INSTRUCTION MANUAL

Speco HD-TVI IR Series

HT7040T, HT7041T

(IR Bullet Camera)

HT6041T

(IR Turret Camera)

HT5940T, HT5941T

(IR Dome Camera)
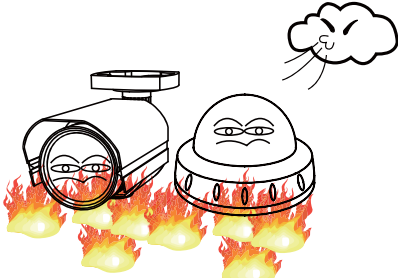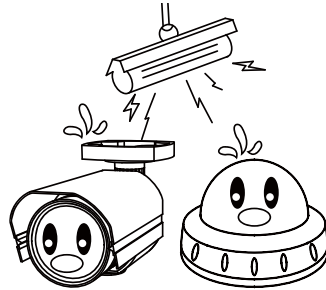
speco technologies®

Contents

Precautions

Do not install the camera in extreme temperature conditions.
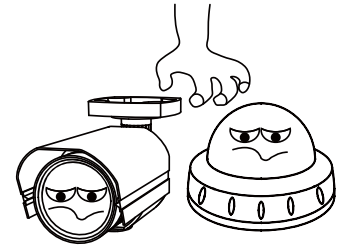
Only use the camera under conditions where temperatures are between -10°C and +50°C. Be especially careful to provide ventilation when operating under high temperatures.

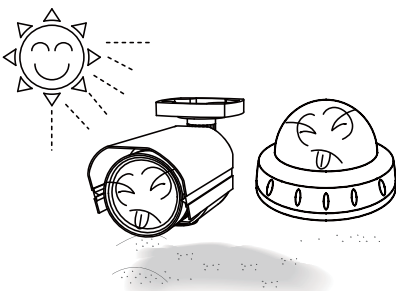Do not install the camera under unstable lighting conditions.

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.
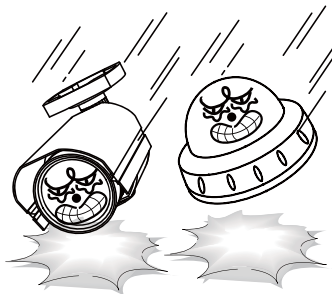
Housing damage can compromise weatherproof ratings.

Do not expose the camera to radioactivity.
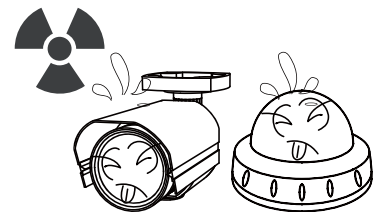
If exposed to radioactivity the CCD will fail.

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.
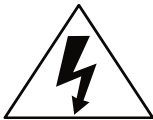
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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) HT7040T, HT7041T
   - 1 Video Test Connector, Power Jack
   - 1 Focus Adjustment(HT7040T)
   - 1 Bracket Base
   - 1 Wrench
   - Set Screw
   - 4 Tapping Screws 4x25
   - 4 Hexagon Socket Screws M5x10

2) HT6041T
   - 1 Video Test Connector, Power Jack
   - 1 Wrenches
   - Set Screw
   - 3 Tapping Screws 4x25

3) HT5940T, HT5941T
   - 1 Video Test Connector, Power Jack
   - 1 Chameleon Cover
   - 1 Wrench
   - Set Screw
   - 3 Tapping Screws 3.5x20

CAMERA INSTALLATION

CONNECT POWER CABLE

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

Power Input :RED

Center : (+)

DC 12V Power Supply
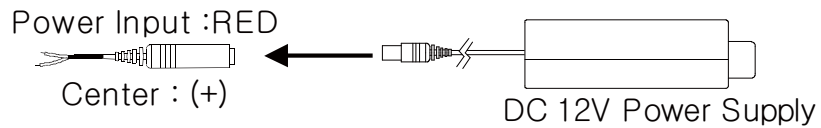
2. WHEN USING 24 VOLTS AC (40 Volt Amps)

RED(+)

BLACK:(-)

AC 24V

Power Supply
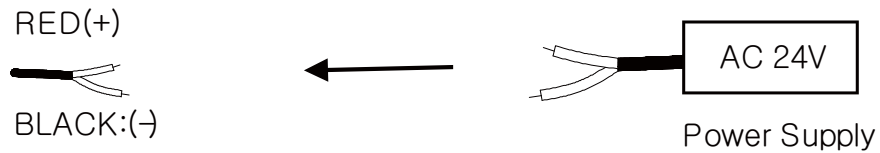
3. CONNECT VIDEO CABLE
– CONNECT BNC CABLE TO THE BNC JACK.
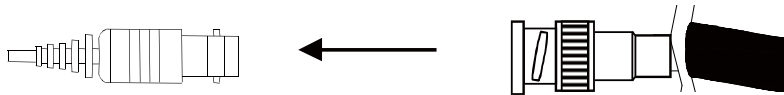
CAMERA INSTALLATION

Compatibility

1) HT7040T, HT7041T
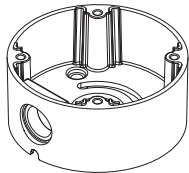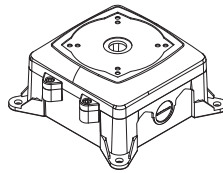
CVCJBB   INTJBS   INTCM
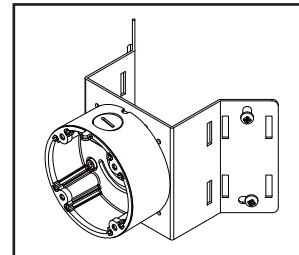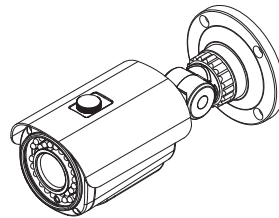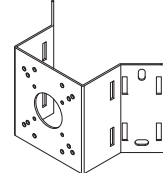
2) HT6041T

CVCJBD
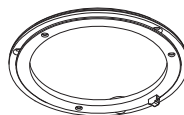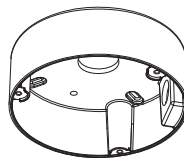
→ Adaptor plate(60PLATE) with rubber
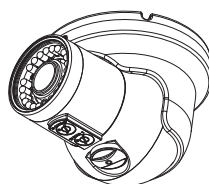
CAMERA INSTALLATION

Compatibility

3) HT5940T, HT5941T

CVCJBD
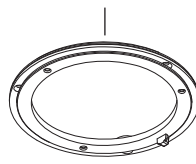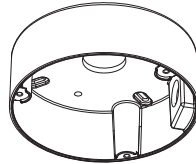
→ Adaptor plate(59PLATE) with rubber
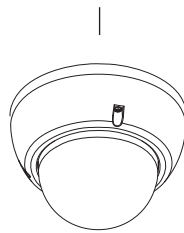
CAUTION : <u>The installation instructions in this manual</u> are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

