USER MANUAL

SK-P400
SK-P403
SK-P440

HUVIRON

01 CONTENTS

1. Long visible range at night.
   (50m Max. indoors, 40m Max. outdoors)

2. This camera has a mechanical exchange of two filters to receive the maximum of light at night.
   – LED turn on : under 5 lux automatically
   – Filter changed into B/W mode at 5 lux, 2 seconds after becoming 5 lux.
   – Filter changed into color mode at 15 lux, 5 seconds after becoming 15 lux.

3. This camera has vari-focal IR lens to prevent defocusing under IR lighting.

4. IR cut filter is removed at night to receive 100% light.

5. This product can match for any circumstances very well.

6. This product is suitable for 24 hours survillance with optical multi-coating filter according to IR LED and CCD.

7. This product is weather proof to resist rain, snow and other weather factors.

8. This product is made of corrosion-free surface to resist rust and corrosion for a long time.

9. Sunvisor of this product can help the camera get the picture clearly.

10. Iris Level, AGC, BLC, FLK, Digtal Zoom can be controlled by the external DIP switch.

11. Power & video cables are concealable.
    (Cable through bracket).

12. You can connect AC24V or DC12V regardless polarity.
    (Dual voltage model only)

1. Long visible range at night.
   (50m Max. indoors, 40m Max. outdoors)

2. This product can match for any circumstances very
   well.

3. This product is suitable for 24 hours survillance
   with optical multi-coating filter according to IR LED
   and CCD.

4. This product is weather proof to resist rain, snow
   and other weather factors.

5. This product is made of corrosion-free surface to
   resist rust and corrosion for a long time.

6. This camera has a special lens with the low reflection
   ND filter which can match for low light and bright
   condition.

7. Sunvisor of this product can help the camera
   get the picture clearly.

8. Iris Level, AGC Low/High, BLC, FLK, Mirror,
   AE/ME can be controlled by the external DIP switch.

9. Power & video cables are concealable. (Cable through bracket).

10. You can connect AC24V or DC12V regardless polarity.
    (Dual voltage model only)

1. Long visible range at night.
   (50m Max. indoors, 40m Max. outdoors)

2. Can select the level of LED ON/OFF and filter change according to Lux as follow.

	Level 1	Level 2	Level 3
LED ON	8Lux	5Lux	3Lux
LED OFF	18Lux	15Lux	13Lux

   In case of selecting "Level2"
   – LED turn on : under 5 lux automatically
   – Filter changed into B/W mode at 5 lux,
     2 seconds after becoming 5 lux.
   – Filter changed into color mode at 15 lux,
     5 seconds after becoming 15 lux.

3. This camera has vari–focal IR lens to prevent defocusing under IR lighting.

4. IR cut filter is removed at night to receive 100% light.

5. This product can match for any circumstances very well.

6. This product is suitable for 24 hours survillance with optical multi–coating filter according to IR LED and CCD.

7. This product is weather proof to resist rain, snow and other weather factors.

8. This product is made of corrosion–free surface to resist rust and corrosion for a long time.

9. Sunvisor of this product can help the camera get the picture clearly.

10. D&N mode, Mirror, Phase shift, BLC, ALC/ELC, FLK, IRIS LEVEL and etc are controllable from outside by OSD menu.

11. Power & video cables are concealable (Cable through bracket).

12. You can connect AC24V or DC12V regardless polarity.

13. This camera supports the advanced high resolution by HQ1 DSP of SONY.

−Follow the instructions−

Please follow below instructions for safe use.

Information

Read this user guide carefully before any installation for safe operation of product.

⚠️ **WARNING** ⚠️

Indicating the possibility of serious injury or death.

⚠️ **CAUTION** ⚠️

Indicating the possibility of injury or material loss.

-Please study the instruction manual before your applications and keep it for your future reference.

-Do not flash LED light directly on the eyes when LEDs are on.

-Do not install the camera on a unstable surface. It will cause falling or other hazards.

-Do not use improper power, it could cause fire or electric shock.
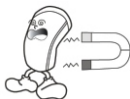
-Do not disassemble or re-model the camera, it could cause fire, electric shock or other hazards.

