

INSTRUCTION MANUAL

Intensifier T[®] Series HD-TVI Camera

HTINT70T, HTINT701T, HTINT702T

(Bullet Camera)

HTINT60T, HTINT601T

(Turret Camera)

HTINT591T

(Dome Camera)

HT7246T / HT7250T

(Dome Camera)

HTINT40T

(Miniature Camera)

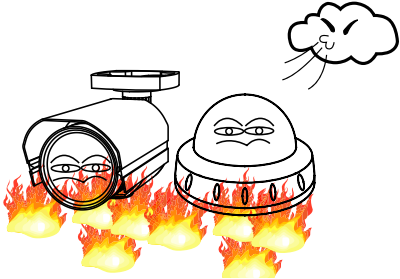


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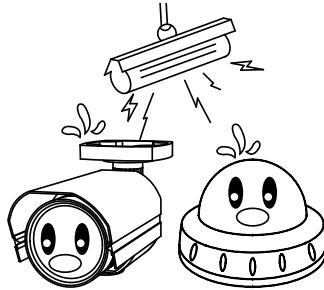
Precautions

Do not install the camera in extreme temperature conditions.



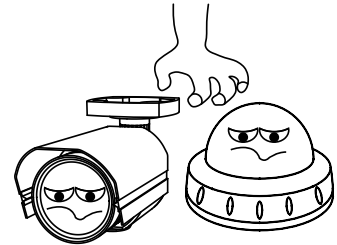
Only use the camera under conditions where temperatures are between -10°C and $+50^{\circ}\text{C}$. Be especially careful to provide ventilation when operating under high temperatures.

Do not install the camera under unstable lighting conditions.



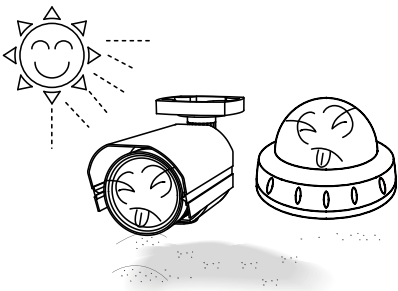
Severe lighting change or flicker can cause the camera to work improperly.

Do not touch the front lens of the camera.



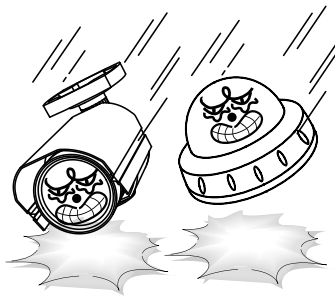
This is one of the most important parts of the camera. Be careful not to leave fingerprints on the lens cover.

Never keep the camera pointed directly at strong light.



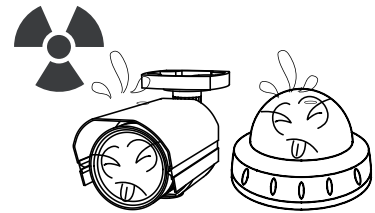
It can cause malfunctions to occur.

Do not drop the camera or subject it to physical shocks.



Housing damage can compromise weatherproof ratings.

Do not expose the camera to radioactivity.

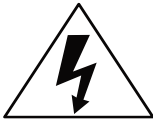


If exposed to radioactivity the CCD will fail.

NOTE

* If the camera is exposed to spotlight or object reflecting strong light, smear or blooming may occur.

* please check that the power satisfies the normal specification before connecting the camera.



The lightning flash with an 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.

In USA and Canada, Use Class 2 Power Supply Only

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 & CE 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 their own expense.

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

WARNING - To prevent electric shock and risk of fire hazards:

- ◆ Do NOT use power sources other than that specified.
- ◆ Do NOT expose this appliance to rain or moisture.

Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

CAUTION : To prevent electric shock and risk of fire hazards:

- ☞ Do NOT use power sources other than those specified.

Safety Instructions

Precautions for use

- ① This camera should be installed by qualified personnel only
- ① There are no user serviceable parts inside
- ① Do not disassemble this camera other than to make initial adjustments
- ① Use a UL approved regulated 24 volt AC or 12 volt DC power supply
- ① Use appropriate low voltage power cable to prevent fire or electrical shock
- ① Please insure that your installation area can support the weight of the camera

Please handle this camera carefully :

- ① Do not use a strong or abrasive detergent when cleaning the camera
- ① Do not install near cooling or heating device

Package Contents

Please make sure that the following items are included in the Package:

- 1) HTINT70T, HTINT701T, HTINT702T
 - 1 Video Test Connector, Power Jack
 - 1 Focus Adjustment(HTINT70T)
 - 1 Bracket Base
 - 1 Wrench
 - Set Screw
 - 4 Tapping Screws 4x25
 - 4 Hexagon Socket Screws M5x10

- 2) HTINT60T, HTINT601T
 - 1 Video Test Connector, Power Jack
 - 1 Wrenches
 - Set Screw
 - 3 Tapping Screws 4x25

- 3) HTINT591T
 - 1 Video Test Connector, Power Jack
 - 1 Chameleon Cover
 - 1 Wrench
 - Set Screw
 - 3 Tapping Screws 3.5x20

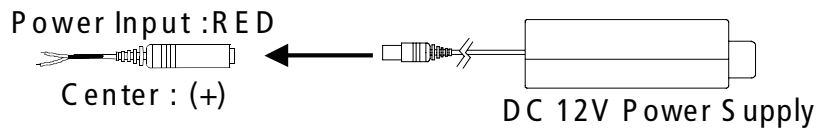
- 4) HT7246T, HT7250T
 - 1 Video Test Connector, Power Jack
 - 1 Chameleon Cover
 - 1 Wrench
 - Set Screw
 - 3 Tapping Screws 4x40
 - 3 Plastic Anchor

- 5) HTINT40T
 - 1 Video Test Connector, Power Jack
 - Set Screw
 - 2 Tapping Screws M3x10
 - 2 Machine Screws M2x3

CAMERA INSTALLATION

CONNECT POWER CABLE

1. WHEN USING 12 VOLTS DC (constant voltage 500mA)

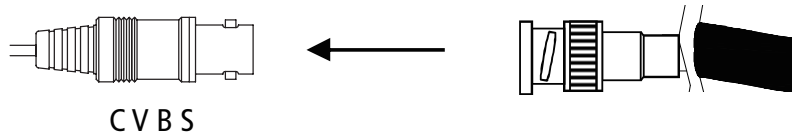


2. WHEN USING 24 VOLTS AC (40 Volt Amps)

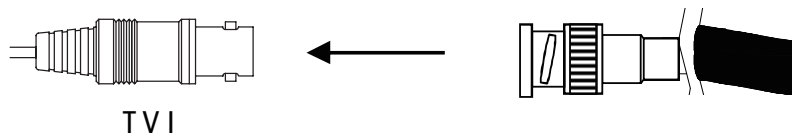


3. CONNECT VIDEO CABLE

1) WHEN USING IT AS ANALOG OUTPUT,
CONNECT YELLOW COLOR BNC CABLE TO THE BNC JACK.



2) WHEN USING IT AS TVI OUTPUT,
CONNECT BLACK COLOR BNC CABLE TO THE BNC JACK.

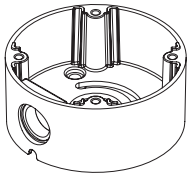


CAMERA INSTALLATION

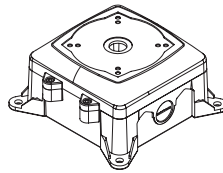
Compatibility

1) HTINT70T, HTINT701T, HTINT702T

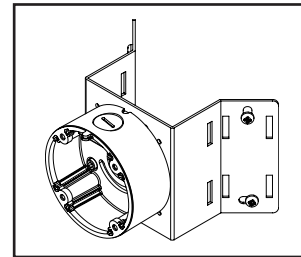
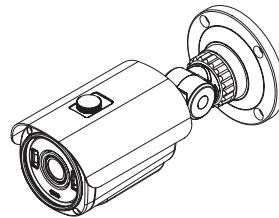
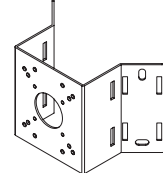
CVCJBB



INTJBS

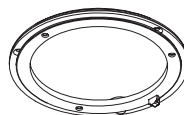
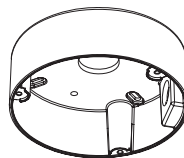


INTCM

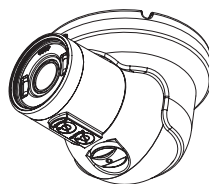


2) HTINT60T, HTINT601T

CVCJBD



→ Adaptor plate(60PLATE) with rubber

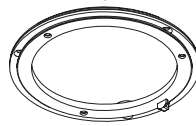
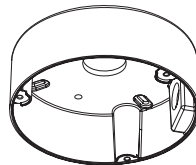


CAMERA INSTALLATION

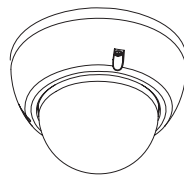
Compatibility

3) HTINT591T

CVCJBD

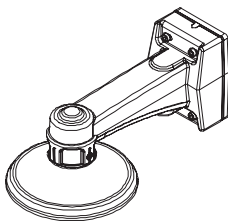


→ Adaptor plate(59PLATE) with rubber

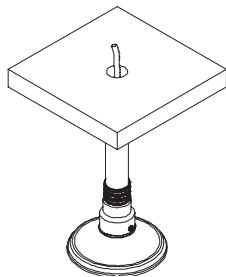


4) HT7246T, HT7250T

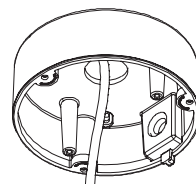
INTWM



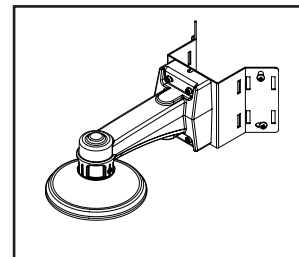
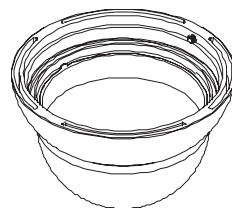
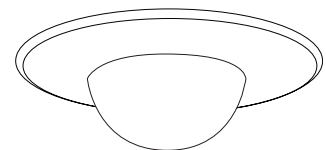
INTPM



