INSTRUCTION MANUAL

SPECO 960H Series

HT7040H

(960H Outdoor IR Bullet Camera)

HT671H/HT670H

(960H Outdoor IR Dome Camera)

HT649H/HT648H

(960H Indoor IR Dome Camera)

HT5940H/HT5935H

(960H Small Outdoor IR / Non IR Dome Camera)

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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. 05/01/2013

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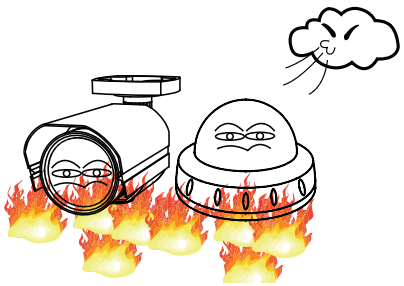
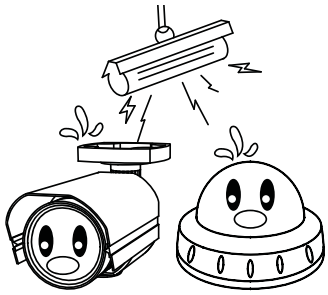
Precautions

Do not install the camera in extreme temperature conditions.



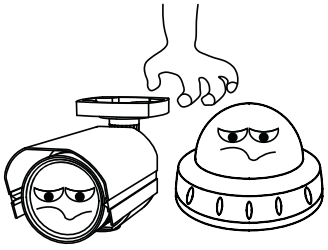
Only use the camera under conditions where temperatures are between -4°F and +140°F. Be especially careful to provide ventilation when operating under high temperatures.

Do not install the camera under unstable lighting conditions.



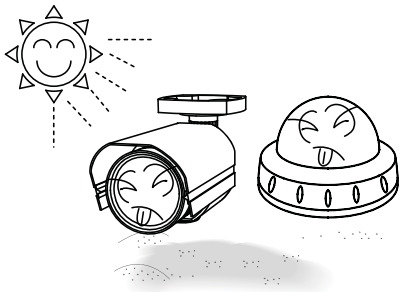
Severe lighting change or flicker can cause the camera to work improperly.

Do not touch the front lens of the camera.



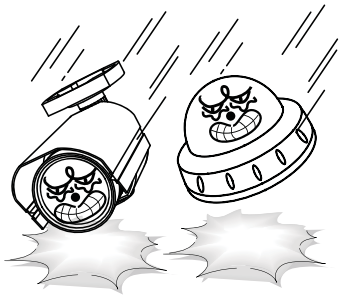
This is one of the most important parts of the camera. Be careful not to leave fingerprints on the lens cover.

Never keep the camera pointed directly at strong light.



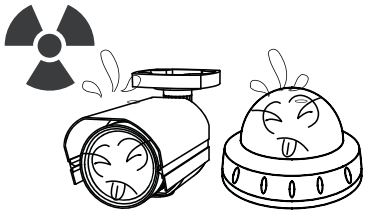
It can cause malfunctions to occur.

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



Housing damage can compromise weatherproof ratings.

Do not expose the camera to radioactivity.

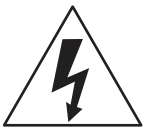


If exposed to radioactivity the CCD will fail.

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.

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) HT7040H
- 1 Video Test Connector, Power Jack
- 1 Focus Adjustment
- 1 Bracket Base
- 1 Wrench
- Set Screw
  - 4 Tapping Screws 4x25
  - 4 Hexagon Socket Screws M5x10

2) HT671H , HT670H
- 1 Video Test Connector, Power Jack
- 1 Chameleon Cover
- 1 Wrench
- Set Screw
  - 3 Tapping Screws 4x40
  - 1 Hexagon Socket Screw M4x8

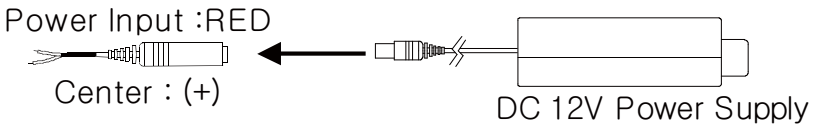
3) HT649H, HT648H
- 1 Video Test Connector, Power Jack
- 1 Chameleon Cover
- Set Screw
  - 3 Tapping Screws 4x25

4) HT5940H, HT5935H
- 1 Video Test Connector, Power Jack
- 1 Wrench
- Set Screw
  - 3 Tapping Screws 3.5x20