-Stop using the camera when you find a malfunction like smoke or unusual heat, it could cause fire or electric shock.

- Do not adhere dangerous aticles to the camera

- Do not leave the unit along an unstable stand or table.

- DC power cable or Video cable should be always loose. Do not keep the cables tight or twisted.

- Use the camera unit within given temperature and electricity limit.

- Make sure that installation should be done by qualified service person only.

- Do not disassemble the unit by yourself. When there is problem with the unit please contact after-sale service center or the shop where you bought.

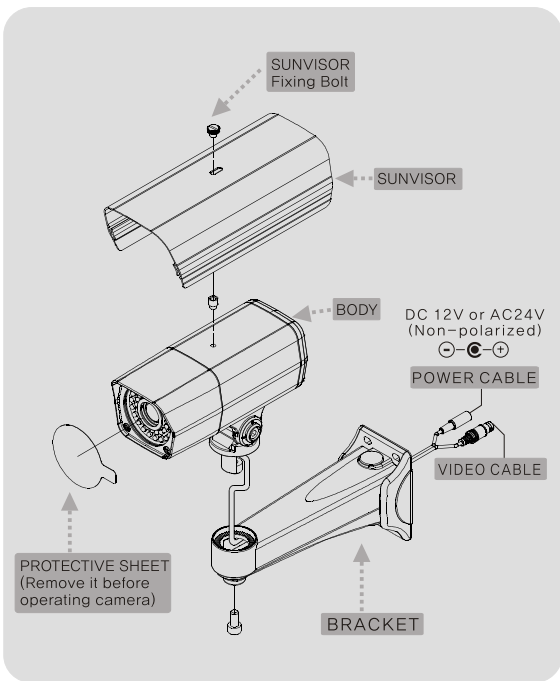−Stop operating and separate connector from the unit if below cases happen.
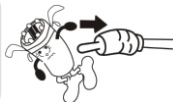
1) When power connector or video connector is broken.
2) When body is broken and dropped.
3) When it is not operating though it is set correctly by the manual.

If you meet any strange cases, please call the shop where you purchased.

If the product is to be put out of operation definitively, take it to a local recycling plant for a disposal which is not harmful to the environment.

SUNVISOR
Fixing Bolt

SUNVISOR

BODY

DC 12V or AC24V
(Non-polarized)
⊖–ⓒ–⊕

POWER CABLE

VIDEO CABLE

PROTECTIVE SHEET
(Remove it before
operating camera)

BRACKET

Warning

In case of DC power model, do not connect AC power.
Use only DC 12V regulated power supply.
Please refer to the sticker identifying the model,
which is attached on the product, for power specification.
Keep the polarity in mind.
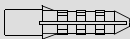
ANCHORS 8x35 4EA

SCREW 6x35 TP1 BIND SUS 4EA
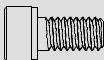
WRENCH TORX T10 1EA

