IDIS

HD-TVI Camera
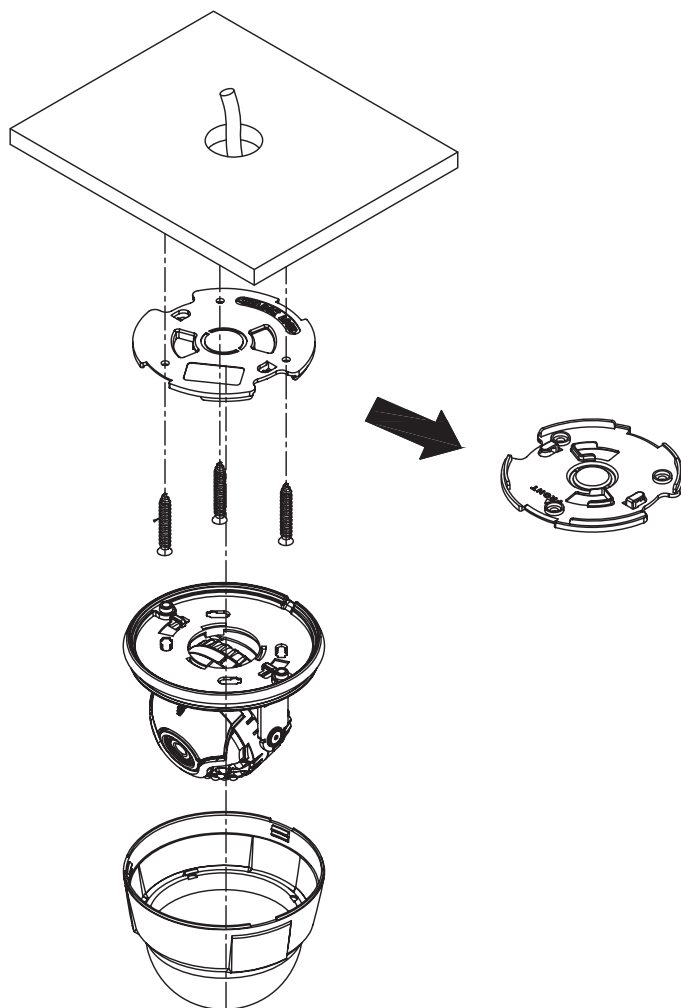
User Manual

IDIS

CAMERA INSTALLATION
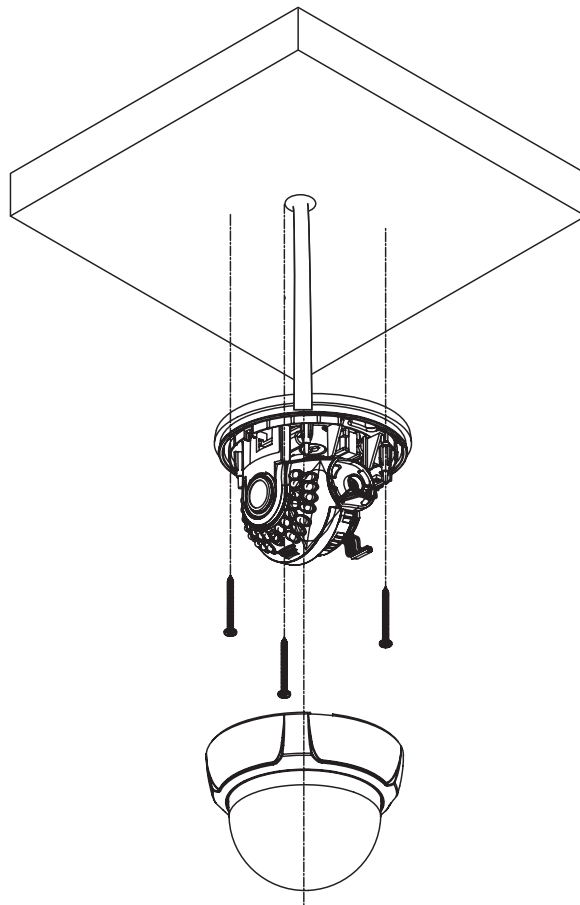
1. TC-B1202
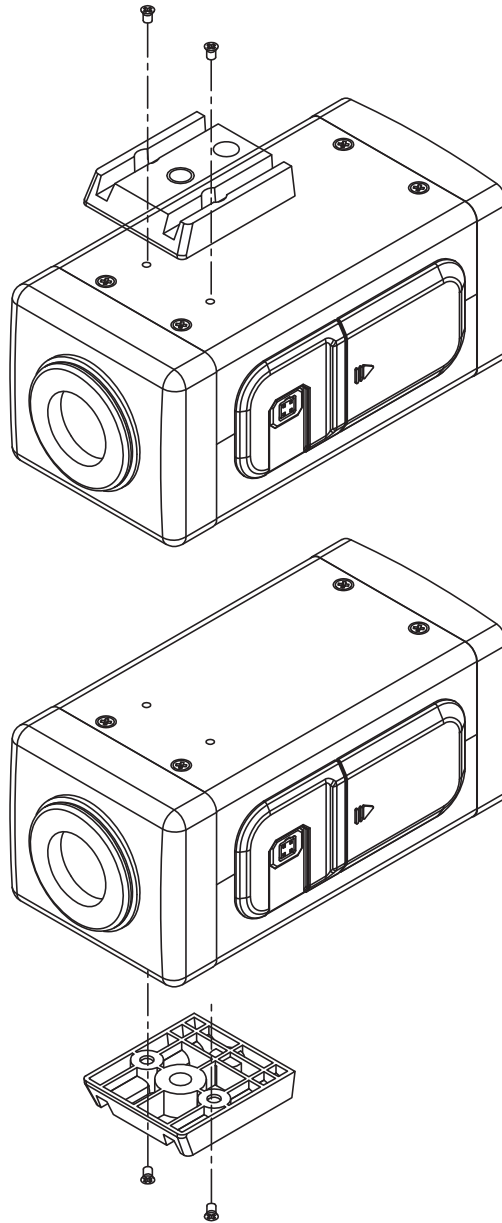
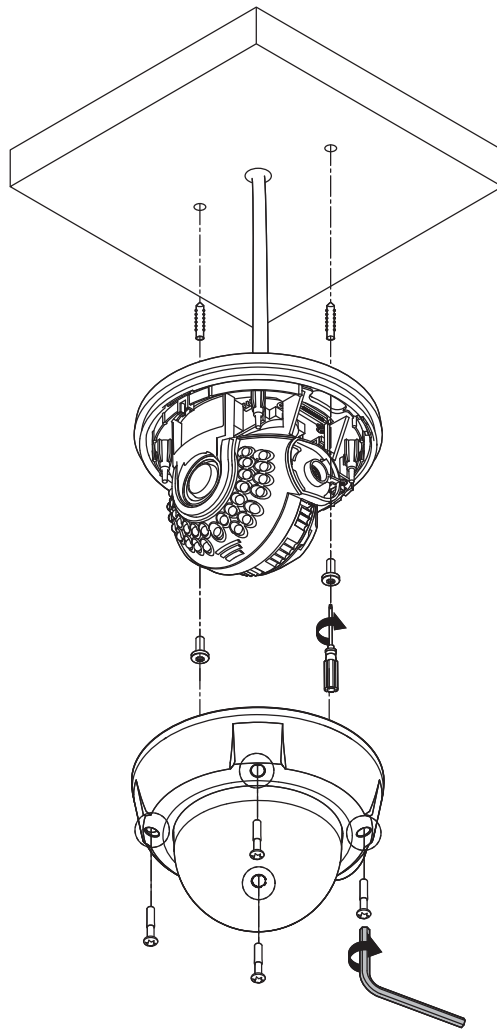# CAMERA INSTALLATION