CAMERA INSTALLATION

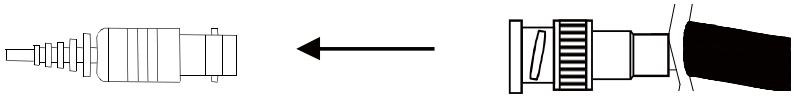
CONNECT POWER CABLE

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



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

3. CONNECT VIDEO CABLE
- CONNECT BNC CABLE TO THE BNC JACK.

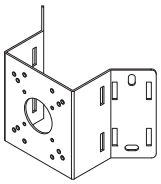


CAMERA INSTALLATION

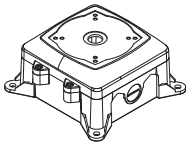
Compatibility

1) HT7040H

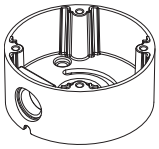
INTCM

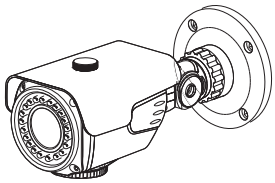


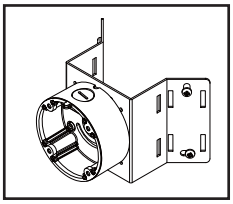
INTJBS



CVCJBB

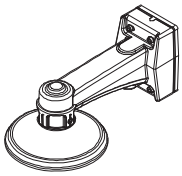




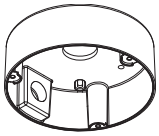


2) HT671H, HT670H, HT649H, HT648H

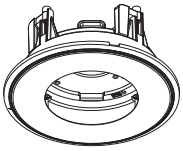
INTWM



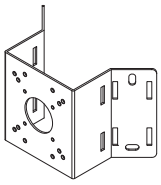
CVCJBD



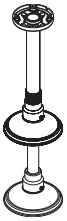
DFM

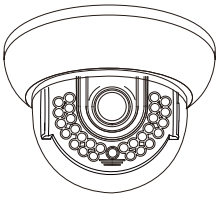


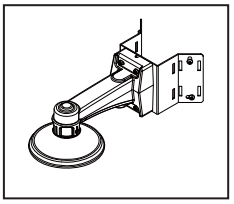
INTCM



INTPM





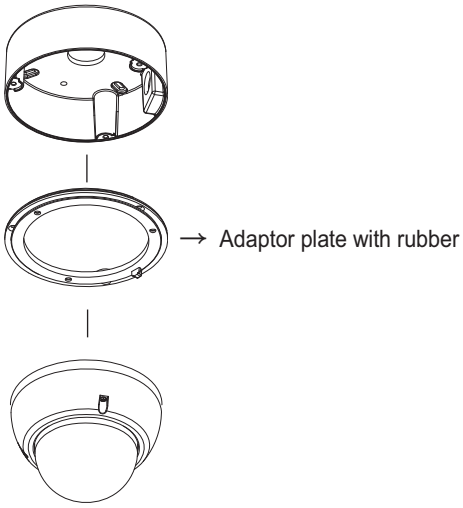


CAMERA INSTALLATION

Compatibility

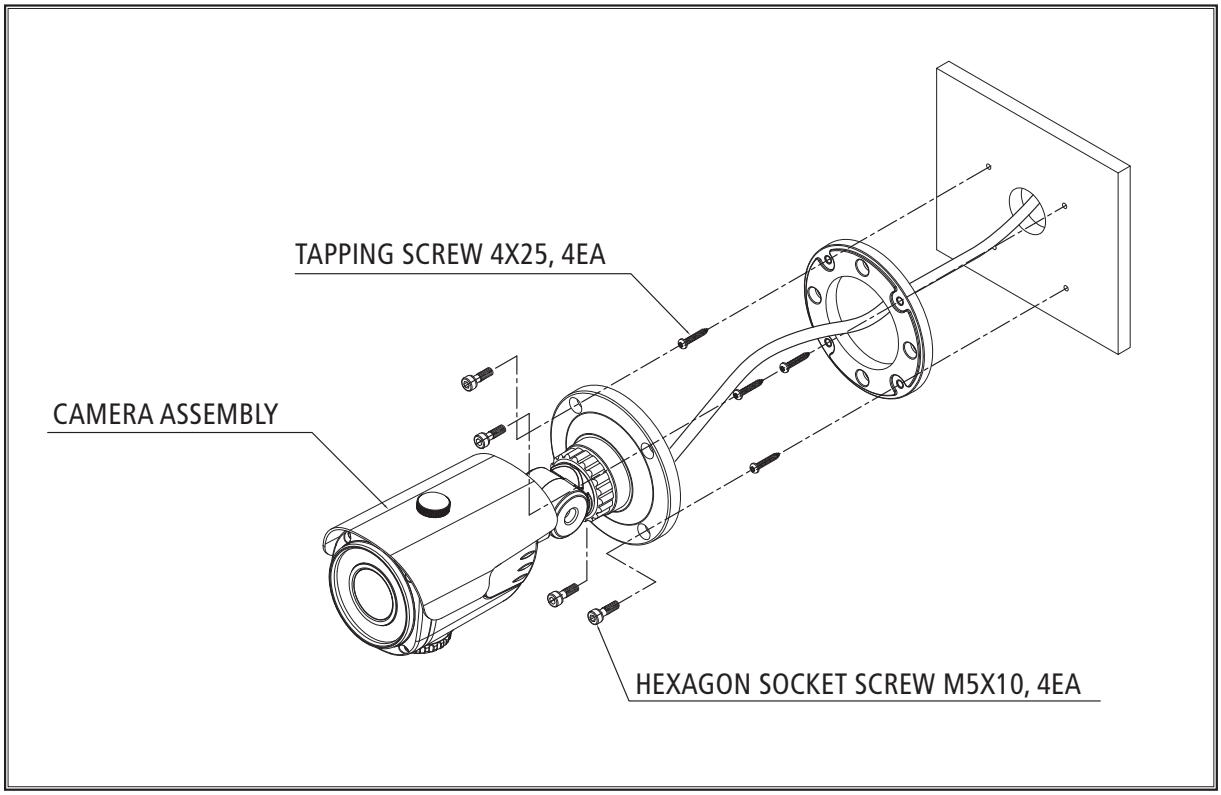
3) HT5940H, HT5935H

CVCJBD

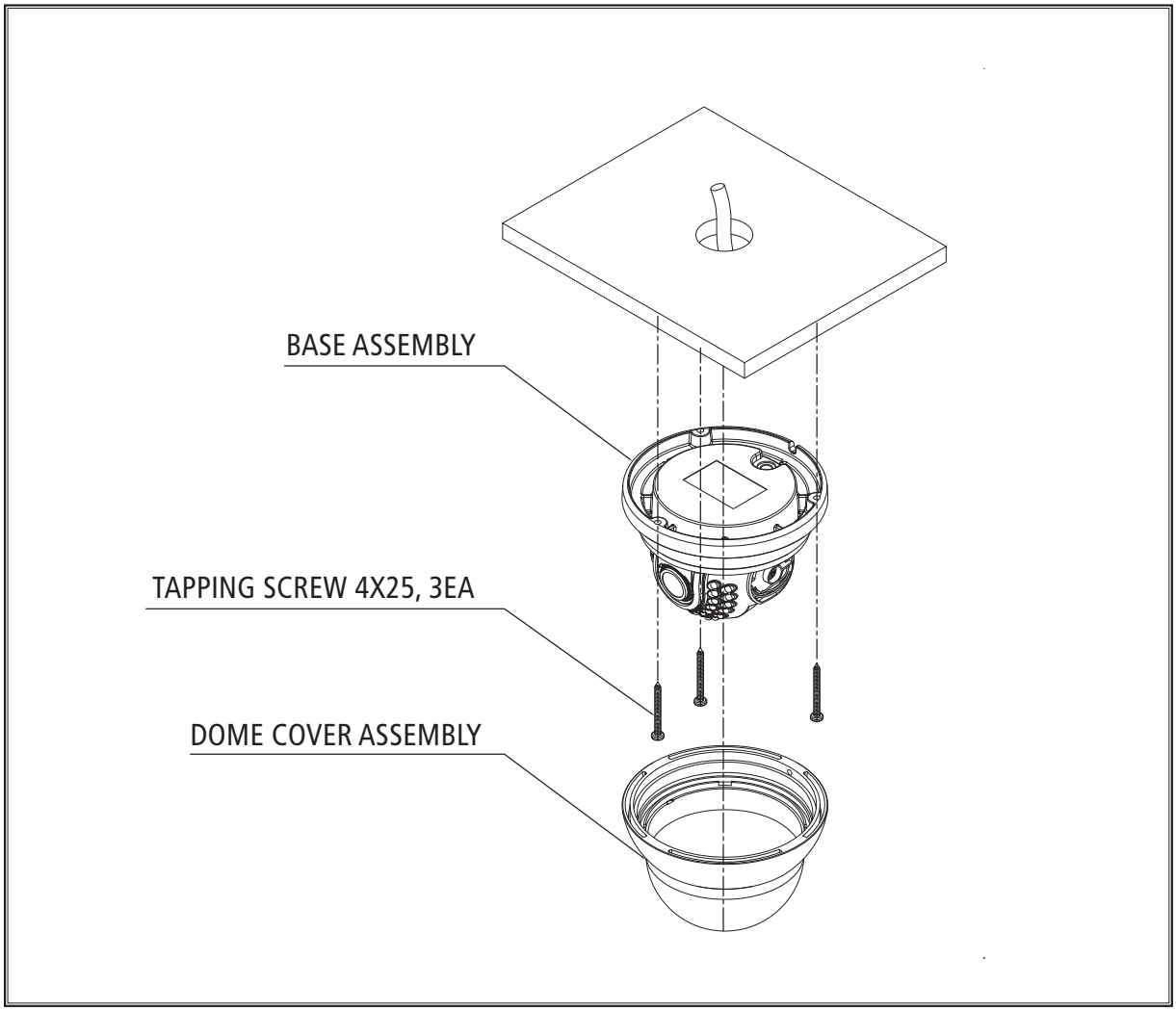


CAMERA INSTALLATION

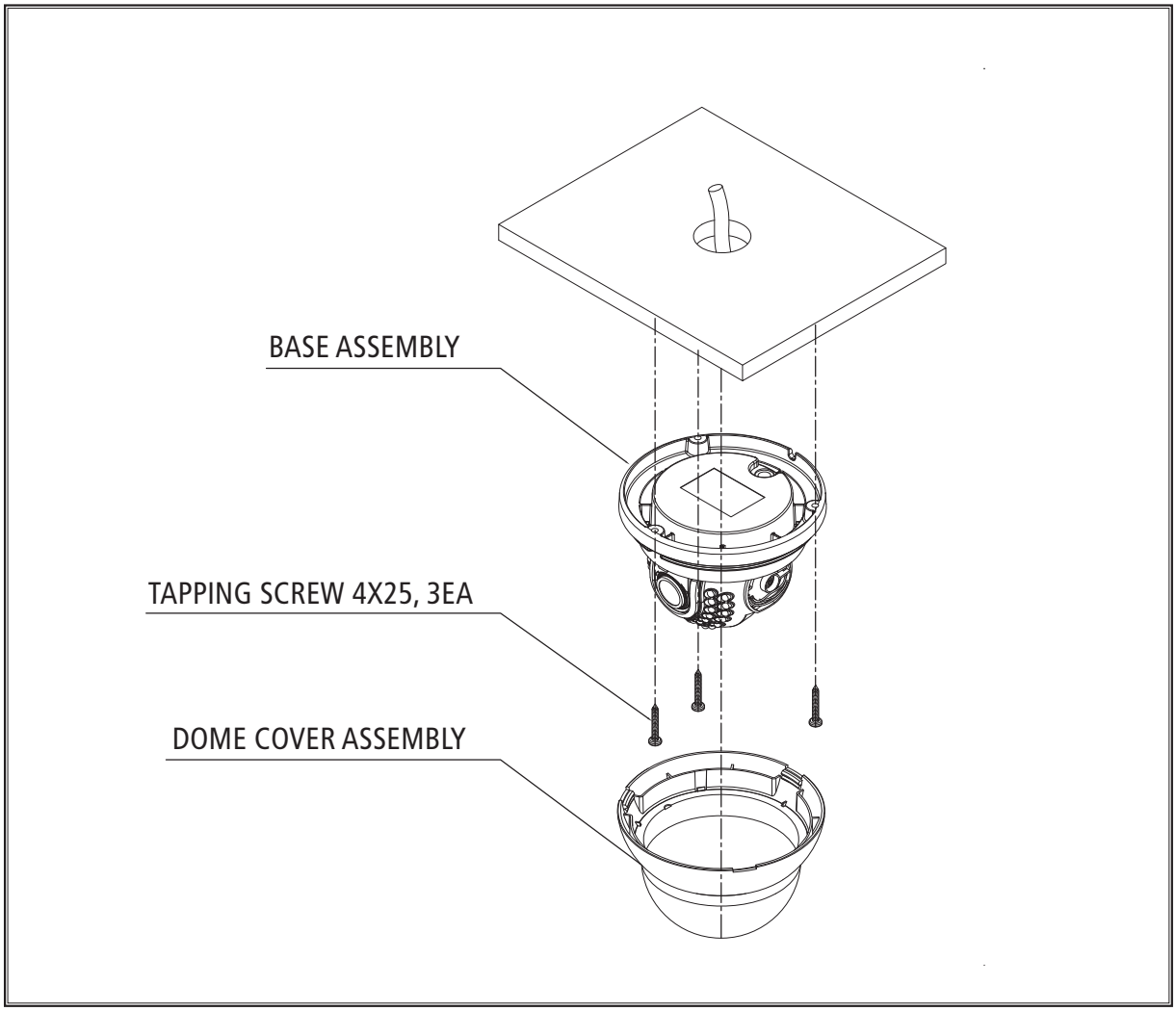
1. HT7040H



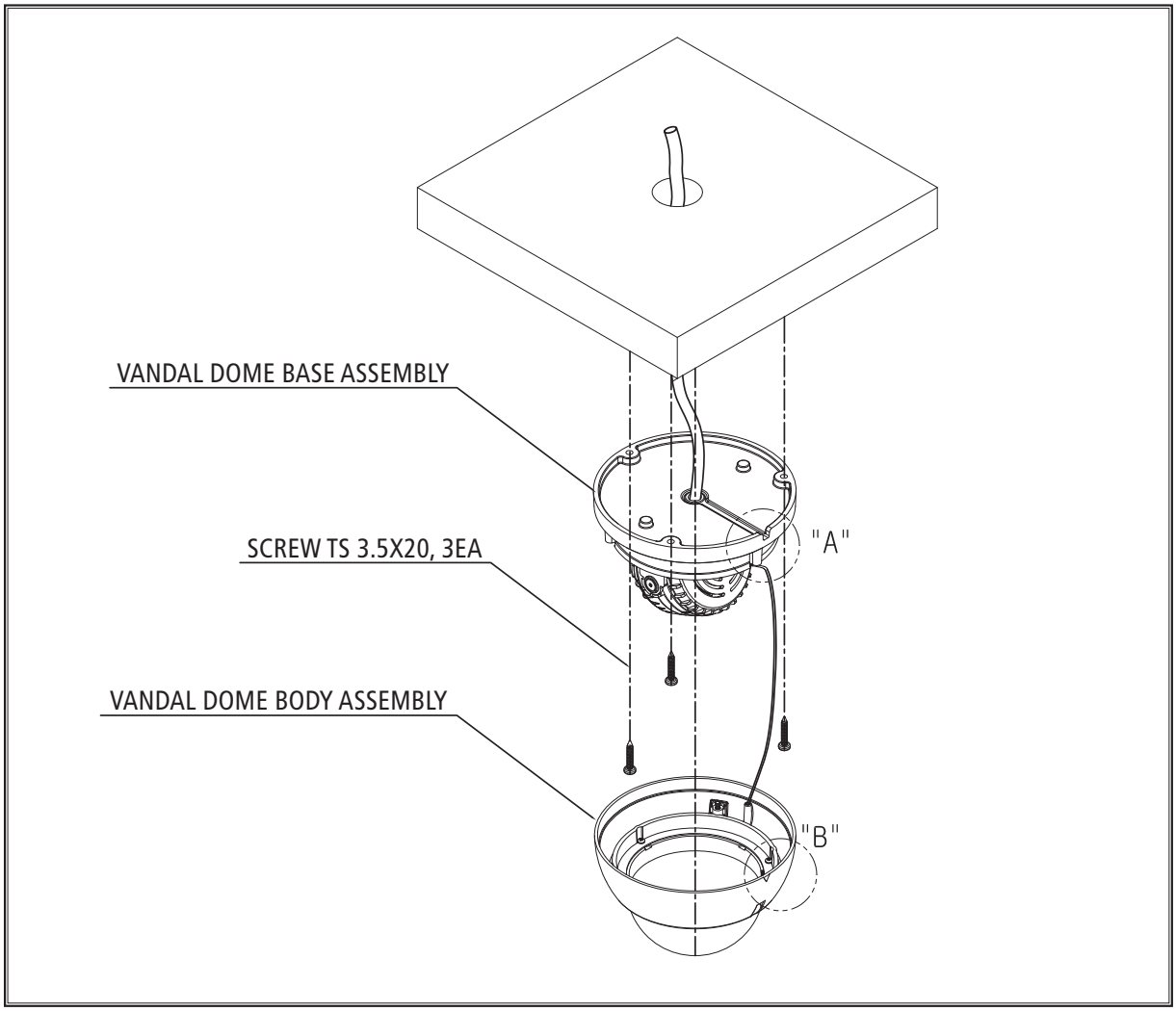
2. HT671H, HT670H



3. HT649H, HT648H

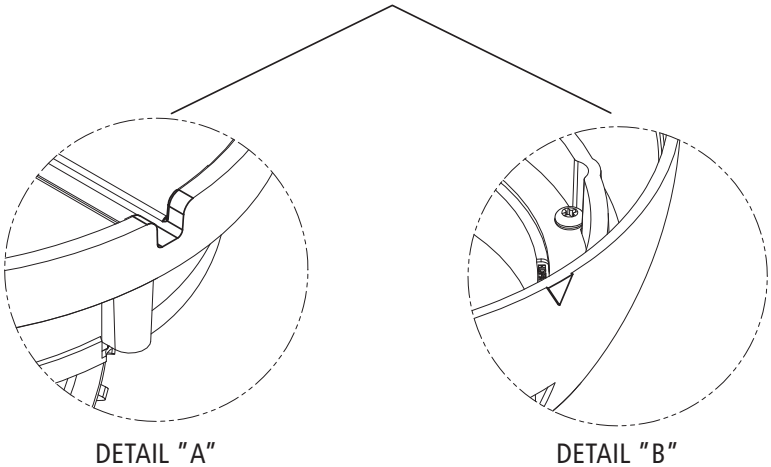


4. HT5940H, HT5935H



* Please refer to the mark "A" and "B" on above.

Match " ⊔ " with " ▽ "
to close the cover.



