



# INSTRUCTION MANUAL

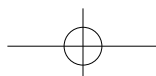
## *2MP TVI LPR Camera*

**HLPR1G**  
(IR Bullet Camera)



Speco Technologies is constantly developing product improvements.  
We reserve the right to modify product design and specifications without notice and without incurring any obligation.

Rev. 07/01/2020





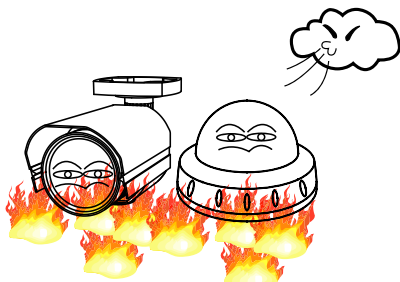
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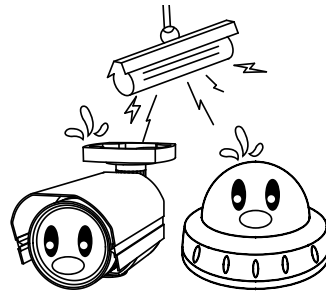
# Precautions

Do not install the camera in extreme temperature conditions.



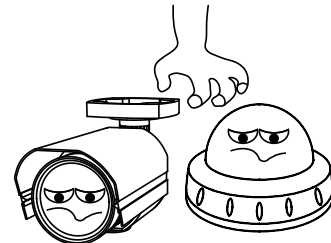
Only use the camera under conditions where temperatures are between  $-10^{\circ}\text{C}$  and  $+50^{\circ}\text{C}$ . Be especially careful to provide ventilation when operating under high temperatures.

Do not install the camera under unstable lighting conditions.



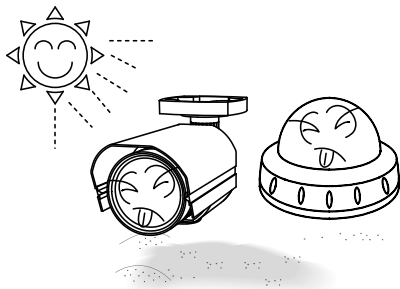
Severe lighting change or flicker can cause the camera to work improperly.

Do not touch the front lens of the camera.



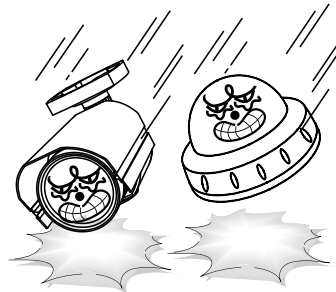
This is one of the most important parts of the camera. Be careful not to leave fingerprints on the lens cover.

Never keep the camera pointed directly at strong light.



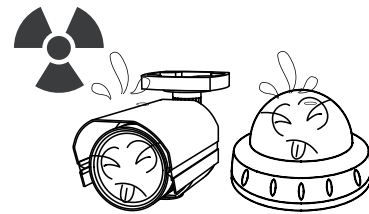
It can cause malfunctions to occur.

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



Housing damage can compromise weatherproof ratings.

Do not expose the camera to radioactivity.

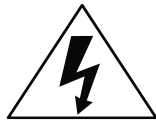


If exposed to radioactivity the CCD will fail.

## 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

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

### Please handle this camera carefully :

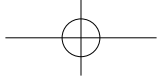
- Do not use a strong or abrasive detergent when cleaning the camera
- Do not install near cooling or heating device



## Package Contents

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

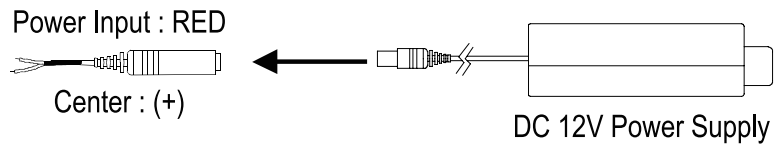
- 1) HLP1G Included Junction Box
  - 1 Power Jack
  - 1 Mount Base Sticker
  - 1 Wrench
  - Set Screw
    - 3 Tapping Screws 4x25
    - 4 Hexagon Socket Screws M4x14
    - 3 Plastic Anchor



# Camea Installation

## CONNECT POWER CABLE

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

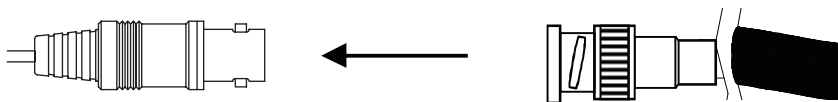


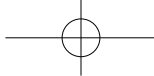
2. WHEN USING 24 VOLTS AC (40 Volts Amps)



3. CONNECT VIDEO CABLE

CONNECT BNC CABLE TO THE BNC JACK.



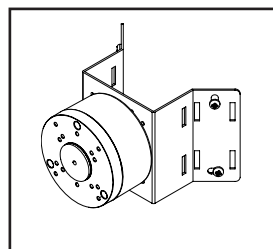
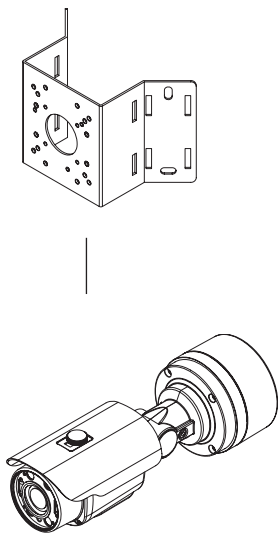