CVCJBD



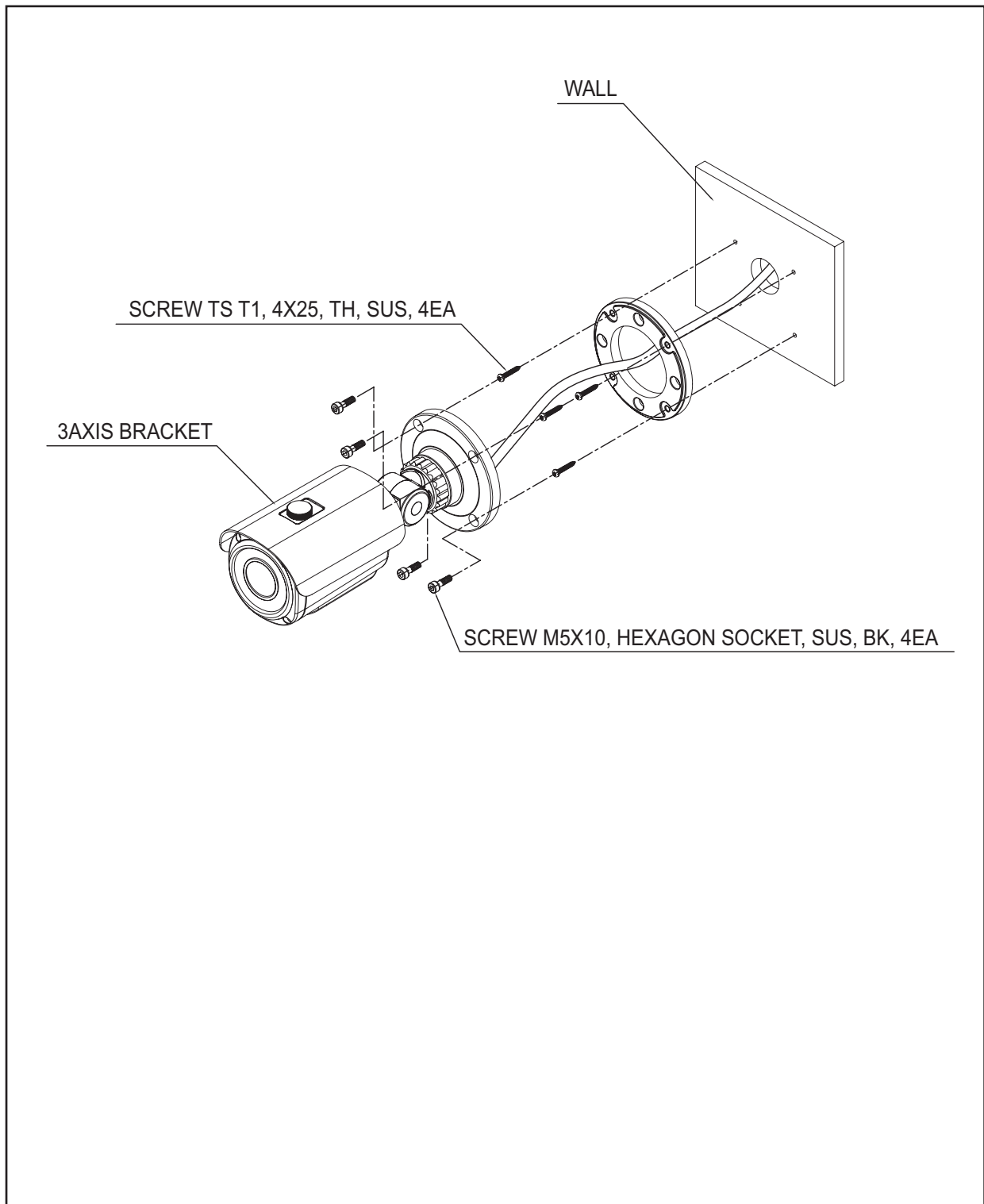
DFM



CAUTION : The installation instructions in this manual are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