DETAIL "A"

DETAIL "B"

Speco Technologies

(960H Outdoor IR Bullet Camera)

DC Auto Iris Varifocal Lens 2.8-12mm

■ **HT7040H(2.8~12mm)**

SPECIFICATIONS

MODEL	HT7040H
Sensor type	1/3 Inch Color 960H CCD
Effective pixels	976 (H) X 494 (V) approx. 480K pixels (NTSC)
	976 (H) X 582 (V) approx. 570K pixels (PAL)
Total pixels	1020 (H) X 508 (V) approx. 520K pixels (NTSC)
	1020 (H) X 596 (V) approx. 610K pixels (PAL)
Resolution	COLOR : 650 TV lines, BW : 700 TV line
Scanning system	2:1 Interlace
Min. illumination	IR LED ON : 0 Lux @F1.2 (Sens-UP X256)
Video Output	1.0Vp-p Composite. 75 Ohms
S/N Ratio	52dB
AGC	Low / Middle / High
Sens-UP	OFF/AUTO (X2 ~ X256)
Backlight Compensation	OFF/BLC/HLC
D-WDR	OFF/INDOOR/OUTDOOR
Motion Detection	4 Zone
Privacy Masking	8 Zone
DIS(Digital Image Stabilizer)	OFF/ON
Day & Night	Auto(AGC)/Day/Night/Ext
White Balance	ATW/AWB/AWC->SET/Manual(1,800K ~ 11,000K)
3DNR(2D or 3D)	1 ~ 200 Level Selectable
Mirror	H-Rev / V-Rev / ROTATE
D-ZOOM	X32
SMART DZOOM	OFF/ON
DEFOG	OFF/MANUAL/AUTO
Blemish Compensation	Auto(512POINT)
Power Source	Dual Voltage
Power Consumption	IR LED ON:700mA Max
IR Distance	98 ft
Lens	DC Auto Iris Varifocal Lens(2.8-12mm)
Storage Temperature	-4°F ~ +140°F(Humidity : 20%RH ~ 95%RH)
Operating Temperature	-4°F ~ +140°F(Humidity : 20%RH ~ 80%RH)
Dimension(W x H x D)	3.94"(W) * 3.94"(H) * 8.27"(D)
Weight	3.09 lbs

Speco Technologies

(960H Outdoor IR Dome Camera)