CAMERA INSTALLATION

1. HT7040T, HT7041T

WALL

SCREW TS T1, 4X25, TH, SUS, 4EA

3AXIS BRACKET

SCREW M5X10, HEXAGON SOCKET, SUS, BK, 4EA
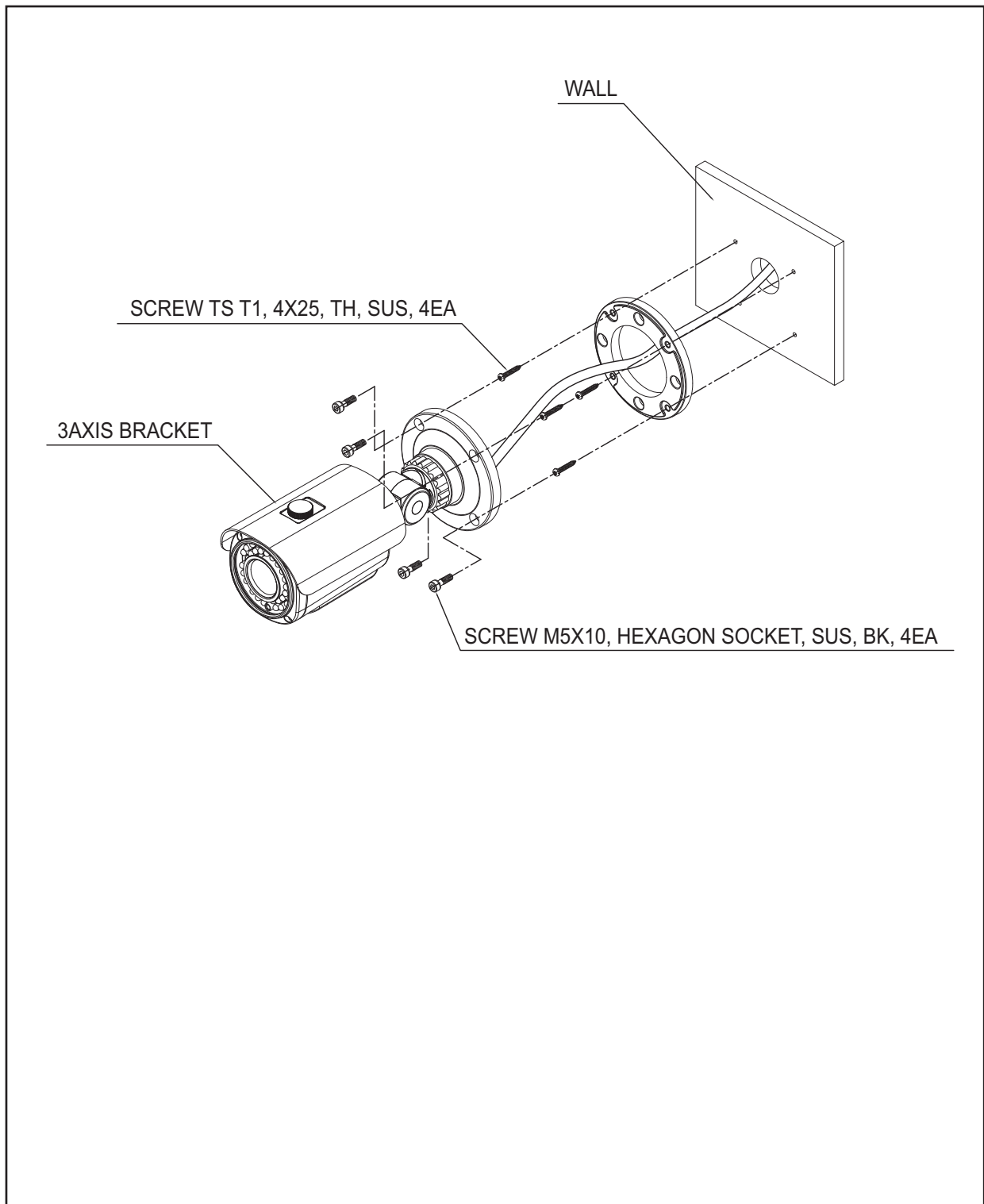
CAMERA INSTALLATION