2. TC-D1212R

CAMERA INSTALLATION

3. TC-D1222R

CAMERA INSTALLATION

4. TC-D1222WR

CAMERA INSTALLATION

5. TC-E1212WR
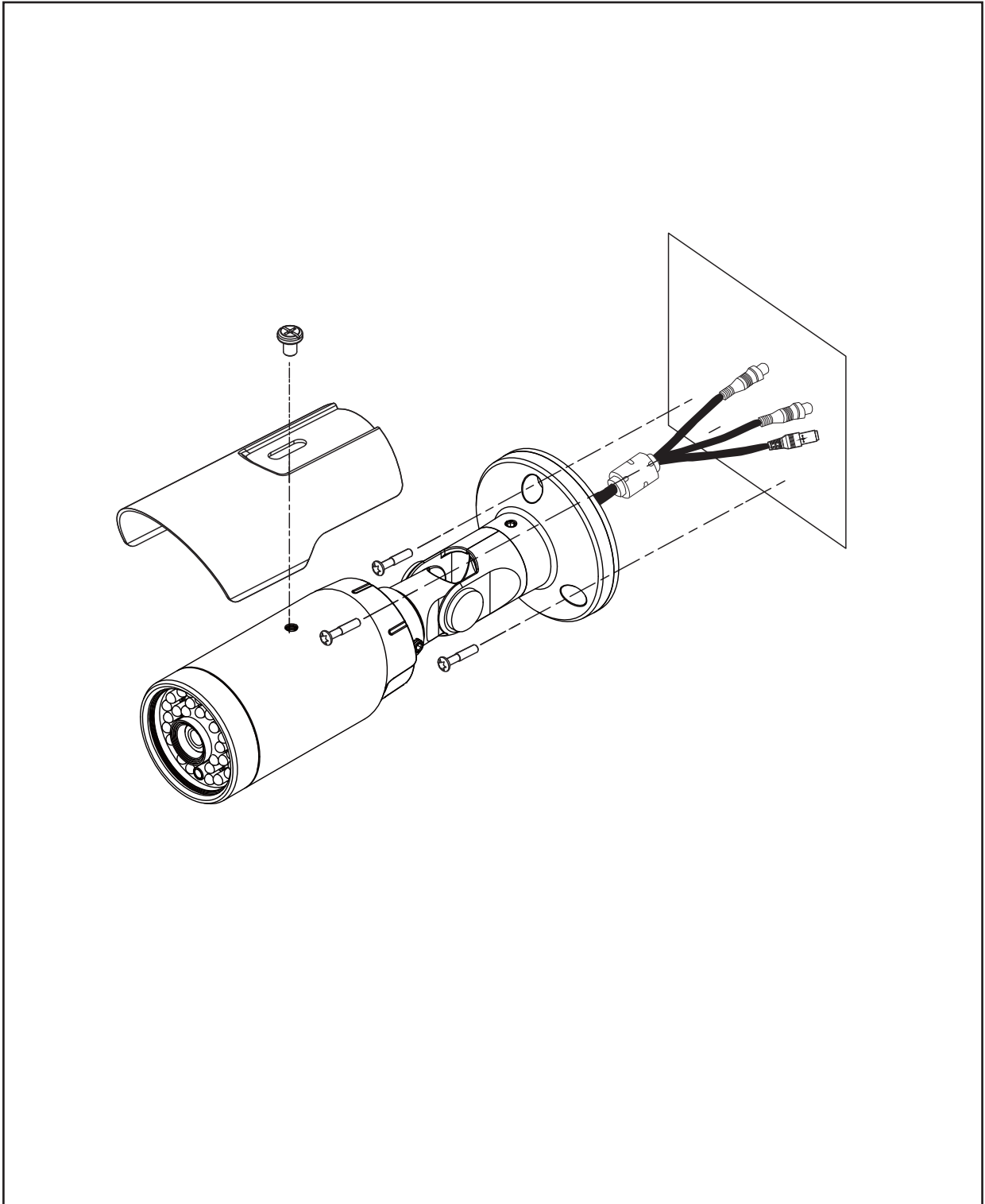
CAMERA INSTALLATION

6. TC-T1222WR
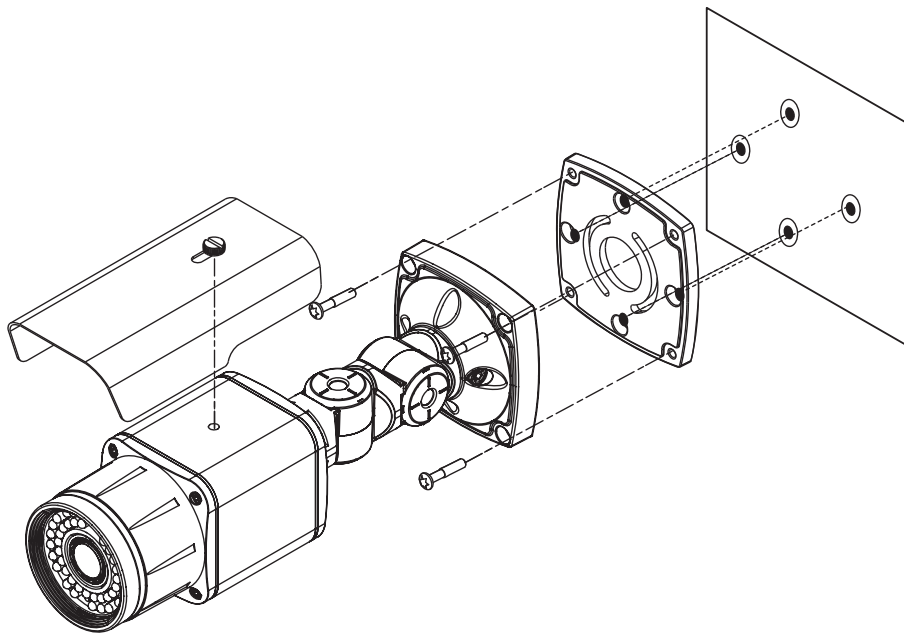
BOX CAMERA INSTALLATION GUIDE
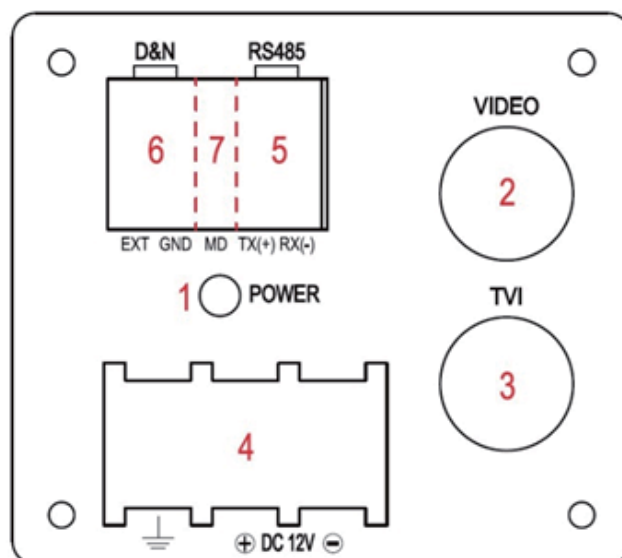
1. Power : If camera power is on properly, red signal is turn on.
2. Video : Analog Video Signal Output
3. TVI : HD-TVI Signal Output
4. Power : Connect DC 12V Properly
5. RS-485 : Use RS-485 Protocol
6. Day & Night : Select Day & Night Function by External Signal
7. Motion Detection : Motion Detection Output