DC Auto Iris Varifocal Lens 2.8-12mm/4mm Fixed Board Lens

- **HT671H(2.8~12mm)**
- **HT670H(4mm Fixed Board Lens)**

SPECIFICATIONS

MODEL	HT671H / HT670H
Sensor type	1/3 Inch Color 960H CCD
Effective pixels	976 (H) X 494 (V) approx. 480K pixels (NTSC)
	976 (H) X 582 (V) approx. 570K pixels (PAL)
Total pixels	1020 (H) X 508 (V) approx. 520K pixels (NTSC)
	1020 (H) X 596 (V) approx. 610K pixels (PAL)
Resolution	COLOR : 650 TV lines, BW : 700 TV line
Scanning system	2:1 Interlace
Min. illumination	IR LED ON : 0 Lux @F1.2 (Sens-UP X256)
Video Output	1.0Vp-p Composite. 75 Ohms
S/N Ratio	52dB
AGC	Low / Middle / High
Sens-UP	OFF/AUTO (X2 ~ X256)
Backlight Compensation	OFF/BLC/HLC
D-WDR	OFF/INDOOR/OUTDOOR
Motion Detection	4 Zone
Privacy Masking	8 Zone
DIS(Digital Image Stabilizer)	OFF/ON
Day & Night	Auto(AGC)/Day/Night/Ext
White Balance	ATW/AWB/AWC->SET/Manual(1,800K ~ 11,000K)
3DNR(2D or 3D)	1 ~ 200 Level Selectable
Mirror	H-Rev / V-Rev / ROTATE
D-ZOOM	X32
SMART DZOOM	OFF/ON
DEFOG	OFF/MANUAL/AUTO
Blemish Compensation	Auto(512POINT)
Power Source	Dual Voltage
Power Consumption	IR LED ON:500mA Max
IR Distance	98 ft
Lens	DC Auto Iris Varifocal Lens(2.8-12mm) | 4mm Fixed Board Lens
Storage Temperature	-4°F ~ +140°F(Humidity : 20%RH ~ 95%RH)
Operating Temperature	-4°F ~ +140°F(Humidity : 20%RH ~ 80%RH)
Dimension(W x H x D)	5.12"(Dia) * 3.94"(H)
Weight	1.98 lbs

Speco Technologies

(960H Indoor IR Dome Camera)