# Camea Installation

## Compatibility

### 1) HLPR1G

INTCM

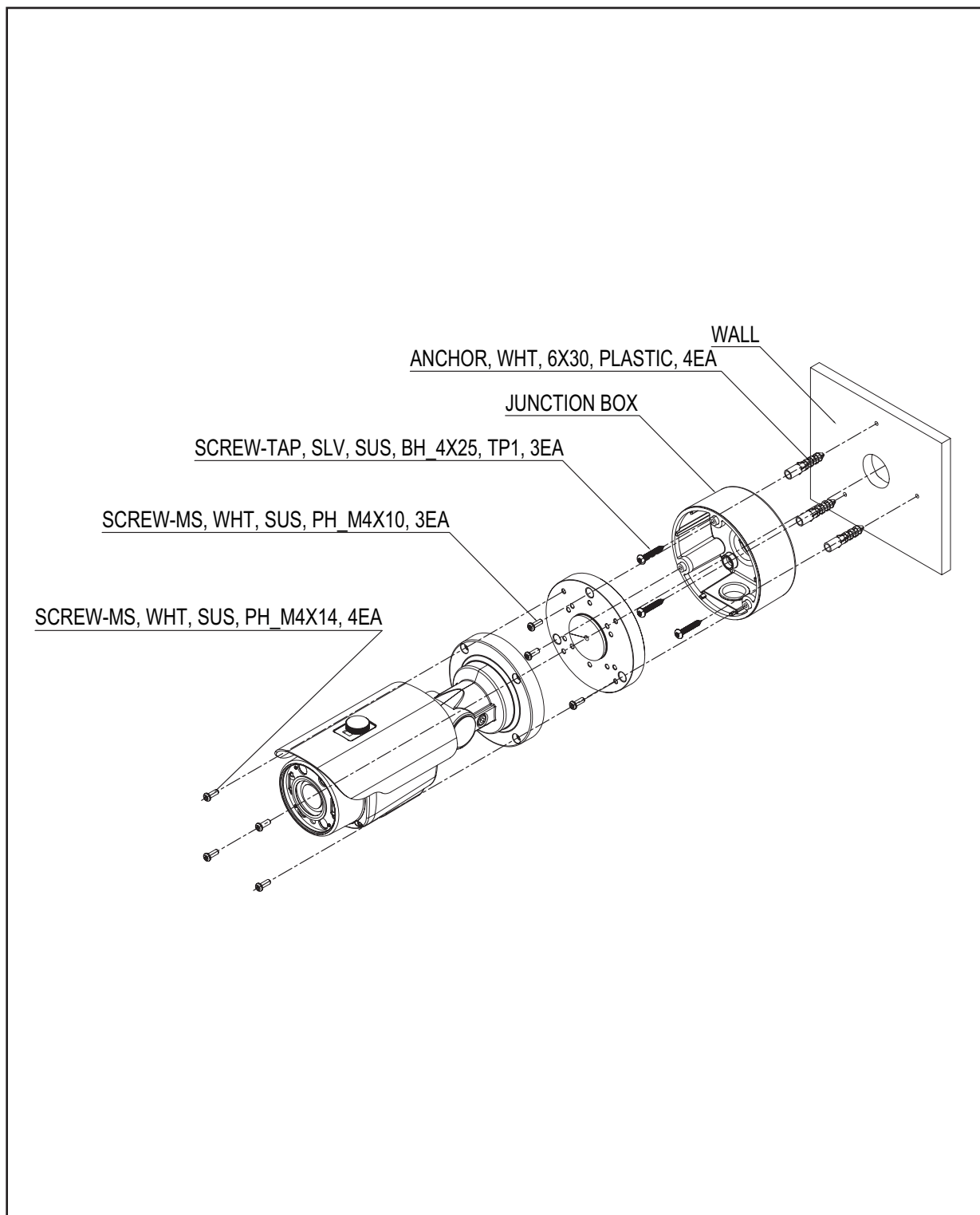






# Camea Installation

## 1. HLPR1G



# 2MP TVI LPR Camera

## 5-50mm Motorized Lens



- **HLPR1G (5-50mm)**
- 5-50mm motorized auto iris varifocal lens, (10x auto focus / zoom)
- High-contrast imaging performance that delivers sharp, clear license-plate captures
- Full HD 1080p over coax (HD-TVI)
- Supports full UTC control over coax for Zoom / Focus and camera's OSD
- Captures license plates up to 40 mph
- IP66 compliant, weather resistant

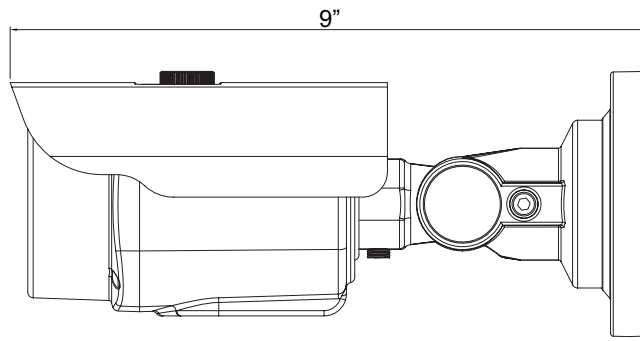
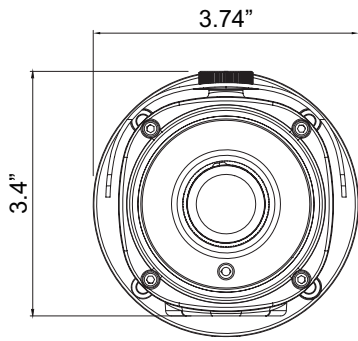
### SPECIFICATIONS

MODEL		HLPR1G
Image sensor	Sensor type	1/2.9" SONY 2Mega Starvis CMOS Sensor
	Effective pixels	1985(H) X 1105(V), 2.19M Pixels
	Total pixels	2001(H) X 1121(V), 2.24M Pixels
Resolution	Analogue	1080P / 720P / CVBS
Frame rate		NTSC 30P, PAL 25P
Scanning system		Progressive Scan
Min. illumination		DAY : 0.5LUX (AGC MAX, SENS-UP OFF, F1.4) NIGHT : 0.01LUX (AGC MAX, SENS-UP OFF, F1.4)
Video Output	Analogue	TVI, CVBS
S/N Ratio		More than 50dB
Lens	Drive Type	05~50mm Motorized Lens with Auto Focus
	AGC	0 ~ 10 Level Adjustable
	Shutter Speed	AUTO / FLK / MANUAL(1/30Sec ~ 1/30000Sec)
	Brightness	0 ~ 20 Level Adjustable
	Sens-UP	OFF / x2 ~ x32
	WDR	OFF / ON : LOW/MIDDLE/HIGH / ROI WDR
	BLC	OFF / ON
	HLC	OFF / ON
	ACE(D-WDR/ATR-EX)	OFF / ON(LOW/MIDDLE/HIGH)
	Privacy Masking	OFF / ON (BOX : 16 Zone)
	DEFOG	OFF / ON(LOW/MIDDLE/HIGH)
	Day & Night	Auto(AGC) / COLOR / BW / EXTERN(Lux CTL, PWM CTL)
	Smart-IR	0~20 Level Adjustable
	White Balance	AUTO(1,700K ~ 11,000K) / AUTO ext / PRESET / MANUAL
	DNR	OFF / LOW / MIDDLE / HIGH (2D+3DNR)
	Mirror	MIRROR / FLIP
	Function	Sharpness
Gamma Correction		0.45 ~ 0.75
Language		ENG / KOR / JPN / CHN / CHN(S)
Power Consumption		DC 12V : Max 9.3W / 0.77A, AC 24V : Max 8W / 0.6A
Operating Temperature		-10 ~ +50 Deg C. RH 95% Max.
Storage Temperature	-20 ~ +60 Deg C. RH 95% Max.	
Dimensions		3.74"(W)*3.4"(H)*9"(D)
Weight		1.54lbs



# Camera Dimension

## 1) HLPR1G





## General Features

### ● Transfer Video Interface

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

### ● DNR

Smart DNR 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 “improves” the clarity of images taken in poor conditions such as fog, smoke, rain or snow.