HEXAGON WRENCH 6,0mm L TYPE 1EA

BOLT M8X12 1EA
HEXAGON SOCKET HEAD, SUS, 1EA

BOLT 1/4"-20UNC L=6, 1EA

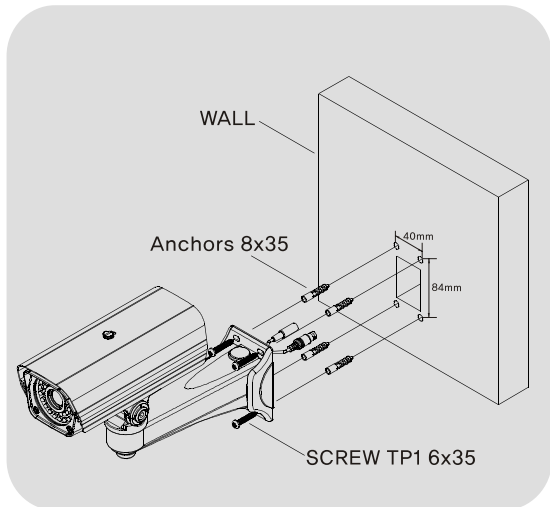BOLT 1/4"-MOUNT-1/4", 1EA

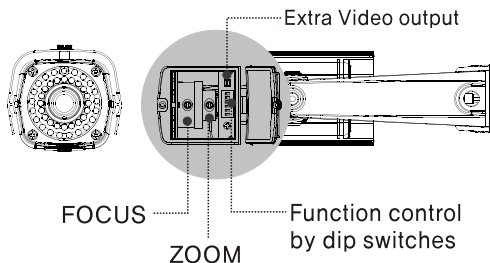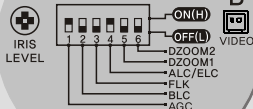Extra video output cable for installation (Option)

USER MANUAL
SK-P400
SK-P403
SK-P440

HUVIRON

MANUAL

WALL

Anchors 8x35

40mm

84mm

SCREW TP1 6x35

1. Make a hole on the wall
2. Insert the screw anchors.
3. Fix the screws.

Extra Video output

FOCUS

ZOOM

Function control by dip switches

● SETUP FOR CAMERA FUNCTIONS

• Function setting combination

"A"

"B"

IRIS LEVEL

ON(H)
OFF(L)

VIDEO

1 2 3 4 5 6

- DZOOM2
- DZOOM1
- ALC/ELC
- FLK
- BLC
- AGC

- IRIS LEVEL : DC Level control
- AGC : Auto Gain Control
- BLC : Back Light Compensation
- FLK : Flickerless
- ALC/ELC : ALC-Auto Iris Type/ELC-Electronic exposure
　　※ALC mode is recommended
- DZOOM : Digital Zoom(*Reference)
- VIDEO : Extra video for installation. You can use RCA cable included
　(The cable is option)

*Digital Zoom Setting
(After setting below combination, turn off and on.)

	×1	×2	×3
DZOOM-1	ON(OFF)	ON	OFF
DZOOM-2	ON(OFF)	OFF	ON

Extra Video output

FOCUS

ZOOM

Function control by dip switches

●SETUP FOR CAMERA FUNCTIONS

•Function setting combination

"A"

"B"

IRIS LEVEL

ON(H)
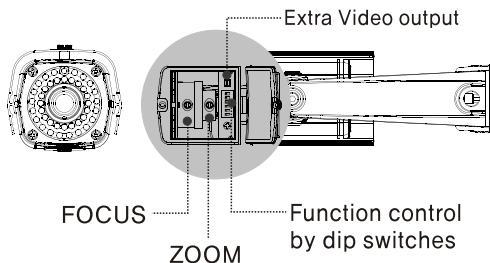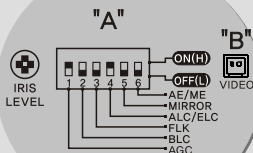OFF(L)
1 2 3 4 5 6
AE/ME
MIRROR
ALC/ELC
FLK
BLC
AGC

VIDEO

- IRIS LEVEL : DC Level control
- AGC : Auto Gain Control
- BLC : Back Light Compensation
- FLK : Flickerless
- ALC/ELC : ALC–Auto IrisType/ELC–Electronic exposure
  ※ALC mode is recommended
- MIRROR : Mirror ON/OFF
- AE/ME : Auto Exposure/Manual Exposure(*Refer to below table)
- VIDEO : Extra video for installation. You can use RCA cable included.
  (The cable is option)

*Manual Exposure Setting.(AE/ME ON)

BLC	FLK	ALC/ELC	SHUTTER SPEED
OFF	OFF	OFF	1/60(1/50)
OFF	ON	OFF	1/100(1/120)
ON	OFF	OFF	1/250
ON	ON	OFF	1/500
OFF	OFF	ON	1/1,000
OFF	ON	ON	1/2,000
ON	OFF	ON	1/4,000
ON	ON	ON	1/10,000