DC Auto Iris Varifocal Lens 2.8-12mm/4mm Fixed Board Lens

- **HT649H(2.8~12mm)**
- **HT648H(4mm Fixed Board Lens)**

SPECIFICATIONS

MODEL	HT649H / HT648H
Sensor type	1/3 Inch Color 960H CCD
Effective pixels	976 (H) X 494 (V) approx. 480K pixels (NTSC)
	976 (H) X 582 (V) approx. 570K pixels (PAL)
Total pixels	1020 (H) X 508 (V) approx. 520K pixels (NTSC)
	1020 (H) X 596 (V) approx. 610K pixels (PAL)
Resolution	COLOR : 650 TV lines, BW : 700 TV line
Scanning system	2:1 Interlace
Min. illumination	IR LED ON : 0 Lux @F1.2 (Sens-UP X256)
Video Output	1.0Vp-p Composite. 75 Ohms
S/N Ratio	52dB
AGC	Low / Middle / High
Sens-UP	OFF/AUTO (X2 ~ X256)
Backlight Compensation	OFF/BLC/HLC
D-WDR	OFF/INDOOR/OUTDOOR
Motion Detection	4 Zone
Privacy Masking	8 Zone
DIS(Digital Image Stabilizer)	OFF/ON
Day & Night	Auto(AGC)/Day/Night/Ext
White Balance	ATW/AWB/AWC->SET/Manual(1,800K ~ 11,000K)
3DNR(2D or 3D)	1 ~ 200 Level Selectable
Mirror	H-Rev / V-Rev / ROTATE
D-ZOOM	X32
SMART DZOOM	OFF/ON
DEFOG	OFF/MANUAL/AUTO
Blemish Compensation	Auto(512POINT)
Power Source	Dual Voltage
Power Consumption	IR LED ON:500mA Max
IR Distance	164 ft
Lens	DC Auto Iris Varifocal Lens(2.8-12mm) | 4mm Fixed Board Lens
Storage Temperature	-4°F ~ +140°F(Humidity : 20%RH ~ 95%RH)
Operating Temperature	-4°F ~ +140°F(Humidity : 20%RH ~ 80%RH)
Dimension(W x H x D)	5.12"(Dia) * 3.94"(H)
Weight	1.32 lbs

Speco Technologies

(960H Small Outdoor IR / Non IR Dome Camera)

DC Auto Iris Varifocal Lens 2.8-12mm

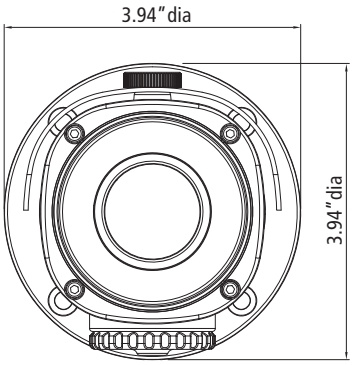
- **HT5940H(2.8~12mm) with IR**
- **HT5935H(2.8~12mm)**

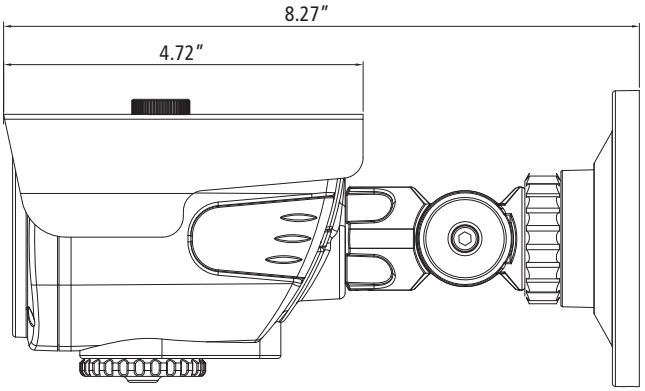
SPECIFICATIONS

MODEL	HT5940H / HT5935H	
Sensor type	1/3" Inch Color 960H CCD	
Effective pixels	976 (H) X 494 (V) approx. 480K pixels (NTSC)	
	976 (H) X 582 (V) approx. 570K pixels (PAL)	
Total pixels	1020 (H) X 508 (V) approx. 520K pixels (NTSC)	
	1020 (H) X 596 (V) approx. 610K pixels (PAL)	
Resolution	COLOR : 650 TV lines, BW : 700 TV line	
Scanning system	2:1 Interlace	
Min. illumination	IR LED ON:0Lux@F1.2(Sens-UP X256)	COLOR:0.01Lux @ F1.2 BW:0.001Lux@F1.2 (Sens-UP X256)
Video Output	1.0Vp-p Composite. 75 Ohms	
S/N Ratio	52dB	
AGC	Low / Middle / High	
Sens-UP	OFF/AUTO (X2 ~ X256)	
Backlight Compensation	OFF/BLC/HLC	
D-WDR	OFF/INDOOR/OUTDOOR	
Motion Detection	4 Zone	
Privacy Masking	8 Zone	
DIS(Digital Image Stabilizer)	OFF/ON	
Day & Night	Auto(AGC)/Day/Night/Ext	
White Balance	ATW/AWB/AWC->SET/Manual(1,800K ~ 11,000K)	
3DNR(2D or 3D)	1 ~ 200 Level Selectable	
Mirror	H-Rev / V-Rev / ROTATE	
D-ZOOM	X32	
SMART DZOOM	OFF/ON	
DEFOG	OFF/MANUAL/AUTO	
Blemish Compensation	Auto(512POINT)	
Power Source	Dual Voltage	
Power Consumption	IR LED ON:400mA Max	150mA Max
IR Distance	66 ft	
Lens	DC Auto Iris Varifocal Lens(2.8-12mm)	
Storage Temperature	-4°F ~ +140°F(Humidity : 20%RH ~ 95%RH)	
Operating Temperature	-4°F ~ +140°F(Humidity : 20%RH ~ 80%RH)	
Dimension(W x H x D)	4.72"(Dia) * 3.35"(H)	
Weight	2.20 lbs	