### ● WDR

A powerful and advanced technology that captures a high resolution picture even where images appear dark.

### ● CVBS(Composite Video Blanking and Sync)

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

### ● Intelligent Function

An extraordinary technology that enables Speco Technologies TVI to become the ultimate solution by providing intelligent features based on motion detection. It also strengthens crime prevention and detection.



# How to Set Up the camera menu

## ● Setup Menu

MENU						
MENU SETUP						
1.2.MOTOR	AF MODE	AUTO/MANUAL				
	SCANNING	HALF/FULL				
	ONEPUSHAF	ON-PUSHING				
	SYNC TDN	OFF/ON				
	INITIAL	ON-PUSHING				
	RETURN (LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)					
2.EXPOSURE	BRIGHTNESS	0~20 default : 10				
	SHUTTER	AUTO	NORMAL/DEBLUE			
		MANUAL	1/30, 1/60, 1/120, 1/240, 1/480, 1/1000, 1/2000, 1/4000, 1/8000, 1/15000, 1/30000			
		FLICKER				
	SENS-UP	OFF, X2, X4, X8, X16, X32				
	AGC	0~10 default : 10				
RETURN (LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)						
3.BACKLIGHT	OFF					
	HLC	LEVEL	0~20 default : 10			
		COLOR	BLK/CUSTOMIZE/WHT/YEL/CYN/GRN/MAG/RED/BLU			
		RETURN (LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)				
	BLC	H-POS	0~20 default : 8			
		V-POS	0~19 default : 7			
		H-SIZE	0~20 default : 3			
		V-SIZE	0~12 default : 3			
		RETURN (LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)				
	WDR	NORMAL				
		MODE	ROI	WINDOW ZONE	0 ~ 3 default : 3	
				WINDOW USE	ON/OFF	
				H-POS	0 ~ 1920 default : 920	
				V-POS	0 ~ 1080 default : 630	
				H-SIZE	0 ~ 1920 default : 512	
V-SIZE				0 ~ 1080 default : 432		
RETURN (LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)						
WEIGHT		LOW/MIDDLE/HIGH				
RETURN (LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)						
4.DAY&NIGHT	AUTO	D -> N THRES 0~20 default : 13				
		N -> D THRES 0~20 default : 3				
		DELAY	LOW, MIDDLE, HIGH			
		RETURN (LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)				
	COLOR					
	B&W	SMART-IR	0~20 default : 2			
		LED LEVEL	0~20 default : 9			
	RETURN (LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)					
	EXTERN	GHOST_CAT	SMART-IR	0~20 default : 2		
			OFF			
		ON	DET WINDOW	DET H-POS	0~60 default : 13	
				DET V-POS	0~34 default : 6	
DET H-SIZE				0~60 default : 34		
DET V-SIZE				0~34 default : 22		
RETURN (LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)						
DET TONE		0 ~ 4 default : 4				
SENSITIVITY		0 ~ 10 default : 5				
MOTION OSD		ON/OFF				
RETURN (LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)						

# How to Set Up the camera menu

## ● Setup Menu

		LED LEVEL	0~10 default : 10	
		D → N THRES	0~20 default : 8	
		N → D THRES	0~20 default : 15	
		DELAY	LOW, MIDDLE, HIGH	
		RETURN	(LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)	
5.WHITE BAL	AUTO/AWB/AWC-SET ↓			
	MANUAL	C-TEMP	3000K/5000K/8000K	
		R-GAIN	0~20 default : 10	
		B-GAIN	0~20 default : 10	
	RETURN	(LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)		
6.DNR	OFF/LOW/MIDDLE/HIGH			
7.IMAGE	SHARPNESS	0 ~ 10 default : 10		
	COLOR GAIN	0 ~ 10 default : 10		
	GAMMA	0.45, 0.5, 0.55, 0.6, 0.65, 0.7, 0.75		
	MIRROR	ON/OFF		
	FLIP	ON/OFF		
	ACE	OFF, LOW, MIDDLE, HIGH		
	DEFOG	ON	MODE	AUTO/MANUAL
			LEVEL	LOW,MIDDLE,HIGH
			RETURN	(LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)
		OFF		
	PRIVACY	ON	ZONE NUM	0~15 default : 0
			ZONE DISP	ON/OFF
			H-POS	0~60 default : 12
			V-POS	0~34 default : 2
			H-SIZE	0~60 default : 3
			V-SIZE	0~34 default : 3
			Y LEVEL	0~20 default : 10
CB LEVEL			0~20 default : 10	
CR LEVEL			0~20 default : 10	
TRANS			0 ~ 3 default : 0	
RETURN			(LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)	
	OFF			
	RETURN (LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)			
	RETURN (LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)			
8.SYSTEM	OUTPUT	TVI	Y GAIN	0~32 default : 16
			CB GAIN	0~255 default : 75
			CR GAIN	0~255 default : 75
			POSITION	0~255 default : 124
			RETURN	(LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)
		CVBS		
	FRAME RATE	720-30P, 720-60P, 1080-30P		
	FREQ	60Hz/50Hz		
	IMAGE RANGE	USER	FULL	
			COMP	
OFFSET			0~32 default : 16	
	RETURN	(LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)		
LANGUAGE	ENG/KOR/CHN/CHN(S)/JPN			
CAMTITLE	OFF/RIGHT UP/LEFT DOWN			
RESET	ON-PUSHING			
	RETURN (LEFT,RIGHT PUSH : EXIT-----SAVE/EXIT-----CANCEL)			
9.EXIT	SAVE/CANCEL			

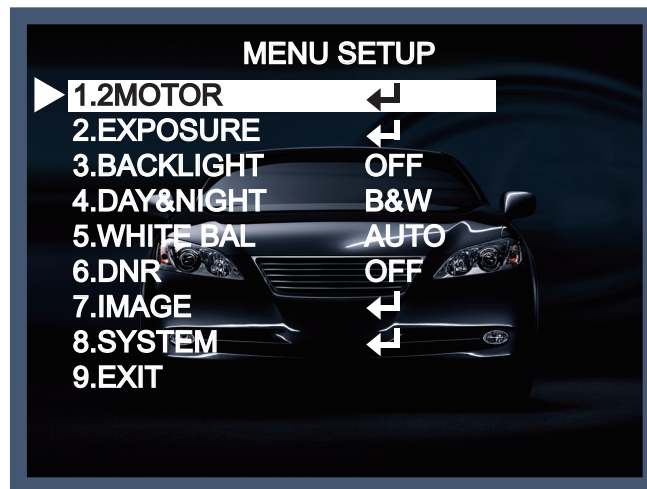


# Menu Set Up

Menu setting can be selected by the button inside the camera.