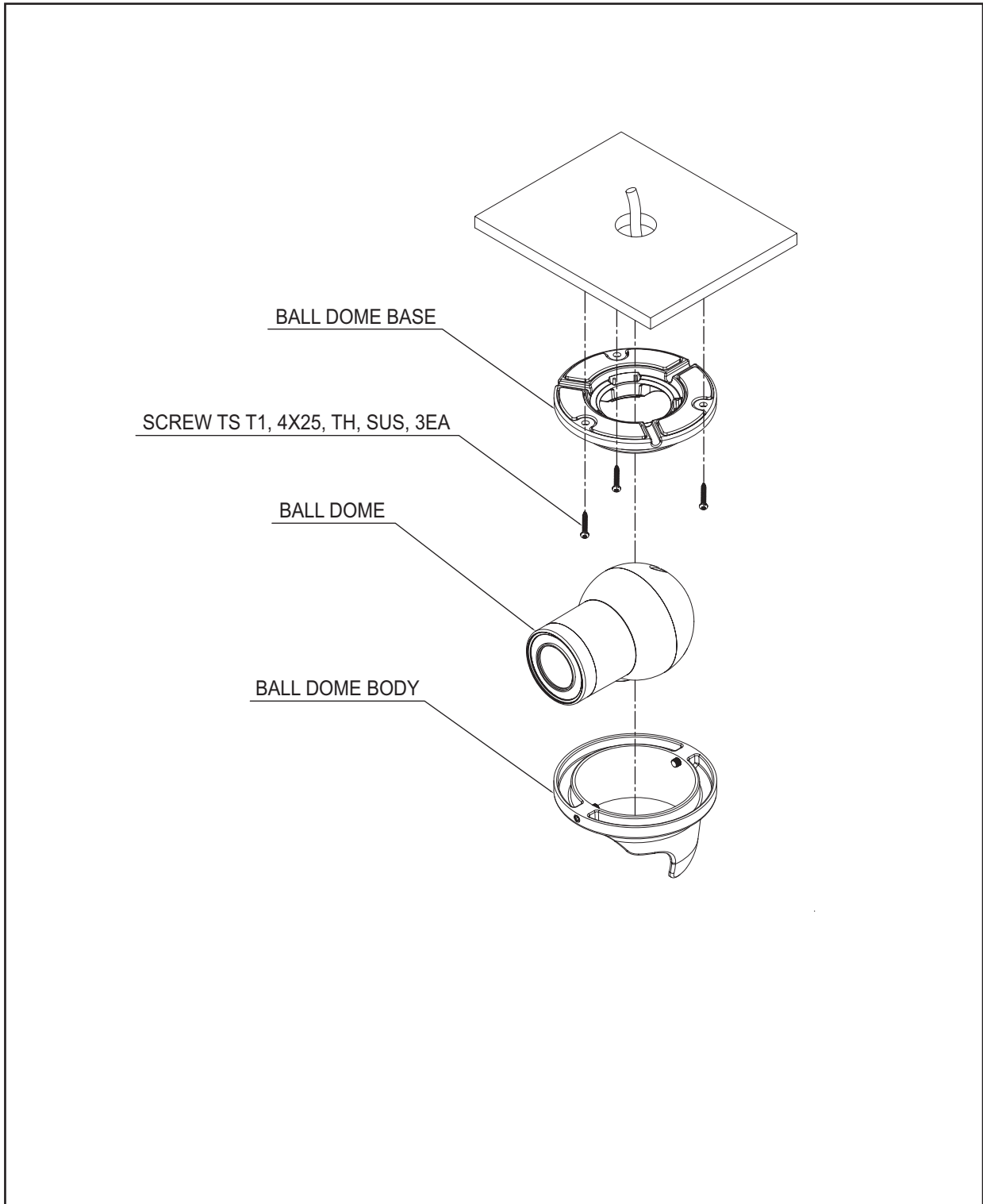
CAMERA INSTALLATION

1. HTINT70T, HTINT701T, HTINT702T



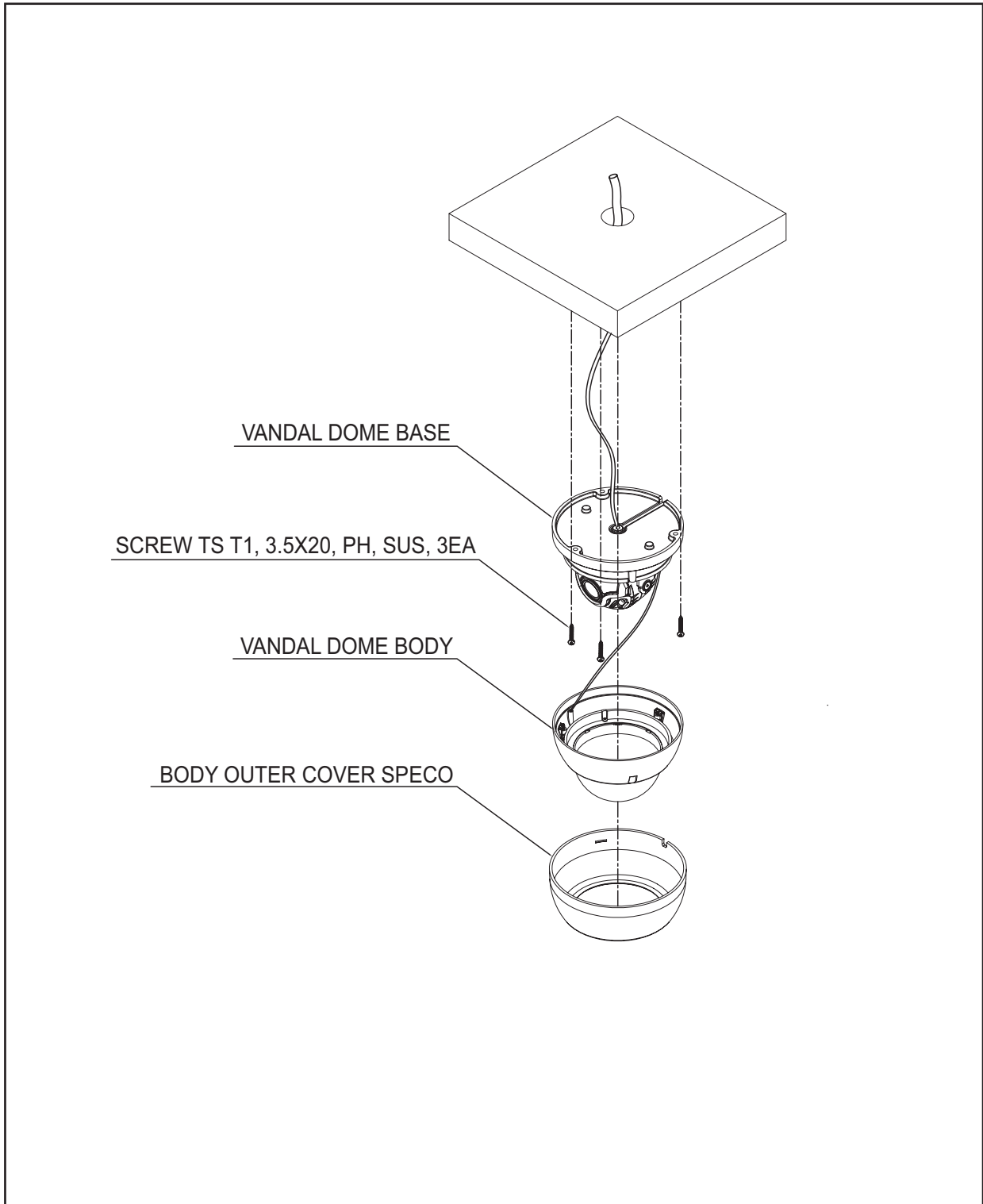
CAMERA INSTALLATION

2. HTINT60T, HTINT601T



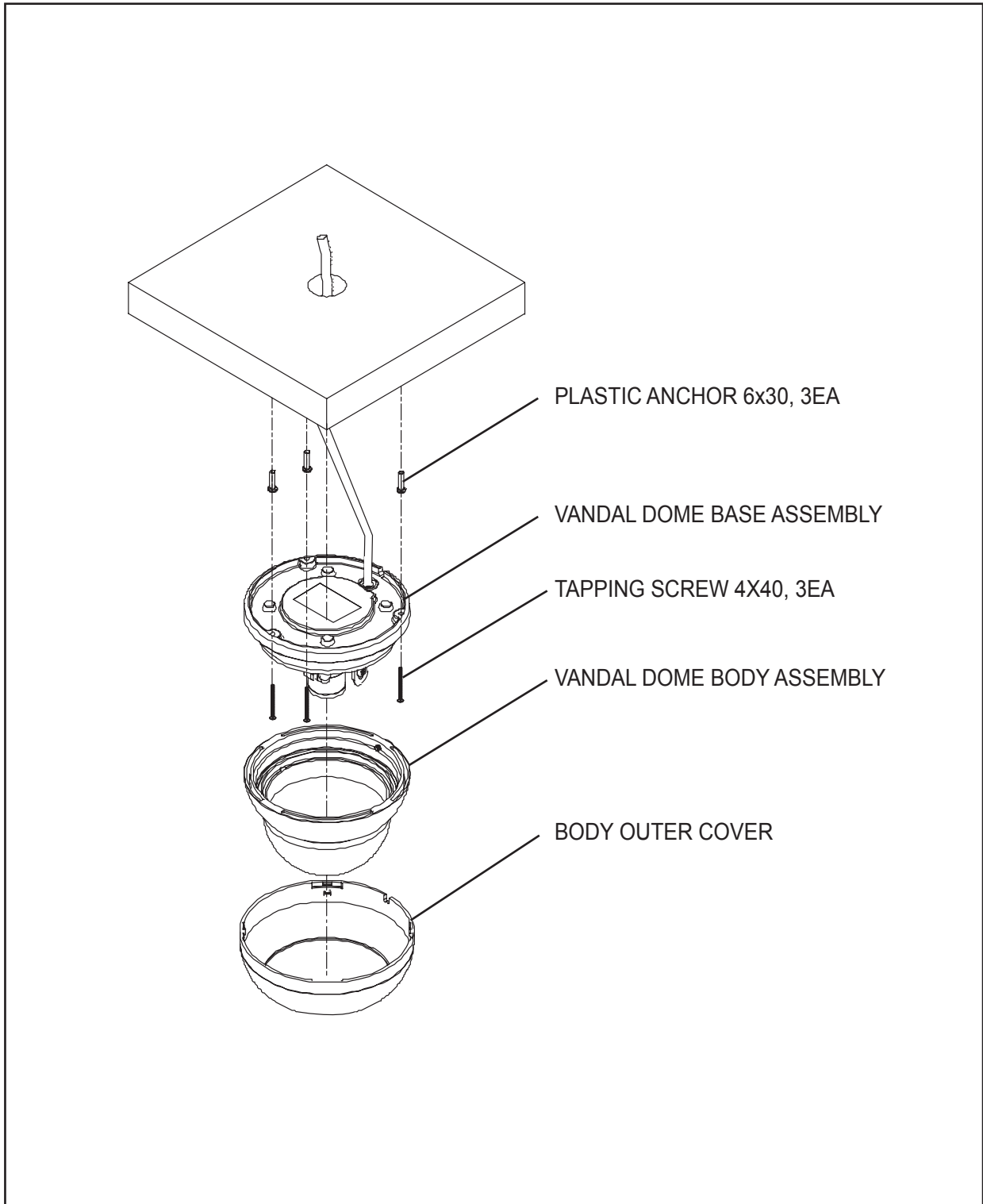
CAMERA INSTALLATION

3. HTINT591T



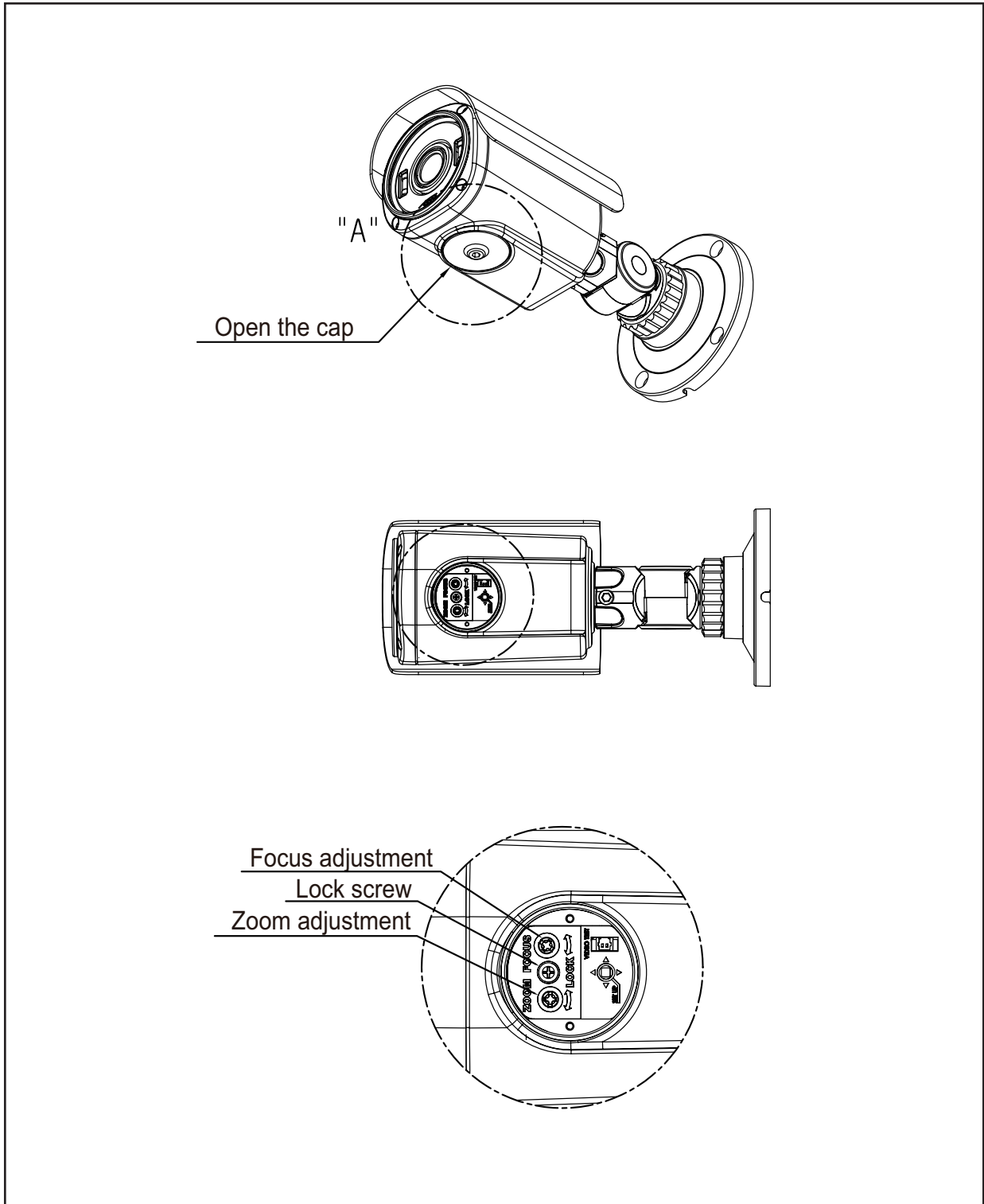
CAMERA INSTALLATION

4. HT7246T, HT7250T



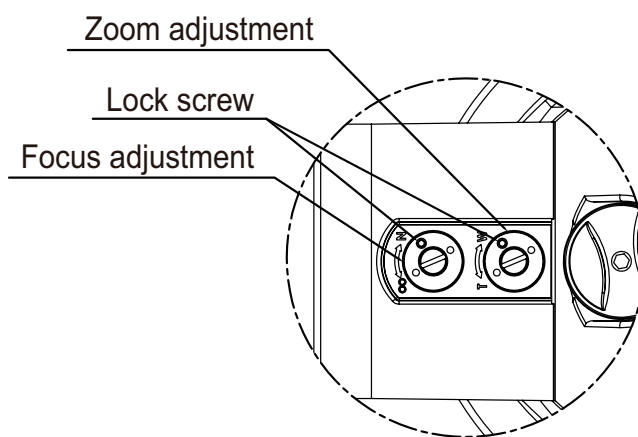
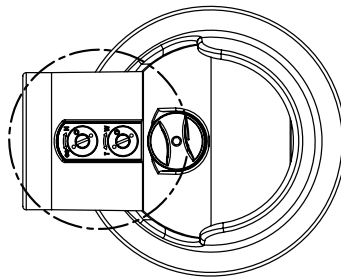
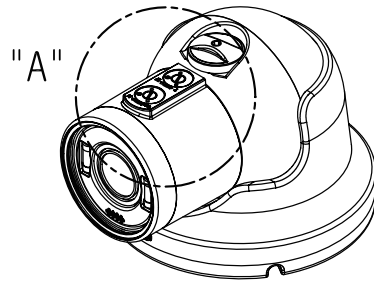
LENS ADJUSTMENT

1. HTINT70T, HTINT702T



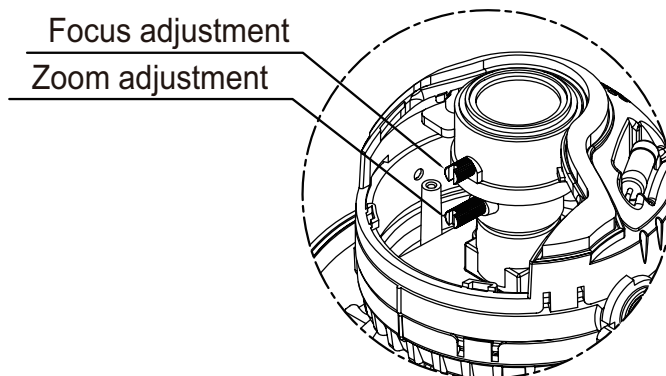
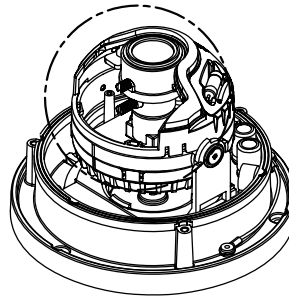
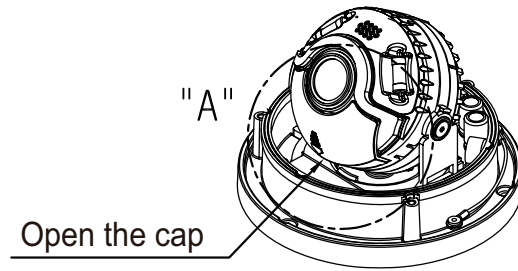
LENS ADJUSTMENT