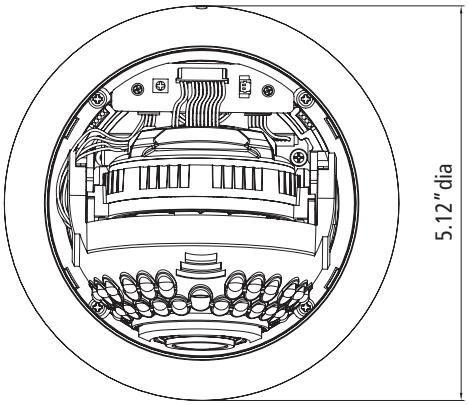
CAMERA DIMENSION

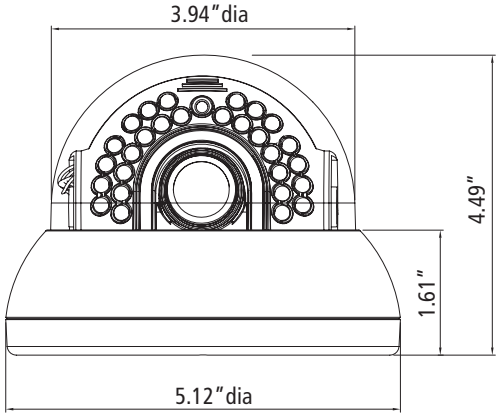
1) HT7040H





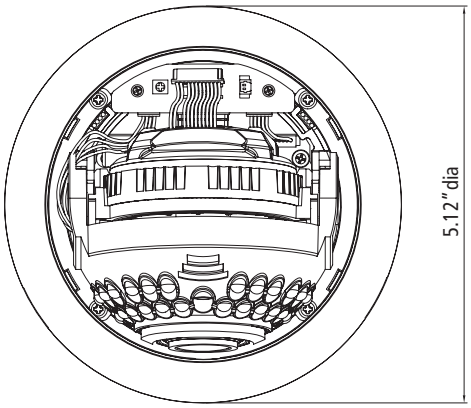
2) HT671H, HT670H

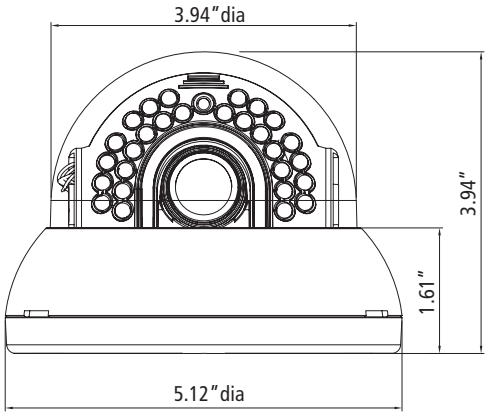




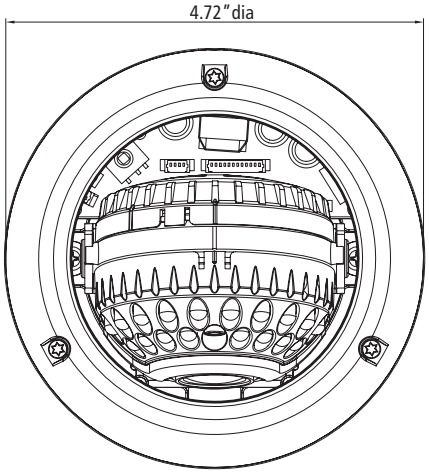
CAMERA DIMENSION

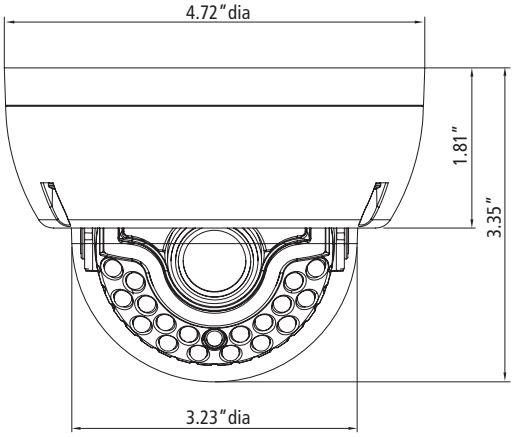
3) HT649H, HT648H





4) HT5940H, HT5935H





General Features

● 700TV Lines

The combination of a 960H CCD image sensor and SPECO DSP provides an excellent resolution of 700TV Lines.

● 3D-DNR

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

● DIS(Digital Image Stabilizer) Function

Makes a stabilizing clearer and the highest picture quality when out of focus by the wind or climate changing.

● Smart-IR

No saturation image, vivid image in darkness. "SPECO 960H" 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 "SPECO 960H"cameras, you can enjoy vivid image in any dark condition.

● Sens-Up

Despite a limited & low light condition, Sens-Up - Max. x256 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.

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.

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 is displayed "---".

Lens

This function is to adjust the brightness of the monitor.

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.

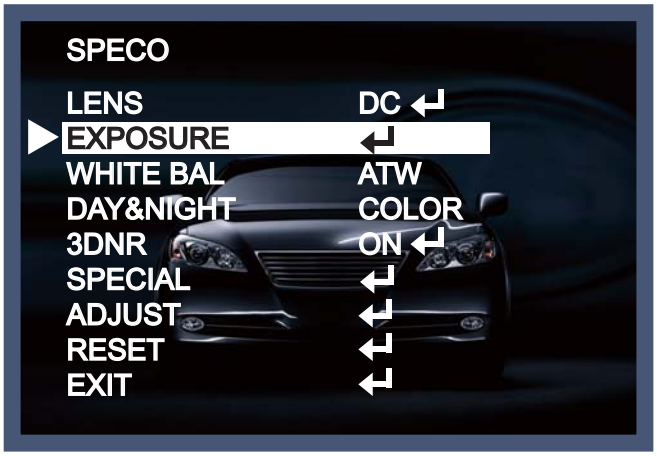
NOTE

* When DC is selected, the brightness control range is 1~100.

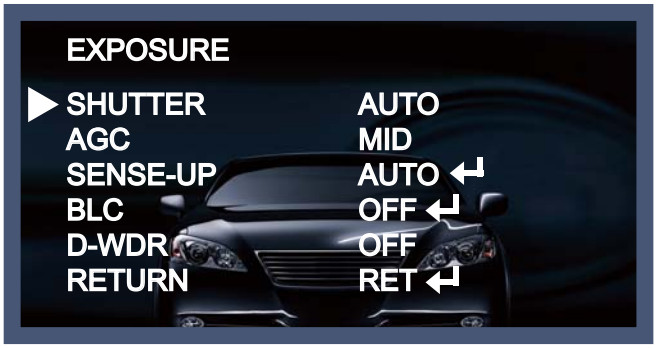
* When you select the mode setup, you can select INDOOR or OUTDOOR depending on the installation environment.

Exposure

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



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



◆ Electronic Shutter : DC lens is launched with the setting of 1/60 and the manual lens is launched with the setting of Auto shutter, but the shutter speed can be adjusted from 1/60 to 1/100,000.

→ DIS (Digital Image Stabilizer) : Select the DIS mode when a shaken image appeared due to the discrepancy of frequency with ambient light condition near the installation spot. Sense Up mode does not work while in DIS mode.

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

→ Off : Deactivated.

→ Low : 28dB Gain is applied.

→ Mid : 32dB Gain is applied.

→ High : 36dB Gain is applied.

NOTE

*Sense Up mode does not work while the Electronic shutter is set to Manual or DIS.

◆ 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 : Deactivated status.

→ Auto : Sense-Up auto mode status, The brightness degree is decided by the Sense Up setting value in the low light condition.

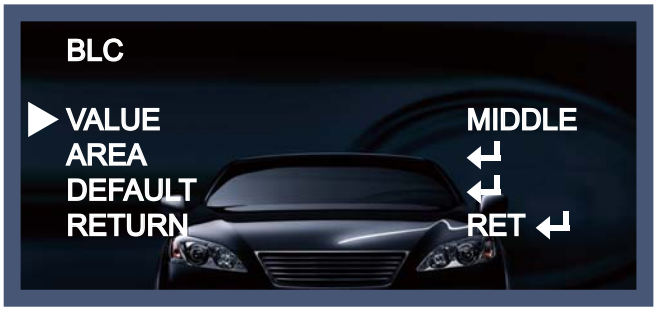
NOTE

*Sense Up mode does not work while the AGC mode is off.