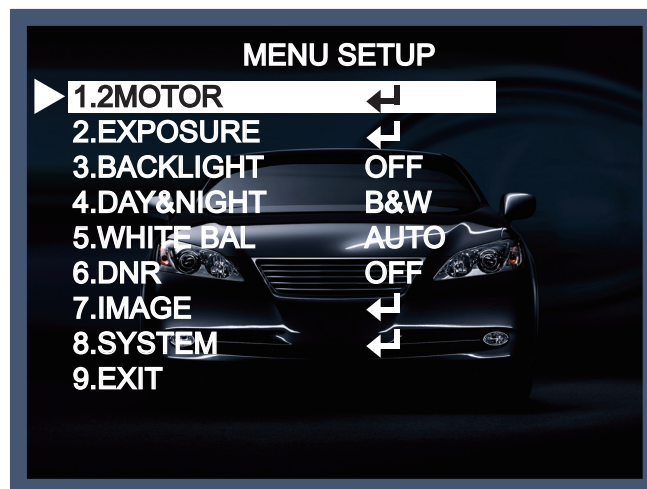
1. Press the set button.

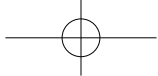
\* The Set Up menu will be displayed on the monitor.



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

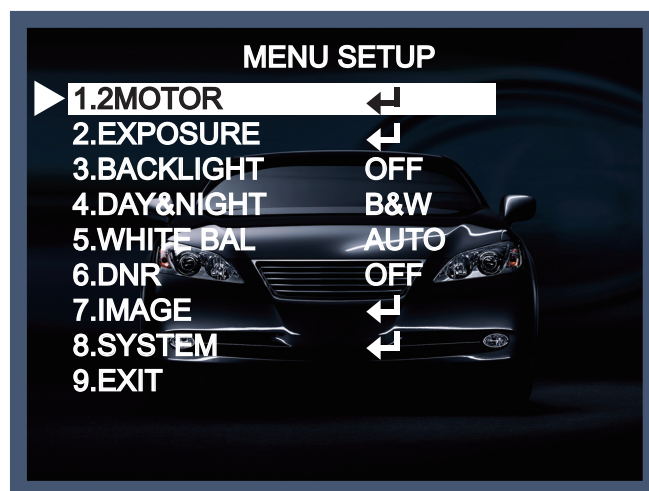
\* Move to the available submenu by moving  arrow to desired feature.

\* Submenu is not available when this symbol displayed “---”.

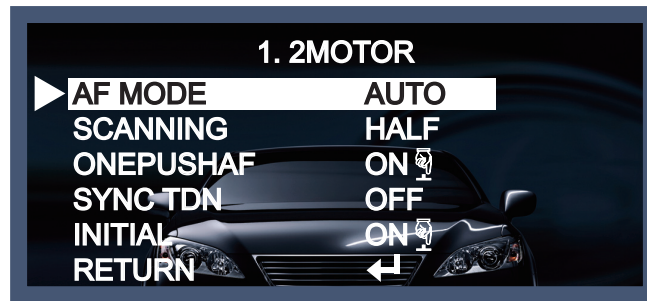
## 2MOTOR

1. Move the triangular indicator to 2MOTOR 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.







◆ AF MODE

- AUTO : Adjust zoom and focus automatically.
- MANUAL : Adjust zoom and focus manually.

◆ SCANNING

- HALF : Adjust auto focusing when lens focus fixed. If lens focus is not fixed well, adjust focus manually.
- FULL : Scanning full size of scree and adjust autofocusing.

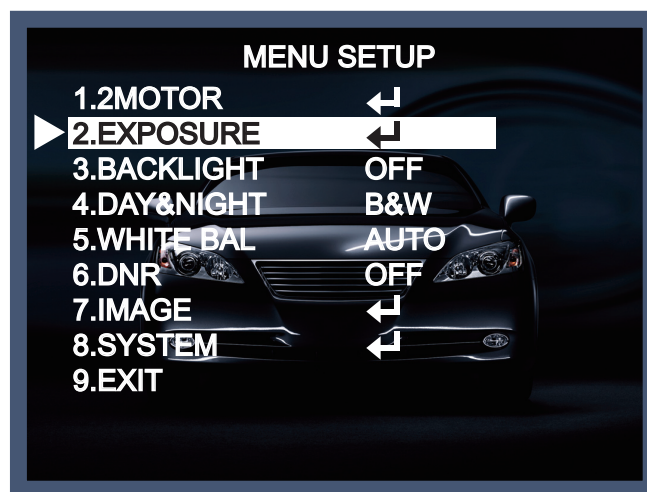
◆ ONEPUSHAF : If you press OSD button 3~4 seconds, focus will be fixed automatically.

◆ SYNC TDN : It can adjust switching time between Day&Night.

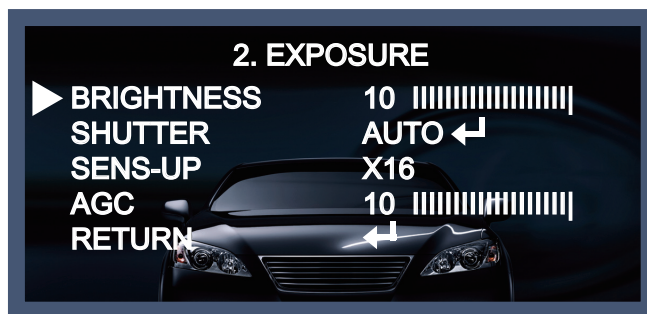
◆ INITIAL : If you press OSD button 3~4 seconds, Lens Initializing start.

