cover.

Control name	Position
(a) Colour and Black/White level switch (C-BW)	L
(b) High speed electronic shutter switches (ES)	All OFF: 1/50 sec
(c) Red and Blue colour adjustment volume (R, B)	about centre
(d) White balance switch (WB)	A
(e) Electronic iris (EI)/Backlight compensation (BLC) switch	OFF
(f) Auto-iris lens switch (A.I. LENS)	DC
(g) Lens iris level volume (LEVEL)	about centre

Notes:

- The **EI/BLC** switch cannot be used simultaneously.
- When using a 1/2 or 2/3 inch C mount **VIDEO** (with **EE** internal amplifier) auto-iris type lens, set the **A.I. LENS** switch to the **VIDEO** position.
- If not using an auto-iris lens, make sure the **EI/BLC** switch is set to **OFF**.

PARTS NAMES



7 Power indicator (POWER)

Comes on when the power to the camera is on.

8 Video output connector (VIDEO OUT: BNC type)

Connect this connector to a device such as a VCR or monitor with a **VIDEO IN** connector.

9 External sync composite video signal input connector (VBS IN: BNC type)

Connect to this connector the synchronizing signal output from a synchronizing signal device or the composite signal of a video distributor.

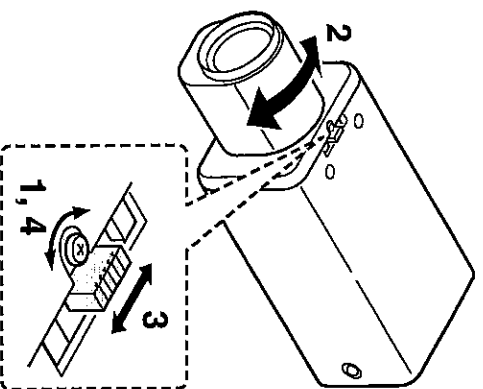
10 12 V DC input terminal (12 V DC, NC)

■ POWER SOURCE

Connect DC connecting cord from the AC adaptor to the **12 V DC IN** terminal on the camera. Then, plug the AC adaptor into an AC outlet.

WARNING:

- This AC adaptor is specially conceived for this camera. Never use another type of AC adaptor with this camera, and do not use this AC adaptor to power other types of cameras.
- Not for use with toys.
- Never try to disassemble or modify the AC adaptor.
- AC adaptor output: 15 V DC



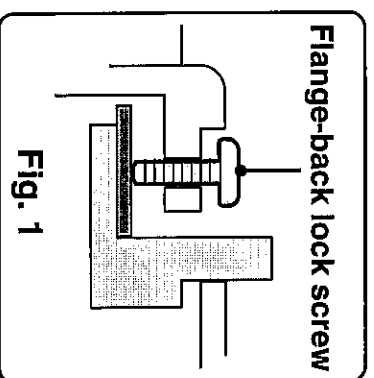
■ Flange-back adjustment

If the pick-up surface is not correctly positioned with relation to the lens focal point, the picture will be out of focus (in particular when using auto-iris power zoom lenses, sold separately). If that is the case, adjust the flange-back position as described below.

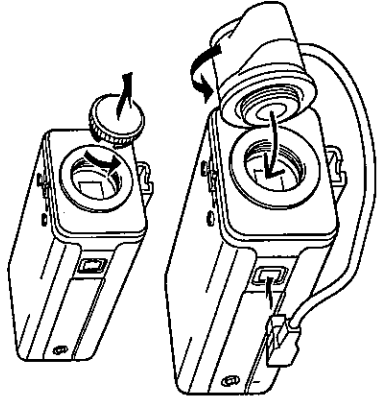
- 1 Using a + screwdriver, loosen the **flange-back lock screw (M2:+)**.
 - 2 Set the zoom lens to the maximum telephoto position, set the focus using the focus ring on the lens.
 - 3 Set the zoom lens to the maximum wide angle position, set the focus using the **flange-back adjustment lever**.
 - 4 Repeat steps 2 and 3, until the image stays in focus when changing from a telephoto shot to a wide angle shot.
- When the setting is complete, tighten the **flange-back lock screw**.