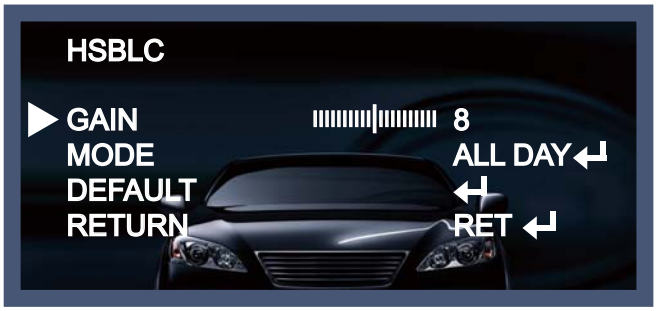
◆ BLC (Back Light Compensation) : The camera with 3D-DNR provides the intelligent light level control to overcome strong backlight conditions.

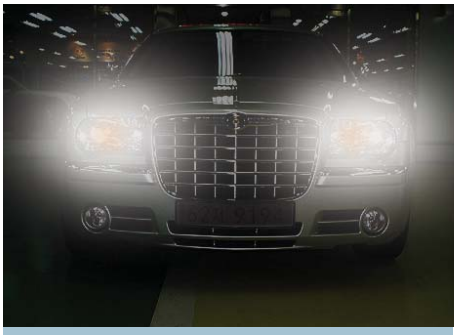
→ Off : Deactivated status.

→ BLC : The set up area can be seen vividly by the user who sets up the desired area to compensate for the back light directly according to the installation environment.



→ HSBLC (Highlight Suppression Back Light Compensation) : When there is a car head light turned on at the entrance of the gas station or in some place in the parking lot, the numbers of the car plate can be recognized by blocking only the light from the car headlight. The area is set up specifically so you can recognize the car plate numbers by blocking out the strong light.





Normal

HSBLC

◆ D-WDR : This camera which is using 3D-DNR DSP provides intelligent light level control to overcome even strong backlight conditions.

→ Off : Deactivated status.

→ Indoor compensation : To be used when the camera is installed in the indoor circumstances.

→ Outdoor compensation : To be used when the camera is installed in the outdoor circumstances.

WDR OFF

WDR ON

◆ Return : Saves the changes and returns you to the previous menu.

White Balance

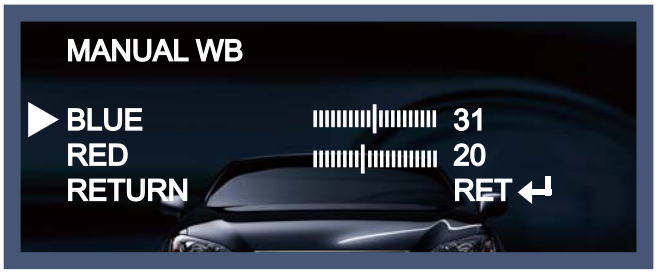
Use this function when the color adjustment of a screen is needed.

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.

Use the appropriate mode according to your purposes among these three modes.

- ATW : Use this mode when the color temperature is from 1,800K to 10,500K.
- AWB : The function to search for the color which is matched well with the ambient environment. This should be used when the color temperature is from 3,000K to 7,000K.
- AWC→SET : After letting the 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 is recommended.
- MANUAL : Manual setting allows for a more detailed color control. 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.



NOTE

The White Balance may not be working properly in the following conditions.

* 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.
* In these conditions, AWB mode is recommended.

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.

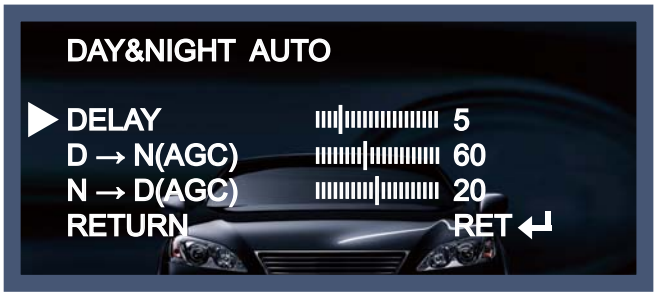
◆ COLOR : Makes the video output in color, at all times.

◆ B / W : Makes the video output in Black and White, at all times.

→ Burst : Remove the color signal to make the video output in Black and White.

→ Smart IR : Eliminate saturation of video image of the closer object in darkness by control of the IR sensitivity.

◆ 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.



◆ EXT : It can change the color or B/W mode automatically by connecting external signal.

3DNR

This function decreases the noise in the low light background.

1. Move the triangular indicator to 3DNR by using the Up or Down button.

2. Select the mode to use by pressing the Right or Left button.

3. Adjust the most available proportion of compensation with the ambient environment by changing the 3DNR mode into On and pressing the Set button.

◆ Off : Deactivated status.

◆ On : The compensation proportion is from 0 to 200.

The excellent effect of noise decrease in the low light condition.

NOTE

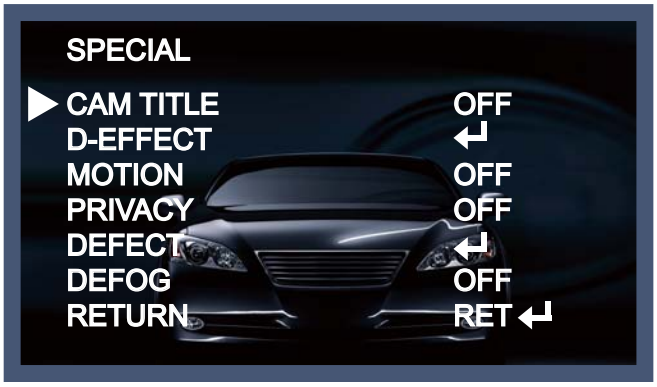
* If 3DNR function is used, the cancellation effect of noise is excellent. The higher the compensation proportion raise, the better the effect of noise cancellation is, but the ghost effect may occur.

Special

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

1.When the SETUP menu is displayed, select SPECIAL using the Up and Down button.

2. Select one of the mode using the Up and Down button.

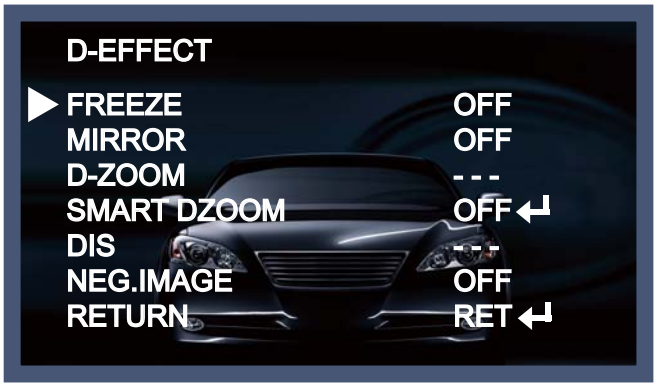


◆ CAM (Camera) TITLE : It can be adjusted when you get into the Cam Title menu. This function is to display the letters of the camera on the monitor. The 15 characters can be displayed and the location of the camera title on the screen can be adjusted. Move the triangular indicator to CAMERA ID using 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.