## 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 : Select one of AUTO/MANUAL/FLICKER to adjust the electronic shutter speed.

MANUAL mode can adjust shutter speed 1/30~1/3,0000.

→ FLK : Select FLK mode if flickering occurs ; caused by the unmatched frequency of electric light.

◆ SENS-UP : The bright screen can be displayed by sensing the degree of the darkness automatically under the circumstance of low light condition or at night.

→ Off ~x32 Level Adjustable.

◆ AGC (Auto Gain Control) : The higher the AGC level is, the more noises appear.

→ 0~10 Level selectable.

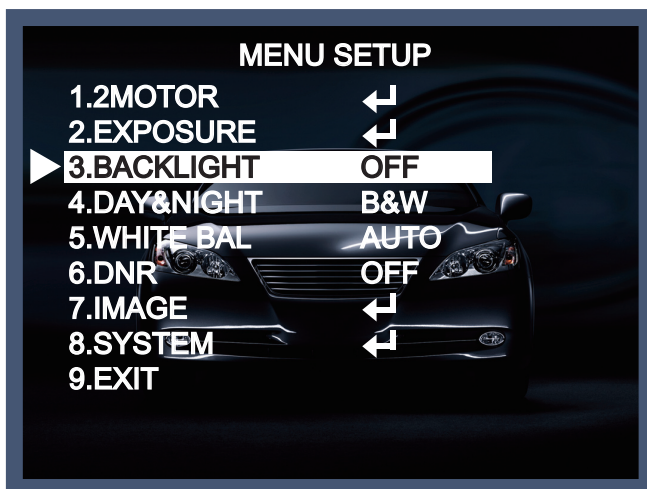
### NOTE

\* Sens-Up mode is not worked when Electronic shutter is selected as Manual.

## 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 HCL, 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.

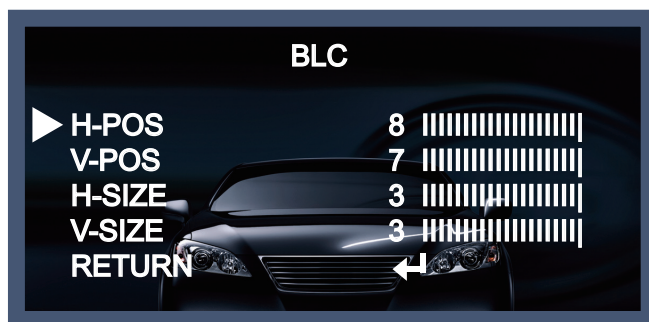
0~20 level adjustable.

– COLOR : You can choose BLK/CUSTOMIZE/WHT/YEL/CYN/GRN/MAG/RED/BLU.



◆ 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.

–MODE[NORMAL/ROI] can be selected.



– ROI

WINDOW ZONE [0~3]

WINDOW USE [ON/OFF]

H-POS [1~1920] : You can select the horizontal starting position of the monitoring area.

V-POS [1~1080] : You can select the vertical starting position of the monitoring area.

H-ZISE [1~1920] : You can select the horizontal size of the monitoring area.

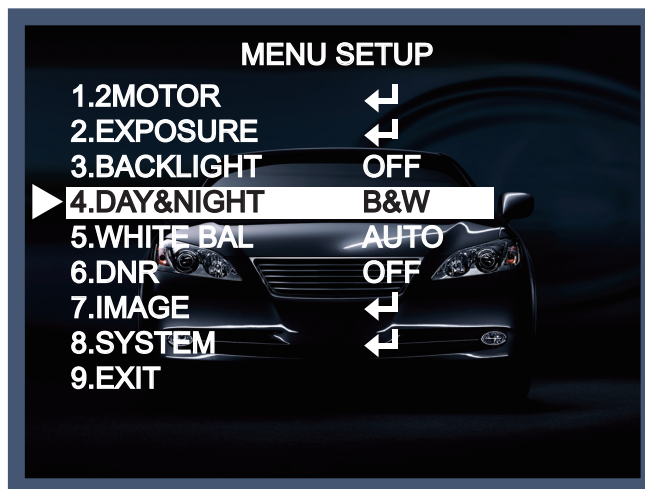
V-SIZE [1~1080] : You can select the vertical size of the monitoring area.

– WEIGHT [MIDDLE, HIGH, LOW] : Select the WDR level of the camera.

## 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.

- D>N THRES : 0~20 CDS THRES level adjustable.
- N>D THRES : 0~20 CDS THRES 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 : ANTI SAT ON/OFF Function.
- LED LEVEL : 0~20 IR ADJUST level adjustable.

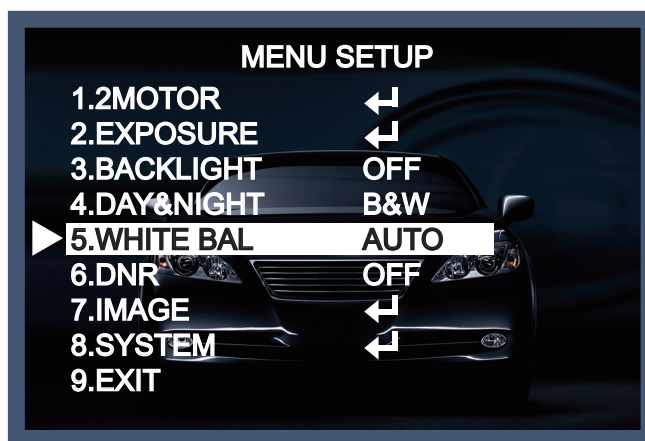
◆ **EXTERN** : It can change the color or B/W mode automatically through the connection with the ground terminal. (Option for box camera and IR camera)

- SMART IR : ANTI SAT ON/OFF Function.  
0~20 level adjustable.
- GHOST\_CAT[ON/OFF] : Get rid of Ghost phenomenon (image dragging) when set-up the SENS-UP.
- LED LEVEL : 0~10 IR ADJUST level adjustable.
- D>N THRES : 0~20 CDS THRES level adjustable.
- N>D THRES : 0~20 CDS THRES level adjustable.
- DELAY [LOW/MIDDLE/HIGH] : Set the delay time for switching between COLOR and B/W.

## WHITE BAL

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.