Note:

When flange-back lock screw is completely tighten it will protrude slightly as shown in the illustration (Fig. 1). Do not tighten the screw further.

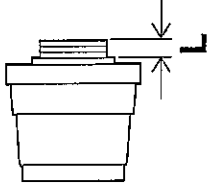


MOUNTING THE LENS



Check the lens mount

Do not use a lens if the length "L" is more than 5 mm. That may damage the camera and prevent proper installation.



■ Installation of a DC type auto-iris lens (sold separately)

A 1/3 inch CS mount type lens without EE amplifier circuit that only uses a DC power source. This camera can receive (the **A.I. LENS** switch to the DC type) a CS mount type lens without the need of an adaptor. If the lens plug shape or wiring does not correspond, please install the supplied plug as indicated in the pin layout table.

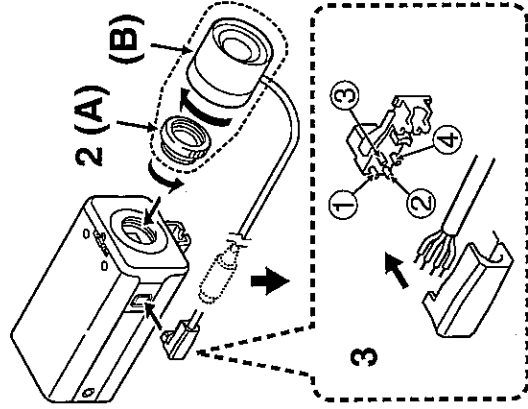
■ Installation of a VIDEO type auto-iris lens (sold separately)

A 1/2 or 2/3 inch C mount type lens with EE amplifier circuit that uses the video signal and a DC power source.

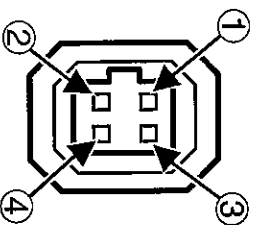
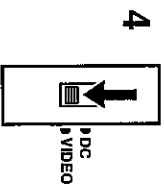
- 1 Remove the lens mount cap.
- 2 Attach the supplied **C mount adaptor (A)** to the auto-iris lens **(B)**, then install the assembly on the camera.
- 3 Connect the lens plug to the **LENS** connector on the side of the camera.
If the lens plug shape or wiring does not correspond to the specifications below, connect the supplied plug as indicated.
 - When using lenses from other makers, make sure that the pins connections in the plug correspond to the ones of the camera.

Refer to the lens specifications to check the pins connections in the plug.

- If they are different than indicated, remove the original plug and connect the supplied plug according to the diagram.



MOUNTING THE LENS



4 Set the **A.I. LENS** switch in the camera setup section to the **VIDEO** position.

Pin layout

	DC type lenses	VIDEO type lenses
①	Brake coil (-)	+12 V DC (50 mA max.)
②	Brake coil (+)	Not used
③	Drive coil (+)	Video output (1.0 Vp-p, high impedance)
④	Drive coil (-)	Ground (for video signal and DC power)

Compatible auto-iris lenses

1/3 inch Sanyo DC type lens		1/2 or 2/3 inch VIDEO type lens	
VCL-CS8LY:	Standard angle, f= 8 mm	Standard angle, f= 9 mm	
VCL-CS4LY:	Wide angle, f= 4 mm	Telephoto angle, f= 12 mm	
VCL-CS2LY:	Ultra-wide angle, f= 2.8 mm	More telephoto angle, f= 16 mm	

If using a VIDEO type auto-iris lens

- Set the **ALC** and **LEVEL** controls on the lens to adjust the iris. Normally the **ALC** volume should be turned all the way to **AV** (Average).
- Depending on the type of lens used, the lens may not perform properly. In such a case, adjust the **LEVEL** volume on the lens casing to correct.

CONNECTIONS

Basic connection for monitoring or recording

The peripheral devices (VCR, monitor, lens, etc.) and cables are sold separately.

- 1 Make the video signal connection between the camera and the monitor or time lapse VCR.
- 2 Insert the plug of this power cord into a wall outlet.
The **POWER** indicator (A) will light. Adjust the picture on the monitor using the Brightness and Contrast controls.