2. HTINT60T



LENS ADJUSTMENT

3. HT7246T, HT7250T

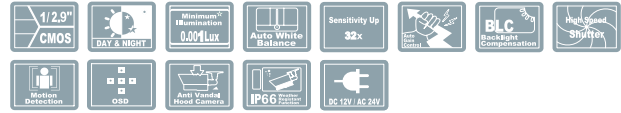


Intensifier T[®] Series

DC Auto Iris Varifocal Lens 2.8-12mm,5-50mm / 3.6mm Fixed Board Lens



- HTINT70T (2.8-12mm)
- HTINT701T (3.6mm)
- HTINT702T (5-50mm)



SPECIFICATIONS

MODEL	HTINT70T / HTINT701T / HTINT702T		
Image Sensor	1/2.9 Inch SONY 2Mega CMOS Sensor		
Pixels - total	2001 (H) X 1121 (V)		
Pixels - Effective	1985 (H) X 1105 (V)		
Resolution	1920X1080(1080p@30f / 1080p@25f) 1280X720_CROP(720p@60f / 720p@50f) 1280X720_CROP(720p@30f / 720p@25f)		
Scanning System	Progressive Scan		
S/N Ratio	50 dB		
Video Output	1.0Vp-p Composite. 75 Ohms 1.0Vp-p TVI(Transport Video Interface) 75 Ohms		
Minimum Illumination	0.001 Lux @ F1.4(Sens-Up X32)		
Shutter Speed	AUTO / Manual(1/25,1/30Sec ~ 1/30000Sec) / FLICKER		
BLC	0		
HSBLC	0		
WDR	ON / OFF (Low,Middle,High)(15 Fram)		
ACE(D-WDR)	O(OFF/LOW/MIDDLE/HIGH)		
Day&Night	AUTO / COLOR / BW / EXT		
White Balance	AUTO/AWB/AWC-SET/MANUAL		
Smart-IR	0		
Sense-Up	x2 ~ x32		
Motion	ON / OFF (4 Area)		
Digital Noise Reduction	3DNR (OFF/LOW/MIDDLE/HIGH)		
De-Fog	0 (AUTO/MANUAL)		
brightness	0 ~ 20		
AGC	0~20(Level Adjustable)		
Privacy	ON / OFF (16 Area)		
Mirror	MIRROR,V-FLIP		
Sharpness	0~20(Level Adjustable)		
Defect	AUTO DETECT		
Coaxial Communication	0		
Language	ENG/KOR/CHN/CHA(S)/JPN		
Lens	DC Auto Iris Varifocal Lens 2.8-12mm, 5-50mm / 3.6mm Fixed Board Lens		
Power	DC 12V/AC 24V Dual Voltage Operation		
Power Consumption	DC 12V	Heater Off: 180mA, On: 380mA ±10%(MAX)	Heater Off: 160mA, On: 350mA ±10%(MAX)
	AC 24V	Heater Off: 90mA, On: 160mA ±10%(MAX)	Heater Off: 80mA, On: 150mA ±10%(MAX)
Operating Temperature	-10 ~ +50 Deg C. RH 95% Max.		
Storage Temperature	-20 ~ +60 Deg C. RH 95% Max.		
Dimension	3.94"(W)*3.94"(H)*8.27"(D)		
Weight	3.09lbs		

Intensifier T[®] Series

DC Auto Iris Varifocal Lens 2.8-12mm / 3.6mm Fixed Board Lens



- HTINT60T (2.8-12mm)
- HTINT601T (3.6mm)



SPECIFICATIONS

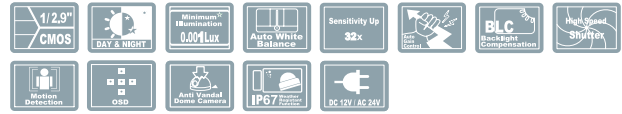
MODEL	HTINT60T / HTINT601T		
Image Sensor	1/2.9 Inch SONY 2Mega CMOS Sensor		
Pixels - total	2001 (H) X 1121 (V)		
Pixels - Effective	1985 (H) X 1105 (V)		
Resolution	1920X1080(1080p@30f / 1080p@25f) 1280X720_CROP(720p@60f / 720p@50f) 1280X720_CROP(720p@30f / 720p@25f)		
Scanning System	Progressive Scan		
S/N Ratio	50 dB		
Video Output	1.0Vp-p Composite. 75 Ohms 1.0Vp-p TVI(Transport Video Interface) 75 Ohms		
Minimum Illumination	0.001 Lux @ F1.4(Sens-Up X32)		
Shutter Speed	AUTO / Manual(1/25,1/30Sec ~ 1/30000Sec) / FLICKER		
BLC	0		
HSBLC	0		
WDR	ON / OFF (Low,Middle,High)(15 Fram)		
ACE(D-WDR)	O(OFF/LOW/MIDDLE/HIGH)		
Day&Night	AUTO / COLOR / BW / EXT		
White Balance	AUTO/AWB/AWC-SET/MANUAL		
Smart-IR	0		
Sense-Up	x2 ~ x32		
Motion	ON / OFF (4 Area)		
Digital Noise Reduction	3DNR (OFF/LOW/MIDDLE/HIGH)		
De-Fog	0 (AUTO/MANUAL)		
brightness	0 ~ 20		
AGC	0~20(Level Adjustable)		
Privacy	ON / OFF (16 Area)		
Mirror	MIRROR,V-FLIP		
Sharpness	0~20(Level Adjustable)		
Defect	AUTO DETECT		
Coaxial Communication	0		
Language	ENG/KOR/CHN/CHA(S)/JPN		
Lens	DC Auto Iris Varifocal Lens 2.8-12mm / 3.6mm Fixed Board Lens		
Power	DC 12V/AC 24V Dual Voltage Operation		
Power Consumption	DC 12V	Heater Off: 180mA, On: 380mA ±10%(MAX)	Heater Off: 160mA, On: 350mA ±10%(MAX)
	AC 24V	Heater Off: 90mA, On: 160mA ±10%(MAX)	Heater Off: 80mA, On: 150mA ±10%(MAX)
Operating Temperature	-10 ~ +50 Deg C. RH 95% Max.		
Storage Temperature	-20 ~ +60 Deg C. RH 95% Max.		
Dimension	4.65" (Dia)*3.80(H)		
Weight	1.99lbs		

Intensifier T[®] Series

3.6mm Fixed Board Lens



HTINT591T (3.6mm)



SPECIFICATIONS

MODEL	HTINT591T	
Image Sensor	1/2.9 Inch SONY 2Mega CMOS Sensor	
Pixels - total	2001 (H) X 1121 (V)	
Pixels - Effective	1985 (H) X 1105 (V)	
Resolution	1920X1080(1080p@30f / 1080p@25f) 1280X720_CROP(720p@60f / 720p@50f) 1280X720_CROP(720p@30f / 720p@25f)	
Scanning System	Progressive Scan	
S/N Ratio	50 dB	
Video Output	1.0Vp-p Composite. 75 Ohms 1.0Vp-p TVI(Transport Video Interface) 75 Ohms	
Minimum Illumination	0.001 Lux @ F1.4(Sens-Up X32)	
Shutter Speed	AUTO / Manual(1/25,1/30Sec ~ 1/30000Sec) / FLICKER	
BLC	0	
HSBLC	0	
WDR	ON / OFF (Low,Middle,High)(15 Fram)	
ACE(D-WDR)	O(OFF/LOW/MIDDLE/HIGH)	
Day&Night	AUTO / COLOR / BW / EXT	
White Balance	AUTO/AWB/AWC-SET/MANUAL	
Smart-IR	0	
Sense-Up	x2 ~ x32	
Motion	ON / OFF (4 Area)	
Digital Noise Reduction	3DNR (OFF/LOW/MIDDLE/HIGH)	
De-Fog	0 (AUTO/MANUAL)	
brightness	0 ~ 20	
AGC	0~20(Level Adjustable)	
Privacy	ON / OFF (16 Area)	
Mirror	MIRROR,V-FLIP	
Sharpness	0~20(Level Adjustable)	
Defect	AUTO DETECT	
Coaxial Communication	0	
Language	ENG/KOR/CHN/CHA(S)/JPN	
Lens	3.6mm Fixed Board Lens	
Power	DC 12V/AC 24V Dual Voltage Operation	
Power Consumption	DC 12V	Heater Off: 160mA, On: 350mA ±10%(MAX)
	AC 24V	Heater Off: 80mA, On: 150mA ±10%(MAX)
Operating Temperature	-10 ~ +50 Deg C. RH 95% Max.	
Storage Temperature	-20 ~ +60 Deg C. RH 95% Max.	
Dimension	4.72" (Dia)*3.35" (H)	
Weight	2.20lbs	

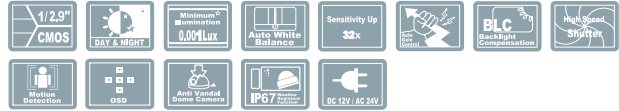
Intensifier T[®] Series

DC Auto Iris Varifocal Lens 2.8-12mm,5-50mm



■ HT7246T (2.8-12mm)

■ HT7250T (5-50mm)