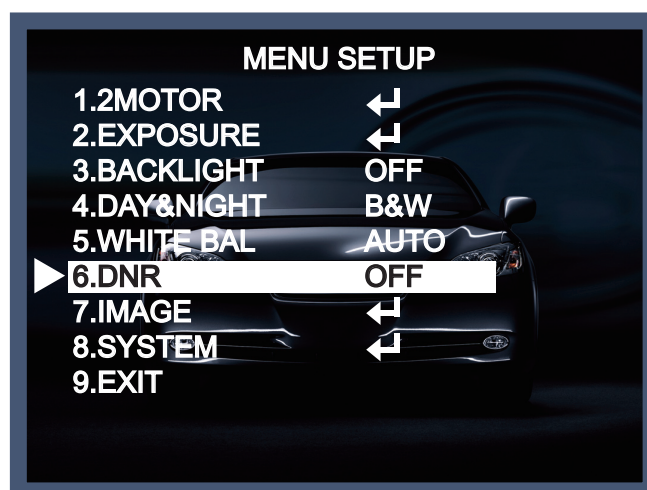


- ◆ AUTO : Use this mode when the color temperature is from 3,000k to 8,000k.
- ◆ AWB : The function to search for the color which is matched well with the ambient environment.
- ◆ AWC→SET : After letting camera focus on the blank white paper to the best condition of current lighting environment, press 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.
  - C-TEMP : 3000K/5000K/8000K level adjustable.
  - R-GAIN : 0~20 level adjustable.
  - B-GAIN : 0~20 level adjustable.
  - Return : Every function is set up at the WHITE BAL menu, and then return the previous menu.

## DNR

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

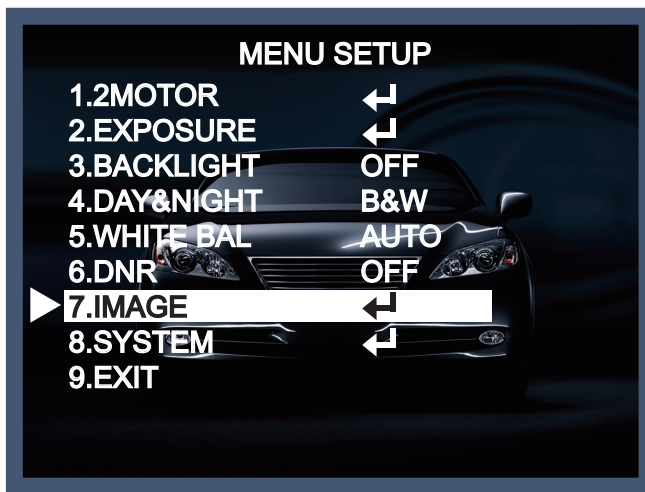
1. Move the triangular indicator to DNR by using the Up and Down button.
2. Select the mode to use by pressing the left or Right button and OFF/LOW/MIDDLE/HIGH level selectable.



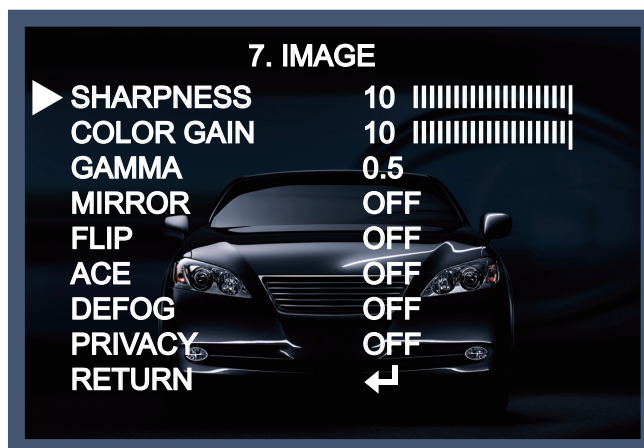


# IMAGE

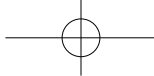
When selecting, the following submenu will appear.



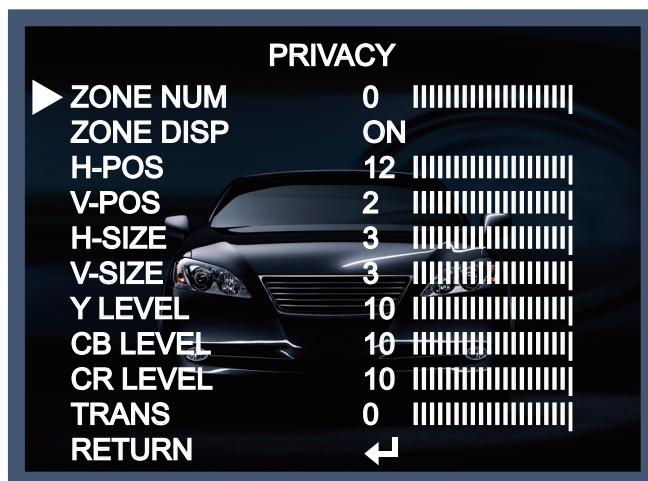
Here you can optimise the image quality by adjusting different options.



- ◆ SHARPNESS [1 ~ 10] : Adjusts the image sharpness. If the level goes up excessively, it may affect the video image and generate a noise.
- ◆ COLOR GAIN [0 ~ 10] : Changes the color gain of the camera.
- ◆ GAMMA [0.45 ~ 0.75] : Changes the gamma curve of the camera.
- ◆ MIRROR [ON, OFF] : Mirrors the image horizontally on the screen.
- ◆ FLIP [ON, OFF] : Flips the image vertically on the screen.
- ◆ ACE [OFF/LOW/MIDDLE/HIGH] : Intelligent lighting level control to over come even strong backlight conditions.
- ◆ DEFOG [ON, OFF] : This function helps to recognize the object in a dusty weather condition. 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.