Note:

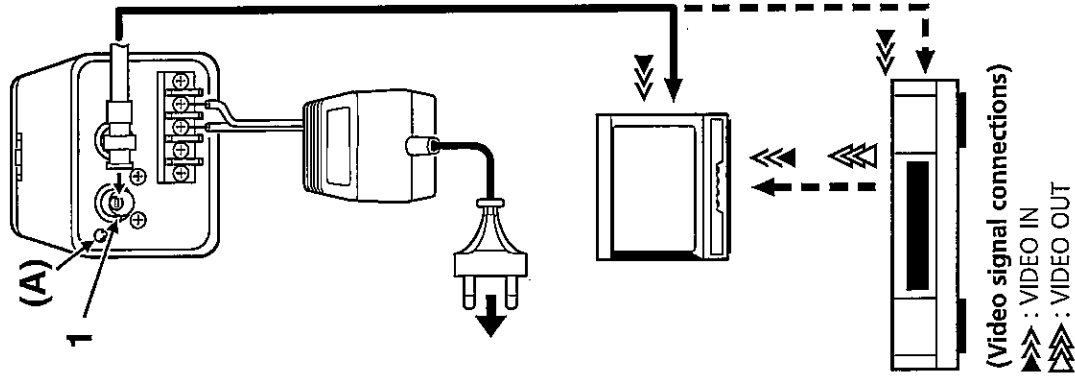
When installing the camera, use metal brackets to fix the AC adaptor. Then attach it firmly using a metal strap.

Coaxial cable type and maximum length

- Cable type RG-59U (3C-2V), 250 m maximum.
- Cable type RG-6U (5C-2V), 500 m maximum.
- Cable type RG-11U (7C-2V), 600 m maximum.

CAUTION:

- The RG-59U type cable should not be run through electrical conduits or through the air.
- Using CCTV/Video-grade coaxial cable.



SETTINGS

High speed electronic shutter setting

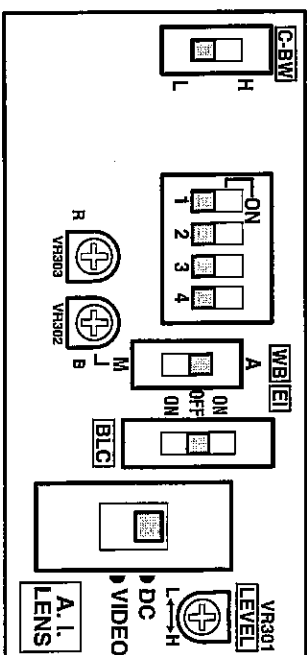
Normally, the speed setting switches for the high speed electronic shutter are all set to the **OFF** position. This sets the electronic shutter speed to 1/50 sec. The switches can be set as indicated in table **A** to select one of the **8** speeds available.

CAUTION:

- When using the high speed electronic shutter, the **EI/BLC** switch must be set to the **OFF** position.
- Using the high speed electronic shutter indoors with low lighting, will give darker pictures. In such a case, add some lights to make sure the lighting is sufficient. If the lighting is very bright, pay attention to the light angle in order to avoid or minimize the smear phenomenon effect.

Table A

① 1/50 sec.	
② 1/120 sec.	
③ 1/250 sec.	
④ 1/500 sec.	
⑤ 1/1000 sec.	
⑥ 1/2000 sec.	
⑦ 1/4000 sec.	
⑧ 1/10000 sec.	

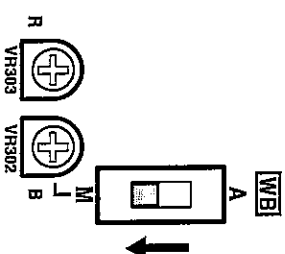


White balance adjustment

Normally the **WB** (white balance) switch is set to the **A** (automatic) position and the white balance is adjusted automatically. If a manual white balance adjustment is necessary, follow the steps below.

Set the **WB** switch to the **M** (manual) position, then adjust the colour.

- Turn **R** (VR303) to set the red ratio and/or **B** (VR302) to set the blue ratio.



SETTINGS

■ Lens iris adjustment

If using a DC type auto-iris lens, you will need to set the **LEVEL** (VR301) volume when shooting in the conditions described below.