2. HT6041T

BALL DOME BASE

SCREW TS T1, 4X25, TH, SUS, 3EA

BALL DOME

BALL DOME BODY
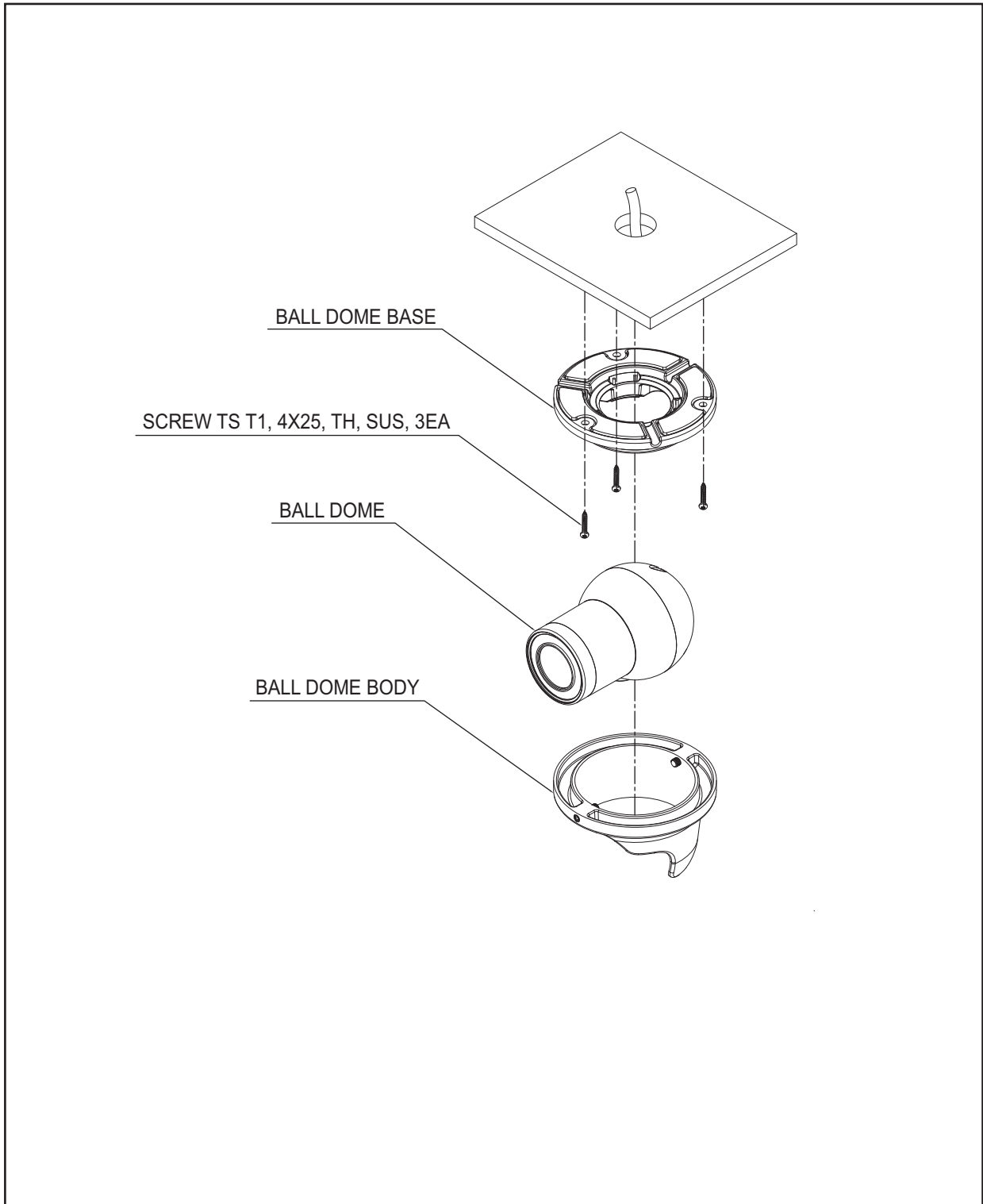
CAMERA INSTALLATION

3. HT5940T, HT5941T

VANDAL DOME BASE

SCREW TS T1, 3.5X20, PH, SUS, 3EA

VANDAL DOME BODY

BODY OUTER COVER SPECO
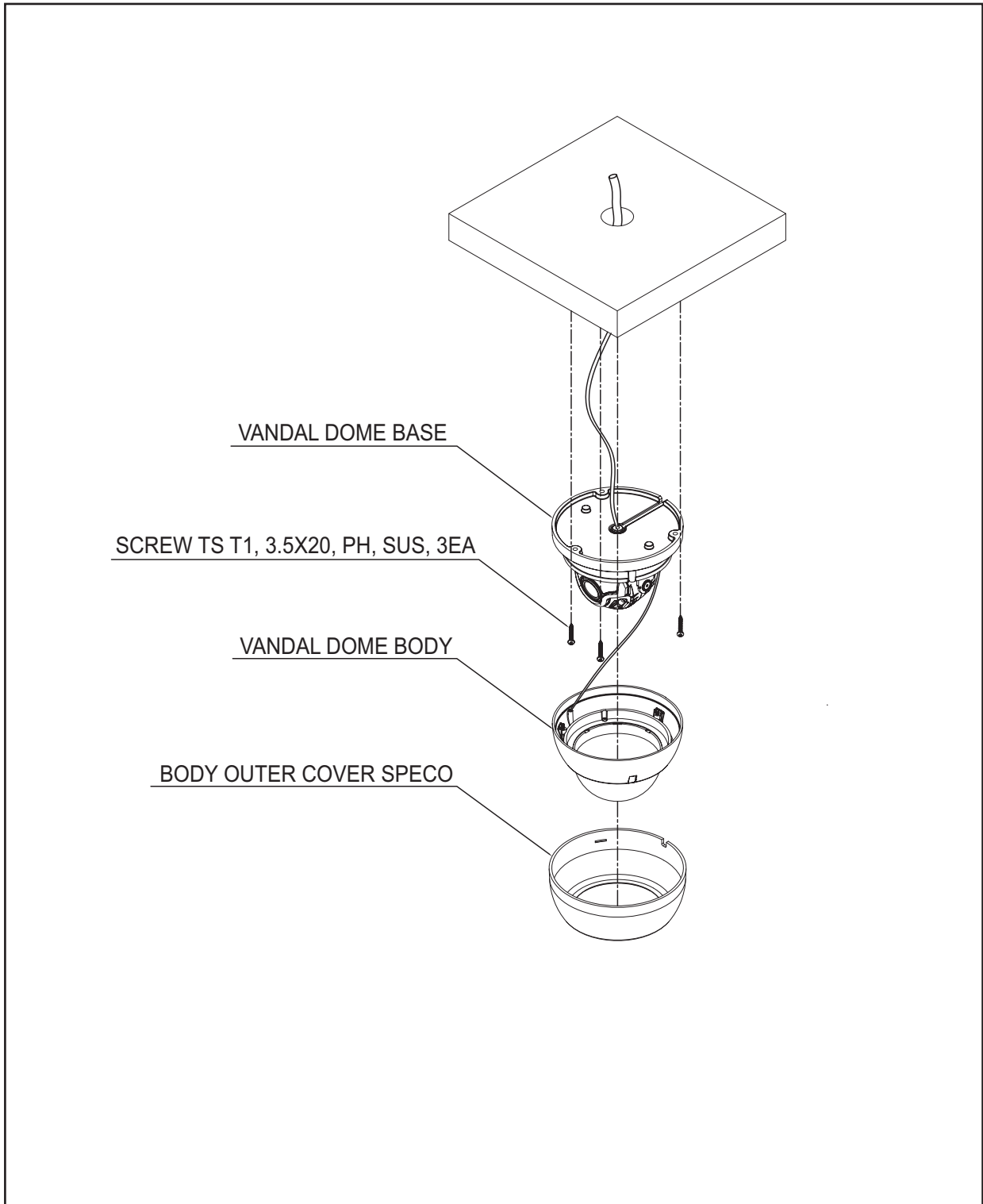
LENS ADJUSTMENT

1. HT7040T

"A"

Open the cap

Focus adjustment
Lock screw
Zoom adjustment
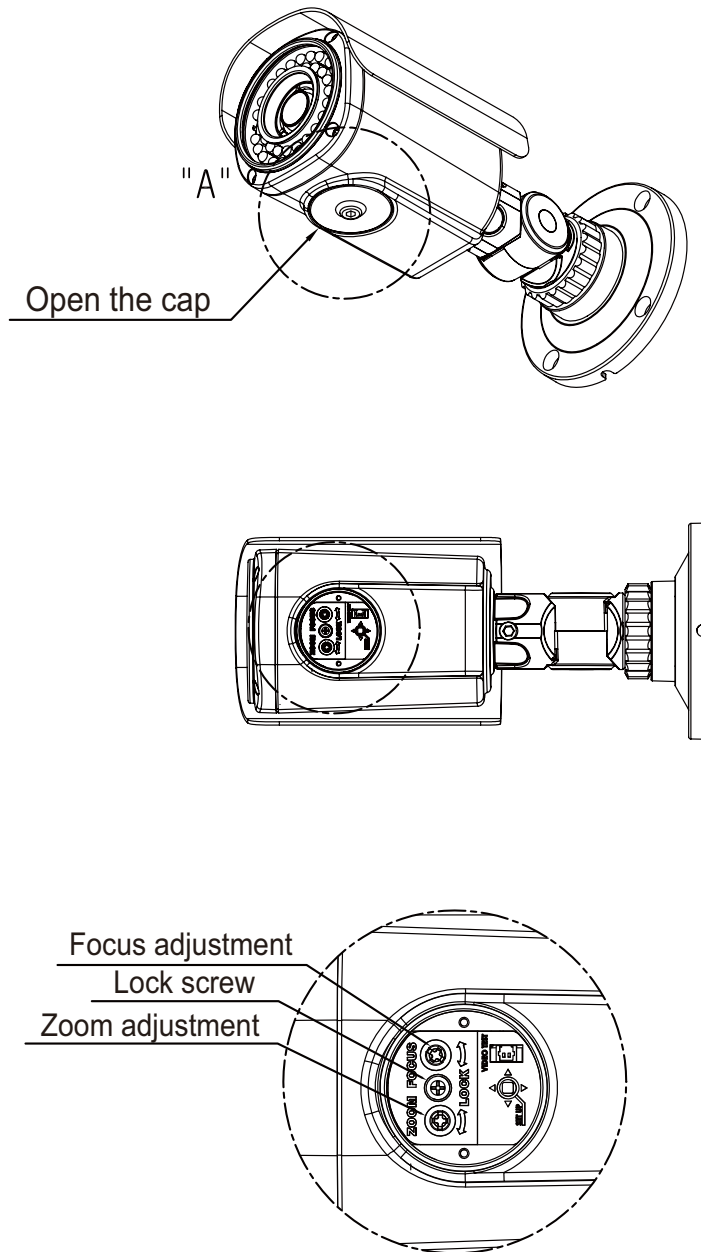
Speco TVI Series
DC Auto Iris Varifocal Lens 2.8-12mm/3.6mm Fixed Board Lens