SPECIFICATIONS

MODEL	HT7246T / HT7250T		
Image Sensor	1/2.9 Inch SONY 2Mega CMOS Sensor		
Pixels - total	2001 (H) X 1121 (V)		
Pixels - Effective	1985 (H) X 1105 (V)		
Resolution	1920X1080(1080p@30f / 1080p@25f) 1280X720_CROP(720p@60f / 720p@50f) 1280X720_CROP(720p@30f / 720p@25f)		
Scanning System	Progressive Scan		
S/N Ratio	50 dB		
Video Output	1.0Vp-p Composite. 75 Ohms 1.0Vp-p TVI(Transport Video Interface) 75 Ohms		
Minimum Illumination	0.001 Lux @ F1.4(Sens-Up X32)		
Shutter Speed	AUTO / Manual(1/25,1/30Sec ~ 1/30000Sec) / FLICKER		
BLC	0		
HSBLC	0		
WDR	ON / OFF (Low,Middle,High)(15 Fram)		
ACE(D-WDR)	0(OFF/LOW/MIDDLE/HIGH)		
Day&Night	AUTO / COLOR / BW / EXT		
White Balance	AUTO/AWB/AWC-SET/MANUAL		
Smart-IR	0		
Sense-Up	x2 ~ x32		
Motion	ON / OFF (4 Area)		
Digital Noise Reduction	3DNR (OFF/LOW/MIDDLE/HIGH)		
De-Fog	0 (AUTO/MANUAL)		
brightness	0 ~ 20		
AGC	0~20(Level Adjustable)		
Privacy	ON / OFF (16 Area)		
Mirror	MIRROR,V-FLIP		
Sharpness	0~20(Level Adjustable)		
Defect	AUTO DETECT		
Coaxial Communication	0		
Language	ENG/KOR/CHN/CHA(S)/JPN		
Lens	DC Auto Iris Varifocal Lens(2.8-12mm,5-50mm)		
Power	DC 12V/AC 24V Dual Voltage Operation		
Power Consumption	DC 12V	Heater Off: 180mA, On: 380mA ±10%(MAX)	Heater Off: 180mA, On: 380mA ±10%(MAX)
	AC 24V	Heater Off: 90mA, On: 160mA ±10%(MAX)	Heater Off: 90mA, On: 160mA ±10%(MAX)
Operating Temperature	-10 ~ +50 Deg C. RH 95% Max.		
Storage Temperature	-20 ~ +60 Deg C. RH 95% Max.		
Dimension	5.10"(Dia)*3.46"(H)		
Weight	1.0 lbs		

Intensifier T[®] Series

3.6mm Fixed Board Lens



■ HTINT40T(3.6mm)

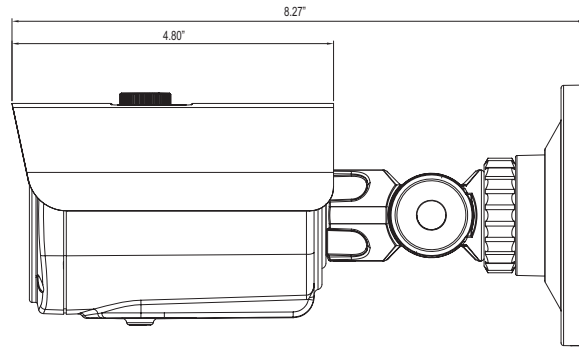
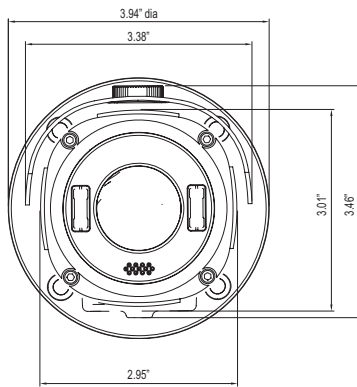


SPECIFICATIONS

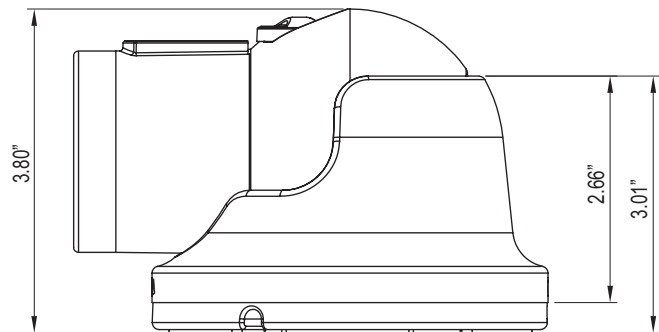
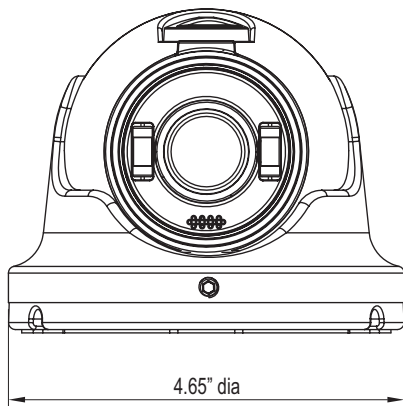
MODEL	HTINT40T
Image Sensor	1/2.9 Inch SONY 2Mega CMOS Sensor
Pixels - total	2001 (H) X 1121 (V)
Pixels - Effective	1985 (H) X 1105 (V)
Resolution	1920X1080(1080p@30f / 1080p@25f) 1280X720_CROP(720p@60f / 720p@50f) 1280X720_CROP(720p@30f / 720p@25f)
Scanning System	Progressive Scan
S/N Ratio	50 dB
Video Output	1.0Vp-p Composite. 75 Ohms 1.0Vp-p TVI(Transport Video Interface) 75 Ohms
Minimum Illumination	0.001 Lux @ F1.4(Sens-Up X32)
Shutter Speed	AUTO / Manual(1/25,1/30Sec ~ 1/30000Sec) / FLICKER
BLC	0
HSBLC	0
WDR	ON / OFF (Low,Middle,High)(15 Fram)
ACE(D-WDR)	0(OFF/LOW/MIDDLE/HIGH)
Day&Night	AUTO / COLOR / BW / EXT
White Balance	AUTO/AWB/AWC-SET/MANUAL
Smart-IR	0
Sense-Up	x2 ~ x32
Motion	ON / OFF (4 Area)
Digital Noise Reduction	3DNR (OFF/LOW/MIDDLE/HIGH)
De-Fog	0 (AUTO/MANUAL)
brightness	0 ~ 20
AGC	0~20(Level Adjustable)
Privacy	ON / OFF (16 Area)
Mirror	MIRROR,V-FLIP
Sharpness	0~20(Level Adjustable)
Defect	AUTO DETECT
Coaxial Communication	0
Language	ENG/KOR/CHN/CHA(S)/JPN
Lens	3.6mm Fixed Board Lens
Power	DC 12V
Power Consumption	100mA ±10%(MAX)
Operating Temperature	-10 ~ +50 Deg C. RH 95% Max.
Storage Temperature	-20 ~ +60 Deg C. RH 95% Max.
Dimension	1.34" (W)*1.34(H)*0.65" D(D)
Weight	0.66 lbs

CAMERA DIMENSION

1) HTINT70T, HTINT701T, HTINT702T

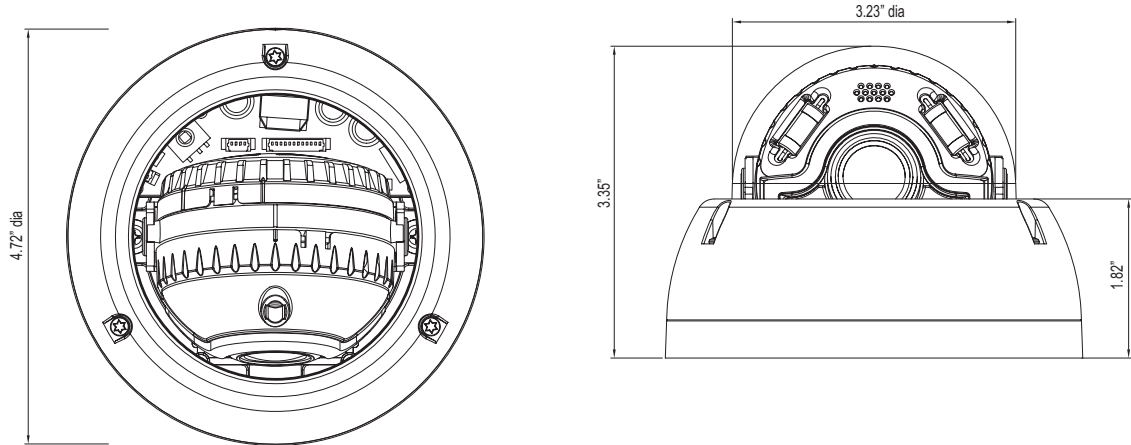


2) HTINT60T, HTINT601T

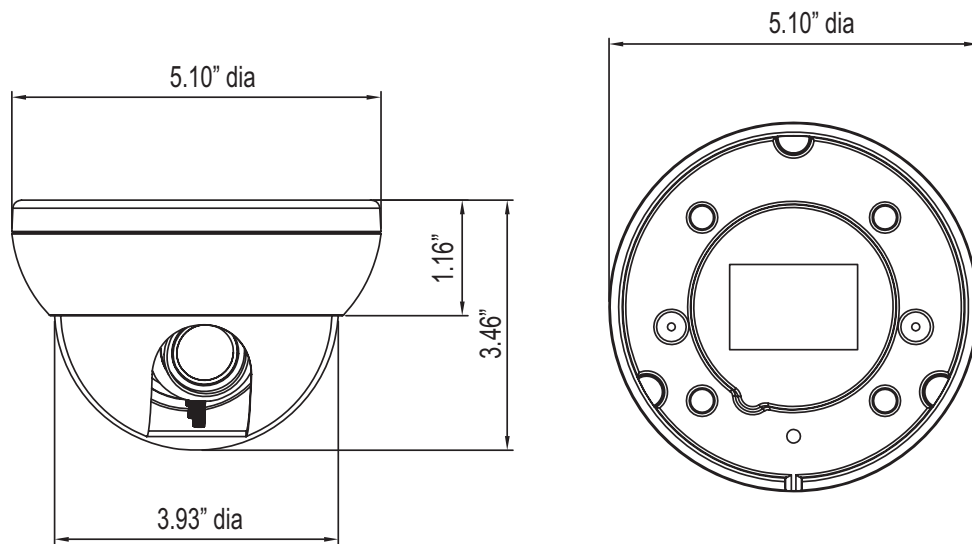


CAMERA DIMENSION

3) HTINT591T

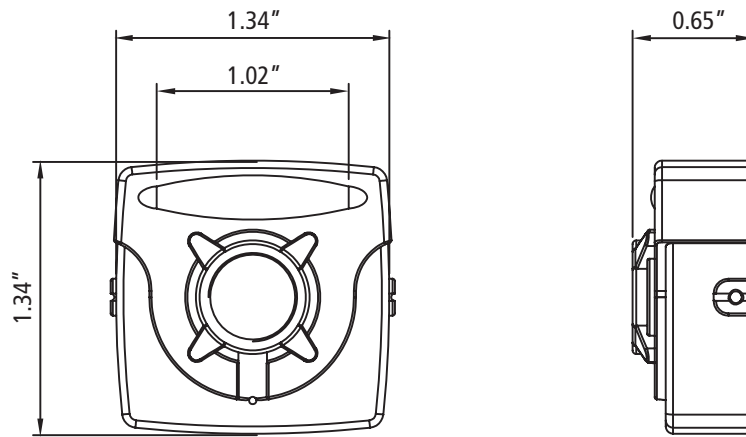


4) HT7246T, HT7250T



CAMERA DIMENSION

5) HTINT40T



General Features

● Transfer Video Interface

The combination of a 2Mega CMOS image sensor and TVI DSP provides an excellent resolution of TVI picture.

● 3D-DNR

Smart 3DNR prevents the image blurring of moving object and activates only if moving objects are appearing on the scene.