IRIS LEVEL

FOCUS

ZOOM

Function control by the switches

Extra Video output
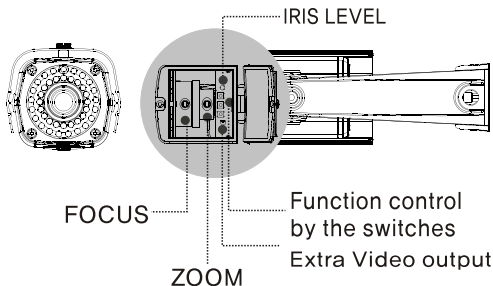
● SETUP FOR CAMERA FUNCTIONS

• Function setting combination

■ ENTER : Move to next menu

← LEFT : Move to left

→ RIGHT : Move to right

EXT VIDEO

ENTER

LEFT
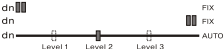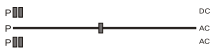
RIGHT
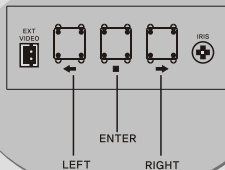
IRIS

● OSD MENU

• dn(DAY&NIGHT) : DAY&NIGHT mode

• R(MIRROR) : Mirror function ON/OFF

• P(V-PHASE) : V-Phase controllable

• B(BLC) : Back Light Compensation

• L(ALC/ELC) : ALC-Auto IrisType/ELC-Electronic exposure

   ※ ALC mode is recommended

• F(FLK) : Flickerless

● IRIS LEVEL : DC Level control

● EXT VIDEO : Extra video test connector for easy installation

● Camera function setting

Factory setting	

1.DC 12V Input
 	
   R   P   B   L   F   C AC/DC
ON ON ON ON ON ON ON
OFF OFF OFF OFF OFF OFF OFF
 	
2.AC 24V Input
 	
   R   P   B   L   F   C AC/DC
ON ON ON ON ON ON ON
OFF OFF OFF OFF OFF OFF OFF
	* Display for factory set will last for 5 sec
	
	* How to set OSD menu
	   ◼ ENTER: Move to next menu
	   ◀ LEFT: Move to left
	   ➡ RIGHT: Move to right
	
	* OSD color
	  –NTSC: yellowish green
	  –PAL: sky blue

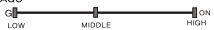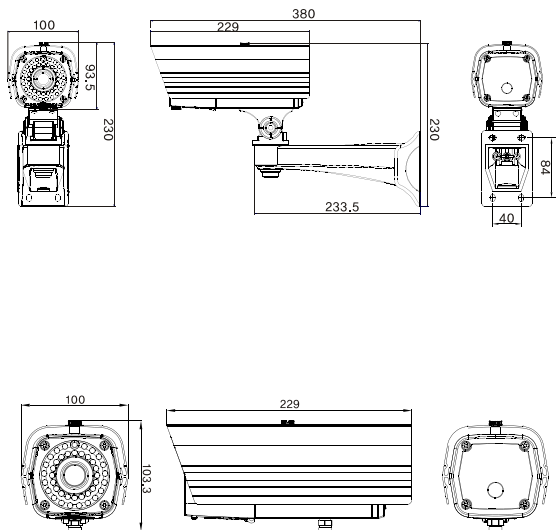| OSD Menu	Descriptioin
1. Day & Night : Day & Night mode dn ▮▮ FIX dn ▮▮ FIX dn ▮▮ AUTO Level 1 Level 2 Level 3	Fixed at Day mode(LED OFF) Fixed at Night mode(LED ON) Level(Filter change & LED O/OFF) selecting mode. Level 1: 8/18 Lux(D–)N / N–)D) Level 2: 5/15 Lux(D–)N / N–)D) Level 3: 3/13 Lux(D–)N / N–)D)
2. Mirror R ▮▮ OFF Я ━━━━━━━━━━━▮▮ ON	Normal Image (Default) Reverse image
3. Phase P ▮▮ DC P ━━━━━▮━━━━━ AC P ▮▮ AC	Not controllable at DC 12V input (Internal Sync.) Phase controllable at AC 24V input(Line–Lock) Internal Sync mode at AC 24V input
4. BLC B ▮▮ OFF B ━▮━▮━▮━▮━ ▮ 1 2 3 4	Normal Image(Default) BLC ON(Level selectable)
5. ALC/ELC L ━━━━━━━━━━━▮ ALC L ELC	ALC MODE(Detault) ELC MODE
6. FLK F ▮▮ OFF F ━━━━━━━━━━━▮▮ ON	FLICKERLESS OFF(Default) FLICKERLESS ON –) NTSC : 1/100[sec], PAL : 1/120[sec]
7. Chart : Color bar chart mode C ▮▮ OFF C ━━━▮━━━━▮━ ON Horizontal Vertical	Normal Image(Default) Color bar chart mode selection –) Horizontal : Horizontal Color bar chart –) Vertical : Vertical Color bar chart
8. AGC G ━━━━▮━━━━▮ ON LOW MIDDLE HIGH	AGC control mode(default : middle) –) Low: 19(dB)max –) Middle: 22(dB)max –) High: 25(dB)max