■ **HT7040T (2.8-12mm)**
■ **HT7041T (3.6mm)**

SPECIFICATIONS

MODEL	HT7040T / HT7041T		
Image Sensor	1/3" SONY 2Mega Exmor CMOS Sensor Imx222		
Effective Pixels	1984(H) X 1105(V), 2.19M Pixels		
Total pixels	2000(H) X 1121(V), 2.24M Pixels		
Scanning System	Progressive Scan		
S/N Ratio	More than 50dB		
Resolution	Digital : 1920X1080(1080p@30f / 1080p@25f)" 1280X720(720p@60f / 720p@50f)		
Video Output	1.0Vp-p Composite. 75 Ohms 1.0Vp-p TVI(Transport Video Interface) 75 Ohms		
Minimum Illumination	0Lux(IR LED ON)		
LENS	DC Auto Iris Varifocal Lens(2.8mm-12mm)	3.6mm Fixed Board Lens	
Shutter Speed	AUTO / Manual(1/30,1/25Sec ~ 1/30000Sec) / FLICKER		
OSD	Built-in		
BLC	O		
HSBLC	O		
WDR(Wide Dynamic Range)	ON / OFF (Low,Middle,High)		
ACE	OFF/LOW/MIDDLE/HIGH		
Day&Night	AUTO/COLOR/NIGHTEXTERN0		
Smart-IR	0~20		
White Balance	AUTO/AWB/AWC-SET/MANUAL		
Sense-Up	x2 ~ x32		
Motion	ON / OFF (4 Area)		
Digital Noise Reduction	3DNR (OFF/LOW/MIDDLE/HIGH)		
De-Fog	ON(AUTO/MANUAL) / OFF		
Brightness	0 ~ 20, Default : 10		
AGC	0~20(Level Adjustable), Default : 20		
Privacy	ON / OFF (16 Area)		
Mirror	MIRROR,V-FLIP		
Sharpness	0~20		
Defect	AUTO DETECT		
Lens Shading(LSC)	O		
RS-485	O(OPTION)		
COLORBAR	ON/OFF		
CVBS OUTPUT	NTSC/PAL Selectable		
Language	English		
Power	DC 12V/AC 24V Dual Voltage Operation		
Power Consumption	DC 12V	Day Heater ON:500mA, Night Heater OFF(LED ON) :720mA, Heater OFF(LED OFF):300mA	Day Heater ON:500mA, Night Heater OFF(LED ON) :650mA, Heater OFF(LED OFF):300mA
	AC 24V	Day Heater ON:195mA, Night Heater OFF(LED ON) :260mA, Heater OFF(LED OFF):130mA	Day Heater ON:195mA, Night Heater OFF(LED ON) :240mA, Heater OFF(LED OFF):130mA
Operating Temperature	-4°F ~ +140°F(Humidity : 20%RH ~ 95%RH)		
Storage Temperature	-4°F ~ +140°F(Humidity : 20%RH ~ 95%RH)		
Dimension	3.94"(W)*3.94"(H)*8.27"(D)		
Weight	3.09lbs		

Speco TVI Series
3.6mm Fixed Board Lens

HT6041T (3.6mm)

SPECIFICATIONS

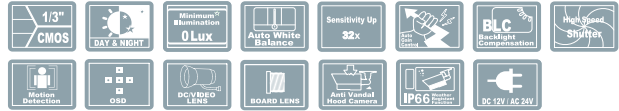| MODEL	HT6041T
Image Sensor	1/3" SONY 2Mega Exmor CMOS Sensor Imx222
Effective Pixels	1984(H) X 1105(V), 2.19M Pixels
Total pixels	2000(H) X 1121(V), 2.24M Pixels
Scanning System	Progressive Scan
S/N Ratio	More than 50dB
Resolution	Digital : 1920X1080(1080p@30f / 1080p@25f)" 1280X720(720p@60f / 720p@50f)
Video Output	1.0Vp-p Composite. 75 Ohms 1.0Vp-p TVI(Transport Video Interface) 75 Ohms
Minimum Illumination	0Lux(IR LED ON)
LENS	3.6mm Fixed Board Lens
Shutter Speed	AUTO / Manual(1/30,1/25Sec ~ 1/30000Sec) / FLICKER
OSD	Built-in
BLC	O
HSBLC	O
WDR(Wide Dynamic Range)	ON / OFF (Low,Middle,High)
ACE	OFF/LOW/MIDDLE/HIGH
Day&Night	AUTO/COLOR/NIGHTEXTERN0
Smart-IR	0~20
White Balance	AUTO/AWB/AWC-SET/MANUAL
Sense-Up	x2 ~ x32
Motion	ON / OFF (4 Area)
Digital Noise Reduction	3DNR (OFF/LOW/MIDDLE/HIGH)
De-Fog	ON(AUTO/MANUAL) / OFF
Brightness	0 ~ 20, Default : 10
AGC	0~20(Level Adjustable), Default : 20
Privacy	ON / OFF (16 Area)
Mirror	MIRROR,V-FLIP
Sharpness	0~20
Defect	AUTO DETECT
Lens Shading(LSC)	O
RS-485	O(OPTION)
COLORBAR	ON/OFF
CVBS OUTPUT	NTSC/PAL Selectable
Language	English
Power	DC 12V/AC 24V Dual Voltage Operation
Power Consumption — DC 12V	Day Heater ON:500mA, Night Heater OFF(LED ON):580mA, Heater OFF(LED OFF):300mA
Power Consumption — AC 24V	Day Heater ON:195mA, Night Heater OFF(LED ON):218mA, Heater OFF(LED OFF):130mA
Operating Temperature	-4ºF ~ +140ºF(Humidity : 20%RH ~ 95%RH)
Storage Temperature	-4ºF ~ +140ºF(Humidity : 20%RH ~ 95%RH)
Dimension	4.65"(Dia)*3.80(H)
Weight	1.99lbs

Speco TVI Series

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

■ **HT5940T (2.8-12mm)**
■ **HT5941T (3.6mm)**

SPECIFICATIONS

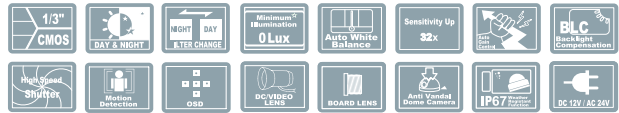| MODEL	HT5940T / HT5941T
Image Sensor	1/3" SONY 2Mega Exmor CMOS Sensor Imx222
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S/N Ratio	More than 50dB
Resolution	Digital : 1920X1080(1080p@30f / 1080p@25f)" 1280X720(720p@60f / 720p@50f)
Video Output	1.0Vp-p Composite. 75 Ohms 1.0Vp-p TVI(Transport Video Interface) 75 Ohms
Minimum Illumination	0Lux(IR LED ON)
LENS	DC Auto Iris Varifocal Lens(2.8-12mm) / 3.6mm Fixed Board Lens
Shutter Speed	AUTO / Manual(1/30,1/25Sec ~ 1/30000Sec) / FLICKER
OSD	Built-in
BLC	O
HSBLC	O
WDR(Wide Dynamic Range)	ON / OFF (Low,Middle,High)
ACE	OFF/LOW/MIDDLE/HIGH
Day&Night	AUTO/COLOR/NIGHTEXTERN0
Smart-IR	0~20
White Balance	AUTO/AWB/AWC-SET/MANUAL
Sense-Up	x2 ~ x32
Motion	ON / OFF (4 Area)
Digital Noise Reduction	3DNR (OFF/LOW/MIDDLE/HIGH)
De-Fog	ON(AUTO/MANUAL) / OFF
Brightness	0 ~ 20, Default : 10
AGC	0~20(Level Adjustable), Default : 20
Privacy	ON / OFF (16 Area)
Mirror	MIRROR,V-FLIP
Sharpness	0~20
Defect	AUTO DETECT
Lens Shading(LSC)	O
RS-485	O(OPTION)
COLORBAR	ON/OFF
CVBS OUTPUT	NTSC/PAL Selectable
Language	English
Power	DC 12V/AC 24V Dual Voltage Operation
Power Consumption	DC 12V	Day Heater ON:500mA, Night Heater OFF(LED ON):510mA, Heater OFF(LED OFF):300mA
	AC 24V	Day Heater ON:195mA, Night Heater OFF(LED ON):195mA, Heater OFF(LED OFF):130mA
Operating Temperature	-4°F ~ +140°F(Humidity : 20%RH ~ 95%RH)
Storage Temperature	-4°F ~ +140°F(Humidity : 20%RH ~ 95%RH)
Dimension	4.72"(Dia)*3.35"(H)
Weight	2.20lbs

CAMERA DIMENSION

1) HT7040T, HT7041T

3.94" dia
3.38"
3.01"
3.46"
2.95"