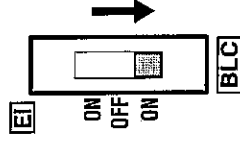
L (counterclockwise): To decrease the contrast

H (clockwise): To increase the contrast

- If shooting simultaneously in a dark room and through a bright window.
- If the subject background is extremely bright or dark.
- If the brightness of the picture on the monitor is not correct.

■ Backlight compensation setting

Use an auto-iris lens and set the **EI/BLC** switch to the **BLC-ON** position, to engage the backlight compensation function.



If using a VIDEO type auto-iris lens

- The **ALC** volume on the lens should be turned all the way to **Av** (Average).
- If the backlight compensation function does not compensate properly for the conditions, set using the **LEVEL** volume on the lens.

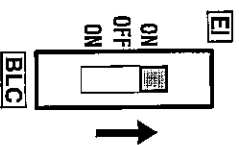
CAUTION:

The electronic iris function and the backlight compensation function cannot operate simultaneously.

SETTINGS

■ Electronic iris function setting

Use a manual or fixed iris lens and set the lens aperture to the shortest F stop. Set the **EI/BLC** switch to the **EI-ON** position.



Note:

Please refer to the specifications for dynamic range of the electronic iris.

CAUTION:

- The electronic iris is suitable for normal indoor use. When the **EI/BLC** switch is set to the **EI-ON** position, do not use an auto-iris lens.
- If used under fluorescent light, the image may flicker. In such a case, change to incandescent lighting or set the **EI/BLC** switch to the **OFF** position and use an auto-iris lens.
- When shooting bright subjects, pay attention to the light angle in order to avoid or minimize the smear phenomenon effect.

When using an auto-iris lens (for indoor/outdoor use)

Set the **EI/BLC** switch to the **OFF** position.

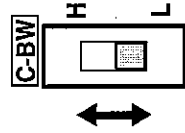
CAUTION:

If conditions are outside the electronic iris operation range or more than the maximum illumination, it will cause saturation of the CCD. In that case, use a manual iris lens.

SETTINGS

■ C • B/W (colour/black and white) switch setting

This switch lets you select the timing of the automatic switching of the optical filter to colour image or black and white image, according to the subject brightness. The default setting is "L". Set the switch according to the brightness.



H: for a brighter setting than L

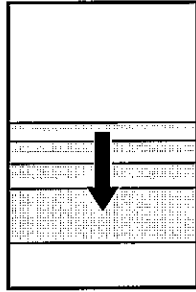
L: Standard setting

Notes:

- After the power has been turned off, switching will restart from colour, when the power is restored.
- A sound may be heard when the colour image or black and white image is switched. Also, the image will be distorted as shown in **Fig. 1**, this is normal and does not indicate a problem.

When using infrared lighting, if there is a strong reflection on the subject, the optical filter may switch from black and white to colour mode, Use only enough infrared lighting so that the mode is not switched.

- The focus setting may be different in black and white mode and colour mode. Please check the focus setting in both modes.



(Fig. 1)

TROUBLESHOOTING

Before taking the camera for repairs, please check below to make sure that the camera is used correctly. If it still does not perform correctly, please consult your dealer or a Sanyo Authorized Service Centre.

■ No picture on the monitor screen

- Is the power turned on to all connected devices? Is the voltage correct?
- Are all the signal connecting cables correctly connected?
- Is the lighting sufficient?
- Has the lens cap been removed?
- Is the lens type (**DC** or **VIDEO**) correctly selected?

Depending on the type of lens, the **A. I. LENS** switch must be set accordingly.

- Is the iris control correctly set?

■ The picture is not clear

- Is the monitor correctly adjusted?
- Is the flange-back position correctly set?
- Is the lens focus correctly adjusted?
- Are the lens surfaces clean?

If there is dust or finger prints on the lens, the image quality will deteriorate. To clean the lens use a soft cloth or a commercially available lens cleaning set.

SERVICE

This camera is a precision instrument and if treated with care, will provide years of satisfactory performance. However, in the event of a problem, the owner is advised not to attempt to make repairs or open the cabinet. Servicing should always be referred to your dealer or Sanyo Authorized Service Centre.