● Smart-IR

No saturation image, vivid image in darkness! "TVI" camera makes very sharp video image in darkness! This technology eliminates saturation of video image of the closer object in darkness by control of the IR sensitivity. Saturation never happens in our "TVI" cameras, you can enjoy vivid image in any dark condition!

● Sens-Up

Despite a limited & low light condition, Sens-Up - Max. x32 helps the viewer to get visible and clear images.

● Defog

Defog function improve the clarity of images taken in poor conditions such as fog, smoke, rain or snow.

● WDR

A powerful and advanced technology that captures clean and superior high resolution picture even where images appear dark and strong back light.

● CVBS(Composite Video Blanking and Sync)

TV system is switchable 'NTSC' or 'PAL' with built-in OSD.

● Intelligent Function

An extra ordinary technology enables Speco Technologies TVI become an ultimate and of solution by providing intelligent features based on motion detection. It strengthens crime prevention and detection.

How to Set Up the camera menu

● Setup Menu

MENU						
1.PRESET			INDOOR / OUTDOOR / LOW LIGHT / HALLWAY / LOBBY(WDR) / ELEVATOR			
2. MAIN SETUP	1.LENS	DC	MODE	INDOOR / OUTDOOR / DEBLUR		
			RETURN			
		MANUAL	MODE	NORMAL / DEBLUR		
			RETURN			
	2.EXPOSURE		BRIGHTNESS	0~20		
			SHUTTER	AUTO		
				MANUAL	SPEED	1/30 ~ 1/30000
				RETURN		
			FLICKER			
			INTENSIFY	OFF ~ X32		
			AGC	0~20		
	RETURN					
	3.WHITE BAL		AUTO			
			AWB			
			AWC-SET			
		MANUAL	KELVIN	LOW / MIDDLE / HIGH		
			R-GAIN	0 ~ 20		
			B-GAIN	0 ~ 20		
	RETURN					
	4.BACKLIGHT		OFF			
			HLC	LEVEL	0 ~ 20	
				MODE	ALL DAY / NIGHT ONLY	
		RETURN				
		BLC	H-POS	0 ~ 20		
			V-POS	0 ~ 19		
			H-SIZE	0 ~ 20		
			V-SIZE	0 ~ 19		
			RETURN			
		WDR	WEIGHT	LOW / MIDDLE / HIGH		
	RETURN					
5.SPECO DNR	OFF / LOW / MIDDLE / HIGH					
6.DAY&NIGHT	AUTO	SMART IR	0~20			
		AGC THRES	0~20			
		AGC MARGIN	0~20			
		DELAY	LOW / MIDDLE / HIGH			
		RETURN				
	COLOR					
	B/W	SMART IR	0~20			
		RETURN				
	EXTERN	SMART IR	0~20			
		EXTERN S/W	LOW / HIGH			
DELAY		LOW / MIDDLE / HIGH				
RETURN						
7.IMAGE		SHARPNESS	0 ~ 20			
		GAMMA	0.45 ~ 0.65			
		COLOR GAIN	0 ~ 20			
		MIRROR	ON/OFF			
		FLIP	ON/OFF			
		ACE	OFF/LOW/MIDDLE/HIGH			
		DEFOG	OFF			
			ON	MODE	AUTO/MANUAL	
				LEVEL	LOW/MIDDLE/HIGH	
				RETURN		

How to Set Up the camera menu

● Setup Menu

MENU									
	7.IMAGE		PRIVACY	OFF					
				ON	ZONE NUM	0~15			
					ZONE DISP	ON/OFF			
					H-POS	0~60			
					V-POS	0~34			
					H-SIZE	0~60			
					V-SIZE	0~34			
					Y LEVEL	0~20			
					CR LEVEL	0~20			
					CB LEVEL	0~20			
	RETURN								
				RETURN					
	8.MOTION	ON	OFF						
			SENSITIVITY	0 ~ 10					
			WINDOW TONE	0 ~ 4					
			WINDOW ZONE	0 ~ 3					
			WINDOW USE	OFF/ON					
			DET H-POS	1 ~ 60					
			DET V-POS	1 ~ 34					
			DET H-SIZE	1 ~ 60					
			DET V-SIZE	1 ~ 34					
			ALARM	OFF/ON					
				RETURN					
	9.SYSTEM			COM.	CAM ID	0 ~ 255			
				BAUDRATE	2400 / 4800 / 9600 / 57600 / 115200				
							RETURN		
				IMAGE RANGE	FULL				
							COMP		
				USER	OFFSET	0~32			
							RETURN		
FRAME RATE				1080_30P, 720_30P, 720_60P					
COLOR SPACE				YUV / SD-CBCR / HD-CBCR					
CVBS				PAL / NTSC					
LANGUAGE	ENG / CHN / CHN(S) / JPN / KOR								
COLOR BAR	OFF/ON								
RESET	OFF/ON								
			RETURN	ON					
10.RETURN									
3.EXIT	EXIT / RESET (L/R - PUSHING)								

Menu Set Up

Menu items can be selected by using the OSD buttons of the camera.

1. PRESET



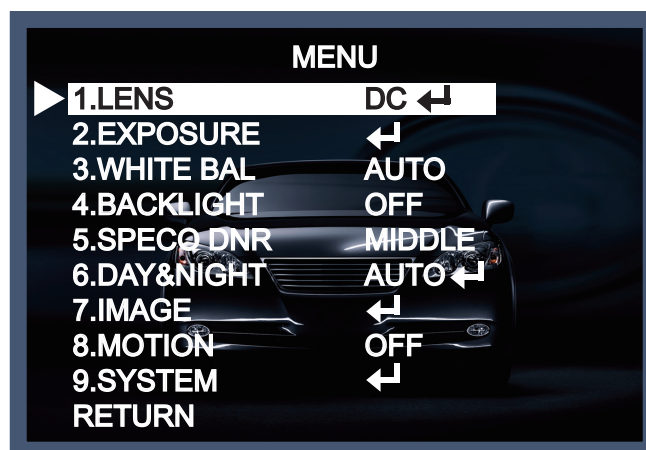
1-1. Preset : INDOOR / OUTDOOR / LOW LIGHT / HALLWAY / LOBBY(WDR) / ELEVATOR.

- Used for a quick and easy setup for the installation environment.

* The Advanced Set Up menu will be displayed on the monitor.

2. Move and select the required function using the Up and Down button.

* Move the triangular indicator Up or Down to select the desired feature by pressing the Up or Down button.



3. Change menu settings using the Left or Right button.


* Available values or Status are displayed by pressing the Left or Right buttons.

Press the button until desired value / status is displayed.

4. After Changing the setting move the arrow indicator to EXIT and press the

SET button to EXIT.

NOTE

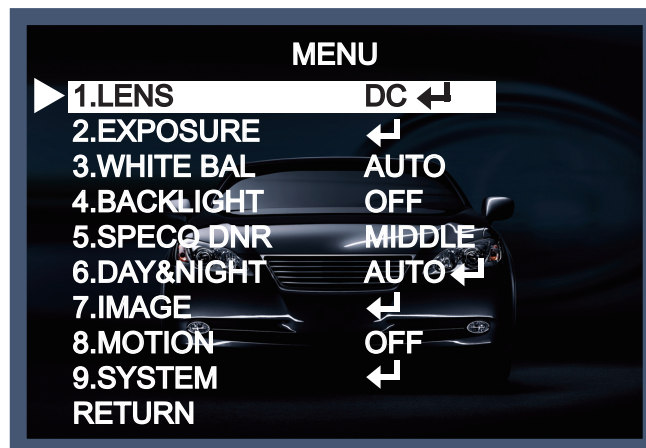
* Move to the available submenu by moving  arrow to desired feature.

* Submenu is not available when this symbol displayed "---".

LENS

1. Move the triangular indicator to LENS using the Up and Down buttons on the Set Up menu screen.

2. Select the desired lens type by pressing the Left or Right button.



NOTE

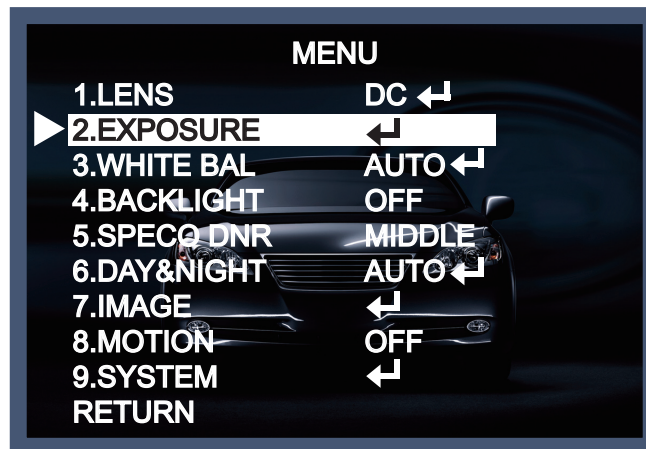


* When you select the mode setup, you can select INDOOR, OUTDOOR or DEBLUR depending on the installation environment.

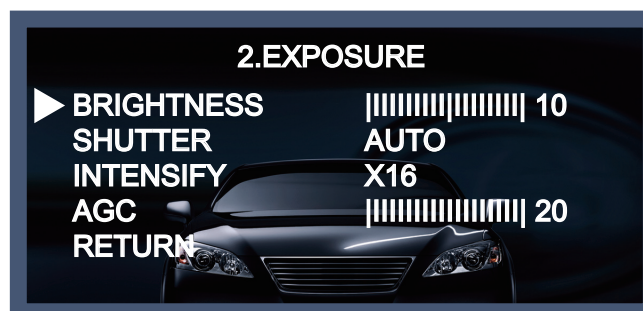
* On manual mode, you can select NORMAL or DEBLUR depending on the installation environment.

EXPOSURE

1. On the Set Up menu, Select EXPOSURE by using the Up or Down button.



2. Select the desired shutter mode by pressing the Left or Right button.



- ◆ BRIGHTNESS : The brightness can be adjusted. The brightness control range is 1~20.
- ◆ SHUTTER : DC lens is launched with the setting of 1/30 and the manual lens is launched with the setting of Auto shutter, but the shutter speed can be adjusted from 1/30 to 1/30,000.
- FLK : Select FLK mode if flickering occurs ; caused by the unmatched frequency of electric light.

NOTE

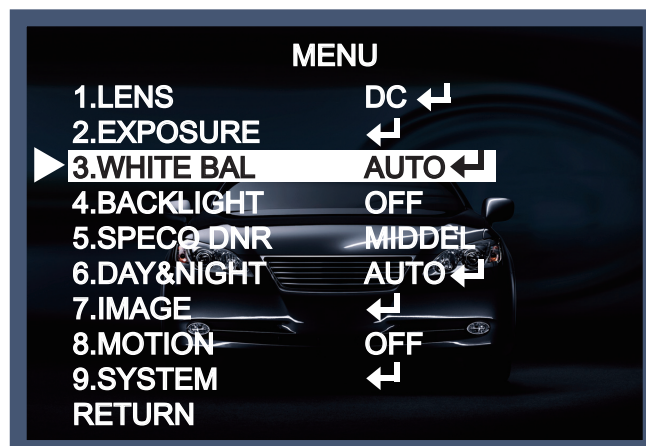
* Sense-Up mode does not work when Electronic shutter is set to Manual.