8.27"
4.80"

2) HT6041T

4.65" dia

3.80"
2.66"
3.01"
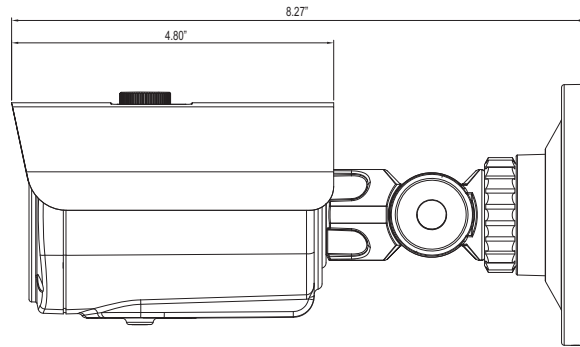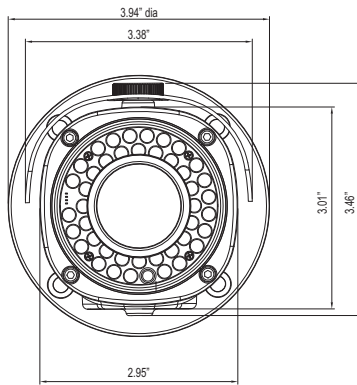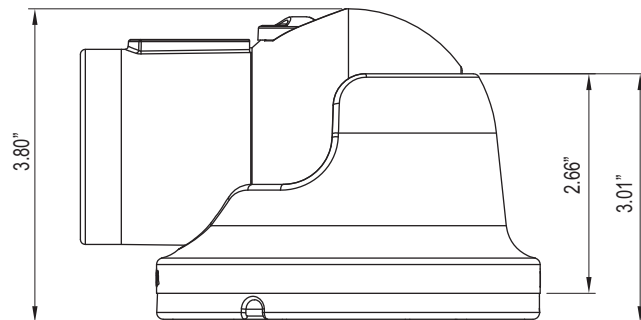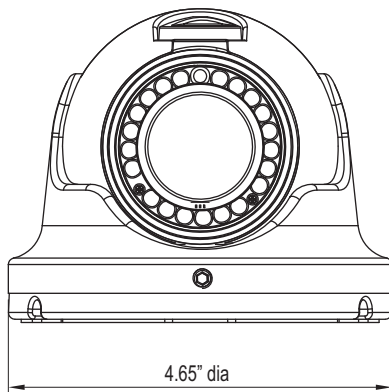
CAMERA DIMENSION

3) HT5940T, HT5941T

4.72" dia

3.23" dia

3.35"

1.82"
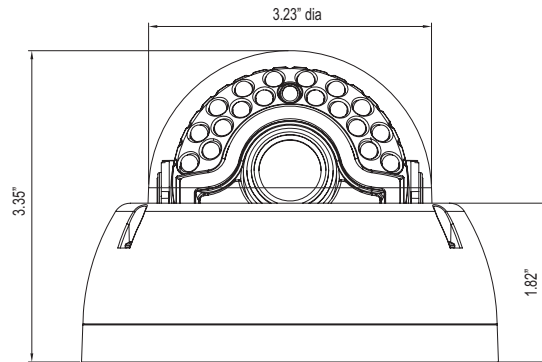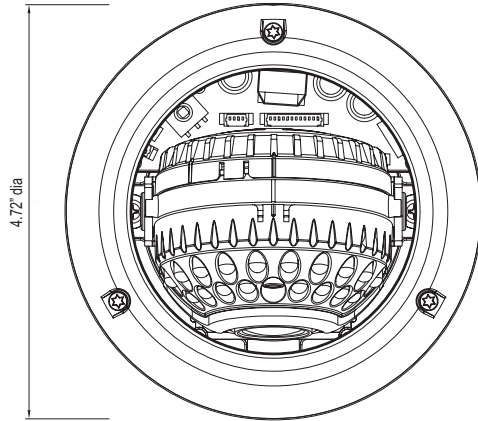
General Features

● 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 supperior 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		SUB MENU 1	SUB MENU 2	SUB MENU 3	SUB MENU 4
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		
		SENS-UP	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 ~ 18		
		V-POS	0 ~ 17		
		H-SIZE	0 ~ 18		
		V-SIZE	0 ~ 17		
		RETURN			
	WDR	WEIGHT	LOW / MIDDLE / HIGH		
		RETURN			
5.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		
		D-ZOOM	X 1.0 ~ X 8.0		
		ACE	LOW/MIDDLE/HIGH		
		DEFOG	OFF		
			ON	MODE	AUTO/MANUAL
				LEVEL	LOW/MIDDLE/HIGH
				RETURN	
		SHADING	OFF		
			ON	WEIGHT	0% ~ 100%
				RETURN	

How to Set Up the camera menu

● Setup Menu

		PRIVACY	OFF		
			ON	ZONE NUM	0~15
				ZONE DISP	ON/OFF
				H-POS	0~60
				V-POS	0~33
				H-SIZE	0~60
				V-SIZE	0~33
				Y LEVEL	0~20
				CR LEVEL	0~20
				CB LEVEL	0~20
				RETURN	
		RETURN			
8.MOTION	OFF				
	ON	SENSITIVITY	0 ~ 20		
		DC MODE	1 ~ 6		
		WINDOW TONE	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	0~20
				RETURN	
		OUTPUT MODE	720P / 720P CROP/ 1080P		
		COLOR SPACE	YUV / SD-CBCR / HD-CBCR		
		FRAME RATE	25 FPS / 30 FPS		
		H-DELAY	OFF/ON		
		CVBS	PAL / NTSC		
		LANGUAGE	ENG / CHN / CHN(S) / JPN / KOR		
		COLOR BAR	OFF/ON		
		RESET	ON		
		RETURN			
10.EXIT					

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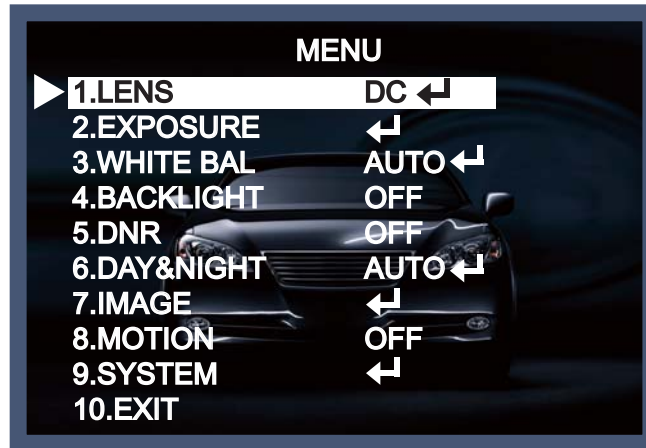
2. Move and select the required function using the Up and Down button.

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

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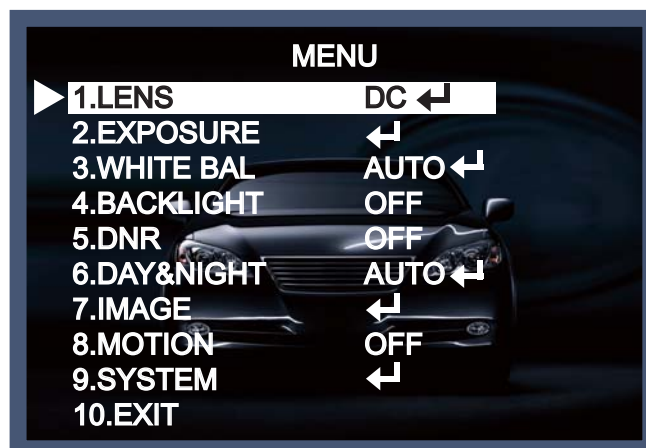
3. Change menu settings using the Left or Right button.