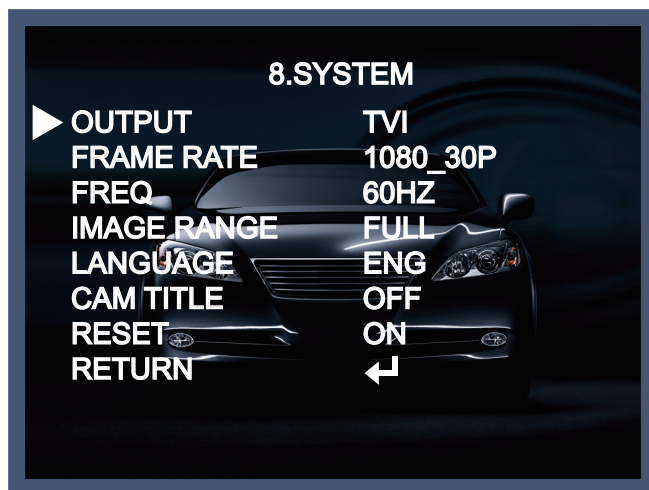
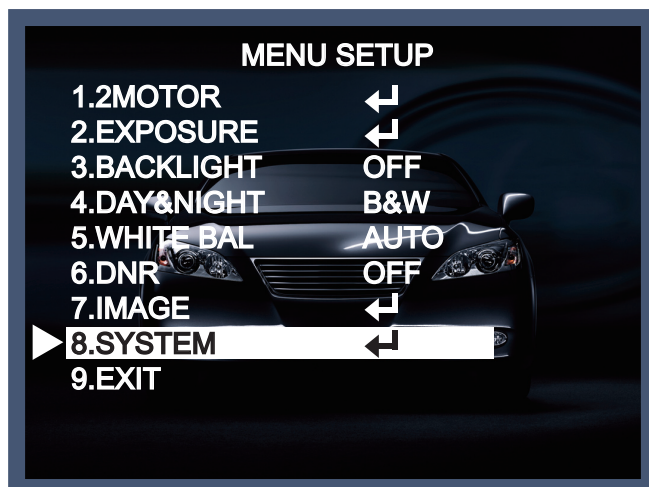
- ZONE NUM [0~15] : Select a mask out of the 16 mask areas and set the options below for the selected mask.
- ZONE DISP [ON, OFF] : Choose ON to activate privacy masks and press OFF to deactivate masks.
- H-POS [0~60] : Define the horizontal start position of the privacy mask.
- V-POS [0~34] : Define the vertical start position of the privacy mask.
- H-SIZE [0~60] : Define the horizontal size of the privacy mask.
- V-SIZE [0~34] : Define the vertical size of the privacy mask.
- Y LEVEL [0~20] : Define the brightness of the mask color.
- CB LEVEL [0~20] : Define the blue amount of the mask color.
- CR LEVEL [0~20] : Define the red amount of the mask color.
- TRANS [0~3] : Applies a tone from the window to act on the selected area.

## 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.





◆ **OUTPUT : TVI**

- Y GAIN [0~32] : The more higher level, The more brighter image it is.
- CB GAIN [0~255] : The more higher level, The more bluer image it is.
- CR GAIN [0~255] : The more higher level, The more redder image it is.
- POSITION [0~255] : User can adjust level adjustment for image position when TVI image signal don' t match left, right blink signal.

◆ **FRAME RATE** : Set the frame rate and resolution output from the camera.

(60Hz : 1080-30p / 720-60p / 720-30p), (50Hz : 1080-25p / 720-50p / 720-25p)

◆ **FREQ** : Select frequency by TV SYSTEMS(NTSC : 60Hz / PAL : 50Hz).

◆ **IMAGE RANGE [FULL/COMP/USER]** : Adjust the rate of YC signal to 100%(FULL), 75%(COMP) or 100%~75%(USER).

◆ **LANGUAGE** : ENG/KOR/CHN/CHN(S)/JPN



◆ CAM TITLE [ON/ OFF] : It can be adjusted when you get into the Cam Title menu. This function is to display the letters of the camera on the monitor. The 15 camera titles can be displayed and the location of the camera title on the screen can be adjusted. Move the triangular indicator to CAMERA ID using the Up and Down button on the Setup menu and then Set to On using the Left or Right button. After the letters you want to display on the monitor set up, press set button on the “END” and complete the set up.

◆ RESET [ON] : Return to factory default setting value.

## EXIT

Press the Set button in the exit menu to save the current settings and exit 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.	<ul style="list-style-type: none"> <li>☞ Are the camera lens or the lens glass dirty? Clean the lens / glass with a soft clean cloth.</li> <li>☞ Adjust the monitor controls, as required.</li> <li>☞ If the camera is facing a very strong light, change the camera position.</li> <li>☞ Adjust the lens focus.</li> </ul>
The image on the screen is dark.	<ul style="list-style-type: none"> <li>☞ Adjust the contrast control of the monitor.</li> <li>☞ If there is an intermediate device, correctly set the 75Ω/Hz.</li> </ul>
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.	<ul style="list-style-type: none"> <li>☞ Has MOTION DET been set to ON in the menu?</li> <li>☞ Has MD AREA been properly defined?</li> </ul>
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 SENS-UP does not work.	☞ Check that the AGC setting in the EXPOSURE menu is't set to OFF.
Auto-Focusing Is Not Working Properly.	<ul style="list-style-type: none"> <li>☞ 1. VERY RARELY, the auto-focusing may not work. But, this is not a defect. This symptom occurs due to the product's specific feature. For this reason, if you experience this symptom, then please manually move the control board once to the left and once to the right. Then, the focusing will be corrected and working properly as it should.</li> <li>☞ 2. (Recommendation) ONE PUSH Feature In case the focusing does not work, please do the following to correct this problem. Menu -&gt; 1. 2MOTOR -&gt; 3. ONEPUSHAF -&gt; Push the "ON" button for 1 second. -&gt; The Auto Focusing will begin upon changing to "PUSHING".</li> </ul>



## LIMITED WARRANTY - VIDEO PRODUCTS

THIS WARRANTY IS VALID ONLY ON PRODUCTS PURCHASED AND USED IN THE UNITED STATES OF AMERICA AND CANADA. THIS WARRANTY APPLIES ONLY TO THE ORIGINAL USER.

SUBJECT TO CONDITIONS AND EXCLUSIONS FOUND BELOW, THIS PRODUCT IS WARRANTED AGAINST MANUFACTURING DEFECTS IN MATERIAL AND WORKMANSHIP FOR THE FOLLOWING PERIOD FOR PARTS AND LABOR:

<b>SPECO TECHNOLOGIES CAMERAS</b> ..... 5 YEARS	<b>DVRs</b> ..... 5 YEARS
<b>SPECO TECHNOLOGIES IP CAMERAS</b> ..... 5 YEARS	<b>NVRs</b> ..... 5 YEARS
<b>SPECO PTZ AND VL CAMERAS</b> ..... 1 YEAR	<b>BALANCE OF</b>
<b>SPECO TECHNOLOGIES MONITORS</b> ..... 1 YEAR	<b>SPECO TECHNOLOGIES LINE</b> ..... 1 YEAR
<b>IR LEDS</b> ..... 90 DAYS	

SPECO TECHNOLOGIES WILL REPAIR OR REPLACE (AT OUR DISCRETION) ANY PARTS FOUND TO BE DEFECTIVE FOR THE WARRANTY PERIOD SPECIFIED. WE WILL PROVIDE A REPLACEMENT FOR ANY DEFECTIVE PART.