CABLE INSTALLATION GUIDE
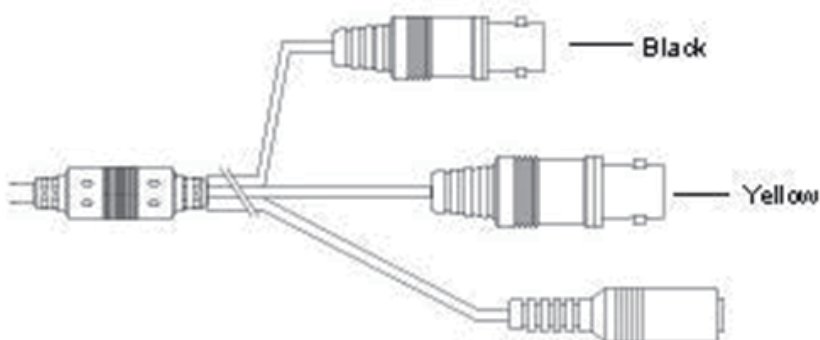
Black Video Cable : HD-TVI Video Output
Yellow Video Cable : Analog Video Output
Red Cable : Power Input (DC 12V)
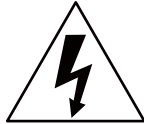
The lightning flash with an arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

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.

Symbol	Publication	Description
▬ ▬ ▬	IEC60417, No.5031	Direct Current

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 his own expense.

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

CAUTION : To prevent electric shock and risk of fire hazards:
☞ Do NOT use power sources other than those specified.
☞ Do NOT expose this appliance to rain or moisture.

This installation should be made by a qualified service person and should conform to all local codes.

Contents

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 HD-TVI become an ultimate and of solution by providing intelligent features based on motion detection. It strengthens crime prevention and detection.

Precautions

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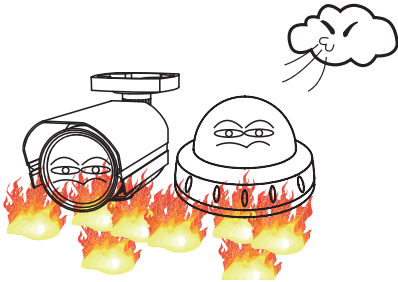
Only use the camera under conditions where temperatures are between -10°C and +50°C. Be especially careful to provide ventilation when operating under high temperatures.

Do not install or use the camera in an environment where the humidity is high.
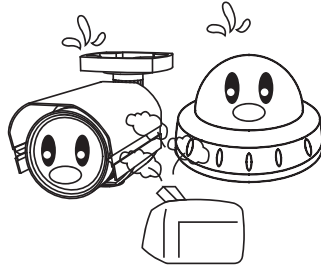
Do not install or use the camera in an environment where the humidity is high.

Do not install the camera under unstable lighting conditions.
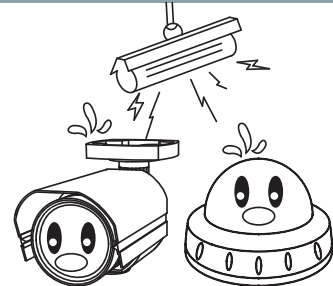
Severe lighting change or flicker can cause the camera to work improperly.

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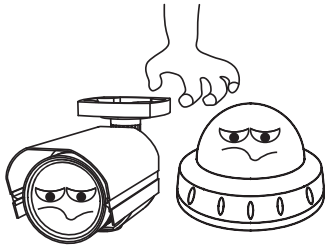
This is one of the most important parts of the camera. Be careful not to leave fingerprints on the lens cover.

Never keep the camera pointed directly at strong light.
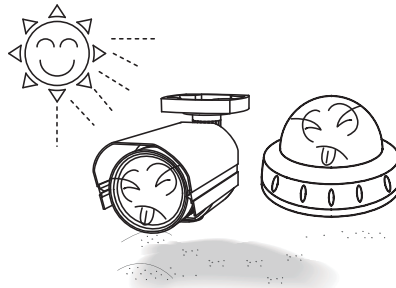
It can cause malfunctions to occur.

Do not drop the camera or subject it to physical shocks.
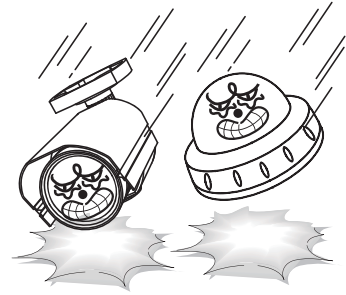
Do not expose the camera to rain or spill liquids on it.
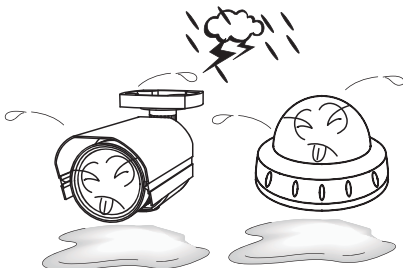
If it gets wet, wipe dry immediately. Liquids can contain minerals that corrode the electronic components.

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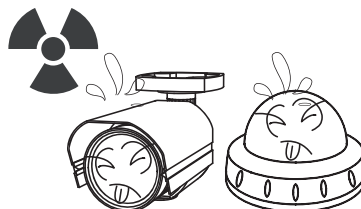
If exposed to radioactivity the CCD will fail.

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.

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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 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 expose the camera to direct sunlight

◑ Do not install camera in places where humidity is high

◑ Do not install near cooling or heating device

◑ Do not expose camera to rain or moisture

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				
		KELVIN	LOW / MIDDLE / HIGH		
	MANUAL	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				

How to Set Up the camera menu

● Setup Menu

6.DAY&NIGHT	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		
		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				

How to Set Up the camera menu

● Setup Menu

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
		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 | | |

6.DAY&NIGHT	AUTO	SMART IR	0 ~ 20
		AGC THRES	0 ~ 20
		AGC MARGIN	0 ~ 20
		DELAY	LOW/MIDDLE/HIGH
		RETURN	

** TC-B1202 model can only select auto menu. Others are not available.

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.

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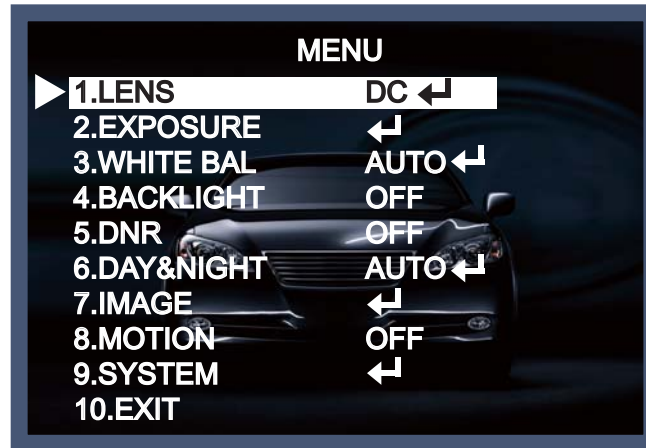
2. Move and select the required function using the Up and Down button.