* 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.

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 of Right button.


```
                    MENU
  ▶ 1.LENS              DC ⏎
    2.EXPOSURE             ⏎
    3.WHITE BAL        AUTO ⏎
    4.BACKLIGHT        OFF
    5.DNR              OFF
    6.DAY&NIGHT        AUTO ⏎
    7.IMAGE               ⏎
    8.MOTION           OFF
    9.SYSTEM              ⏎
    10.EXIT
```

```
                    MODE
 ▶ MODE                    INDOOR
   RETURN                  RET ↵
```
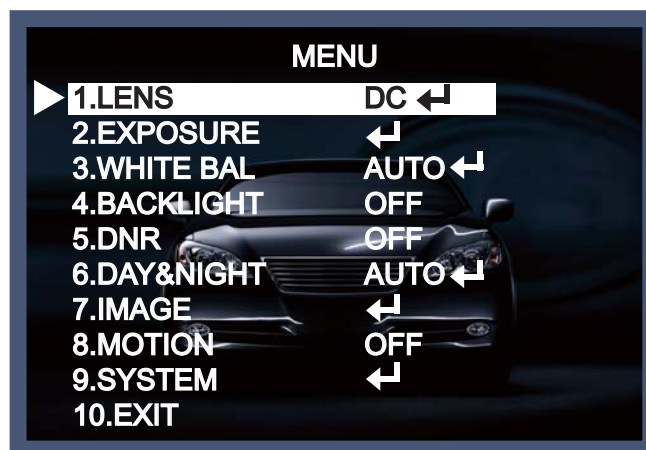
* When you select the mode setup, you can select INDOOR, OUTDOOR or DEBLUR depending on the installation environment.
*On manual mode, you can select NORMAL or DEBLUR depending on the installation environment.

EXPOSURE

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

```
                    MENU
   1.LENS               DC ↵
 ▶ 2.EXPOSURE              ↵
   3.WHITE BAL          AUTO ↵
   4.BACKLIGHT          OFF
   5.DNR                OFF
   6.DAY&NIGHT          AUTO ↵
   7.IMAGE                 ↵
   8.MOTION             OFF
   9.SYSTEM                ↵
   10.EXIT
```
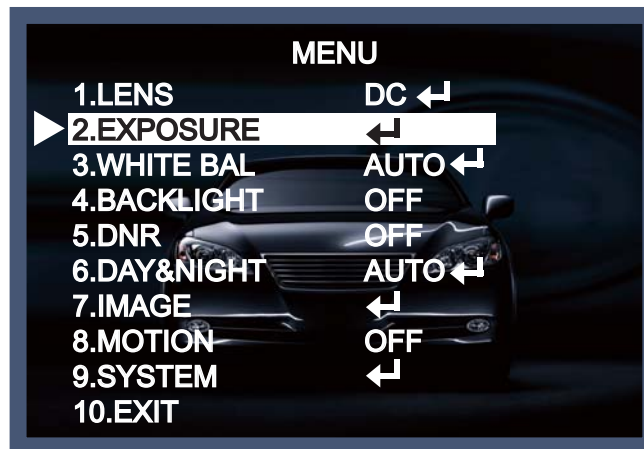
2. Select the desired shutter mode by pressing the Left or Right button.

```
                  EXPOSURE
 ▶ BRIGHTNESS        IIIIIIIIIIIIIIIIII| 20
   SHUTTER           AUTO ↵
   SENSE-UP          OFF
   AGC               IIIIIIIIIIIIIIIII| 20
   RETURN               ↵
```
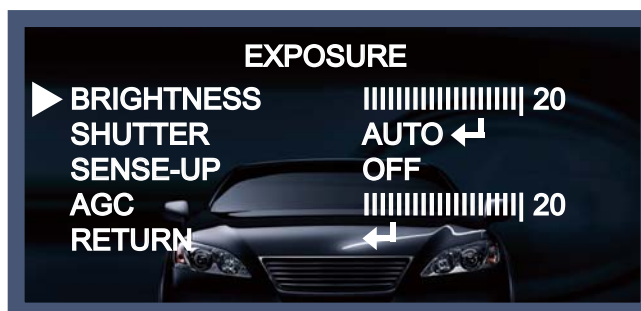
◆ BRIGHTNESS : The brightness can be adjusted. The brightness control range is 1~20.

◆ 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.

◆ SENSE-UP : 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.

```
                MENU
  1.LENS              DC ↵
  2.EXPOSURE             ↵
▶ 3.WHITE BAL        AUTO ↵
  4.BACKLIGHT        OFF
  5.DNR              OFF
  6.DAY&NIGHT        AUTO ↵
  7.IMAGE               ↵
  8.MOTION           OFF
  9.SYSTEM              ↵
  10.EXIT
```
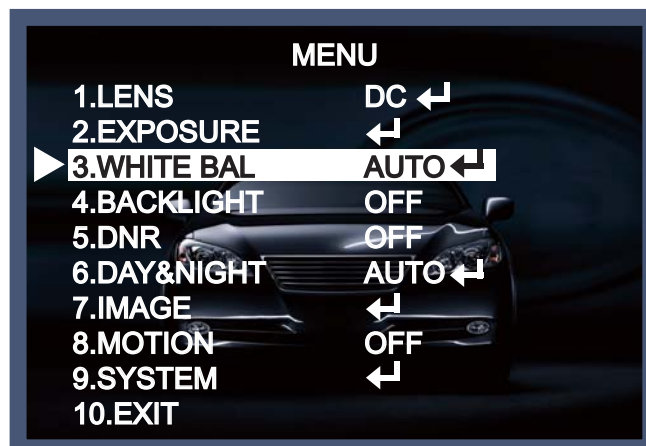
◆ AUT0 : Use this mode when the color temperature is from 2,500k to 9,500k.

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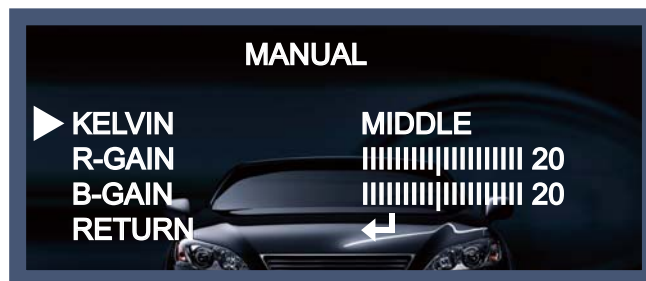
- KELVIN : LOW/MIDDLE/HIGH level adjustable.
- R-GAIN : 0~20 level adjustable.
- B-GAIN : 0~20 level adjustable.
- Return : Every function is set up at the EXPOSURE menu, and then return the previous menu.

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 modees.(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.
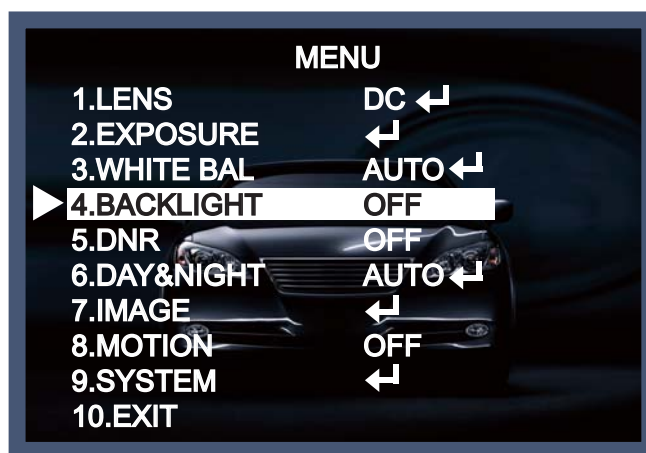
◆ Off : Deactivated status.