- ◆ INTENSIFY : Brightness will be increased automatically depending on the circumstance of low light condition.
→ Off ~x32 Level Adjustable.
- ◆ AGC (Auto Gain Control) : The higher the AGC level is, the more noises appear.
→ 0~20 Level selectable.

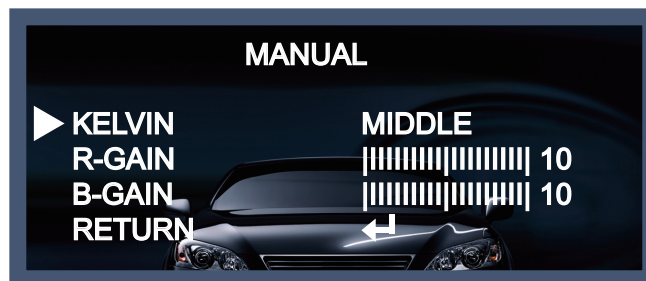
White Balance

Use this function when the color adjustment of a screen is needed.

1. Move the triangular indicator to WHITE BAL on the SETUP menu screen using the Up and Down button.
2. Select the desired mode by using the left or Right button.



- ◆ AUTO : Use this mode when the color temperature is from 2,500k to 9,500k.
- ◆ AWB : The function to search for the color which is matched well with the ambient environment.
- ◆ AWC→SET : After letting camera focus on the blank white paper to the best condition of current lighting environment, press the SET button. If the lighting condition is changed, Re-adjustment should be needed.
- ◆ MANUAL : Manual compensation make the more detailed control possible. First, after adjusting the white balance using the ATW or AWB mode, change the mode into the manual compensation mode and then press Set button. While looking at the color change of the subject seen on the screen after setting up the proper color temperature, increase the each value of the blue and the red.



- KELVIN : LOW/MIDDLE/HIGH level adjustable.
- R-GAIN : 0~20 level adjustable.
- B-GAIN : 0~20 level adjustable.
- Return : Every function is set up at the EXPOSURE menu, and then return the previous menu.

NOTE

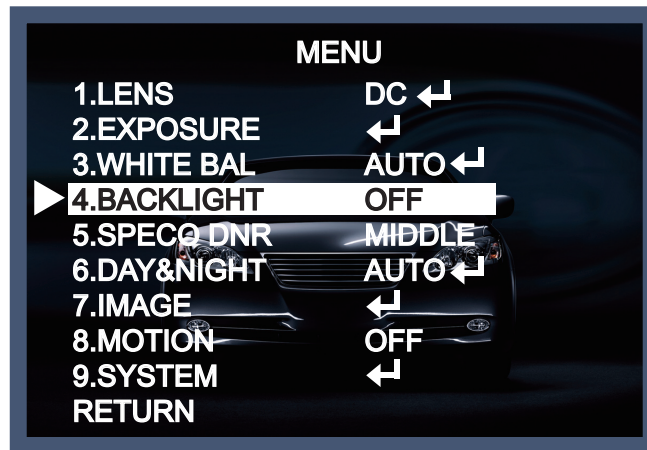
White Balance may not work properly in the following conditions. If this doesn't work, use the AWB mode.

- * When there is a very high color temperature in the circumstances of the subject.
(for example, clear sky, Sunset)
- * It is very dark.
- * If the camera is pointed directly at fluorescent light or if there is a drastic lighting change, The operation of White balance may become unstable.

BACKLIGHT

On this menu, backlight image can be compensated by users selecting one of modes.(HLC, BLC, WDR)

1. Move the triangular indicator to BACKLIGHT on the SETUP menu screen using the Up and Down button.
2. Select the desired mode by using the left or Right button.



- ◆ Off : Deactivated status.
- ◆ HLC : This function is used to suppress or strong light source (for example, headlights of cars during nighttime) so that other subjects can be seen in more detail. If you select HLC, a submenu appears where you can make finer adjustments.
 - LEVEL : Adjust the brightness level from which on the light source is to be masked out. 0~20 level adjustable.
 - MODE : All day/night only adjustable.



- ◆ BLC : This function is used to counterbalance the screen image by increasing the brightness so that a subject which appears dark due to a strong backlight can be displayed in more detail. If you select BLC, a submenu appears where you can make finer adjustments.
- H-POS/V-POS/H-SIZE/V-SIZE : Define the position and size of the area of interest by changing the position & size.



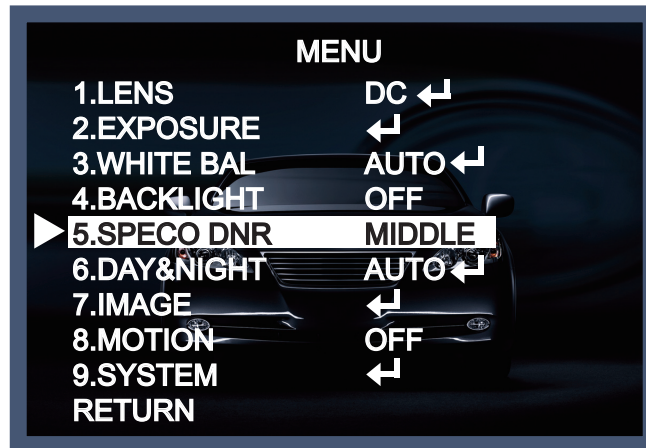
- ◆ WDR : The WDR (Wide Dynamic Range) function works to correct excessive light within the frame to produce a usable image. When the image has simultaneous bright and dark areas, it makes both areas distinct. If you select WDR, a submenu appears where you can make finer adjustments.
- WEIGHT [MIDDLE, HIGH, LOW] : Select the WDR level of the camera.



SPECO DNR

This function is used to improve the picture quality by filtering the noise which is generated under low bright light conditions. You can set different levels here.

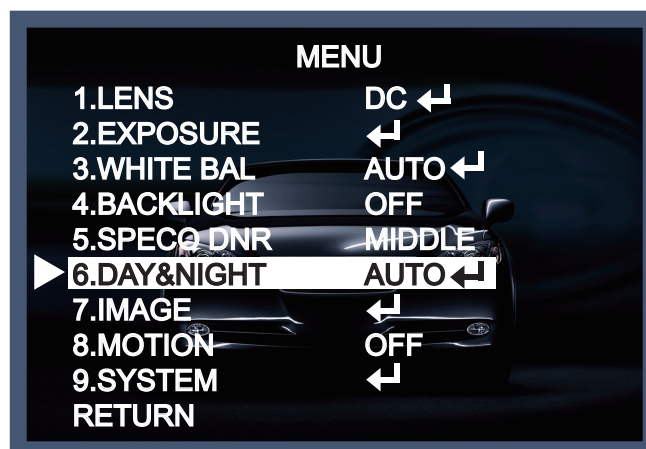
1. Move the triangular indicator to SPECO DNR by using the Up and Down button.
2. Select the mode to use by pressing the left or Right button and LOW/MIDDLE/HIGH level selectable.



Day&Night

You can change the color mode of color or black / white by setting up the mode.

1. Select Day&Night using the Up or Down button on the Set Up menu screen.
2. Select the desired mode using the Left or Right buttons.

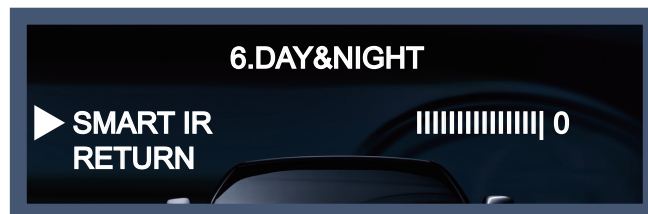


- ◆ **AUTO** : Automatically, It shifts into the color mode in the bright environment and the B/W mode in the low light condition. It can adjust the delay time, starting brightness and end brightness according to the ambient conditions by pressing the Set button.



- SMART IR : 0~20 smart IR level adjustable.
- AGC THRES : 0~20 AGC THRES level adjustable.
- AGC MARGIN : 0~20 AGC MARGIN level adjustable.
- DELAY [LOW/MIDDLE/HIGH] : Set the delay time for switching between COLOR and B/W

- ◆ **COLOR** : Making the video output color always.
- ◆ **B / W** : Making the video output B/W always.



- SMART IR : It controls the IR LED(bright portion base), saturation is not expected. 0~20 level adjustable.

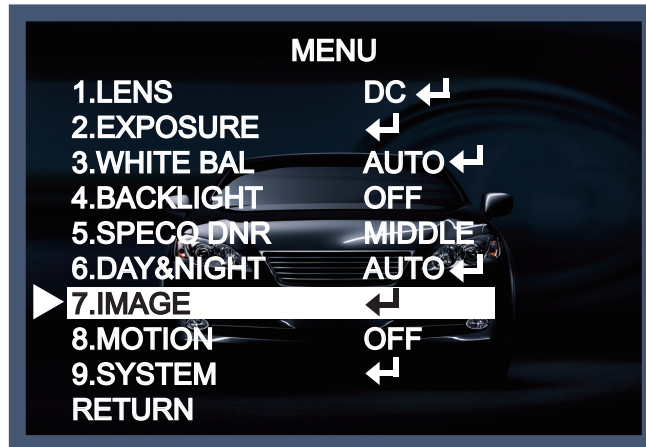
- ◆ **EXTERN** : It can change the color or B/W mode automatically through the connection with the ground terminal.(Option for box camera and IR camera)
- SMART IR : It controls the IR LED(bright portion base), saturation is not expected. 0~20 level adjustable.



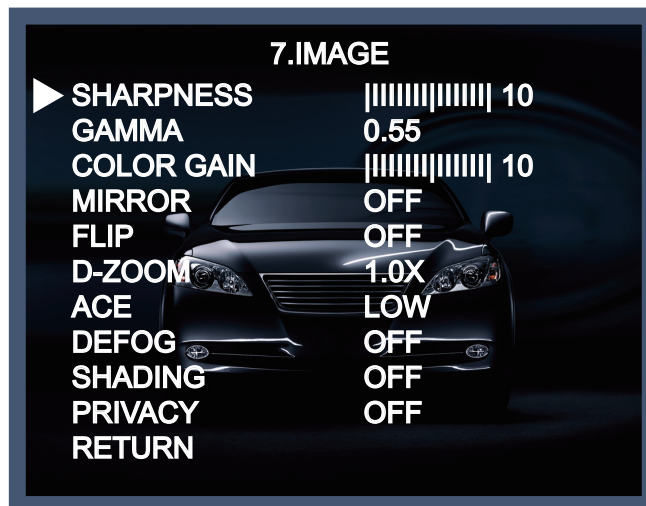
- EXTERN S/W [LOW/HIGH] : Set the external signal for switching between COLOR and B/W.
- DELAY [LOW/MIDDLE/HIGH] : Set the delay time for switching between color and B/W .