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

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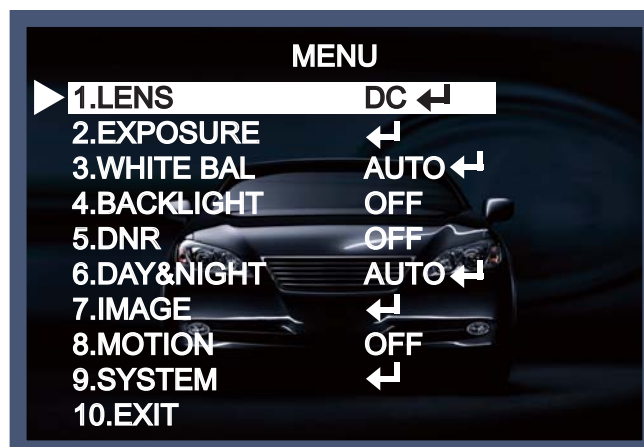
3. Change menu settings using the Left or Right button.

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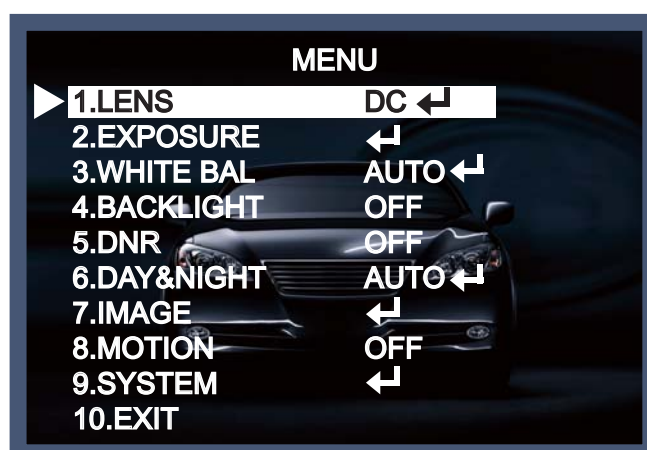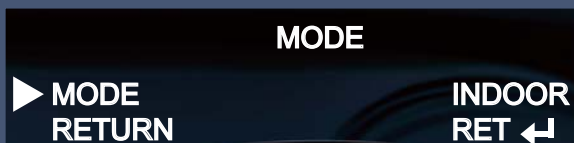
* When you select the mode setup, you can select INDOOR, OUTDOOR or DEBLUR depending on the installation environment.
*On manual mode, you can select NORMAL or DEBLUR depending on the installation environment.

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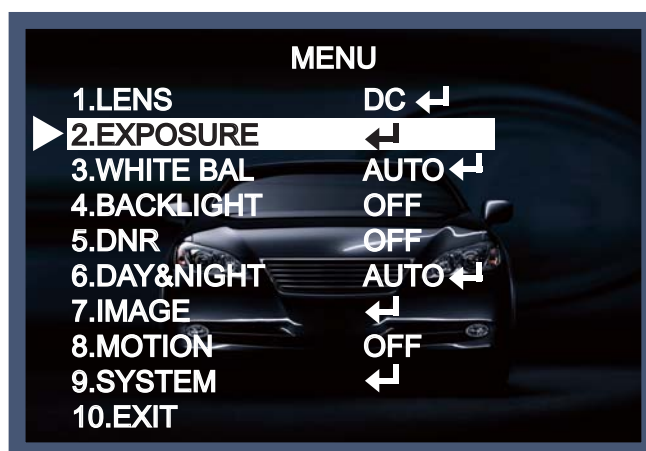
2. Select the desired shutter mode by pressing the Left or Right button.

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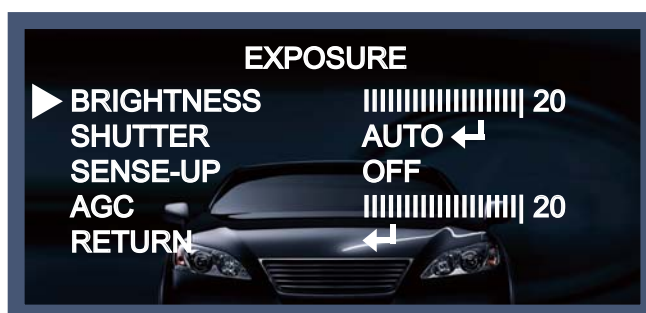
◆ BRIGHTNESS : The brightness can be adjusted. The brightness control range is 1~20.

◆ 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 is not worked when Electronic shutter is selected as Manual.

◆ SENSE-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.
→ 0~20 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
```
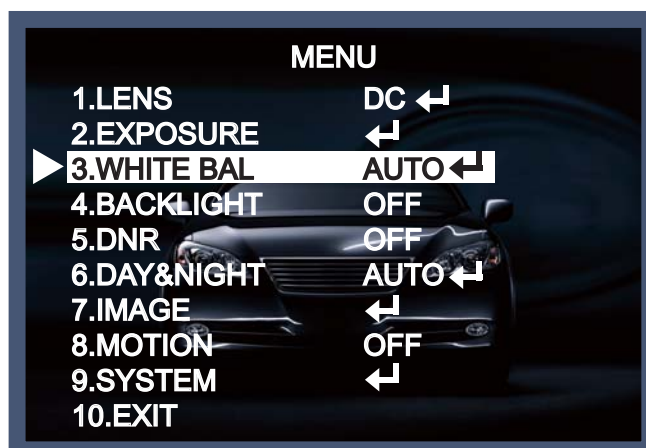
◆ AUT0 : Use this mode when the color temperature is from 2,500k to 9,500k.

◆ 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.

```
                    MANUAL

 ▶ KELVIN              MIDDLE
   R-GAIN             IIIIIIIII|IIIIIIIIII 20
   B-GAIN             IIIIIIIII|IIIIIII|III 20
   RETURN                  ↵
```

- 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

The White Balance may not be worked 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 headed to the fluorescent light directly 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.
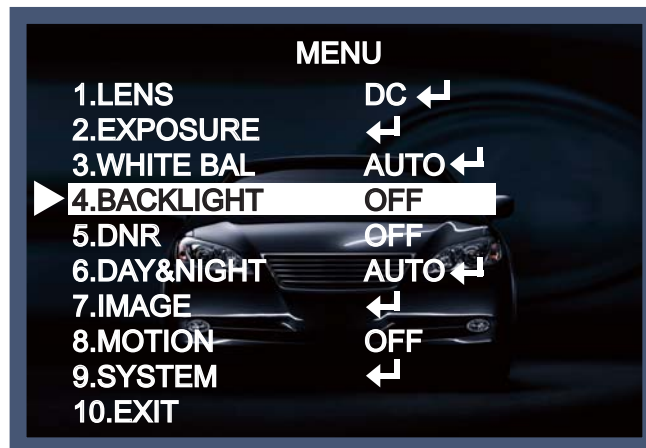
◆ Off : Deactivated status.
◆ HLC : This fuction is used to surpress or strong light source (for example, headlights of cars
   during nighttime) so that other subjects can be seen in more detail. If you select HCL, a
   submenu appears where you can make finer adjustments.
   - LEVEL : Adjust the brightness 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                        ↵
```
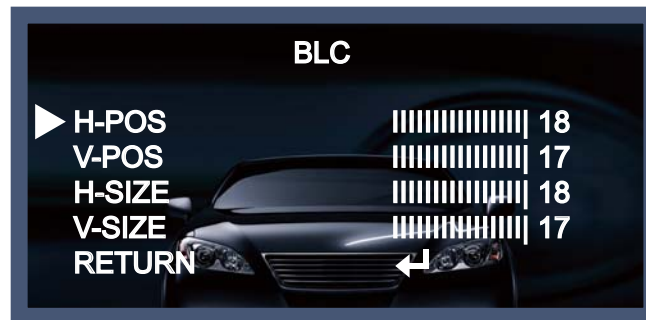
◆ WDR : The WDR (Wide Dynamic Range) fuction works to correct excessive light within the frame to produce a usable image. When the image has simultaneous bright and dark areas, it makes both areas distinct. If you select WDR, a submenu appears where you can make finer adjustments.
  - WEIGHT [MIDDLE, 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.

```
                 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
```
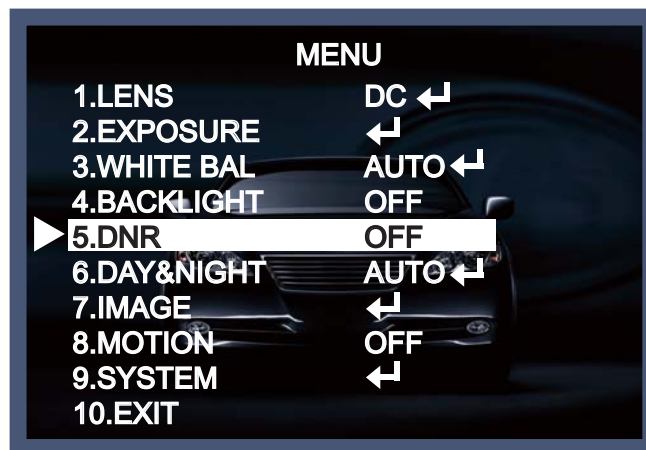
Day&Night