SPECIFICATIONS

■ Camera:

Scanning system	: PAL standard (625 TV lines, 25 frames/sec.)
Interlace	: PLL 2:1 interlace
Image device	: 1/3 inch solid state image device CCD
Picture elements	: 537 (H) x 597 (V)
Effective picture elements	: 500 (H) x 582 (V)
Synchronizing system	: Internal sync, External sync (Automatic switching)
Resolution	: 330 TV lines horizontally, 400 TV lines vertically
Video output level	: 1.0 Vp-p/75 ohms, composite
Video S/N ratio	: More than 48 dB
Minimum required illumination (incandescent lighting)	: Approx. 0.05 lux with a F 1.2 lens (B/W mode), Approx. 1.0 lux with a F 1.2 lens (colour mode)
Electronic shutter	: 8 speeds, selectable by switches: (1/50, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 sec.)
Backlight compensation	: Manual ON/OFF switching, Multi-zone light measuring system (Active when using an auto-iris lens)
Iris function	: Manual ON/OFF switching
Electronic iris range	: 1 lux to 50,000 lux (F 1.2, lens: colour mode) 1.4 lux to 70,000 lux (F 1.4, lens: colour mode)
Flange-back	: 12.5 mm \pm 0.5 mm
White balance	: ATW/Manual switching

Lens mount

: CS mount (or C mount with the
supplied adaptor)

Environmental conditions

: Temperature: $-10^{\circ}\text{C} \sim +50^{\circ}\text{C}$
Humidity: less than 90%
(no condensation)

Power supply

: 12 V DC (Supplied from AC adaptor)

Power requirement

: 12 – 15 V DC/210 – 170 mA
(without Auto iris lens)

Weight

: Approx. 450 g (without lens)

■ AC Adaptor:

Environmental conditions

: Temperature: $-10^{\circ}\text{C} \sim +50^{\circ}\text{C}$
Humidity: less than 90%
(no condensation)

Power requirement

: 220 – 230 V AC 50Hz

Power consumption

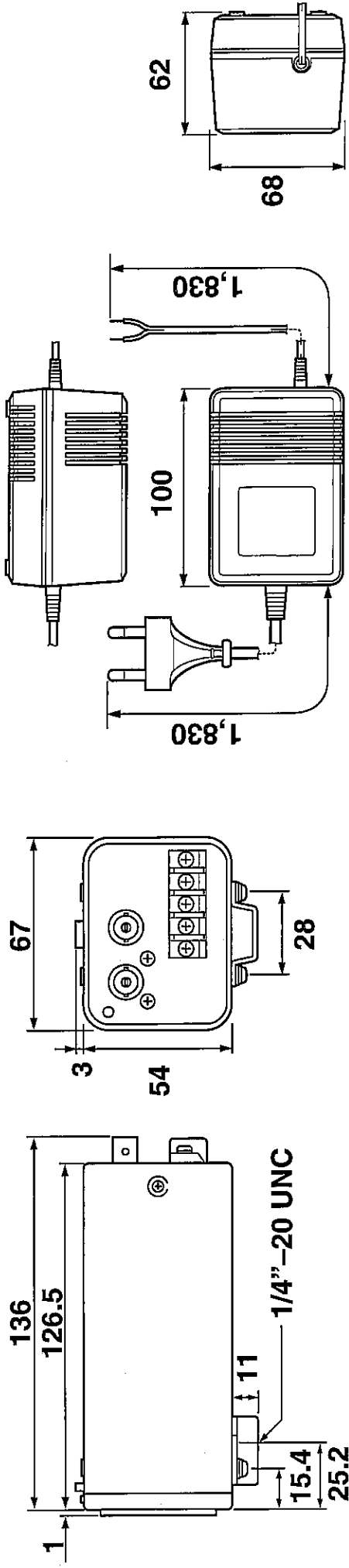
: Approx. 5.3 W

Weight

: Approx. 680 g

SPECIFICATIONS

■ Dimensions: mm



Features and specifications are subject to change without prior notice or obligations.



SANYO

Sanyo Electric Co., Ltd.
Printed in Japan

1AC6P1P1969--
L53S2/XE(0199KP-NI)