IMAGE

When selecting, the following submenu will appear.

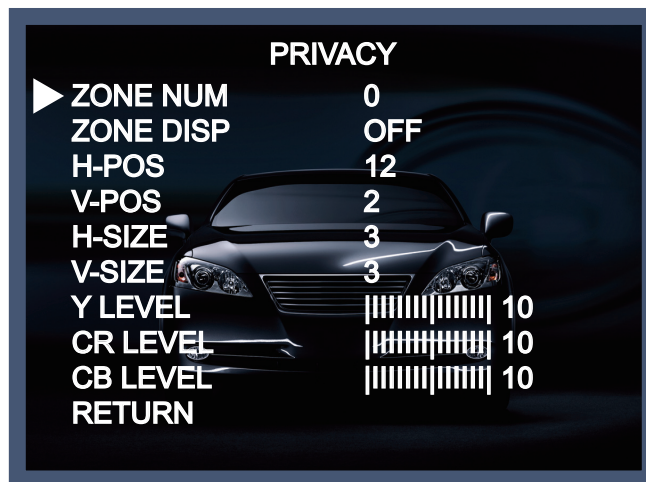


Here you can optimise the image quality by adjusting different options.



- SHARPNESS [1 ~ 20] : Adjusts the image sharpness. If the level goes up excessively, it may affect the video image and generate a noise.
- GAMMA [0.45 ~ 0.65] : Changes the gamma curve of the camera.
- COLOR GAIN [0 ~ 20] : Changes the color gain of the camera.
- MIRROR [ON, OFF] : Mirrors the image horizontally on the screen.
- FLIP [ON, OFF] : Flips the image vertically on the screen.

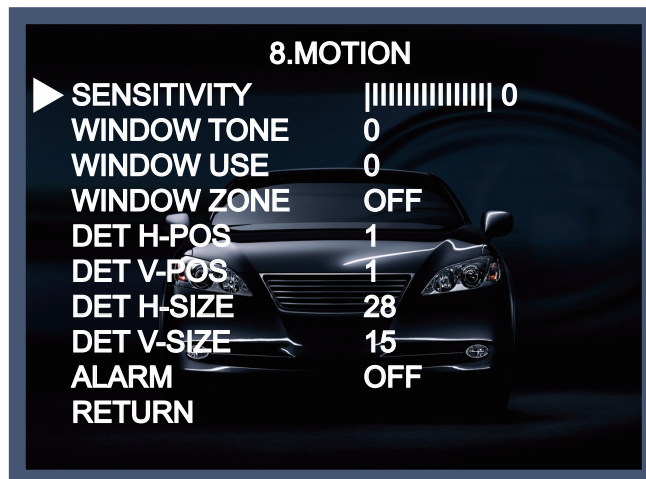
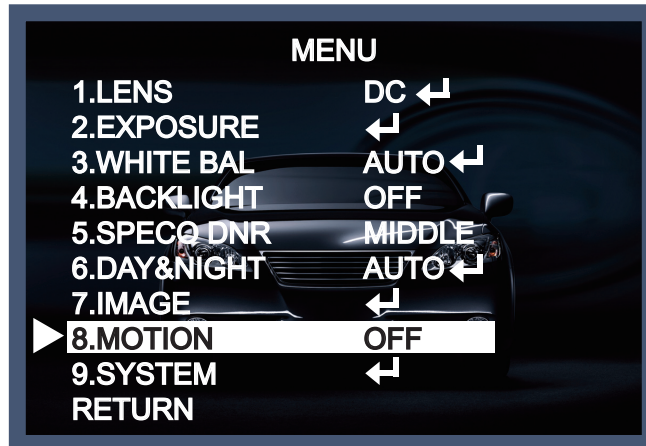
- D-ZOOM : You can use the digital zoom with x1 ~x8 magnification. The higher the digital zoom magnification is, the lower the resolution is.
 - ACE [LOW/MIDDLE/HIGH] : Intelligent lightn level control to over come even strong backlight conditions.
 - DEFOG [ON, OFF] : This fuction helps to recognize the object in a dusty weather condition.
ON, a submenu appears where you can make finer adjustments.
 - SHADING [ON, OFF] : Compensates the shading effects of lenses when the lens is set to a very wide angle. This function will reduce the brightness difference between the centre and the edges. If you select ON, a submenu appears where you can make finer adjustments.
- ◆ PRIVACY [ON, OFF] : This is used to hide certain areas on the monitor. You can designate each different 16 area. The size of a designated area can be adjusted. The color of a privacy area can be selected various colors. When you select the return, the setting values in this function menu are saved, then get out of this menu.



- ZONE NUM [0~15] : Select a mask out of the 16 mask areas and set the options below for the selected mask.
- ZONE DISP [ON, OFF] : Choose ON to activate privacy masks and press OFF to deactivate masks.
- H-POS [0~60] : Define the horizontal start position of the privacy mask.
- V-POS [0~33] : Define the vertical start position of the privacy mask.
- H-ZISE [0~60] : Define the horizontal size of the privacy mask.
- V-SIZE [0~33] : Define the vertical size of the privacy mask.
- Y LEVEL [0~20] : Define the brightness of the mask color.
- CR LEVEL [0~20] : Define the red amount of the mask color.
- CB LEVEL [0~20] : Define the blue amount of the mask color.

MOTION

This function is used to detect moving objects in the monitored area. When choosing ON, the following submenu will appear where you can adjust the settings for the MOTION function.

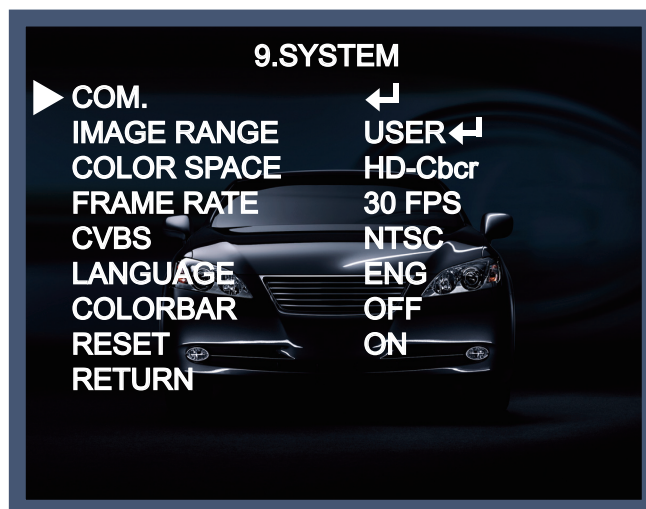
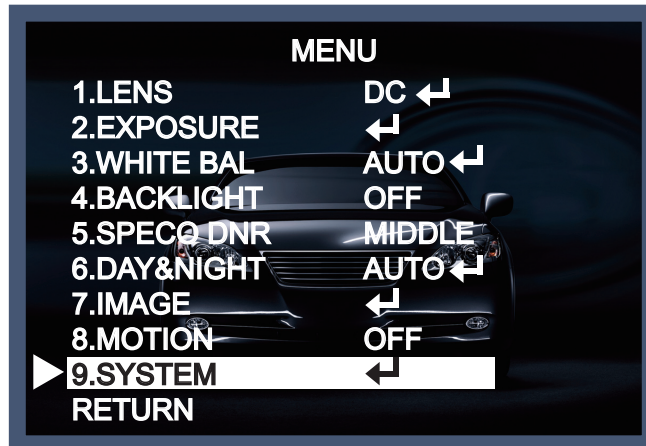


- SENSITIVITY [0~20] : The higher the setting value is, the higher the sensitivity gets, even though the movement of a subject.
- WINDOW TONE [0~3] : Select the number of window use for motion detection.
- WINDOW USE [ON, OFF]
- WINDOW ZONE [ON, OFF]
- DET H-POS [0~60] : Define the horizontal start position of the monitoring area.
- DET V-POS [0~34] : Define the vertical start position of the monitoring area.
- DET H-SIZE [0~60] : Define the horizontal size of the monitoring area.
- DET V-SIZE [0~34] : Define the vertical size of the monitoring area.
- ALARM [ON, OFF] : In motion situation, you can select the detail of option setting.

SYSTEM

This can be used when you want to select the additional function control.

1. When the SETUP menu is displayed, select SYSTEM using the Up and Down button.
2. Select one of the mode using the Up and Down button.



- COM. : This menu is used for RS-485 communication. Users are able to select 'CAM ID(0~255)' and 'BAUDRATE(2400/4800/9600/57600/115200)'.
- IMAGE RANGE [FULL/COMP/USER] : Adjust the rate of YC signal to 100%(FULL), 75%(COMP) or 100%~75%(USER).
- COLOR SPACE [YUV/SD-CBCR/HD-CBCR] : Select different color settings for a warmer or a colder image.
- FRAME RATE [25 FPS/30 FPS] : Choose a frame rate.
- CVBS [PAL/NTSC] : Select the video format that matches the present TV system.
- LANGUAGE : ENG, CHN, CHN(S), JPN, KOR
- COLOR BAR [OFF/ON] : Check current condition with color bar.
- RESET [ON] : All settings will be restored to factory default.

RETURN

Press the Set button in the return menu to save the current settings and return the Set Up menu.

• Trouble Shooting

PROBLEM	POSSIBLE CAUSE
Nothing appears on the screen.	☞ Check the power cable, power supply output and video connection between the camera and monitor.
The image on the screen is dim.	☞ Are the camera lens or the lens glass dirty? Clean the lens / glass with a soft clean cloth. ☞ Adjust the monitor controls, as required. ☞ If the camera is facing a very strong light, change the camera position. ☞ Adjust the lens focus.
The image on the screen is dark.	☞ Adjust the contrast control of the monitor. ☞ If there is an intermediate device, correctly set the 75Ω/Hi-z.
The camera is not working properly and the surface of the camera is hot.	☞ Check the camera is correctly connected to an appropriate regulated power source.
Motion Detection is not activated.	☞ Has MOTION DET been set to ON in the menu? ☞ Has MD AREA been properly defined?
The color of the picture is not correct.	☞ Check the settings in WHITE BALANCE menu.
The image on the screen flickers.	☞ Make sure that the camera isn't facing direct sunlight or fluorescent lighting. If necessary, change the camera position.
The INTENSIFY does not work.	☞ Check that the AGC setting in the EXPOSURE menu is not set to OFF. ☞ Check the EXPOSURE menu and make sure SHUTTER is set to-----.