### CONDITIONS

- 1. YOU MUST OBTAIN A RETURN AUTHORIZATION (RA) NUMBER FOR ANY MERCHANDISE BEING RETURNED TO SPECO TECHNOLOGIES, WHETHER FOR RETURN/EXCHANGE OR REPAIR, WHETHER IN OR OUT OF WARRANTY.**
2. THIS WARRANTY WILL BE HONORED ONLY UPON PRESENTATION OF THE ORIGINAL DATED BILL OF SALE OR SALES SLIP.
3. TRANSPORTATION OF THE PRODUCT TO OUR SERVICE DEPARTMENT IS THE RESPONSIBILITY OF THE USER. REPAIRED OR REPLACED PRODUCT WILL BE RETURNED PREPAID DURING THE WARRANTY PERIOD.
4. SPECO TECHNOLOGIES DOES NOT AUTHORIZE ANY INTERNET OR MAIL ORDER PRODUCT SALES. IF A SPECO TECHNOLOGIES PRODUCT IS PURCHASED FROM AN UNAUTHORIZED DISTRIBUTOR OR OTHER SOURCE, INCLUDING RETAILERS, MAIL ORDER SELLERS AND ONLINE SELLERS, IT WILL NOT BE HONORED OR SERVICED UNDER THE EXISTING SPECO TECHNOLOGIES WARRANTY POLICY. ANY SPECO TECHNOLOGIES PRODUCT PURCHASED FROM THESE ONLINE MERCHANTS WILL VOID THE APPLICABLE WARRANTY AND IS INELIGIBLE FOR TECHNICAL SUPPORT. IF YOU HAVE QUESTIONS ABOUT A RESELLER, PLEASE CONTACT SPECO TECHNOLOGIES AT 1-800-645-5516 FOR A LIST OF UNAUTHORIZED DEALERS, VISIT: [www.specotech.com/unauthorized](http://www.specotech.com/unauthorized).

### EXCLUSIONS

1. THIS WARRANTY SHALL NOT COVER ADJUSTMENT OF CUSTOMER OPERATED CONTROLS AS EXPLAINED IN THE APPROPRIATE Model 's INSTRUCTION MANUAL OR PRODUCTS WHICH HAVE BEEN ALTERED, ABUSED, OR HAVE MISSING OR ALTERED SERIAL NUMBERS.
2. THIS WARRANTY SHALL NOT APPLY TO UNCRATING, SETUP, INSTALLATION, OR THE REMOVAL AND REINSTALLATION OF PRODUCTS AFTER REPAIR.
3. THIS WARRANTY SHALL NOT APPLY TO REPAIRS OR REPLACEMENTS NECESSITATED BY ANY CAUSE BEYOND THE RESULT OF MANUFACTURE INCLUDING, BUT NOT LIMITED TO, ANY MALFUNCTION, DEFECTS OR FAILURE CAUSED BY OR RESULTING FROM UNAUTHORIZED SERVICE OR PARTS, IMPROPER MAINTENANCE, MODIFICATION OR REPAIR BY THE USER, ABUSE, MISUSE, NEGLIGENCE, ACCIDENT, FIRE, FLOOD, OR OTHER ACTS OF NATURE, INCORRECT LINE VOLTAGE, DAMAGE OR IMAGE BURNS TO TELEVISION PICTURE TUBES CAUSED BY OR ATTRIBUTABLE TO THE USE OF ANY ACCESSORY, ELECTRONICS GAME OR DEVICE, OR DAMAGE CAUSED TO IMAGE PICKUP DEVICES BY EXCESSIVE LIGHT.

THE FOREGOING IS IN LIEU OF ALL OTHER EXPRESSED WARRANTIES AND WE DO NOT AUTHORIZE ANY PARTY TO ASSUME FOR US ANY OTHER OBLIGATION OR LIABILITY. IN NO EVENT SHALL WE BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OF THIS PRODUCT, OR FOR ANY DELAY IN THE USE OF THIS PRODUCT DUE TO CAUSES BEYOND OUR CONTROL. SOME STATES DO NOT ALLOW LIMITATIONS OF HOW LONG AN IMPLIED WARRANTY LASTS AND/OR DO NOT ALLOW THE EXCLUSION OR LIMITATION OF CONSEQUENTIAL DAMAGES. THE ABOVE LIMITATIONS ON IMPLIED WARRANTY AND CONSEQUENTIAL DAMAGES MAY NOT APPLY TO YOU.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

**NOTE: FOR YOUR PROTECTION IN THE EVENT OF THEFT OR LOSS OF THIS PRODUCT, PLEASE FILL IN THE INFORMATION REQUESTED BELOW AND RETAIN WITH YOUR SALES RECEIPT.**

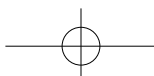
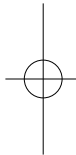
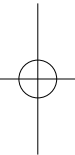
MODEL NO.: \_\_\_\_\_ SERIAL NO.: \_\_\_\_\_  
(LOCATED ON BACK OR BOTTOM OF UNIT)

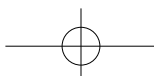
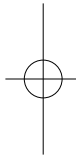
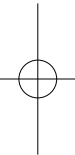
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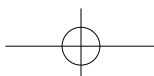
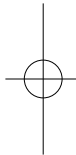
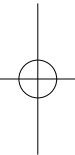
WHERE PURCHASED: \_\_\_\_\_ PURCHASE PRICE: \_\_\_\_\_

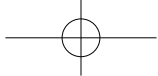
Speco Technologies 200 New Highway Amityville, NY 11701 <a href="http://www.specotech.com">www.specotech.com</a>	<b>FOR MORE INFORMATION REGARDING SERVICE OR RETURN,          CALL US TOLL FREE: 1-800-645-5516 IN METRO NY: 631-957-8700</b>
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**ALWAYS USE DISCRETION WHEN INSTALLING VIDEO AND/OR AUDIO SURVEILLANCE EQUIPMENT ESPECIALLY WHEN THERE IS AN EXPECTATION OF PRIVACY. INQUIRE REGARDING FEDERAL, STATE AND/OR LOCAL REGULATIONS APPLICABLE TO THE LAWFUL INSTALLATION OF VIDEO AND/OR AUDIO RECORDING OR SURVEILLANCE EQUIPMENT. PARTY CONSENT MAY BE REQUIRED.**









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