◆ HLC : This fuction is used to surpress 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.
 - MODE : All day/night only adjustable.

◆ BLC : This fuction 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.

BLC	
▶ H-POS	‖‖‖‖‖‖‖‖‖‖‖‖| 18
V-POS	‖‖‖‖‖‖‖‖‖‖‖| 17
H-SIZE	‖‖‖‖‖‖‖‖‖‖‖| 18
V-SIZE	‖‖‖‖‖‖‖‖‖‖‖| 17
RETURN	↵
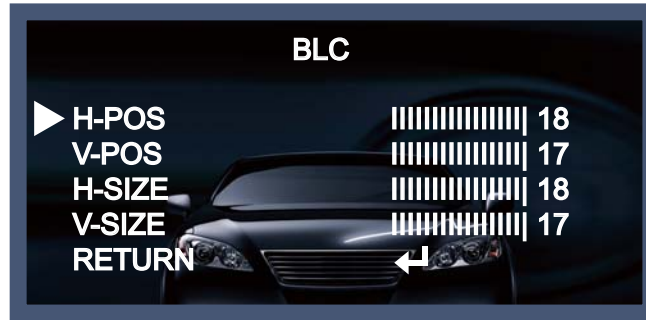
◆ WDR : The WDR (Wide Dynamic Range) fuction works to correct excessive light within the frame to
produce a usable image. When the image has simultaneous bright and dark areas, it makes both areas
distinct. If you select WDR, a submenu appears where you can make finer adjustments.
- WEIGHT [MIDDLE, HIGH, LOW] : Select the WDR level of the camera.

WDR	
▶ WEIGHT	MIDDLE
RETURN	↵

DNR

This fuction 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 DNR by useing the Up and Down button.

2. Select the mode to use by pressing the left or Right button and LOW/MIDDLE/HIGH level selectable.
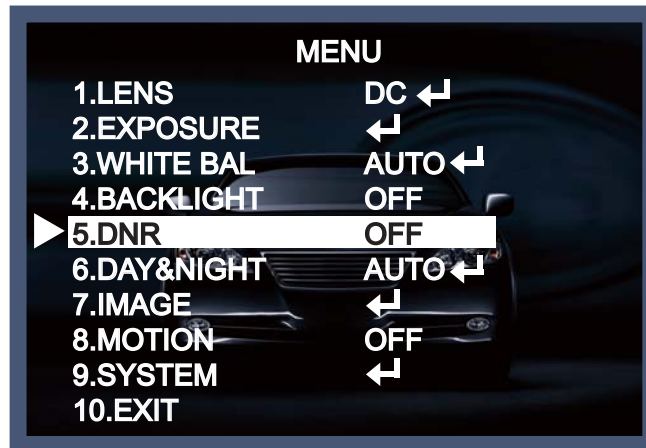
Day&Night

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.

```
                    DAY&NIGHT

  ▶ SMART IR                IIIIIIIIIIIIIII| 20
    AGC THRES               IIIIIIIIIIIIIII| 20
    AGC MARGIN              IIIIIIIIIIIIIII| 20
    DELAY                   LOW
    RETURN                  ↵
```

- 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.

```
                    DAY&NIGHT

  ▶ SMART IR                IIIIIIIIIIIIIII| 20
    RETURN                  ↵
```
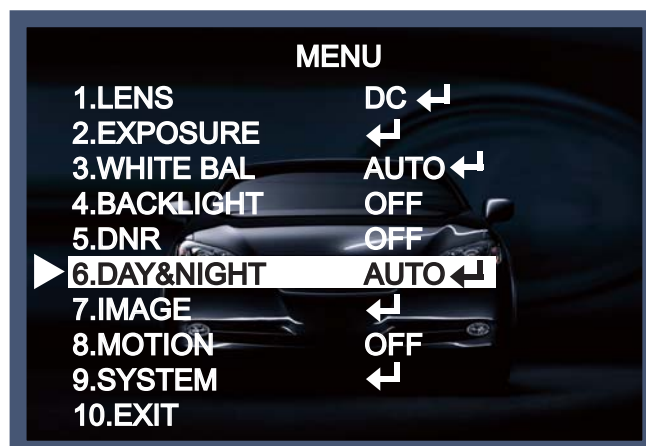
- SMART IR : It controls the IR LED(bright portion base), satuation is not expected.
  0~20 level adjustable.

◆ 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), satuation is not expected.
  0~20 level adjustable.

```
                    DAY&NIGHT

  ▶ SMART IR                IIIIIIIIIIIIIII| 20
    EXTERN S/W              LOW
    DELAY                   LOW
    RETURN                  ↵
```