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.

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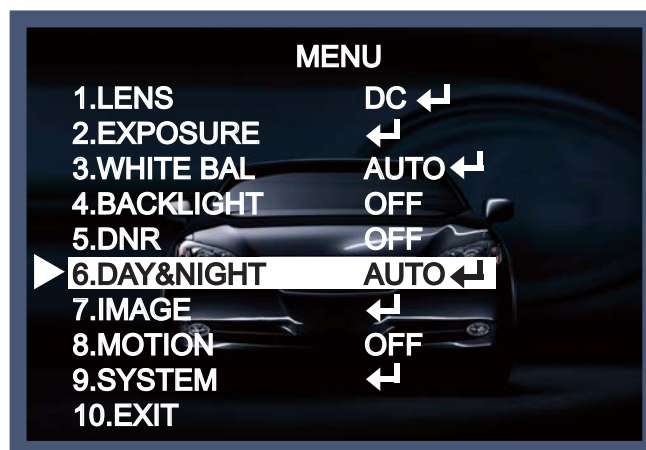
◆ AUTO : Automatically, It shifts into the color mode in the bright environment and the B/W mode in the low light condition. It can adjust the delay time, starting brightness and end brightness according to the ambient conditions by pressing the set button.

```
                    DAY&NIGHT

  ▶ SMART IR              IIIIIIIIIIIIII| 20
    AGC THRES             IIIIIIIIIIIIII| 20
    AGC MARGIN            IIIIIIIIIIIIII| 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.

**TC-B1202 model can only select auto menu. Others are not available.

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

```
                    DAY&NIGHT

  ▶ SMART IR              IIIIIIIIIIIIII| 20
    RETURN                ↵
```

- 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.

```
                    DAY&NIGHT

  ▶ SMART IR              IIIIIIIIIIIIII| 20
    EXTERN S/W            LOW
    DELAY                 LOW
    RETURN                ↵
```
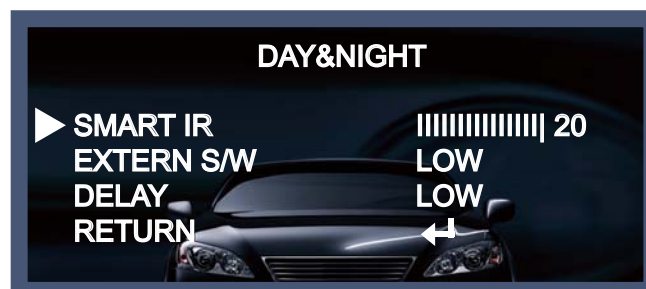
- EXTERN S/W [LOW/HIGH] : Set the external signal for switching between COLOR and B/W.
- DELAY [LOW/MIDDLE/HIGH] : Set the delay time for switching between COLOR and B/W .

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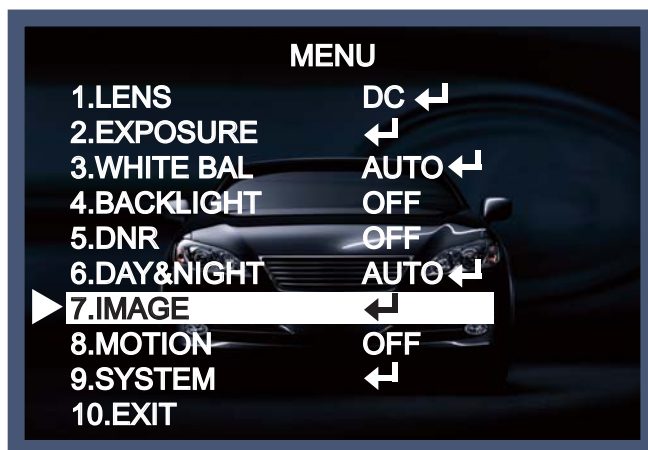
Here you can optimise the image quality by adjusting different options.

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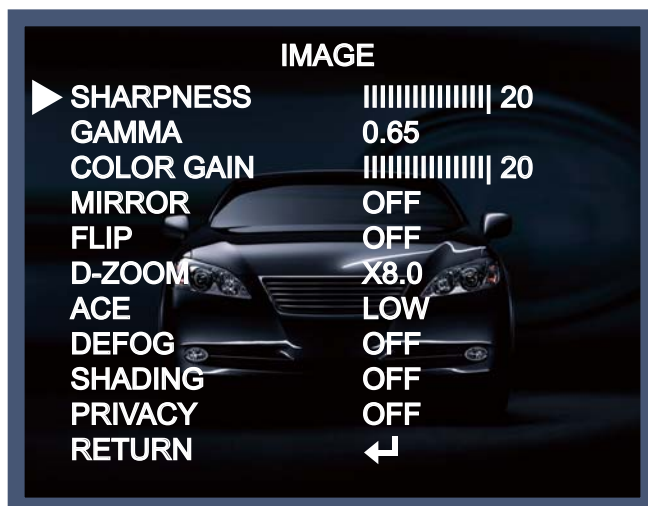
- SHARPNESS [1 ~ 20] : Adjusts the image sharpness. If the level goes up excessively, it may affect the video image and generate a noise.
- GAMMA [0.45 ~ 0.65] : Changes the gamma curve of the camera.
- COLOR GAIN [0 ~ 20] : Changes the color gain of the camera.
- MIRROR [ON, OFF] : Mirrors the image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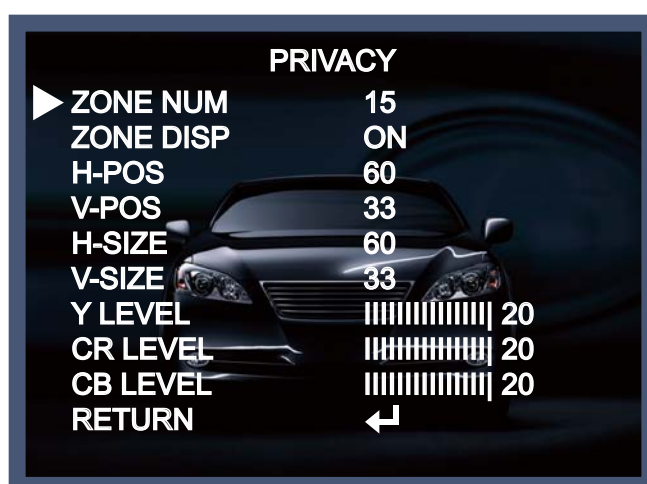
- ZONE NUM [0~15] : Select a mask out of the 16 mask areas and set the options below for the selected mask.
- ZONE DISP [ON, OFF] : Choose ON to activate privacy masks and press OFF to deactivate masks.
- H-POS [0~60] : Define the horizontal start position of the privacy mask.
- V-POS [0~33] : Define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