NOTE

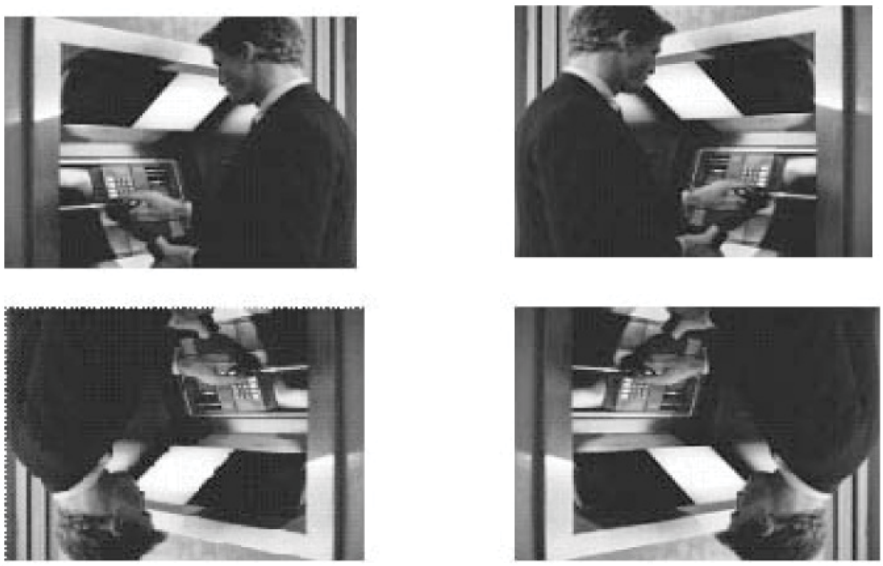
* If you want to erase the letter, move the cursor on the empty space in front of the number 0, and then letters will be erased by pressing the Set button one by one. Selecting the CLR option will erase all of the characters.

◆ D-EFFECT : This function affects the video image.



→ FREEZE : The image of the monitor is paused temporarily by this function.

→ MIRROR : The image of the monitor is reversed vertically or horizontally.



→ D-Zoom : You can use the digital zoom with x1 ~ x32 magnification.
The higher the digital zoom magnification is, the lower the resolution is.

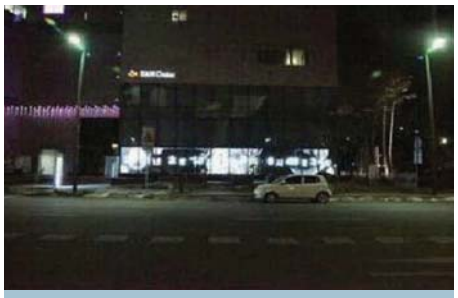
NOTE

* When you use the digital zoom, SMART DZOOM and DIS cannot be used.

→ SMART DZOOM : This function is interlocked with Digital-Zoom to distinguish a specific object in more detail when there is a movement detected in a certain area. An extra sensitivity function is used to detect motions. This function works more effectively with the optical zoom.

→ DIS (Digital Image Stabilizer) : DIS offers to compensate for the ghost effect and gives a clear image in a low light condition.

DIS OFF



DIS ON

→ NEG. IMAGE
- On : Activate a negative image just like a film.
- Off : Normal image.

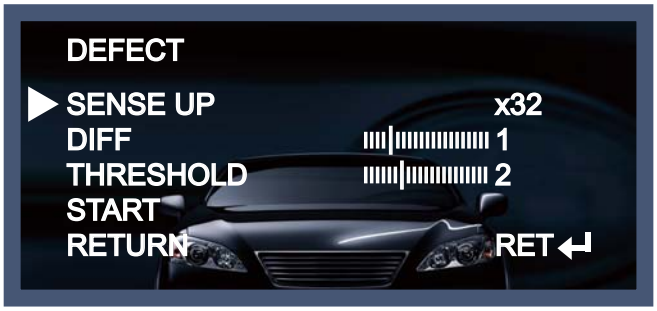
→ Return : Save the digital zoom setting, then return to the SPECIAL menu.

◆ MOTION : This can detect the movement of a subject and you can see the moving image of the subject on the monitor when the camera detects it. When the Motion Detection is ON, a new submenu appears when you press the Set menu.

- Area : You can designate areas up to a maximum of 4.
- AREA DISPLAY : After the selection of an area, the area screen should be activated On to use the motion detection function in a designated area. When this is activated, you can select the location of area, a size of area coverage.
- VALUE (Sensitivity) : The higher the setting value, the more sensitive the area becomes to motion.
- Motion View : If the camera detects a motion, the sentence like "Motion Detection" appears on the monitor.
- Return : Save the setting value of this menu, return to the SPECIAL menu.

◆ PRIVACY : This is used to hide certain areas on the monitor. You can designate up to 8 different areas. The size of a designated area can be adjusted. The color of a privacy area can be changed to 15 different colors. When Return is selected, all the changes are saved.

◆ DEFECT : You can eliminate white spots (defect) up to max.512 points.



- Sense Up : To eliminate defect, set the high level of Sense Up. You can set to max. 64x, but 32x is the best setting value to eliminate defect.
- DIFF : You can set the size of DEFECT from 0 to 3.
- THRESHOLD : The higher the level is, the more defect will appear.
- START : Press Set button on the "< " mark, It will start to eliminate defects "PROCESSING NOW…" sentence will be displayed on the monitor.
- Return : Save the setting value of this menu, return to the SPECIAL menu.

◆ DEFOG : This function helps to recognize the object in a foggy or dusty weather condition.

DEFOG OFF

DEFOG ON

◆ Return : Save the setting value and get out of the current menu.

Adjust

This function is needed to control the brightness of the monitor.

1. When the Set UP menu is displayed, select ADJUST using the Up and Down button.

2. Select the desired mode by using Up or Down button.

◆ Sharpness : The outline of an image becomes sharp and more distinct as the level of sharpness increases.

◆ Monitor : Change the setting value which is suitable for the monitor.

→ LCD : Select this when you use the LCD monitor.
(You can adjust the Gamma, Level, Blue& Red Gain on the submenu)

→ CRT : Select this when you use the CRT monitor.
(You can adjust the Level, Blue & Red Gain on the submenu)

→ USER : Use this unless you adjust two values above. If you use the monitor which don't have a good contrast rate, get into the submenu and adjust the Gamma, Level, Blue & Red Gain in the submenu.

Reset

The camera is set to the Factory Default 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.	☞Is 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. ☞Check the EXPOSURE menu and make sure SHUTTER is set to------.

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:

SPECO TECHNOLOGIES CAMERAS.....5 YEARS	**DVRs.....3 YEARS**
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.

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.**

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, NEGLECT, 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)

DATE OF PURCHASE: _____

WHERE PURCHASED: _____ PURCHASE PRICE: _____

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