RESET Menu	
*RESET	Push "LEFT & RIGHT" buttons for 3sec to set the factory default.

MODEL NO	SK-P400X	SK-P400XD
Type	Day & Night Color Camera(With IR Illuminator)	
Image Sensor	1/3" COLOR SONY EXview HAD CCD	
Effective Pixel	786(H) x 494(V)PIXEL(NTSC) 752(H) x 582(V)PIXEL(PAL)	
Cell size	6.35μm(H) x 7.4μm(V)(NTSC) 6.5μm(H) x 6.25μm(V)(PAL)	
Horizontal Resolution	Color : 480 TV-LINE, B/W : 520 TV-LINE	
TV Type	NTSC, PAL	
Sync. Type	Internal	
Scanning System	2:1 Interlace	
Scan.Freq.(HOR.)	NTSC 15.734kHz PAL 15.625kHz	
Scan.Freq.(VERT.)	NTSC 59.94Hz PAL 50Hz	
Video Output	1.0Vp-p(Sync,Negative) Termination 75Ω	
Gamma Characteristic	γ=0.45 Typ.	
Min. Illumination	0.01 Lux(F/1.2, Video Outer 40 IRE) : LED OFF 0 Lux(40~50M Range) : LED ON	
S/N Ratio	45dB over(AGC OFF)	
Gain(AGC)	On / Off	
Back Light Compensation(BLC)	On / Off	
Flicker less(FLK)	On / Off	
Digital Zoom	x1, x2, x3	
IRIS	Auto Iris	
External Control	YES	
Day&Night	Auto(Built-in CDS sensor)	
Shutter Speed (Electronic)	1/60 ~ 1/100,000 second(NTSC)[at ELC Mode] 1/50 ~ 1/100,000 second(PAL)[at ELC Mode]	
Test illuminance area	Average test illumination by front view	
Power Supply	Regulated DC 12V	DUAL VOLTAGE (DC 12V or AC24V)
Consumption Current	Usual operation(Color) : Max,180mA(at DC 12V) Motor operation : Max,280mA(at DC 12V) LED On : Max, 900mA(at DC 12V)	Usual operation(Color) : Max,300mA(at AC 24V) Motor operation : Max,400mA(at AC 24V) LED On : Max, 900mA(at AC 24V)
Operation Temp	−10℃~ 50℃	
Preservation Temp	−20℃~ 60℃	
LED	40PCS	
LENS	Vari focal Auto Iris Lens	
Dimension	100(W) X 94(H) X 229(D)mm	
Weight	Net : 2kg / Gross : 2.7kg	

*The specification is subject to change without any prior notice to improve the quality.