```
                    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       IIIIIIIIIIIIII| 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
        RETURN               ↵
```
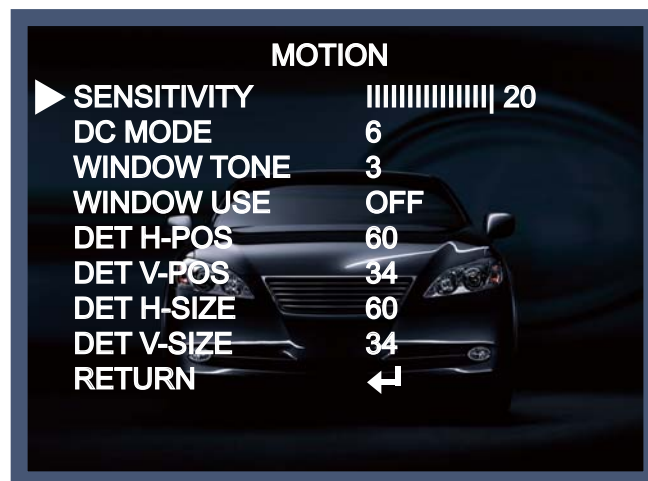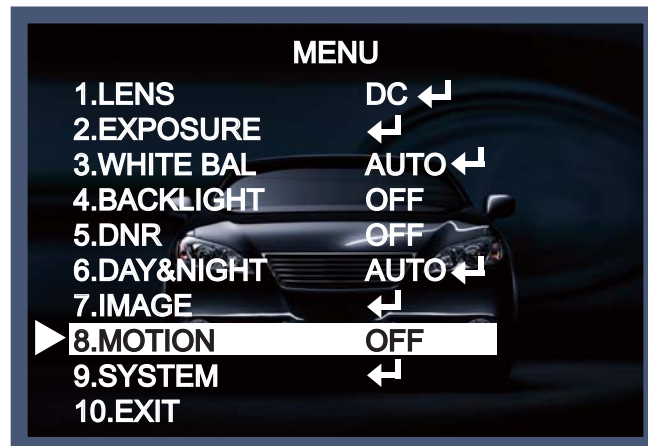
- SENSITIVITY [0~20] : The higher the setting value is, the higher the sensitivity gets, though it may cause reduction in image quality.
- DC MODE [0~6] : Adjust window tone where not use motion function.
- WINDOW TONE [0~3] : Select the number of window use for motion detection.
- WINDOW USE [ON, OFF]
- 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.

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.

```
                    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
```