- 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.

```
                    MENU
      1.LENS              DC ↵
      2.EXPOSURE             ↵
      3.WHITE BAL         AUTO ↵
      4.BACKLIGHT         OFF
      5.DNR               OFF
      6.DAY&NIGHT         AUTO ↵
   ▶  7.IMAGE                ↵
      8.MOTION            OFF
      9.SYSTEM               ↵
      10.EXIT
```
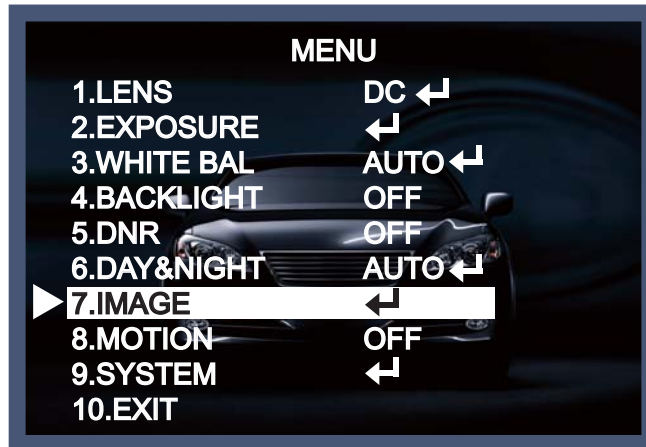
Here you can optimise the image quality by adjusting different options.

```
                    IMAGE
   ▶  SHARPNESS       IIIIIIIIIIIIII| 20
      GAMMA           0.65
      COLOR GAIN      IIIIIIIIIIIIII| 20
      MIRROR          OFF
      FLIP            OFF
      D-ZOOM          X8.0
      ACE             LOW
      DEFOG           OFF
      SHADING         OFF
      PRIVACY         OFF
      RETURN             ↵
```
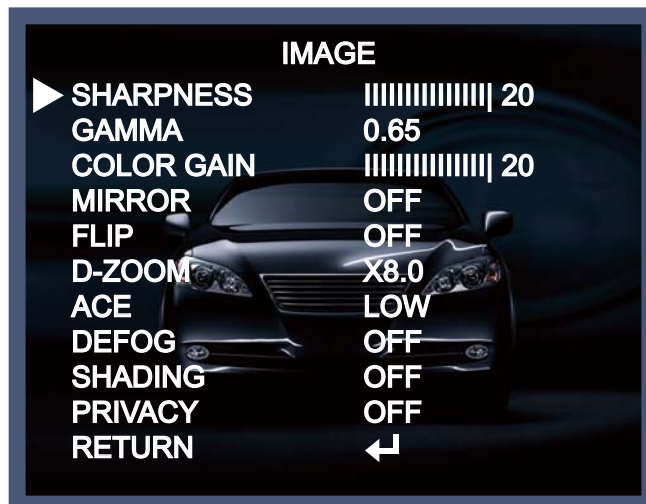
- SHARPNESS [1 ~ 20] : Adjusts the image sharpness. If the level goes up excessively, it may affect the
  video image and generate a noise.
- GAMMA [0.45 ~ 0.65] : Changes the gamma curve of the camera.
- COLOR GAIN [0 ~ 20] : Changes the color gain of the camera.
- MIRROR [ON, OFF] : Mirrors the image 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.
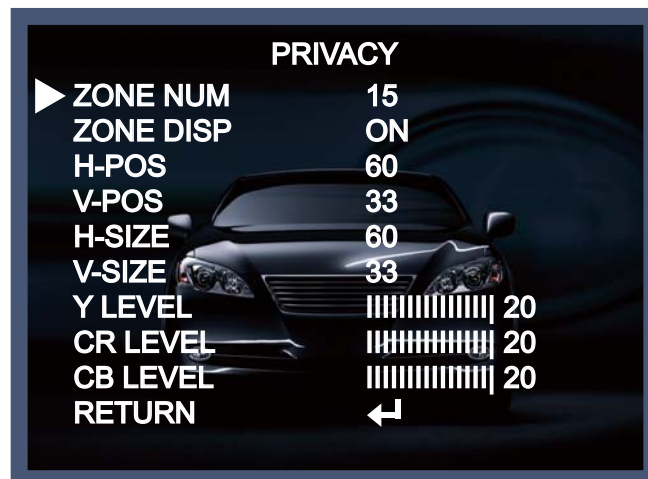
- ZONE NUM [0~15] : Select a mask out of the 16 mask areas and set the options below for the selected mask.
- ZONE DISP [ON, OFF] : Choose ON to activate privacy masks and press OFF to deactivate masks.
- H-POS [0~60] : Define the horizontal start position of the privacy mask.
- V-POS [0~33] : Define 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 san adjust the settings for the MOTION function.

```
                MENU
    1.LENS              DC ↵
    2.EXPOSURE             ↵
    3.WHITE BAL         AUTO ↵
    4.BACKLIGHT         OFF
    5.DNR               OFF
    6.DAY&NIGHT         AUTO ↵
    7.IMAGE                ↵
  ▶ 8.MOTION            OFF
    9.SYSTEM               ↵
    10.EXIT
```

```
                MOTION
  ▶ SENSITIVITY         IIIIIIIIIIIIIIII| 20
    DC MODE             6
    WINDOW TONE         3
    WINDOW USE          OFF
    DET H-POS           60
    DET V-POS           34
    DET H-SIZE          60
    DET V-SIZE          34
    ALARM               OFF
    RETURN                 ↵
```
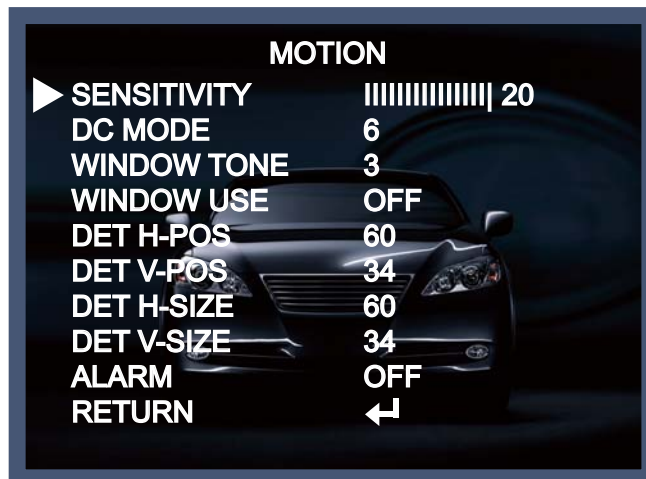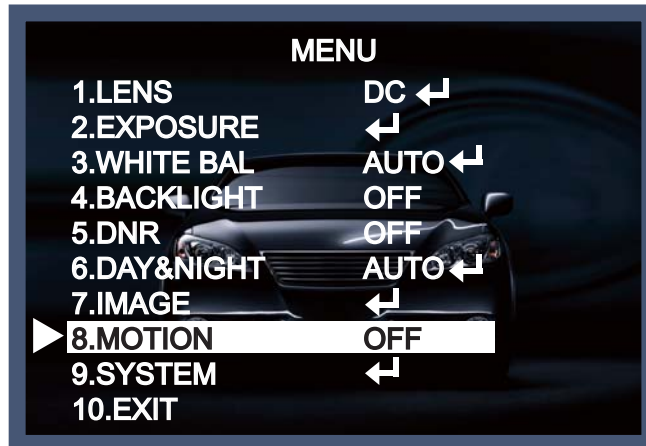
- SENSITIVITY [0~20] : The higher the setting value is, the higher the sensitivity gets, even though the movement of a subject.
- DC MODE [0~6] : Adjust window tone where not use motion function.
- WINDOW TONE [0~3] : Select the number of window use for motion detection.
- WINDOW USE [ON, OFF]
- DET 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-ZISE [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.
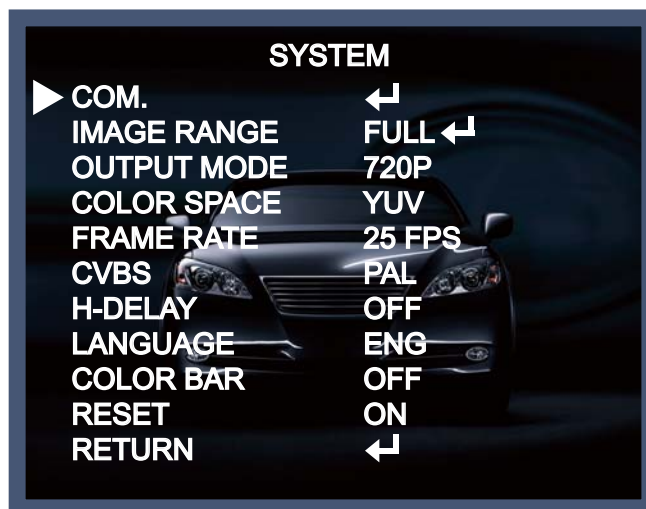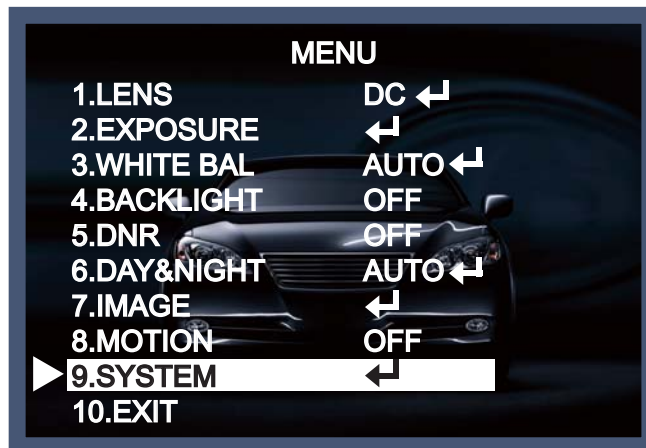
- COM. : This menu id used for RS-485 communication. Users are able to select 'CAM ID(0~255)' and 'BAU DRATE(2400/4800/9600/57600/115200).

- IMAGE RANGE [FULL/COMP/USER] : Adjust the rate of YC signal to 100%(FULL), 75%(COMP) or 100%~75%(USER).
- OUTPUT MODE [720P/720P CROP/1080P] : Choose output type.
- 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.
- H-DELAY [ON, OFF] : Compensate image size of screen accroding to DVR.
- 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.

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
Northing 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------.

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SPECO TECHNOLOGIES IP CAMERAS......**2 YEARS**	**NVRs** ....**3 YEARS**
SPECO PTZ AND VL CAMERAS...................**1 YEAR**	**BALANCE OF**
SPECO TECHNOLOGIES MONITORS.........**1 YEAR**	**SPECO TECHNOLOGIES LINE**....................**1 YEAR**
IR LEDS ....**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.

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EXCLUSIONS

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

DATE OF PURCHASE: _____

WHERE PURCHASED: _____   PURCHASE PRICE:_____

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