MODEL NO	SK-P400S	SK-P400SD
Type	Day & Night Color Camera(With IR Illuminator)	
Image Sensor	1/3" COLOR SONY SUPER HAD CCD	
Effective Pixel	786(H) x 494(V)PIXEL(NTSC) 752(H) x 582(V)PIXEL(PAL)	
Cell size	6.35μm(H) x 7.4μm(V)(NTSC) 6.5μm(H) x 6.25μm(V)(PAL)	
Horizontal Resolution	Color : 480 TV-LINE, B/W : 520 TV-LINE	
TV Type	NTSC, PAL	
Sync. Type	Internal	
Scanning System	2:1 Interlace	
Scan.Freq.(HOR.)	NTSC 15.734kHz PAL 15.625kHz	
Scan.Freq.(VERT.)	NTSC 59.94Hz PAL 50Hz	
Video Output	1.0Vp-p(Sync,Negative) Termination 75Ω	
Gamma Characteristic	γ=0.45 Typ.	
Min. Illumination	0.5 Lux(F/1.2, Video Outer 40 IRE) : LED OFF 0 Lux(30~50M Range) : LED ON	
S/N Ratio	45dB over(AGC OFF)	
Gain(AGC)	On / Off	
Back Light Compensation(BLC)	On / Off	
Flicker less(FLK)	On / Off	
Digital Zoom	x1, x2, x3	
IRIS	Auto Iris	
External Control	YES	
Day&Night	Auto(Built-in CDS sensor)	
Shutter Speed (Electronic)	1/60 ~ 1/100,000 second(NTSC)[at ELC Mode] 1/50 ~ 1/100,000 second(PAL)[at ELC Mode]	
Test illuminance area	Average test illumination by front view	
Power Supply	Regulated DC 12V	DUAL VOLTAGE (DC 12V or AC24V)
Consumption Current	Usual operation(Color) : Max, 180mA(at DC 12V) Motor operation : Max, 280mA(at DC 12V) LED On : Max, 900mA(at DC 12V)	Usual operation(Color) : Max, 300mA(at AC 24V) Motor operation : Max, 400mA(at AC 24V) LED On : Max, 900mA(at AC 24V)
Operation Temp	−10℃~ 50℃	
Preservation Temp	−20℃~ 60℃	
LED	40PCS	
LENS	Vari focal Auto Iris Lens	
Dimension	100(W) X 94(H) X 229(D)mm	
Weight	Net : 2kg / Gross : 2.7kg	

*The specification is subject to change without any prior notice to improve the quality.

MODEL NO	SK-P403	SK-P403D
Type	Day & Night Color Camera(With IR Illuminator)	
Image Sensor	1/3" COLOR SONY SUPER HAD CCD	
Effective Pixel	510(H) x 492(V)PIXEL(NTSC) 500(H) x 582(V)PIXEL(PAL)	
Cell size	9.6μm(H) x 7.5μm(V)(NTSC) 7.8μm(H) x 6.3μm(V)(PAL)	
Horizontal Resolution	380 TV-LINE	
TV Type	NTSC, PAL	
Sync. Type	Internal	
Scanning System	2:1 Interlace	
Scan.Freq.(HOR.)	NTSC 15.734kHz PAL 15.625kHz	
Scan.Freq.(VERT.)	NTSC 59.94Hz PAL 50Hz	
Video Output	1.0Vp-p(Sync,Negative) Termination 75Ω	
Gamma Characteristic	γ =0.45 Typ.	
Min. Illumination	0.1 Lux(F/1.2, Video Outer 40 IRE) : LED OFF 0 Lux(40~50M Range) : LED ON	
S/N Ratio	45dB over(AGC OFF)	
Gain(AGC)	On / Off	
Back Light Compensation(BLC)	On / Off	
Flicker less(FLK)	On / Off	
Mirror	On / Off	
Electronic Shutter Mode	On / Off	
IRIS	ALC / ELC	
External Control	YES	
Shutter Speed (Electronic)	1/60 ~ 1/100,000 second(NTSC)[at ELC Mode] 1/50 ~ 1/100,000 second(PAL)[at ELC Mode]	
Test illuminance area	Average test illumination by front view	
Power Supply	Regulated DC 12V	DUAL VOLTAGE (DC 12V or AC24V)
Consumption Current	Usual operation(Color) : Max,150mA(at DC 12V) LED On : Max, 900mA(at DC 12V)	Usual operation(Color) : Max,250mA(at AC24V) LED On : Max, 900mA(at AC24V)
Operation Temp	−10℃~ 50℃	
Preservation Temp	−20℃~ 60℃	
LED	40PCS	
LENS	Vari focal Auto Iris Lens	
Dimension	100(W) X 94(H) X 229(D)mm	
Weight	Net : 2kg / Gross : 2.7kg	

*The specification is subject to change without any prior notice to improve the quality.