```
                  SYSTEM
    ▶ COM.                   ↵
        IMAGE RANGE         FULL ↵
        OUTPUT MODE         720P
        COLOR SPACE         YUV
        FRAME RATE          25 FPS
        CVBS                PAL
        LANGUAGE            ENG
        COLOR BAR           OFF
        RESET               ON
        RETURN                ↵
```
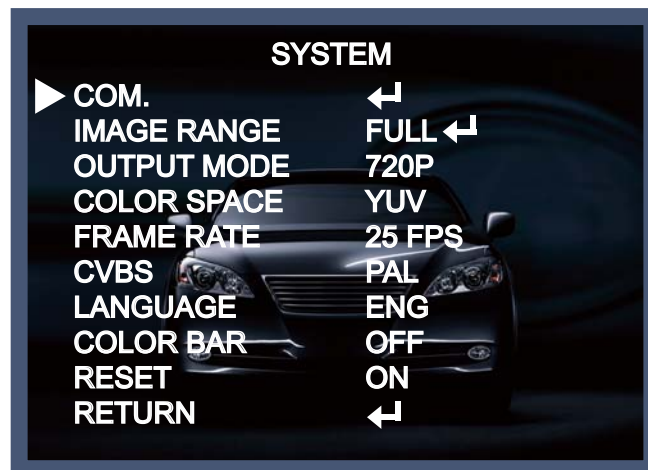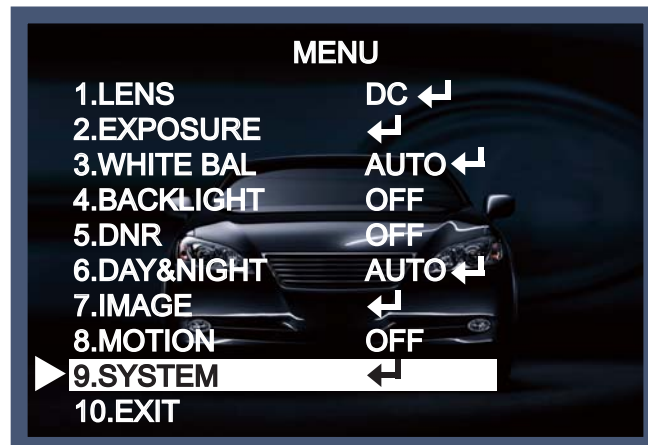
- COM. : This menu id used for RS-485 communication. Users are able to select CAM ID (0~255) and BAUD RATE (2400/4800/9600/57600/115200).
- IMAGE RANGE [FULL/COMP/USER] : Adjust the rate of YC signal to 100% (FULL), 75% (COMP) or 100%~75%(USER).
- OUTPUT MODE [720P/720P CROP/1080P] : Choose output type.
- 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.
- 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.

Specifications

MODEL	TC-B1202
Sensor type	1/2.8" SONY 2Mega Exmor CMOS Sensor
Effective pixels	1984(H) X 1105(V), 2.19M Pixels
Total pixels	2000(H) X 1121(V), 2.24M Pixels
Resolution	1920X1080(1080p@30f / 1080p@25f)
Scanning system	Progressive Scan
Min. illumination	0.001 Lux @ F1.2 , (Sens-UP X32)
Video Output	1.0Vp-p Composite. 75 Ohms 1.0Vp-p TVI(Transport Video Interface) 75 Ohms
S/N Ratio	More than 50dB
Lens	C/CS Mount Lens
Shutter Speed	AUTO / Manual(1/30,1/25Sec ~ 1/30000Sec) / FLICKER
True Day/Night	YES(ICR)
AGC	0 ~ 20 Level Adjustable
Brightness	0 ~ 20 Level Adjustable
Sens-UP	OFF / x2 ~ x32
WDR(Wide Dynamic Range)	OFF / ON (Low,Middle,High / 15 Frame)
Backlight Compensation(BLC)	OFF/ON
HSBLC	1 ~ 20 Level Adjustable(ALL DAY/NIGHT ONLY)
ACE(D-WDR/ATR-EX)	OFF/LOW/MIDDLE/HIGH
Motion Detection	OFF/ON (4 Zone)
Privacy Masking	OFF/ON (16 Zone)
Day & Night	AUTO(AGC)/Color/B&W/EXTERN
Smart -IR(IR OPTIMIZER)	0~20 Level Adjustable
White Balance	AUTO(2,500K ~ 9,500K) / AWB(1,800K ~ 10,500K) / AWC→Set / Manual
Digital Noise Reduction	2D+3DNR(OFF/LOW/MIDDLE/HIGH)
Mirror	MIRROR,V-FLIP
D-ZOOM(EZOOM)	X1 ~ X8
Sharpness	0~20 Level Adjustable
De-fog	OFF/ON
GAMMA Correction	r = 0.45 ~ 0.65
Lens Shading(LSC)	OFF/ON
Language	ENG / CHN / CHN(S) / JPN / KOR
Power Source	DUAL
Power Consumption	LED OFF:180mA / 2.64W
Dimensions (W x H x D)	58mm x 52mm x 123mm (2.29" x 2.05" x 4.85")
Weight	300g(Net) / 450g(Gross)
Out-door Ready	-
Storage Temperature	-20℃ ~ +60℃ (-4℉ ~ +140℉) (Humidity : 0% ~ 95%)
Operating Temperature	-10℃ ~ +50℃ (14℉ ~ +122℉) (Humidity : 0% ~ 90%)

Specifications

MODEL	TC-D1212R
Sensor type	1/2.8" SONY 2Mega Exmor CMOS Sensor
Effective pixels	1984(H) X 1105(V), 2.19M Pixels
Total pixels	2000(H) X 1121(V), 2.24M Pixels
Resolution	1920X1080(1080p@30f / 1080p@25f)
Scanning system	Progressive Scan
Min. illumination	COLOR : 0.3 Lux @ F1.2, B/W : 0 Lux (IR LED ON)
IR LED	18EA
Video Output	1.0Vp-p Composite. 75 Ohms 1.0Vp-p TVI(Transport Video Interface) 75 Ohms
S/N Ratio	More than 50dB
Lens	3.6mm
Shutter Speed	AUTO / Manual(1/30,1/25Sec ~ 1/30000Sec) / FLICKER
True Day/Night	YES(ICR)
AGC	0 ~ 20 Level Adjustable
Brightness	0 ~ 20 Level Adjustable
Sens-UP	OFF / x2 ~ x32
WDR(Wide Dynamic Range)	OFF / ON (Low,Middle,High / 15 Frame)
Backlight Compensation(BLC)	OFF/ON
HSBLC	1 ~ 20 Level Adjustable
ACE(D-WDR/ATR-EX)	OFF/LOW/MIDDLE/HIGH
Motion Detection	OFF/ON (4 Zone)
Privacy Masking	OFF/ON (16 Zone)
Day & Night	Color/B&W/EXTERN
Smart -IR(IR OPTIMIZER)	0~15 Level Adjustable
White Balance	ATW(1,700K ~ 11,000K) / AWC → Set / Manual /AWB
Digital Noise Reduction	2D, 3DNR
Mirror	MIRROR,V-FLIP
D-ZOOM(EZOOM)	OFF/ON (x2 ~ x8)
Sharpness	0~15 Level Adjustable
De-fog	OFF/ON
GAMMA Correction	r = 0.45 ~ 0.65
Lens Shading(LSC)	OFF/ON
Language	ENG/KOR/CHN1/CHA2/JPN
Power Source	DC12V
Power Consumption	LED OFF:160mA , LED ON:310mA / 4.56W
Dimensions (W x H x D)	Ø100mm x 80mm (Ø3.94" x 3.15")
Weight	200g(Net) / 350g(Gross)
Out-door Ready	-
Storage Temperature	-20℃ ~ +60℃ (-4℉ ~ +140℉) (Humidity : 0% ~ 95%)
Operating Temperature	-10℃ ~ +50℃ (14℉ ~ +122℉) (Humidity : 0% ~ 90%)

Specifications

MODEL	TC-D1222R
Sensor type	1/2.8" SONY 2Mega Exmor CMOS Sensor
Effective pixels	1984(H) X 1105(V), 2.19M Pixels
Total pixels	2000(H) X 1121(V), 2.24M Pixels
Resolution	1920X1080(1080p@30f / 1080p@25f)
Scanning system	Progressive Scan
Min. illumination	COLOR : 0.9 Lux @ F1.8
IR LED	B/W : 0 Lux (IR LED ON)
Video Output	28EA 1.0Vp-p Composite. 75 Ohms
S/N Ratio	1.0Vp-p TVI(Transport Video Interface) 75 Ohms
Lens	More than 50dB
Shutter Speed	f = 2.8mm ~ 12mm
True Day/Night	AUTO / Manual(1/30,1/25Sec ~ 1/30000Sec) / FLICKER
AGC	YES(ICR)
Brightness	0 ~ 20 Level Adjustable
Sens-UP	OFF / x2 ~ x32
WDR(Wide Dynamic Range)	OFF / ON (Low,Middle,High / 15 Frame)
Backlight Compensation(BLC)	OFF/ON
HSBLC	1 ~ 20 Level Adjustable(ALL DAY/NIGHT ONLY)
ACE(D-WDR/ATR-EX)	OFF/LOW/MIDDLE/HIGH
Motion Detection	OFF/ON (4 Zone)
Privacy Masking	OFF/ON (16 Zone)
Day & Night	Color/B&W/EXTERN
Smart -IR(IR OPTIMIZER)	0~20 Level Adjustable
White Balance	AUTO(2,500K ~ 9,500K) / AWB(1,800K ~ 10,500K) / AWC→Set / Manual
Digital Noise Reduction	2D+3DNR(OFF/LOW/MIDDLE/HIGH)
Mirror	MIRROR,V-FLIP
D-ZOOM(EZOOM)	X1 ~ X8
Sharpness	0~20 Level Adjustable
De-fog	OFF/ON
GAMMA Correction	r = 0.45 ~ 0.65
Lens Shading(LSC)	OFF/ON
Language	ENG / CHN / CHN(S) / JPN / KOR
Power Source	DUAL
Power Consumption	LED OFF:170mA , LED ON:320mA / 4.8W
Dimensions (W x H x D)	Ø130mm x 101.8mm (Ø5.12" x 4.01")
Weight	300g(Net) / 450g(Gross)
Out-door Ready	-
Storage Temperature	-20℃ ~ +60℃ (-4℉ ~ +140℉) (Humidity : 0% ~ 95%)
Operating Temperature	-10℃ ~ +50℃ (14℉ ~ +122℉) (Humidity : 0% ~ 90%)

Specifications

MODEL	TC-D1222WR
Sensor type	1/2.8" SONY 2Mega Exmor CMOS Sensor
Effective pixels	1984(H) X 1105(V), 2.19M Pixels
Total pixels	2000(H) X 1121(V), 2.24M Pixels
Resolution	1920X1080(1080p@30f / 1080p@25f)
Scanning system	Progressive Scan
Min. illumination	COLOR : 0.9 Lux @ F1.8, B/W : 0 Lux (IR LED ON)
IR LED	28EA
Video Output	1.0Vp-p Composite. 75 Ohms 1.0Vp-p TVI(Transport Video Interface) 75 Ohms
S/N Ratio	More than 50dB
Lens	f = 2.8mm ~ 12mm
Shutter Speed	AUTO / Manual(1/30,1/25Sec ~ 1/30000Sec) / FLICKER
True Day/Night	YES(ICR)
AGC	0 ~ 20 Level Adjustable
Brightness	0 ~ 20 Level Adjustable
Sens-UP	OFF / x2 ~ x32
WDR(Wide Dynamic Range)	OFF / ON (Low,Middle,High / 15 Frame)
Backlight Compensation(BLC)	OFF/ON
HSBLC	1 ~ 20 Level Adjustable
ACE(D-WDR/ATR-EX)	OFF/LOW/MIDDLE/HIGH
Motion Detection	OFF/ON (4 Zone)
Privacy Masking	OFF/ON (16 Zone)
Day & Night	Color/B&W/EXTERN
Smart -IR(IR OPTIMIZER)	0~20 Level Adjustable
White Balance	AUTO(2,500K ~ 9,500K) / AWB(1,800K ~ 10,500K) / AWC→Set / Manua
Digital Noise Reduction	2D, 3DNR
Mirror	MIRROR,V-FLIP
D-ZOOM(EZOOM)	X1 ~ X8
Sharpness	0~20 Level Adjustable
De-fog	OFF/ON
GAMMA Correction	r = 0.45 ~ 0.65
Lens Shading(LSC)	OFF/ON
Language	ENG / CHN / CHN(S) / JPN / KOR
Power Source	DUAL
Power Consumption	LED OFF:280mA , LED ON:320mA / 4.8W
Dimensions (W x H x D)	Ø150.5mm x 98.8mm (Ø5.93" x 3.89")
Weight	850g(Net) / 1100g(Gross)
Out-door Ready	IP66
Storage Temperature	-20℃ ~ +60℃ (-4℉ ~ +140℉) (Humidity : 0% ~ 95%)
Operating Temperature	-10℃ ~ +50℃ (14℉ ~ +122℉) (Humidity : 0% ~ 90%)

Specifications

MODEL	TC-E1212WR
Sensor type	1/2.8" SONY 2Mega Exmor CMOS Sensor
Effective pixels	1984(H) X 1105(V), 2.19M Pixels
Total pixels	2000(H) X 1121(V), 2.24M Pixels
Resolution	1920X1080(1080p@30f / 1080p@25f)
Scanning system	Progressive Scan
Min. illumination	COLOR : 0.9 Lux @ F1.8, B/W : 0 Lux (IR LED ON)
IR LED	24EA
Video Output	1.0Vp-p Composite. 75 Ohms 1.0Vp-p TVI(Transport Video Interface) 75 Ohms
S/N Ratio	More than 50dB
Lens	3.6mm
Shutter Speed	AUTO / Manual(1/30,1/25Sec ~ 1/30000Sec) / FLICKER
True Day/Night	YES(ICR)
AGC	0 ~ 20 Level Adjustable
Brightness	0 ~ 20 Level Adjustable
Sens-UP	OFF / x2 ~ x32
WDR(Wide Dynamic Range)	OFF / ON (Low,Middle,High / 15 Frame)
Backlight Compensation(BLC)	OFF/ON
HSBLC	1 ~ 20 Level Adjustable(ALL DAY/NIGHT ONLY)
ACE(D-WDR/ATR-EX)	Auto(AGC)/Color/B&W/EXTERN
Motion Detection	OFF/ON (4 Zone)
Privacy Masking	OFF/ON (16 Zone)
Day & Night	Color/B&W/EXTERN
Smart -IR(IR OPTIMIZER)	0~20 Level Adjustable
White Balance	AUTO(2,500K ~ 9,500K) / AWB(1,800K ~ 10,500K) / AWC→Set / Manual
Digital Noise Reduction	2D+3DNR(OFF/LOW/MIDDLE/HIGH)
Mirror	MIRROR,V-FLIP
D-ZOOM(EZOOM)	X1 ~ X8
Sharpness	0~20 Level Adjustable
De-fog	OFF/ON
GAMMA Correction	r = 0.45 ~ 0.65
Lens Shading(LSC)	OFF/ON
Language	ENG / CHN / CHN(S) / JPN / KOR
Power Source	DC12V
Power Consumption	LED OFF:140mA , LED ON:410mA / 6W
Dimensions (W x H x D)	68mm x 65.5mm x 136.7mm (2.68" x 5.58" x 5.39")
Weight	600g(Net) / 900g(Gross)
Out-door Ready	IP66
Storage Temperature	-20℃ ~ +60℃ (-4℉ ~ +140℉) (Humidity : 0% ~ 95%)
Operating Temperature	-10℃ ~ +50℃ (14℉ ~ +122℉) (Humidity : 0% ~ 90%)

Specifications

MODEL	TC-T1222WR
Sensor type	1/2.8" SONY 2Mega Exmor CMOS Sensor
Effective pixels	1984(H) X 1105(V), 2.19M Pixels
Total pixels	2000(H) X 1121(V), 2.24M Pixels
Resolution	1920X1080(1080p@30f / 1080p@25f)
Scanning system	Progressive Scan
Min. illumination	COLOR : 0.9 Lux @ F1.8, B/W : 0 Lux (IR LED ON)
IR LED	42EA
Video Output	1.0Vp-p Composite. 75 Ohms 1.0Vp-p TVI(Transport Video Interface) 75 Ohms
S/N Ratio	More than 50dB
Lens	f = 2.8mm ~ 12mm
Shutter Speed	AUTO / Manual(1/30,1/25Sec ~ 1/30000Sec) / FLICKER
True Day/Night	YES(ICR)
AGC	0 ~ 20 Level Adjustable
Brightness	0 ~ 20 Level Adjustable
Sens-UP	OFF / x2 ~ x32
WDR(Wide Dynamic Range)	OFF / ON (Low,Middle,High / 15 Frame)
Backlight Compensation(BLC)	OFF/ON
HSBLC	1 ~ 20 Level Adjustable(ALL DAY/NIGHT ONLY)
ACE(D-WDR/ATR-EX)	OFF/LOW/MIDDLE/HIGH
Motion Detection	OFF/ON (4 Zone)
Privacy Masking	OFF/ON (16 Zone)
Day & Night	Color/B&W/EXTERN
Smart -IR(IR OPTIMIZER)	0~20 Level Adjustable
White Balance	AUTO(2,500K ~ 9,500K) / AWB(1,800K ~ 10,500K) / AWC→Set / Manual
Digital Noise Reduction	2D+3DNR(OFF/LOW/MIDDLE/HIGH)
Mirror	MIRROR,V-FLIP
D-ZOOM(EZOOM)	x1~ x8
Sharpness	0~20 Level Adjustable
De-fog	OFF/ON
GAMMA Correction	r = 0.45 ~ 0.65
Lens Shading(LSC)	OFF/ON
Language	ENG / CHN / CHN(S) / JPN / KOR
Power Source	DUAL
Power Consumption	LED OFF:280mA , LED ON:480mA / 7.2W
Dimensions (W x H x D)	95mm x 80mm x 265mm (3.75" x 3.15" x 10.44")
Weight	1200g(Net) / 1700g(Gross)
Out-door Ready	IP66
Storage Temperature	-20℃ ~ +60℃ (-4℉ ~ +140℉) (Humidity : 0% ~ 95%)
Operating Temperature	-10℃ ~ +50℃ (14℉ ~ +122℉) (Humidity : 0% ~ 90%)

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 SENS-UP does not work.	☞ Check that the AGC setting in the EXPOSURE menu is't set to OFF.

- MEMO -

- MEMO -