MODEL NO	SK-P440	SK-P440X
Type	Day & Night Color Camera(With IR Illuminator)	
Image Sensor	1/3" COLOR SONY SUPER HAD CCD	1/3" COLOR SONY EXview HAD CCD
Effective Pixel	786(H) x 494(V)PIXEL(NTSC) 752(H) x 582(V)PIXEL(PAL)	
Cell size	6.35μm(H) x 7.4μm(V)(NTSC) 6.5μm(H) x 6.25μm(V)(PAL)	
Horizontal Resolution	Color : 520 TV-LINE, B/W : 580 TV-LINE	
TV Type	NTSC, PAL	
Sync. Type	Internal / External(Line-Lock)	
Scanning System	2:1 Interlace	
Scan.Freq.(HOR.)	INT : 15.734KHz(NTSC), 15.625KHz(PAL) L/L: 15.750KHz(NTSC), 15.625KHz(PAL)	
Scan.Freq.(VERT.)	INT : 15.94KHz(NTSC), 50Hz(PAL) L/L: 60Hz(NTSC), 50Hz(PAL)	
Video Output	1.0Vp-p(Sync,Negative) Termination 75Ω	
Gamma Characteristic	ⅴ=0.45 Typ.	
Min. Illumination	0.05 Lux(LED OFF)	0.01 Lux(LED OFF)
	0 Lux(40~50M Range) : LED ON	
S/N Ratio	45dB over(AGC OFF)	
Mirror	On / Off	
Flicker less(FLK)	On / Off	
IRIS	Auto Iris	
External Control	YES	
Day&Night	Auto(Built-in CDS sensor)-Level adjustable	
Shutter Speed (Electronic)	1/60 ~ 1/100,000 second(NTSC)[at ELC Mode] 1/50 ~ 1/100,000 second(PAL)[at ELC Mode]	
Test illuminance area	Average test illumination by front view	
Power Supply	DC12V / AC24V DUAL VOLTAGE	
Consumption Current	250 / 890mA[2.9 / 9.5W] MAX.(at DC 12V) (LED OFF/ON) 280 / 730mA[6.8 / 16.5W] MAX.(at AC 24V) (LED OFF/ON)	
Operation Temp	-10℃~ 50℃	
Preservation Temp	-20℃~ 60℃	
LED	40PCS	
LENS	Vari focal Auto Iris Lens	
Dimension	100(W) X 94(H) X 229(D)mm	
Weight	Net: 2kg / Gross:2.7kg	

*The specification is subject to change without any prior notice to improve the quality.

Problem	Solution
Nothing appears on the screen.	• Check if the power cord and line connection between the camera and monitor are connected properly
The image on the screen is dim	• Check whether the window is stained. If dirty, clean the lens with soft and clean cloth
The image on the screen flickers	• Dose the camera face to the sun directly or fluorescent light? Change the camera position
The contrast on the screen is too weak	• Adjust the contrast feature of the monitor . If the camera is exposed under too strong light, change the camera position

*If you can not solve the problem, please contact an authorized technician

PRODUCT NAME		CCTV CAMERA	TERM OF THE GUARANTEE
MODEL NO			FOR ONE YEAR AFTER THE DATE OF PURCHASE
DATE OF PURCHASE			
CUSTOMER	NAME	P/N	
	ADDRESS		
SELLER	NAME	P/N	
	ADDRESS		

* This product will be under warranty
for one year after the date of purchase

*The history of after−sale service

YEAR	PROBLEM	PERSON IN CHARGE

Sunkwang

Advanced-Solution for Better Life

HUVIRON

Please read this manual carefully before installing and using the camera.
Be sure to keep the manual handy for later reference.

3B05559C